PSY-103: ADULT DEVELOPMENT

Rising Scholar Program

Lake Tahoe Community College

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TABLE OF CONTENTS

Chapter 4: Middle Adulthood

Chapter 5: Late Adulthood

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CHAPTER OVERVIEW

Chapter 1: Adolescence

Learning Objectives: Physical Development in Adolescence

- Summarize the overall physical growth
- Describe the changes that occur during puberty
- Describe the changes in brain maturation
- Describe the changes in sleep
- Describe gender intensification
- Identify nutritional concerns
- Describe eating disorders
- Explain the prevalence, risk factors, and consequences of adolescent pregnancy

Adolescence is a period that begins with puberty and ends with the transition to adulthood (approximately ages 10–18). Physical changes associated with puberty are triggered by hormones. Changes happen at different rates in distinct parts of the brain and increase adolescents' propensity for risky behavior. Cognitive changes include improvements in complex and abstract thought. Adolescents' relationships with parents go through a period of redefinition in which adolescents become more autonomous. Peer relationships are important sources of support, but companionship during adolescence can also promote problem behaviors. Identity formation occurs as adolescents explore and commit to different roles and ideological positions. Because so much is happening in these years, psychologists have focused a great deal of attention on the period of adolescence.

1.1: Growth in Adolescence

Puberty *is a period of rapid growth and sexual maturation*. These changes begin sometime between eight and fourteen. Girls begin puberty at around ten years of age and boys begin approximately two years later. Pubertal changes take around three to four years to complete. Adolescents experience an overall physical growth spurt. *The growth proceeds from the extremities toward the torso. This is referred to as* **distalproximal development**. First the hands grow, then the arms, and finally the torso. The overall physical growth spurt results in 10-11 inches of added height and 50 to 75 pounds of increased weight. The head begins to grow sometime after the feet have gone through their period of growth. Growth of the head is preceded by growth of the ears, nose, and lips. The difference in these patterns of growth result in adolescents appearing awkward and out-of-proportion. As the torso grows, so does the internal organs. The heart and lungs experience dramatic growth during this period.

During childhood, boys and girls are quite similar in height and weight. However, gender differences become apparent during adolescence. From approximately age ten to fourteen, the average girl is taller, but not heavier, than the average boy. After that, the average boy becomes both taller and heavier, although individual differences are certainly noted. As adolescents physically mature, weight differences are more noteworthy than height differences. At eighteen years of age, those that are heaviest weigh almost twice as much as the lightest, but the tallest teens are only about 10% taller than the shortest (Seifert, 2012).

Both height and weight can certainly be sensitive issues for some teenagers. Most modern societies, and the teenagers in them, tend to favor relatively short women and tall men, as well as a somewhat thin body build, especially for girls and women. Yet, neither socially preferred height nor thinness is the destiny for many individuals. Being overweight, in particular, has become a common, serious problem in modern society due to the prevalence of diets high in fat and lifestyles low in activity (Tartamella, Herscher, & Woolston, 2004). The educational system has, unfortunately, contributed to the problem as well by gradually restricting the number of physical education courses and classes in the past two decades.

Average height and weight are also related somewhat to racial and ethnic background. In general, children of Asian background tend to be slightly shorter than children of European and North American background. The latter in turn tend to be shorter than children from African societies (Eveleth & Tanner, 1990). Body shape differs slightly as well, though the differences are not always visible until after puberty. Asian background youth tend to have arms and legs that are a bit short relative to their torsos, and African background youth tend to have relatively long arms and legs. The differences are only averages as there are large individual differences as well.

Sexual Development

Typically, the growth spurt is followed by the development of sexual maturity. Sexual changes are divided into two categories: Primary sexual characteristics and secondary sexual characteristics. **Primary sexual characteristics** *are changes in the reproductive organs*. For males, this includes growth of the testes, penis, scrotum, and **spermarche** *or first ejaculation of semen*. This occurs between 11 and 15 years of age. For females, primary characteristics include growth of the uterus and **menarche** *or the first menstrual period*. The female gametes, which are stored in the ovaries, are present at birth, but are immature. Each ovary contains about 400,000 gametes, but only 500 will become mature eggs (Crooks & Baur, 2007). Beginning at puberty, one ovum ripens and is released about every 28 days during the menstrual cycle. Stress and higher percentage of body fat can bring menstruation at younger ages.

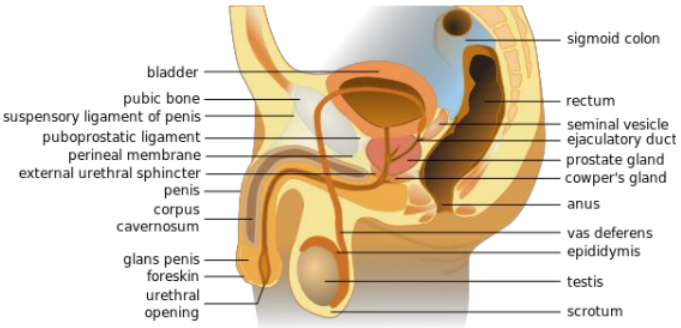

Figure 6.1: Male reproductive system. Source.

Male Anatomy: Males have both internal and external genitalia that are responsible for procreation and sexual intercourse. Males produce their sperm on a cycle, and unlike the female's ovulation cycle, the male sperm production cycle is constantly producing

millions of sperm daily. The main male sex organs are the penis and the testicles, the latter of which produce semen and sperm. The semen and sperm, as a result of sexual intercourse, can fertilize an ovum in the female's body; the fertilized ovum (zygote) develops into a fetus which is later born as a child.

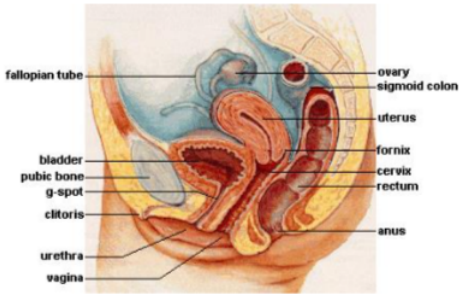

Figure 6.2: Female reproductive system. Source.

Female Anatomy: Female external genitalia is collectively known as the vulva, which includes the mons veneris, labia majora, labia minora, clitoris, vaginal opening, and urethral opening. Female internal reproductive organs consist of the vagina, uterus, fallopian tubes, and ovaries. The uterus hosts the developing fetus, produces vaginal and uterine secretions, and passes the male's sperm through to the fallopian tubes while the ovaries release the eggs. A female is born with all her eggs already produced. The vagina is attached to the uterus through the cervix, while the uterus is attached to the ovaries via the fallopian tubes. Females have a monthly reproductive cycle; at certain intervals the ovaries release an egg, which passes through the fallopian tube into the uterus. If, in this transit, it meets with sperm, the sperm might penetrate and merge with the egg, fertilizing it. If not fertilized, the egg is flushed out of the system through menstruation.

Figure 6.3: First time shaving. Source.

Secondary sexual characteristics *are visible physical changes not directly linked to reproduction, but signal sexual maturity*. For males this includes broader shoulders and a lower voice as the larynx grows. Hair becomes coarser and darker, and hair growth occurs in the pubic area, under the arms and on the face. For females breast development occurs around age 10, although full development takes several years. Hips broaden and pubic and underarm hair develops and also becomes darker and coarser.

Acne: An unpleasant consequence of the hormonal changes in puberty is **acne**, defined *as pimples on the skin due to overactive sebaceous (oil-producing) glands* (Dolgin, 2011). These glands develop at a greater speed than the skin ducts that discharges the oil. Consequently, the ducts can become blocked with dead skin and acne will develop. According to the University of California at Los Angeles Medical Center (2000), approximately 85% of adolescents develop acne, and boys develop acne more than girls because of greater levels of testosterone in their systems (Dolgin, 2011). Experiencing acne can lead the adolescent to withdraw socially, especially if they are self-conscious about their skin or teased (Goodman, 2006).

Effects of Pubertal Age: The age of puberty is getting younger for children throughout the world. According to Euling et al. (2008) data are sufficient to suggest a trend toward an earlier breast development onset and menarche in girls. A century ago the average age of a girl’s first period in the United States and Europe was 16, while today it is around 13. Because there is no clear marker of puberty for boys, it is harder to determine if boys are maturing earlier too. In addition to better nutrition, less positive reasons associated with early puberty for girls include increased stress, obesity, and endocrine disrupting chemicals.

Cultural differences are noted with Asian-American girls, on average, developing last, while African American girls enter puberty the earliest. Hispanic girls start puberty the second earliest, while European-American girls rank third in their age of starting puberty. Although African- American girls are typically the first to develop, they are less likely to experience negative consequences of early puberty when compared to European-American girls (Weir, 2016).

Research has demonstrated mental health problems linked to children who begin puberty earlier than their peers. For girls early puberty is associated with depression, substance use, eating disorders, disruptive behavior disorders, and early sexual behavior (Graber, 2013). Early maturing girls demonstrate more anxiety and less confidence in their relationships with family and friends, and they compare themselves more negatively to their peers (Weir, 2016).

Problems with early puberty seem to be due to the mismatch between the child's appearance and the way she acts and thinks. Adults especially may assume the child is more capable than she actually is, and parents might grant more freedom than the child's age would indicate. For girls, the emphasis on physical attractiveness and sexuality is emphasized at puberty and they may lack effective coping strategies to deal with the attention they may receive.

Figure 6.4. Source.

Additionally, mental health problems are more likely to occur when the child is among the first in his or her peer group to develop. Because the preadolescent time is one of not wanting to appear different, early developing children stand out among their peer group and gravitate toward those who are older. For girls, this results in them interacting with older peers who engage in risky behaviors such as substance use and early sexual behavior (Weir, 2016).

Boys also see changes in their emotional functioning at puberty. According to Mendle, Harden, Brooks-Gunn, and Graber (2010), while most boys experienced a decrease in depressive symptoms during puberty, boys who began puberty earlier and exhibited a rapid tempo, or a fast rate of change, actually increased in depressive symptoms. The effects of pubertal tempo were stronger than those of pubertal timing, suggesting that rapid pubertal change in boys may be a more important risk factor than the timing of development. In a further study to better analyze the reasons for this change, Mendle, Harden, Brooks-Gunn and Graber (2012) found that both early maturing boys and rapidly maturing boys displayed decrements in the quality of their peer relationships as they moved into early adolescence, whereas boys with more typical timing and tempo development actually experienced improvements in peer relationships. The researchers concluded that the transition in peer relationships may be especially challenging for boys whose pattern of pubertal maturation differs significantly from those of others their age. Consequences for boys attaining early puberty was increased odds of cigarette, alcohol, or other drug use (Dudovitz, et al., 2015).

Figure 6.5. Source.

Gender Role Intensification: At about the same time that puberty accentuates gender, role differences also accentuate for at least some teenagers. Some girls who excelled at math or science in elementary school, may curb their enthusiasm and displays of success at these subjects for fear of limiting their popularity or attractiveness as girls (Taylor, Gilligan, & Sullivan, 1995; Sadker, 2004). Some boys who were not especially interested in sports previously may begin dedicating themselves to athletics to affirm their masculinity in the eyes of others. Some boys and girls who once worked together successfully on class projects may no longer feel comfortable doing so, or alternatively may now seek to be working partners, but for social rather than academic reasons. Such changes do not affect all youngsters equally, nor affect any one youngster equally on all occasions. An individual student may act like a young adult on one day, but more like a child the next.

1.2: Adolescent Brain

The brain undergoes dramatic changes during adolescence. Although it does not get larger, it matures by becoming more interconnected and specialized (Giedd, 2015). The myelination and development of connections between neurons continues. This results in an increase in the white matter of the brain, and allows the adolescent to make significant improvements in their thinking and processing skills. Different brain areas become myelinated at different times. For example, the brain's language areas undergo myelination during the first 13 years. Completed insulation of the axons consolidates these language skills, but makes it more difficult to learn a second language. With greater myelination, however, comes diminished plasticity as a myelin coating inhibits the growth of new connections (Dobbs, 2012).

Even as the connections between neurons are strengthened, synaptic pruning occurs more than during childhood as the brain adapts to changes in the environment. This synaptic pruning causes the gray matter of the brain, or the cortex, to become thinner but more efficient (Dobbs, 2012). The corpus callosum, which connects the two hemispheres, continues to thicken allowing for stronger connections between brain areas. Additionally, the hippocampus becomes more strongly connected to the frontal lobes, allowing for greater integration of memory and experiences into our decision making.

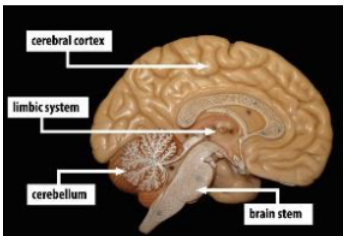

Figure 6.6: The limbic system.

The **limbic system**, *which regulates emotion and reward*, is linked to the hormonal changes that occur at puberty. The limbic system is also related to novelty seeking and a shift toward interacting with peers. In contrast, the **prefrontal cortex** *which is involved in the control of impulses, organization, planning, and making good decisions*, does not fully develop until the mid-20s. According to Giedd (2015) the significant aspect of the later developing prefrontal cortex and early development of the limbic system is the "mismatch" in timing between the two. The approximately ten years that separates the development of these two brain areas can result in risky behavior, poor decision making, and weak emotional control for the adolescent. When puberty begins earlier, this mismatch extends even further.

Teens often take more risks than adults and according to research it is because they weigh risks and rewards differently than adults do (Dobbs, 2012). For adolescents the brain's sensitivity to the neurotransmitter dopamine peaks, and **dopamine** *is involved in reward circuits* so the possible rewards outweighs the risks. Adolescents respond especially strongly to social rewards during activities, and they prefer the company of others their same age. In addition to dopamine, the adolescent brain is affected by **oxytocin** *which facilitates bonding and makes social connections more rewarding*. With both dopamine and oxytocin engaged, it is no wonder that adolescents seek peers and excitement in their lives that could end up actually harming them.

Because of all the changes that occur in the adolescent brain, the chances for abnormal development can occur, including mental illness. In fact, 50% of the mental illness occurs by the age 14 and 75% occurs by age 24 (Giedd, 2015). Additionally, during this period of development the adolescent brain is especially vulnerable to damage from drug exposure. For example, repeated exposure to marijuana can affect cellular activity in the endocannabinoid system. Consequently, adolescents are more sensitive to the effects of repeated marijuana exposure (Weir, 2015).

However, researchers have also focused on the highly adaptive qualities of the adolescent brain which allow the adolescent to move away from the family towards the outside world (Dobbs, 2012; Giedd, 2015). Novelty seeking and risk taking can generate positive outcomes including meeting new people and seeking out new situations. Separating from the family and moving into new relationships and different experiences are actually quite adaptive for society.

1.3: Adolescent Sleep

According to the National Sleep Foundation (NSF) (2016), adolescents need about 8 to 10 hours of sleep each night to function best. The most recent Sleep in America poll in 2006 indicated that adolescents between sixth and twelfth grade were not getting the recommended amount of sleep. On average adolescents only received 7 1⁄2 hours of sleep per night on school nights with younger adolescents getting more than older ones (8.4 hours for sixth graders and only 6.9 hours for those in twelfth grade). For the older adolescents, only about one in ten (9%) get an optimal amount of sleep, and they are more likely to experience negative consequences the following day. These include feeling too tired or sleepy, being cranky or irritable, falling asleep in school, having a depressed mood, and drinking caffeinated beverages (NSF, 2016). Additionally, they are at risk for substance abuse, car crashes, poor academic performance, obesity, and a weakened immune system (Weintraub, 2016).

Figure 6.7. Source.

Why don’t adolescents get adequate sleep? In addition to known environmental and social factors, including work, homework, media, technology, and socializing, the adolescent brain is also a factor. As adolescent go through puberty, their circadian rhythms change and push back their sleep time until later in the evening (Weintraub, 2016). This biological change not only keeps adolescents awake at night, it makes it difficult for them to get up in the morning. When they are awake too early, their brains do not function optimally. Impairments are noted in attention, behavior, and academic achievement, while increases in tardiness and absenteeism are also demonstrated.

To support adolescents’ later sleeping schedule, the Centers for Disease Control and Prevention recommended that school not begin any earlier than 8:30 a.m. Unfortunately, over 80% of American schools begin their day earlier than 8:30 a.m. with an average start time of 8:03 a.m. (Weintraub, 2016). Psychologists and other professionals have been advocating for later school times, and they have produced research demonstrating better student outcomes for later start times. More middle and high schools have changed their start times to better reflect the sleep research. However, the logistics of changing start times and bus schedules are proving too difficult for some schools leaving many adolescent vulnerable to the negative consequences of sleep deprivation.

1.4: Adolescent Sexual Activity

By about age ten or eleven, most children experience increased sexual attraction to others that affects social life, both in school and out (McClintock & Herdt, 1996). By the end of high school, more than half of boys and girls report having experienced sexual intercourse at least once, though it is hard to be certain of the proportion because of the sensitivity and privacy of the information. (Center for Disease Control, 2004; Rosenbaum, 2006).

Adolescent Pregnancy: Although adolescent pregnancy rates have declined since 1991, teenage birth rates in the United States are higher than most developed countries.

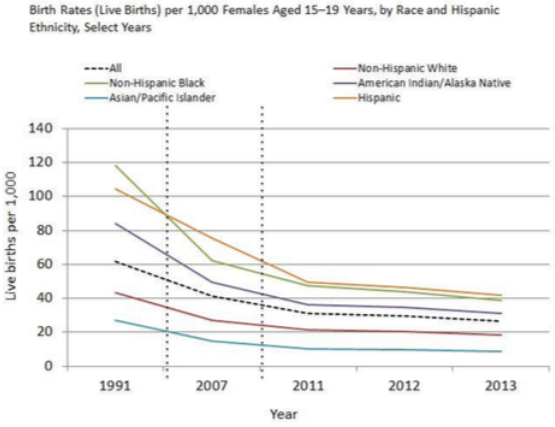

Figure 6.8. Source.

In 2014 females aged 15–19 years experienced a birth rate of 24.2 per 1,000 women. This is a drop of 9% from 2013. Birth rates fell 11% for those aged 15–17 years and 7% for 18–19 year-olds. It appears that adolescents seem to be less sexually active than in previous years, and those who are sexually active seem to be using birth control (CDC, 2016). Figure 6.8 shows the birth rates (live births) per 1,000 females aged 15–19 years for all races and Hispanic ethnicity in the United States, 1991, 2007, 2011, 2012, & 2013.

Risk Factors for Adolescent Pregnancy: Miller, Benson, and Galbraith (2001) found that parent/child closeness, parental supervision, and parents' values against teen intercourse (or unprotected intercourse) decreased the risk of adolescent pregnancy. In contrast, residing in disorganized/dangerous neighborhoods, living in a lower SES family, living with a single parent, having older sexually active siblings or pregnant/parenting teenage sisters, early puberty, and being a victim of sexual abuse place adolescents at an increased risk of adolescent pregnancy.

Consequences of Adolescent Pregnancy: After the child is born life can be difficult for a teenage mother. Only 40% of teenagers who have children before age 18 graduate from high school. Without a high school degree her job prospects are limited and economic independence is difficult. Teen mothers are more likely to live in poverty, and more than 75% of all unmarried teen mother receive public assistance within 5 years of the birth of their first child. Approximately, 64% of children born to an unmarried teenage high-school dropout live in poverty. Further, a child born to a teenage mother is 50% more likely to repeat a grade in school and is more likely to perform poorly on standardized tests and drop out before finishing high school (March of Dimes, 2012).

Research analyzing the age that men father their first child and how far they complete their education have been summarized by the Pew Research Center (2015) and reflect the research for females. Among dads ages 22 to 44, 70% of those with less than a high school diploma say they fathered their first child before the age of 25. In comparison, less than half (45%) of fathers with some college experience became dads by that age. Additionally, becoming a young father occurs much less for those with a bachelor's degree or higher as just 14% had their first child prior to age 25. Like men, women with more education are likely to be older when they become mothers.

- **6.4: Adolescent Sexual Activity** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

1.5: Eating Disorders

Although eating disorders can occur in children and adults, they frequently appear during the teen years or young adulthood (National Institute of Mental Health (NIMH), 2016). Eating disorders affect both genders, although rates among women are 2 1⁄2 times greater than among men. Similar to women who have eating disorders, men also have a distorted sense of body image, including muscle dysmorphia or an extreme concern with becoming more muscular. The prevalence of eating disorders in the United States is similar among Non-Hispanic Whites, Hispanics, African-Americans, and Asians, with the exception that anorexia nervosa is more common among Non-Hispanic Whites (Hudson, Hiripi, Pope, & Kessler, 2007; Wade, Keski-Rahkonen, & Hudson, 2011).

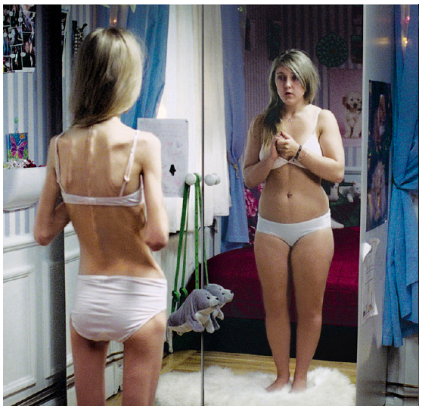

Figure 6.9. Source.

Risk Factors for Eating Disorders

Because of the high mortality rate, researchers are looking into the etiology of the disorder and associated risk factors. Researchers are finding that eating disorders are caused by a complex interaction of genetic, biological, behavioral, psychological, and social factors (NIMH, 2016). Eating disorders appear to run in families, and researchers are working to identify DNA variations that are linked to the increased risk of developing eating disorders. Researchers have also found differences in patterns of brain activity in women with eating disorders in comparison with healthy women.

The main criteria for the most common eating disorders: Anorexia nervosa, bulimia nervosa, and binge-eating disorder are described in the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (DSM-5)(American Psychiatric Association, 2013) and listed in Table 6.1.

Table 6.1 DSM-5 Eating Disorder

Anorexia Nervosa	• Restriction of energy intake, leading to a significantly low body weight • Intense fear of gaining weight • Disturbance in one's self-evaluation regarding body weight
Bulimia Nervosa	• Recurrent episodes of binge-eating • Recurrent inappropriate compensatory behaviors to prevent weight gain, including purging, laxatives, fasting, or excessive exercise • Self-evaluation is unduly affected by body shape and weight
Binge-Eating Disorder	• Recurrent episodes of binge eating • Marked distress regarding binge eating • The binge eating is not associated with the recurrent use of inappropriate compensatory behavior

Health Consequences of Eating Disorders: For those suffering from anorexia, health consequences include an abnormally slow heart rate and low blood pressure, which increases the risk for heart failure. Additionally, there is a reduction in bone density (osteoporosis), muscle loss and weakness, severe dehydration, fainting, fatigue, and overall weakness. Anorexia nervosa has the highest mortality rate of any psychiatric disorder (Arcelus, Mitchell, Wales, & Nielsen, 2011). Individuals with this disorder may

die from complications associated with starvation, while others die of suicide. In women, suicide is much more common in those with anorexia than with most other mental disorders.

The binge and purging cycle of bulimia can affect the digestives system and lead to electrolyte and chemical imbalances that can affect the heart and other major organs. Frequent vomiting can cause inflammation and possible rupture of the esophagus, as well as tooth decay and staining from stomach acids. Lastly, binge eating disorder results in similar health risks to obesity, including high blood pressure, high cholesterol levels, heart disease, Type II diabetes, and gall bladder disease (National Eating Disorders Association, 2016).

Eating Disorders Treatment: To treat eating disorders, adequate nutrition and stopping inappropriate behaviors, such as purging, are the foundations of treatment. Treatment plans are tailored to individual needs and include medical care, nutritional counseling, medications (such as antidepressants), and individual, group, and/or family psychotherapy (NIMH, 2016). For example, the **Maudsley Approach** *has parents of adolescents with anorexia nervosa be actively involved their child's treatment*, such as assuming responsibility for feeding the child. To eliminate binge- eating and purging behaviors, **cognitive behavioral therapy (CBT)** *assists sufferers by identifying distorted thinking patterns and changing inaccurate beliefs.*

Figure 6.10. Source.

1.6: Cognitive Development in Adolescence

Learning Objectives: Cognitive Development in Adolescence

- Describe Piaget's formal operational stage and the characteristics of formal operational thought
- Describe adolescent egocentrism
- Describe Information Processing research on attention and memory
- Describe the developmental changes in language
- Describe the various types of adolescent education
- Identify changes in high school drop-out rates based on gender and ethnicity

Piaget's Formal Operational Stage of Cognitive Development

During the formal operational stage, adolescents are able to understand **abstract principles** *which have no physical reference.* They can now contemplate such abstract constructs as beauty, love, freedom, and morality. The adolescent is no longer limited by what can be directly seen or heard. Additionally, while younger children solve problems through trial and error, adolescents demonstrate **hypothetical-deductive reasoning**, *which is developing hypotheses based on what might logically occur*. They are able to think about all the possibilities in a situation beforehand, and then test them systematically (Crain, 2005). Now they are able to engage in true scientific thinking.

Formal operational thinking also involves accepting hypothetical situations. Adolescents understand the concept of **transitivity**, *which means that a relationship between two elements is carried over to other elements logically related to the first two*, such as if A<B and B<C, then A<C (Thomas, 1979). For example, when asked: If Maria is shorter than Alicia and Alicia is shorter than Caitlyn, who is the shortest? Adolescents are able to answer the question correctly as they understand the transitivity involved.

Does everyone reach formal operations? According to Piaget, most people attain some degree of formal operational thinking, but use formal operations primarily in the areas of their strongest interest (Crain, 2005). In fact, most adults do not regularly demonstrate formal operational thought, and in small villages and tribal communities, it is barely used at all. A possible explanation is that an individual's thinking has not been sufficiently challenged to demonstrate formal operational thought in all areas.

Adolescent Egocentrism: Once adolescents can understand abstract thoughts, they enter a world of hypothetical possibilities and demonstrate **egocentrism** *or a heightened self-focus*. The egocentricity comes from attributing unlimited power to their own thoughts (Crain, 2005). Piaget believed it was not until adolescents took on adult roles that they would be able to learn the limits to their own thoughts.

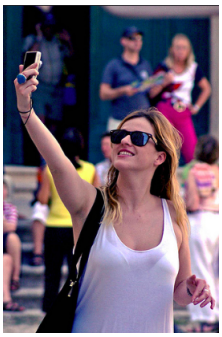

Figure 6.11. Source.

David Elkind (1967) expanded on the concept of Piaget's adolescent egocentricity. Elkind theorized that the physiological changes that occur during adolescence result in adolescents being primarily concerned with themselves. Additionally, since adolescents fail to differentiate between what others are thinking and their own thoughts, they believe that others are just as fascinated with their behavior and appearance. This belief results in the adolescent anticipating the reactions of others, and consequently constructing an imaginary audience. "The **imaginary audience** *is the adolescent's belief that those around them are as concerned and focused on their appearance as they themselves are"* (Schwartz, Maynard, & Uzelac, 2008, p. 441). Elkind thought that the imaginary audience contributed to the self-consciousness that occurs during early adolescence. The desire for privacy and reluctance to share personal information may be a further reaction to feeling under constant observation by others.

Another important consequence of adolescent egocentrism is the **personal fable** *or belief that one is unique, special, and invulnerable to harm.* Elkind (1967) explains that because adolescents feel so important to others (imaginary audience) they regard themselves and their feelings as being special and unique. Adolescents believe that only they have experienced strong and diverse emotions, and therefore others could never understand how they feel. This uniqueness in one's emotional experiences reinforces the adolescent's belief of invulnerability, especially to death. Adolescents will engage in risky behaviors, such as drinking and driving or unprotected sex, and feel they will not suffer any negative consequences. Elkind believed that adolescent egocentricity emerged in early adolescence and declined in middle adolescence, however, recent research has also identified egocentricity in late adolescence (Schwartz, et al., 2008).

Consequences of Formal Operational Thought: As adolescents are now able to think abstractly and hypothetically, they exhibit many new ways of reflecting on information (Dolgin, 2011). For example, they demonstrate greater **introspection** *or thinking about one's thoughts*

Information Processing

Cognitive control: As noted in earlier chapters, executive functions, such as attention, increases in working memory, and cognitive flexibility have been steadily improving since early childhood. Studies have found that executive function is very competent in adolescence. However, **self-regulation**, or *the ability to control impulses,* may still fail. A failure in self- regulation is especially true when there is high stress or high demand on mental functions (Luciano & Collins, 2012). While high stress or demand may tax even an adult's self-regulatory abilities, neurological changes in the adolescent brain may make teens particularly prone to more risky decision making under these conditions.

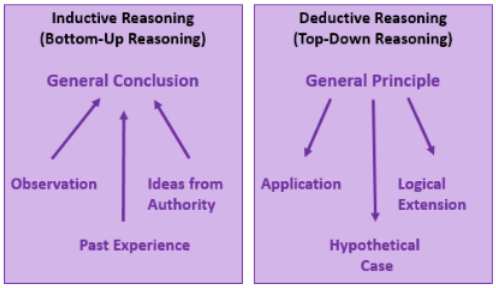

Figure 6.12.

Inductive and Deductive Reasoning: Inductive reasoning emerges in childhood, and is a type of reasoning that is sometimes characterized as "bottom-up-processing" in which *specific observations, or specific comments from those in authority, may be used to draw general conclusions*. However, in inductive reasoning the veracity of the information that created the general conclusion does not guarantee the accuracy of that conclusion. For instance, a child who has only observed thunder on summer days may conclude that it only thunders in the summer. In contrast, **deductive reasoning**, sometimes called "top-down-processing", emerges in adolescence. *This type of reasoning starts with some overarching principle, and based on this propose specific conclusions*. Deductive reasoning guarantees a truthful conclusion if the premises on which it is based are accurate.

Intuitive versus Analytic Thinking: Cognitive psychologists often refer to intuitive and analytic thought as the Dual-Process Model; the notion that humans have two distinct networks for processing information (Albert & Steinberg, 2011). **Intuitive thought** *is automatic, unconscious, and fast* (Kahneman, 2011), *and it is more experiential and emotional*. In contrast, **Analytic thought** *is deliberate, conscious, and rational*. While these systems interact, they are distinct (Kuhn, 2013). Intuitive thought is easier and more commonly used in everyday life. It is also more commonly used by children and teens than by adults (Klaczynski, 2001). The quickness of adolescent thought, along with the maturation of the limbic system, may make teens more prone to emotional intuitive thinking than adults.

1.7: High School Dropouts

The **status dropout rate** *refers to the percentage of 16 to 24 year-olds who are not enrolled in school and do not have high school credentials* (either a diploma or an equivalency credential such as a General Educational Development [GED] certificate). The dropout rate is based on sample surveys of the civilian, noninstitutionalized population, which excludes persons in prisons, persons in the military, and other persons not living in households. The dropout rate among high school students has declined from a rate of 12% in 1990, to 7% in 2013 (U.S. Department of Education, 2015). The rate is lower for Whites than for Blacks, and the rates for both Whites and Blacks are lower than the rate for Hispanics. However, the gap between Whites, Blacks, and Hispanics have narrowed (see Figure 6.11).

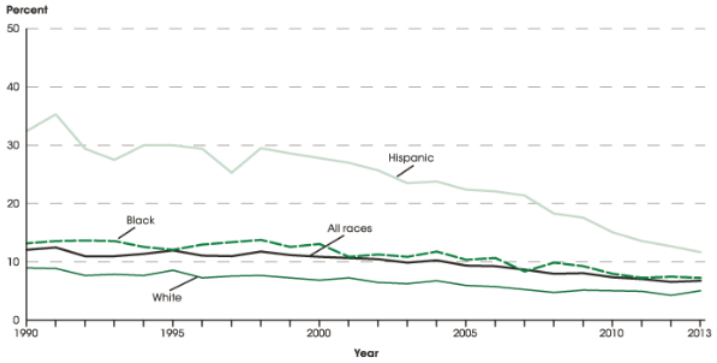

Figure 6.13: Status dropout rates of 16- through 24-year-olds, by race/ethnicity: 1990 through 2013. **SOURCE:** U.S. Department of Education, National Center for Education Statistics. (2015). *The Condition of Education 2015* (NCES 2015-144), Status Dropout Rates.

The dropout rate for males in 1990 was 12%, where it stayed until 2000. Thereafter the rate has dropped to 7% in 2013. The dropout rate for females in 1990 was 12%, where it dropped to 10% in 2000, and in 2013 was 6%. From 1997 until 2012 the rate for males was appreciably higher than for females, while in 2013 the gender difference was minimal (U.S. Department of Education, 2015).

1.8: Teenagers and Working

Many adolescents work either summer jobs, or during the school year. Holding a job may offer teenagers extra funds, the opportunity to learn new skills, ideas about future careers, and perhaps the true value of money. However, there are numerous concerns about teenagers working, especially during the school year. A long-standing concern is that that it “engenders precocious maturity of more adult-like roles and problem behaviors” (Staff, VanEseltine, Woolnough, Silver, & Burrington, 2011, p. 150). Several studies have found that working more than 20 hours per week can lead to declines in grades, a general disengagement from school (Staff, Schulenberg, & Bachman, 2010; Lee & Staff, 2007; Marsh & Kleitman, 2005), an increase in substance abuse (Longest & Shanahan, 2007), engaging in earlier sexual behavior, and pregnancy (Staff et al., 2011).

Figure 6.14. Source.

However, like many employee groups teens have seen a drop in the number of jobs. The summer jobs of previous generations have been on a steady decline, according to the United States Department of Labor, Bureau of Labor Statistics (2016). See Figure 6.15 for recent trends.

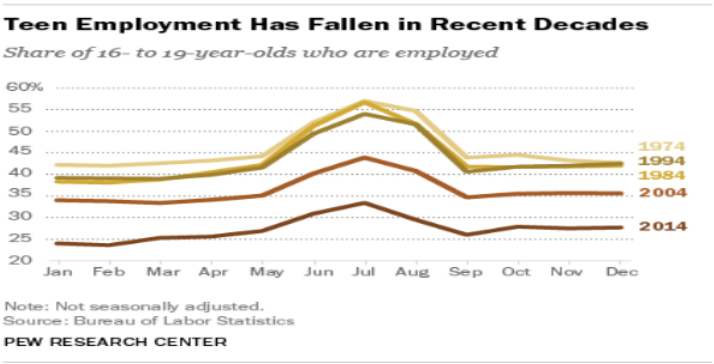

Figure 6.15.

1.9: Teenage Drivers

Driving gives teens a sense of freedom and independence from their parents. It can also free up time for parents as they are not shuttling teens to and from school, activities, or work. The National Highway Traffic Safety Administration (NHTSA) reports that in 2014 young drivers (15 to 20 year-olds) accounted for 5.5% (11.7 million) of the total number of drivers (214 million) in the US (National Center for Statistics and Analysis (NCSA), 2016). However, almost 9% of all drivers involved in fatal crashes that year were young drivers (NCSA, 2016), and according to the National Center for Health Statistics (2014), motor vehicle accidents are the leading cause of death for 15 to 20 year-olds. “In all motorized jurisdictions around the world, young, inexperienced drivers have much higher crash rates than older, more experienced drivers” (NCSA, 2016, p. 1). The rate of fatal crashes is higher for young males than for young females, although for both genders the rate was highest for the 15-20 years-old age group. For young males, the rate for fatal crashes was approximately 46 per 100,000 drivers, compared to 20 per 100,000 drivers for young females. The NHTSA (NCSA, 2016) reported that of the young drivers who were killed and who had alcohol in their system, 81% had a blood alcohol count past what was considered the legal limit. Fatal crashes involving alcohol use were higher among young men than young women. The NHTSA also found that teens were less likely to use seat belt restraints if they were driving under the influence of alcohol, and that restraint use decreased as the level of alcohol intoxication increased.

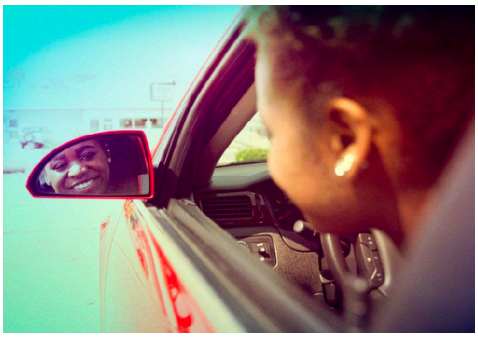

Figure 6.6. Source.

In an AAA study of non-fatal, but moderate to severe motor vehicle accidents in 2014, more than half involved young male drivers 16 to 19 years of age (Carney, McGehee, Harland, Weiss, & Raby, 2015). In 36% of rear-end collisions, teen drivers were following cars too closely to be able to stop in time, and in single-vehicle accidents, driving too fast for weather and road conditions was a factor in 79% of crashes involving teens. Distraction was also a factor in nearly 60% of the accidents involving teen drivers. Fellow passengers, often also teenagers (84% of the time), and cell phones were the top two sources of distraction, respectively. This data suggested that having another teenager in the car increased the risk of an accident by 44% (Carney et al., 2015). According to the NHTSA, 10% of drivers aged 15 to 19 years involved in fatal crashes were reported to be distracted at the time of the crash; the highest figure for any age group (NCSA, 2016). Distraction coupled with inexperience has been found to greatly increase the risk of an accident (Klauer et al., 2014).

The NHTSA did find that the number of accidents has been on a decline since 2005. They attribute this to greater driver training, more social awareness to the challenges of driving for teenagers, and to changes in laws restricting the drinking age. The NHTSA estimates that the raising of the legal drinking age to 21 in all 50 states and the District of Columbia has saved 30,323 lives since 1975.

1.10: Psychological Development in Adolescence

Learning Objectives: Psychosocial Development in Adolescence

- Describe the changes in self-concept and self-esteem in adolescence
- Summarize Erikson's fifth psychosocial task of identity versus role confusion
- Describe Marcia's four identity statuses
- Summarize the three stages of ethnic identity development
- Describe the parent-teen relationship
- Describe the role of peers
- Describe dating relationships

Self-concept and Self-esteem in Adolescence

In adolescence, teens continue to develop their self-concept. Their ability to think of the possibilities and to reason more abstractly may explain the further differentiation of the self during adolescence. However, the teen's understanding of self is often full of contradictions. Young teens may see themselves as outgoing but also withdrawn, happy yet often moody, and both smart and completely clueless (Harter, 2012). These contradictions, along with the teen's growing recognition that their personality and behavior seems to change depending on who they are with or where they are, can lead the young teen to feel like a fraud. With their parents they may seem angrier and sullen, with their friends they are more outgoing and goofy, and at work they are quiet and cautious. "Which one is really me?" may be the refrain of the young teenager. Harter (2012) found that adolescents emphasize traits such as being friendly and considerate more than do children, highlighting their increasing concern about how others may see them. Harter also found that older teens add values and moral standards to their self-descriptions.

As self-concept differentiates, so too does self-esteem. In addition to the academic, social, appearance, and physical/athletic dimensions of self-esteem in middle and late childhood, teens also add perceptions of their competency in romantic relationships, on the job, and in close friendships (Harter, 2006). Self-esteem often drops when children transition from one school setting to another, such as shifting from elementary to middle school, or junior high to high school (Ryan, Shim, & Makara, 2013). These drops are usually temporary, unless there are additional stressors such as parental conflict, or other family disruptions (De Wit, Karioja, Rye, & Shain, 2011). Self-esteem rises from mid to late adolescence for most teenagers, especially if they feel competent in their peer relationships, their appearance, and athletic abilities (Birkeland, Melkivik, Holsen, & Wold, 2012).

Erikson: Identity vs. Role Confusion

Erikson believed that the primary psychosocial task of adolescence was establishing an identity. Teens struggle with the question "Who am I?" This includes questions regarding their appearance, vocational choices and career aspirations, education, relationships, sexuality, political and social views, personality, and interests. Erikson saw this as a period of confusion and experimentation regarding identity and one's life path. During adolescence we experience **psychological moratorium**, *where teens put on hold commitment to an identity while exploring the options*. The culmination of this exploration is a more coherent view of oneself. Those who are unsuccessful at resolving this stage may either withdraw further into social isolation or become lost in the crowd. However, more recent research, suggests that few leave this age period with identity achievement, and that most identity formation occurs during young adulthood (C t , 2006).

Expanding on Erikson's theory, James Marcia (2010) identified four identity statuses that represent the four possible combinations of the dimension of commitment and exploration (see Table 6.2).

Table 6.2 Marcia's Four Identity Statuses

	Exploration		
		Absent	Present
Commitment to an Identity	Absent	Identity Diffusion	Identity Moratorium
	Present	Identity Foreclosure	Identity Achievement

The least mature status, and one common in many children, is identity diffusion. **Identity diffusion** *is a status that characterizes those who have neither explored the options, nor made a commitment to an identity*. Those who persist in this identity may drift

aimlessly with little connection to those around them or have little sense of purpose in life.

Those in **identity foreclosure** *have made a commitment to an identity without having explored the options*. Some parents may make these decisions for their children and do not grant the teen the opportunity to make choices. In other instances, teens may strongly identify with parents and others in their life and wish to follow in their footsteps.

Identity moratorium *is a status that describes those who are activity exploring in an attempt to establish an identity, but have yet to have made any commitment*. This can be an anxious and emotionally tense time period as the adolescent experiments with different roles and explores various beliefs. Nothing is certain and there are many questions, but few answers.

Identity achievement *refers to those who after exploration have made a commitment*. This is a long process and is not often achieved by the end of adolescence.

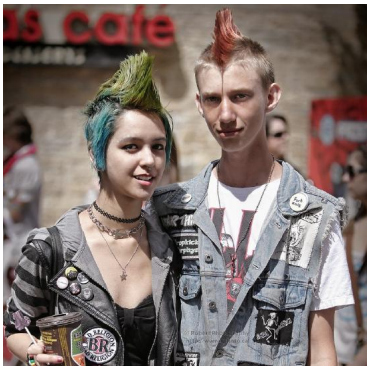

Figure 6.17. Source.

During high school and the college years, teens and young adults move from identity diffusion and foreclosure toward moratorium and achievement. The biggest gains in the development of identity are in college, as college students are exposed to a greater variety of career choices, lifestyles, and beliefs. This is likely to spur on questions regarding identity. A great deal of the identity work we do in adolescence and young adulthood is about values and goals, as we strive to articulate a personal vision or dream for what we hope to accomplish in the future (McAdams, 2013).

Developmental psychologists have researched several different areas of identity development and some of the main areas include:

Religious identity: The religious views of teens are often similar to that of their families (Kim- Spoon, Longo, & McCullough, 2012). Most teens may question specific customs, practices, or ideas in the faith of their parents, but few completely reject the religion of their families.

Political identity: The political ideology of teens is also influenced by their parents' political beliefs. A new trend in the 21st century is a decrease in party affiliation among adults. Many adults do not align themselves with either the democratic or republican party, but view themselves as more of an "independent". Their teenage children are often following suit or become more apolitical (C t , 2006).

Vocational identity: While adolescents in earlier generations envisioned themselves as working in a particular job, and often worked as an apprentice or part-time in such occupations as teenagers, this is rarely the case today. Vocational identity takes longer to develop, as most of today's occupations require specific skills and knowledge that will require additional education or are acquired on the job itself. In addition, many of the jobs held by teens are not in occupations that most teens will seek as adults.

Gender identity: This is also becoming an increasingly prolonged task as attitudes and norms regarding gender keep changing. The roles appropriate for males and females are evolving. Some teens may foreclose on a gender identity as a way of dealing with this uncertainty, and they may adopt more stereotypic male or female roles (Sinclair & Carlsson, 2013).

Figure 6.18. Source.

Ethnic identity *refers to how people come to terms with who they are based on their ethnic or racial ancestry.* "The task of ethnic identity formation involves sorting out and resolving positive and negative feelings and attitudes about one's own ethnic group and about other groups and identifying one's place in relation to both" (Phinney, 2006, p. 119). When groups differ in status in a culture, those from the non-dominant group have to be cognizant of the customs and values of those from the dominant culture. The reverse is rarely the case. This makes ethnic identity far less salient for members of the dominant culture. In the United States, those of European ancestry engage in less exploration of ethnic identity, than do those of non-European ancestry (Phinney, 1989). However, according to the U.S. Census (2012) more than 40% of Americans under the age of 18 are from ethnic minorities. For many ethnic minority teens, discovering one's ethnic identity is an important part of identity formation.

Phinney's model of ethnic identity formation is based on Erikson's and Marcia's model of identity formation (Phinney, 1990; Syed & Juang, 2014). Through the process of exploration and commitment, individual's come to understand and create an ethic identity. Phinney suggests three stages or statuses with regard to ethnic identity:

1. **Unexamined Ethnic Identity:** Adolescents and adults who have not been exposed to ethnic identity issues may be in the first stage, unexamined ethnic identity. This is often characterized with a preference for the dominant culture, or where the individual has given little thought to the question of their ethnic heritage. This is similar to diffusion in Marcia's model of identity. Included in this group are also those who have adopted the ethnicity of their parents and other family members with little thought about the issues themselves, similar to Marcia's foreclosure status (Phinney, 1990).
2. **Ethnic Identity Search**: Adolescents and adults who are exploring the customs, culture, and history of their ethnic group are in the ethnic identity search stage, similar to Marcia's moratorium status (Phinney, 1990). Often some event "awakens" a teen or adult to their ethnic group; either a personal experience with prejudice, a highly profiled case in the media, or even a more positive event that recognizes the contribution of someone from the individual's ethnic group. Teens and adults in this stage will immerse themselves in their ethnic culture. For some, "it may lead to a rejection of the values of the dominant culture" (Phinney, 1990, p. 503).
3. **Achieved Ethnic Identity:** Those who have actively explored their culture are likely to have a deeper appreciation and understanding of their ethnic heritage, leading to progress toward an achieved ethnic identity (Phinney, 1990). An achieved ethnic identity does not necessarily imply that the individual is highly involved in the customs and values of their ethnic culture. One can be confident in their ethnic identity without wanting to maintain the language or other customs.

The development of ethnic identity takes time, with about 25% of tenth graders from ethnic minority backgrounds having explored and resolved the issues (Phinney, 1989). The more ethnically homogeneous the high school, the less identity exploration and achievement (Umana- Taylor, 2003). Moreover, even in more ethnically diverse high schools, teens tend to spend more time with their own group, reducing exposure to other ethnicities. This may explain why, for many, college becomes the time of ethnic identity exploration. "[The] transition to college may serve as a consciousness-raising experience that triggers exploration" (Syed & Azmitia, 2009, p. 618).

It is also important to note that those who do achieve ethnic identity may periodically reexamine the issues of ethnicity. This cycling between exploration and achievement is common not only for ethnic identity formation, but in other aspects of identity development (Grotevant, 1987) and is referred to as **MAMA cycling** or *moving back and forth between moratorium and achievement.* **Bicultural/Multiracial Identity:** Ethnic minorities must wrestle with the question of how, and to what extent, they will identify with the culture of the surrounding society and with the culture of their family. Phinney (2006) suggests that people may handle it in different ways. Some may keep the identities separate, others may combine them in some way, while others may reject some of them. **Bicultural identity** means *the individual sees himself or herself as part of both the ethnic minority group and the larger society*. Those who are **multiracial**, that is *whose parents come from two or more ethnic or racial groups*, have a more challenging task. In some cases their appearance may be ambiguous. This can lead to others constantly asking them to categorize themselves. Phinney (2006) notes that the process of identity formation may start earlier and take longer to accomplish in those who are not mono-racial.

1.11: Adolescents' Relationships

Parents and Teens: Autonomy and Attachment

While most adolescents get along with their parents, they do spend less time with them (Smetana, 2011). This decrease in the time spent with families may be a reflection of a *teenager's greater desire for independence* or **autonomy.** It can be difficult for many parents to deal with this desire for autonomy. However, it is likely adaptive for teenagers to increasingly distance themselves and establish relationships outside of their families in preparation for adulthood. This means that both parents and teenagers need to strike a balance between autonomy, while still maintaining close and supportive familial relationships.

Children in middle and late childhood are increasingly granted greater freedom regarding moment-to-moment decision making. This continues in adolescence, as teens are demanding greater control in decisions that affect their daily lives. This can increase conflict between parents and their teenagers. For many adolescents this conflict centers on chores, homework, curfew, dating, and personal appearance. These are all things many teens believe they should manage that parents previously had considerable control over. Teens report more conflict with their mothers, as many mothers believe they should still have some control over many of these areas, yet often report their mothers to be more encouraging and supportive (Costigan, Cauce, & Etchison, 2007). As teens grow older, more compromise is reached between parents and teenagers (Smetana, 2011). Parents are more controlling of daughters, especially early maturing girls, than they are sons (Caspi, Lynam, Moffitt, & Silva, 1993). In addition, culture and ethnicity also play a role in how restrictive parents are with the daily lives of their children (Chen, Vansteenkiste, Beyers, Soensens, & Van Petegem, 2013).

Having supportive, less conflict ridden relationships with parents also benefits teenagers. Research on attachment in adolescence find that teens who are still securely attached to their parents have less emotional problems (Rawatlal, Kliewer & Pillay, 2015), are less likely to engage in drug abuse and other criminal behaviors (Meeus, Branje & Overbeek, 2004), and have more positive peer relationships (Shomaker & Furman, 2009).

Peers

As children become adolescents, they usually begin spending more time with their peers and less time with their families, and these peer interactions are increasingly unsupervised by adults. Children's notions of friendship often focus on shared activities, whereas adolescents' notions of

friendship increasingly focus on intimate exchanges of thoughts and feelings. During adolescence, peer groups evolve from primarily single-sex to mixed-sex. Adolescents within a peer group tend to be similar to one another in behavior and attitudes, which has been explained as a function of **homophily**, that is, *adolescents who are similar to one another choose to spend time together in a "birds of a feather flock together" way*. Adolescents who spend time together also shape each other's behavior and attitudes.

Peers can serve both positive and negative functions during adolescence. Negative peer pressure can lead adolescents to make riskier decisions or engage in more problematic behavior than they would alone or in the presence of their family. For example, adolescents are much more likely to drink alcohol, use drugs, and commit crimes when they are with their friends than when they are alone or with their family. One of the most widely studied aspects of adolescent peer influence is known as **deviant peer contagion** (Dishion & Tipsord, 2011), *which is the process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior*.

However, peers also serve as an important source of social support and companionship during adolescence, and adolescents with positive peer relationships are happier and better adjusted than those who are socially isolated or have conflictual peer relationships.

Crowds are an emerging level of peer relationships in adolescence. In contrast to friendships, which are reciprocal dyadic relationships, and **cliques**, which *refer to groups of individuals who interact frequently*, **crowds** are *characterized more by shared reputations or images than actual interactions* (Brown & Larson, 2009). These crowds reflect different prototypic identities, such as jocks or brains, and are often linked with adolescents' social status and peers' perceptions of their values or behaviors.

Figure 6.19. Crowds refer to different collections of people, like the “theater kids” or the “environmentalists.” In a way, they are kind of like clothing brands that label the people associated with that crowd. [Image: Garry Knight]

Romantic Relationships

Adolescence is the developmental period during which romantic relationships typically first emerge. By the end of adolescence, most American teens have had at least one romantic relationship (Dolgin, 2011). However, culture does play a role as Asian Americans and Latinas are less likely to date than other ethnic groups (Connolly, Craig, Goldberg, & Pepler, 2004). Dating serves many purposes for teens, including having fun, companionship, status, socialization, sexual experimentation, intimacy, and partner selection for those in late adolescence (Dolgin, 2011).

There are several stages in the dating process beginning with engaging in mixed-sex group activities in early adolescence (Dolgin, 2011). The same-sex peer groups that were common during childhood expand into mixed-sex peer groups that are more characteristic of adolescence. Romantic relationships often form in the context of these mixed-sex peer groups (Connolly, Furman, & Konarski, 2000). Interacting in mixed-sex groups is easier for teens as they are among a supportive group of friends, can observe others interacting, and are kept safe from a too early intimate relationship. By middle adolescence teens are engaging in brief, casual dating or in group dating with established couples (Dolgin, 2011). Then in late adolescence dating involves exclusive, intense relationships. These relationships tend to be long-lasting and continue for a year or longer, however, they may also interfere with friendships.

Figure 6.20. Source.

Although romantic relationships during adolescence are often short-lived rather than long-term committed partnerships, their importance should not be minimized. Adolescents spend a great deal of time focused on romantic relationships, and their positive and negative emotions are more tied to romantic relationships, or lack thereof, than to friendships, family relationships, or school (Furman & Shaffer, 2003). Romantic relationships contribute to adolescents’ identity formation, changes in family and peer relationships, and emotional and behavioral adjustment.

Furthermore, romantic relationships are centrally connected to adolescents’ emerging sexuality. Parents, policymakers, and researchers have devoted a great deal of attention to adolescents’ sexuality, in large part because of concerns related to sexual intercourse, contraception, and preventing teen pregnancies. However, sexuality involves more than this narrow focus. For example, adolescence is often when individuals who are lesbian, gay, bisexual, or transgender come to perceive themselves as such (Russell, Clarke, & Clary, 2009). Thus, romantic relationships are a domain in which adolescents experiment with new behaviors and identities.

- **6.11: Adolescents' Relationships** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

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CHAPTER OVERVIEW

Chapter 2: Emerging and Early Adulthood

Learning Objectives: Emerging Adulthood

- Explain emerging adulthood
- Explain how emerging adulthood differs from adolescence and adulthood
- Describe cultural variations of emerging adulthood
- Identify the markers of adulthood
- Identify where emerging and early adults currently liv

Historically, early adulthood spanned from approximately 18 (the end of adolescence) until 40 to 45 (beginning of middle adulthood). More recently, developmentalists have divided this age period into two separate stages: Emerging adulthood followed by early adulthood. Although these age periods differ in their physical, cognitive, and social development, overall the age period from 18 to 45 is a time of peak physical capabilities and the emergence of more mature cognitive development, financial independence, and intimate relationships.

2.1: Emerging Adulthood

Emerging adulthood is the period between the late teens and early twenties; ages 18-25, although some researchers have included up to age 29 in the definition (Society for the Study of Emerging Adulthood, 2016). Jeffrey Arnett (2000) argues that emerging adulthood is neither adolescence nor is it young adulthood. Individuals in this age period have left behind the relative dependency of childhood and adolescence, but have not yet taken on the responsibilities of adulthood. “Emerging adulthood is a time of life when many different directions remain possible, when little about the future is decided for certain, when the scope of independent exploration of life’s possibilities is greater for most people than it will be at any other period of the life course” (Arnett, 2000, p. 469).

Figure 7.1. Source.

Arnett has identified five characteristics of emerging adulthood that distinguishes it from adolescence and young adulthood (Arnett, 2006).

- It is the **age of identity exploration**. In 1950, Erik Erikson proposed that it was during adolescence that humans wrestled with the question of identity. Yet, even Erikson (1968) commented on a trend during the 20th century of a “prolonged adolescence” in industrialized societies. Today, most identity development occurs during the late teens and early twenties rather than adolescence. It is during emerging adulthood that people are exploring their career choices and ideas about intimate relationships, setting the foundation for adulthood.
- Arnett also described this time period as the **age of instability** (Arnett, 2000; Arnett, 2006). Exploration generates uncertainty and instability. Emerging adults change jobs, relationships, and residences more frequently than other age groups.
- This is also the **age of self-focus**. Being self-focused is not the same as being “self- centered.” Adolescents are more self-centered than emerging adults. Arnett reports that in his research, he found emerging adults to be very considerate of the feelings of others, especially their parents. They now begin to see their parents as people not just parents, something most adolescents fail to do (Arnett, 2006). Nonetheless, emerging adults focus more on themselves, as they realize that they have few obligations to others and that this is the time where they can do what they want with their life.
- This is also the **age of feeling in-between.** When asked if they feel like adults, more 18 to 25 year-olds answer “yes and no” than do teens or adults over the age of 25 (Arnett, 2001). Most emerging adults have gone through the changes of puberty, are typically no longer in high school, and many have also moved out of their parents’ home. Thus, they no longer feel as dependent as they did as teenagers. Yet, they may still be financially dependent on their parents to some degree, and they have not completely attained some of the indicators of adulthood, such as finishing their education, obtaining a good full-time job, being in a committed relationship, or being responsible for others. It is not surprising that Arnett found that 60% of 18 to 25 year-olds felt that in some ways they were adults, but in some ways they were not (Arnett, 2001).
- Emerging adulthood is the **age of possibilities**. It is a time period of optimism as more 18 to 25 year-olds feel that they will someday get to where they want to be in life. Arnett (2000, 2006) suggests that this optimism is because these dreams have yet to be tested. For example, it is easier to believe that you will eventually find your soul mate when you have yet to have had a serious relationship. It may also be a chance to change directions, for those whose lives up to this point have been difficult. The experiences of children and teens are influenced by the choices and decisions of their parents. If the parents are dysfunctional, there is little a child can do about it. In emerging adulthood, people can move out and move on. They have the chance to transform their lives and move away from unhealthy environments. Even those whose lives were happier and more fulfilling as children, now have the opportunity in emerging adulthood to become independent and make decisions about the direction they would like their life to take.

Cultural Variations

The five features proposed in the theory of emerging adulthood originally were based on research involving about 300 Americans between ages 18 and 29 from various ethnic groups, social classes, and geographical regions (Arnett, 2004). To what extent does the theory of emerging adulthood apply internationally?

Figure 7.2. Source.

The answer to this question depends greatly on what part of the world is considered. Demographers make a useful distinction between the developing countries that comprise the majority of the world's population and the economically developed countries that are part of the Organization for Economic Co- operation and Development (OECD), including the United States, Canada, Western Europe, Japan, South Korea, Australia, and New Zealand. The current population of OECD countries (also called developed countries) is 1.2 billion, about 18% of the total world population (United Nations Development Programme, 2011). The rest of the human population resides in developing countries, which have much lower median incomes, much lower median educational attainment, and much higher incidence of illness, disease, and early death. Let us consider emerging adulthood in other OECD countries as little is known about the experiences of 18- 25 year-olds in developing countries.

The same demographic changes as described above for the United States have taken place in other OECD countries as well. This is true of participation in postsecondary education, as well as median ages for entering marriage and parenthood (UNdata, 2010). However, there is also substantial variability in how emerging adulthood is experienced across OECD countries. Europe is the region where emerging adulthood is longest and most leisurely. The median ages for entering marriage and parenthood are near 30 in most European countries (Douglass, 2007). Europe today is the location of the most affluent, generous, and egalitarian societies in the world, in fact, in human history (Arnett, 2007). Governments pay for tertiary education, assist young people in finding jobs, and provide generous unemployment benefits for those who cannot find work. In northern Europe, many governments also provide housing support. Emerging adults in European societies make the most of these advantages, gradually making their way to adulthood during their twenties while enjoying travel and leisure with friends.

The lives of Asian emerging adults in developed countries, such as Japan and South Korea, are in some ways similar to the lives of emerging adults in Europe and in some ways strikingly different. Like European emerging adults, Asian emerging adults tend to enter marriage and parenthood around age 30 (Arnett, 2011). Like European emerging adults, Asian emerging adults in Japan and South Korea enjoy the benefits of living in affluent societies with generous social welfare systems that provide support for them in making the transition to adulthood, including free university education and substantial unemployment benefits.

However, in other ways, the experience of emerging adulthood in Asian OECD countries is markedly different than in Europe. Europe has a long history of individualism, and today's emerging adults carry that legacy with them in their focus on self-development and leisure during emerging adulthood. In contrast, Asian cultures have a shared cultural history emphasizing collectivism and family obligations.

Figure 7.3: Your culture one that promotes romantic relationships for emerging adults? Or does it encourage you to wait till you're older? What would it be like to live in the opposite culture? [Image: Patrick Rodwell]

Although Asian cultures have become more individualistic in recent decades, as a consequence of globalization, the legacy of collectivism persists in the lives of emerging adults. They pursue identity explorations and self-development during emerging

adulthood, like their American and European counterparts, but within narrower boundaries set by their sense of obligations to others, especially their parents (Phinney & Baldelomar, 2011). For example, in their views of the most important criteria for becoming an adult, emerging adults in the United States and Europe consistently rank financial independence among the most important markers of adulthood. In contrast, emerging adults with an Asian cultural

background especially emphasize becoming capable of supporting parents financially as among the most important criteria (Arnett, 2003; Nelson, Badger, & Wu, 2004). This sense of family obligation may curtail their identity explorations in emerging adulthood to some extent, as they pay more heed to their parents' wishes about what they should study, what job they should take, and where they should live than emerging adults do in the West (Rosenberger, 2007).

2.2: When Does Adulthood Begin?

According to Rankin and Kenyon (2008), historically the process of becoming an adult was more clearly marked by rites of passage. For many individuals, marriage and becoming a parent were considered entry into adulthood. However, these role transitions are no longer considered as the important markers of adulthood (Arnett, 2001). Economic and social changes have resulted in increase in young adults attending college (Rankin & Kenyon, 2008) and a delay in marriage and having children (Arnett & Taber, 1994; Laursen & Jensen-Campbell, 1999) Consequently, current research has found financial independence and accepting responsibility for oneself to be the most important markers of adulthood in Western culture across age (Arnett, 2001) and ethnic groups (Arnett, 2004).

Figure 7.4. Source.

In looking at college students' perceptions of adulthood, Rankin and Kenyon (2008) found that some students still view rites of passage as important markers. College students who had placed more importance on role transition markers, such as parenthood and marriage, belonged to a fraternity/sorority, were traditionally aged (18–25), belonged to an ethnic minority, were of a traditional marital status; i.e., not cohabitating, or belonged to a religious organization, particularly for men. These findings supported the view that people holding collectivist or more traditional values place more importance on role transitions as markers of adulthood. In contrast, older college students and those cohabitating did not value role transitions as markers of adulthood as strongly.

Young Adult Living Arrangements

In 2014, for the first time in more than 130 years, adults 18 to 34 were more likely to be living in their parents' home than they were to be living with a spouse or partner in their own household (Fry, 2016). The current trend is that young Americans are not choosing to settle down romantically before age 35. Since 1880, living with a romantic partner was the most common living arrangement among young adults. In 1960, 62% of America's 18- to 34-year-olds were living with a spouse or partner in their own household, while only 20% were living with their parents.

By 2014, 31.6% of early adults were living with a spouse or partner in their own household, while 32.1% were living in the home of their parent(s). Another 14% of early adults lived alone, were a single parent, or lived with one or more roommates. The remaining 22% lived in the home of another family member (such as a grandparent, in-law, or sibling), a non-relative, or in group quarters (e.g., college dormitories). Comparing ethnic groups, 36% of black and Hispanic early adults lived at home, while 30% of white young adults lived at home.

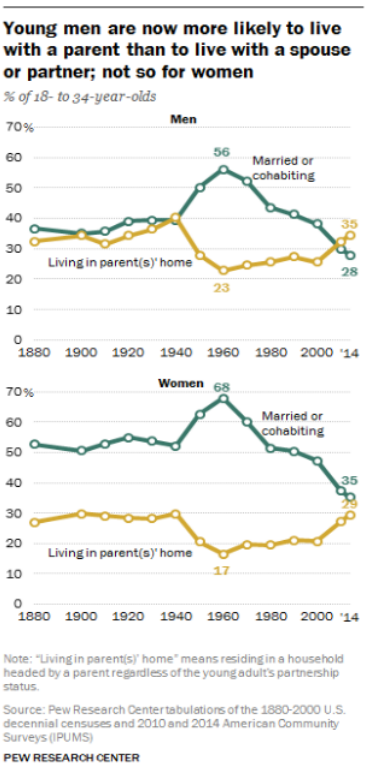

Figure 7.5.

As can be seen in Figure 7.5, gender differences in living arrangements are also noted in that young men are living with parents at a higher rate than young women. In 2014, 35% of young me were residing with their parents, while 28% were living with a spouse or partner in their own household. Young women were more likely to be living with a spouse or partner (35%) than living with their parents (29%). Additionally, more young women (16%) than young men (13%) were heading up a household without a spouse or partner, primarily because women are more likely to be single parents living with their children. Lastly, young men (25%) are more likely than young women (19%) to be living in the home of another family member, a non-relative, or in some type of group quarters (Fry, 2016).

What are some factors that help explain these changes in living arrangements? First, early adults are postponing marriage or choosing not to marry or cohabitate. Lack of employment and lower wages have especially contributed to males residing with their parents. Men who are employed are less likely to live at home. Wages for young men (adjusting for inflation) have been falling since 1970 and correlate with the rise in young men living with their parents. The recent recession and recovery (2007-present) has also contributed to the increase in early adults living at home. College enrollments increased during the recession, which further increased early adults living at home. However, once early adults possess a college degree, they are more likely to establish their own households (Fry, 2016).

2.3: Physical Development in Early and Emerging Adulthood

Learning Objectives: Physical Development in Emerging and Early Adulthood

- Summarize the overall physical growth in early adulthood
- Describe statistics, possible causes, and consequences of obesity
- Explain how early adulthood is a healthy, yet risky time of life.
- Identify the risk factors for substance use
- Describe the changes in brain maturation
- Define sexuality and explain the female and male reproductive systems
- Describe the brain areas and hormones responsible for sexual behavior
- Identify sexually transmitted infections
- Describe cultural views related to sexuality
- Describe research on sexual orientation

The Physiological Peak

People in their mid-twenties to mid-forties are considered to be in early adulthood. By the time we reach early adulthood, our physical maturation is complete, although our height and weight may increase slightly. Those in their early twenties are probably at the peak of their physiological development, including muscle strength, reaction time, sensory abilities, and cardiac functioning. The reproductive system, motor skills, strength, and lung capacity are all operating at their best. Most professional athletes are at the top of their game during this stage, and many women have children in the early-adulthood years (Boundless, 2016).

The aging process actually begins during early adulthood. Around the age of 30, many changes begin to occur in different parts of the body. For example, the lens of the eye starts to stiffen and thicken, resulting in changes in vision (usually affecting the ability to focus on close objects). Sensitivity to sound decreases; this happens twice as quickly for men as for women. Hair can start to thin and become gray around the age of 35, although this may happen earlier for some individuals and later for others. The skin becomes drier and wrinkles start to appear by the end of early adulthood. This includes a decline in response time and the ability to recover quickly from physical exertion. The immune system also becomes less adept at fighting off illness, and reproductive capacity starts to decline (Boundless, 2016).

Obesity

Although at the peak of physical health, a concern for early adults is the current rate of obesity. Results from the 2015 National Center for Health Statistics indicate that an estimated 70.7% of U.S. adults aged 20 and over are overweight and 37.9% are obese (CDC, 2015b). **Body mass index (BMI)**, *expressed as weight in kilograms divided by height in meters squared (kg/m2)*, is commonly used to classify overweight (BMI 25.0–29.9), obesity (BMI greater than or equal to 30.0), and extreme obesity (BMI greater than or equal to 40.0). The 2015 statistics are an increase from the 2013-2014 statistics that indicated that an estimated 35.1% were obese, and 6.4% extremely obese (Fryar, Carroll, & Ogden, 2014). In 2003-2004, 32% of American adults were identified as obese. The CDC also indicated that one's 20s are the prime time to gain weight as the average person gains one to two pounds per year from early adulthood into middle adulthood. The average man in his 20s weighs around 185 pounds and by his 30s weighs approximately 200 pounds. The average American woman weighs 162 pounds in her 20s and 170 pounds in her 30s.

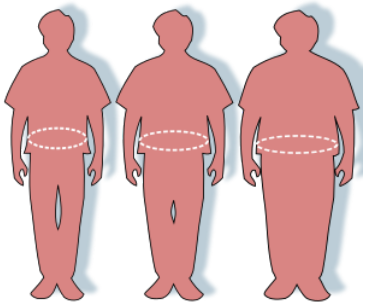

Figure 7.6: Waist circumference. Source.

The American obesity crisis is also reflected worldwide (Wighton, 2016). In 2014, global obesity rates for men were measured at 10.8% and among women 14.9%. This translates to 266 million obese men and 375 million obese women in the world, and more people were identified as obese than underweight. Although obesity is seen throughout the world, more obese men and women live in China and the USA than in any other country. Figure 7.6 illustrates how waist circumference is also used as a measure of obesity. Figure 7.7 demonstrates the percentage growth for males and females identified as obese between 1960 and 2012.

Causes of Obesity: According to the Centers for Disease Control and Prevention (CDC) (2016), obesity originates from a complex set of contributing factors, including one's environment, behavior, and genetics. Societal factors include culture, education, food marketing and promotion, the quality of food, and the physical activity environment available. Behaviors leading to obesity include diet, the amount of physical activity, and medication use. Lastly, there does not appear to be a single gene responsible for obesity. Rather, research has identified variants in several genes that may contribute to obesity by increasing hunger and food intake. Another genetic explanation is the mismatch between today's environment and "energy-thrifty genes" that multiplied in the distant past, when food sources were unpredictable. The genes that helped our ancestors survive occasional famines are now being challenged by environments in which food is plentiful all the ime. Overall, obesity most likely results from complex interactions among the environment and multiple genes.

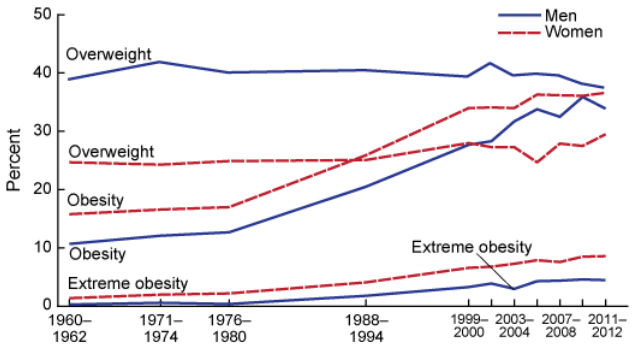

Figure 7.7: Adult obesity trends. Source.

Obesity Health Consequences: Obesity is considered to be one of the leading causes of death in the United States and worldwide. Additionally, the medical care costs of obesity in the United States were estimated to be $147 billion in 2008. According to the CDC (2016) compared to those with a normal or healthy weight, people who are obese are at increased risk for many serious diseases and health conditions including:

- All-causes of death (mortality)
- High blood pressure (Hypertension)
- High LDL cholesterol, low HDL cholesterol, or high levels of triglycerides (Dyslipidemia)
- Type 2 diabetes
- Coronary heart disease
- Stroke
- Gallbladder disease
- Osteoarthritis (a breakdown of cartilage and bone within a joint)
- Sleep apnea and breathing problems
- Some cancers (endometrial, breast, colon, kidney, gallbladder, and liver)
- Low quality of life
- Mental illness such as clinical depression, anxiety, and other mental disorders
- Body pain and difficulty with physical functioning

2.4: A Healthy but Risky Time

Doctor's visits are less frequent in early adulthood than for those in midlife and late adulthood and are necessitated primarily by injury and pregnancy (Berger, 2005). However, the top five causes of death in emerging and early adulthood are non-intentional injury (including motor vehicle accidents), homicide, and suicide with cancer and heart disease completing the list (Heron, & Smith, 2007). Rates of violent death (homicide, suicide, and accidents) are highest among young adult males, and vary by race and ethnicity. Rates of violent death are higher in the United States than in Canada, Mexico, Japan, and other selected countries. Males are 3 times more likely to die in auto accidents than are females (Frieden, 2011).

Alcohol Abuse

A significant contributing factor to risky behavior is alcohol. According to the 2014 National Survey on Drug Use and Health (National Institute on Alcohol Abuse and Alcoholism (NIAAA)), 88% of people ages 18 or older reported that they drank alcohol at some point in their lifetime; 71% reported that they drank in the past year; and 57% reported drinking in the past month. Additionally, 6.7% reported that they engaged in heavy drinking in the past month. Heavy drinking is defined as drinking five or more drinks on the same occasion on each of five or more days in the past 30 days. Nearly 88,000 people (approximately 62,000 men and 26,000 women) die from alcohol-related causes annually, making it the fourth leading preventable cause of death in the United States. In 2014, alcohol-impaired driving fatalities accounted for 9,967 deaths (31% of overall driving fatalities).

The NIAAA defines binge drinking when blood alcohol concentration levels reach 0.08 g/dL. This typically occurs after four drinks for women and five drinks for men in approximately two hours. In 2014, 25% of people ages 18 or older reported that they engaged in binge drinking in the past month. According to the NIAAA (2015) "Binge drinking poses serious health and safety risks, including car crashes, drunk-driving arrests, sexual assaults, and injuries. Over the long term, frequent binge drinking can damage the liver and other organs," (p. 1).

Alcohol and College Students

Results from the 2014 survey demonstrated a difference between the amount of alcohol consumed by college students and those of the same age who are not in college (NIAAA, 2016). Specifically, 60% of full-time college students' ages 18–22 drank alcohol in the past month compared with 51.5% of other persons of the same age not in college. In addition, 38% of college students' ages 18–22 engaged in binge drinking; that is, five or more drinks on one occasion in the past month, compared with 33.5% of other persons of the same age. Lastly, 12% of college students' (ages 18–22) engaged in heavy drinking; that is, binge drinking on five or more occasions per month, in the past month. This compares with 9.5% of other emerging adults not in college.

The consequences for college drinking are staggering, and the NIAAA (2016) estimates that each year the following occur:

- 1,825 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries, including motor-vehicle crashes.
- 696,000 students between the ages of 18 and 24 are assaulted by another student who has been drinking.
- Roughly 1 in 5 college students meet the criteria for an Alcohol Use Disorder.
- About 1 in 4 college students report academic consequences from drinking, including missing class, falling behind in class, doing poorly on exams or papers, and receiving lower grades overall. (p. 1)
- 97,000 students between the ages of 18 and 24 report experiencing alcohol-related sexual assault or date rape.

The role alcohol plays in predicting acquaintance rape on college campuses is of particular concern. "Alcohol use in one the strongest predictors of rape and sexual assault on college campuses," (Carroll, 2016, p. 454). Krebs, Lindquist, Warner, Fisher and Martin (2009) found that over 80% of sexual assaults on college campuses involved alcohol. Being intoxicated increases a female's risk of being the victim of date or acquaintance rape (Carroll, 2007). Females are more likely to blame themselves and to be blamed by others if they were intoxicated when raped. College students view perpetrators who were drinking as less responsible, and victims who were drinking as more responsible for the assaults (Untied, Orchowski, Mastroleo, & Gidycz, 2012).

Figure 7.8. Source.

Factors Affecting College Students' Drinking: Several factors associated with college life affect a student's involvement with alcohol (NIAAA, 2015). These include the pervasive availability of alcohol, inconsistent enforcement of underage drinking laws, unstructured time, coping with stressors, and limited interactions with parents and other adults. Due to social pressures to conform and expectations when entering college, the first six weeks of freshman year are an especially susceptible time for students. Additionally, more drinking occurs in colleges with active Greek systems and athletic programs. Alcohol consumption is lowest among students living with their families and commuting, while it is highest among those living in fraternities and sororities.

College Strategies to Curb Drinking: Strategies to address college drinking involve the individual-level and campus community as a whole. Identifying at-risk groups, such as first year students, members of fraternities and sororities, and athletes has proven helpful in changing students' knowledge, attitudes, and behavior regarding alcohol (NIAAA, 2015). Interventions include education and awareness programs, as well as intervention by health professionals. At the college-level, reducing the availability of alcohol has proven effective by decreasing both consumption and negative consequences.

Non-Alcohol Substance Use: Illicit drug use peaks between the ages of 19 and 22 and then begins to decline. Additionally, 25% of those who smoke cigarettes, 33% of those who smoke marijuana, and 70% of those who abuse cocaine began using after age 17 (Volkow, 2004). Emerging adults (18 to 25) are the largest abusers of prescription opioid pain relievers, anti-anxiety medications, and Attention Deficit Hyperactivity Disorder medication (National Institute on Drug Abuse, 2015). In 2014 more than 1700 emerging adults died from a prescription drug overdose. This is an increase of four times since 1999. Additionally, for every death there were 119 emergency room visits.

Figure 7.9. Source.

Daily marijuana use is at the highest level in three decades (National Institute on Drug Abuse, 2015). For those in college, 2014 data indicate that 6% of college students smoke marijuana daily, while only 2% smoked daily in 1994. For noncollege students of the same age, the daily percentage is twice as high (approximately 12%). Additionally, daily cigarette smoking is lower for those in college as only 13% smoked in the past month, while for those not in college it was almost 25%.

Rates of violent death are influenced by substance use which peaks during emerging and early adulthood. Drugs impair judgment, reduce inhibitions, and alter mood, all of which can lead to dangerous behavior. Reckless driving, violent altercations, and forced sexual encounters are some examples. Drug and alcohol use increase the risk of sexually transmitted infections because people are more likely to engage in risky sexual behavior when under the influence. This includes having sex with someone who has had multiple partners, having anal sex without the use of a condom, having multiple partners, or having sex with someone whose history is unknown. Lastly, as previously discussed, drugs and alcohol ingested during pregnancy have a teratogenic effect on the developing embryo and fetus.

- **7.4: A Healthy but Risky Time** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

2.5: Gender

Sex *refers to physical or physiological differences between males, females, and intersex persons, including both their primary and secondary sex characteristics.* **Gender**, on the other hand, *refers to social or cultural distinctions associated with a given sex.* When babies are born, they are assigned a gender based on their biological sex, male babies are assigned as boys, female babies are assigned as girls, and intersex babies are usually relegated into one category or another. Scholars generally regard gender as a social construct, *meaning that it does not exist naturally, but is instead a concept that is created by cultural and societal norms*. From birth, children are socialized to conform to certain gender roles based on their biological sex and the gender to which they are assigned.

Since the term sex refers to biological or physical distinctions, characteristics of sex will not vary significantly between different human societies. For example, persons of the female sex, in general, regardless of culture, will eventually menstruate and develop breasts that can lactate. Characteristics of gender, on the other hand, may vary greatly between different societies. For example, in American culture, it is considered feminine to wear a dress or skirt. However, in many Middle Eastern, Asian, and African cultures, dresses or skirts (often referred to as sarongs, robes, or gowns) can be considered masculine. Similarly, the kilt worn by a Scottish male does not make him appear feminine in his culture.

Gender identity *is a person's sense of self as a member of a particular gender. Individuals who identify with a role that corresponds to the sex assigned to them at birth (for example, they were born with male sex characteristics, were assigned as a boy, and identify today as a boy or man) are* **cisgender**. *Those who identify with a role that is different from their biological sex (for example, they were born with male sex characteristics, were assigned as a boy, but identify today as a girl, woman, or some other gender altogether) are often referred to as* **transgender.**

The term transgender encompasses a wide range of possible identities, including agender, genderfluid, genderqueer (signifying gender experiences that do not fit into a binary concept), androgynous, bigender, pangender, ambigender, non-gendered, and intergender, **Two-spirit** *is a modern umbrella term used by some indigenous North Americans to describe gender-variant individuals in their communities.*

Transgender is independent of sexual orientation; transgender people may identify as heterosexual, homosexual, bisexual, pansexual, polysexual, asexual, or any other kind of sexuality, just like cisgender people do. It is difficult to determine the prevalence of transgender people in society; however, it is estimated that 700,000 individuals in the United States (0.3%) are transgender (Gates, 2011).

Figure 7.10. Source.

Some transgender individuals may alter their bodies through medical interventions, such as surgery and hormonal therapy, so that their physical being is better aligned with gender identity. Not all transgender individuals choose to alter their bodies or physically transition. Many will maintain their original anatomy, but may present themselves to society as a different gender, often by adopting the dress, hairstyle, mannerisms, or other characteristics typically assigned to a certain gender. It is important to note that people who cross-dress, or wear clothing that is traditionally assigned to the opposite gender, such as transvestites, drag kings, and drag queens, do not necessarily identify as transgender (though some do). People often confuse the term **transvestite**, *which is the practice of dressing and acting in a style or manner traditionally associated with another sex*, with transgender. Cross-dressing is typically a form of self-expression, entertainment, or personal style, and not necessarily an expression about one's gender identity.

Transgender Discrimination: Transgender people are much more likely to experience harassment, bullying, and violence based on their gender identity; they also experience much higher rates of discrimination in housing, employment, healthcare, and education (National Center for Transgender Equality, 2015). Transgender individuals of color face additional financial, social, and interpersonal challenges, in comparison to the transgender community as a whole, as a result of structural racism. Specifically,

black transgender people reported the highest level of discrimination among all transgender individuals of color. As members of several intersecting minority groups, transgender people of color, and transgender women of color in particular, are especially vulnerable to employment discrimination, poor health outcomes, harassment, and violence. Consequently, they face even greater obstacles than white transgender individuals and cisgender members of their own race.

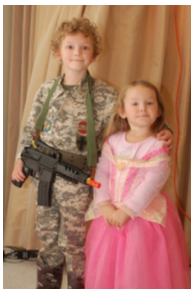

Figure 7.11.

Gender Roles: As we grow, we learn how to behave from those around us. In this socialization process, children are introduced to certain roles that are typically linked to their biological sex. The term **gender role** *refers to society's concept of how men and women are expected to act and behave.* Gender roles are based on norms, or standards, created by society. In American culture, masculine roles have traditionally been associated with strength, aggression, and dominance, while feminine roles have traditionally been associated with passivity, nurturing, and subordination.

The drive to adhere to masculine and feminine gender roles continues throughout life. Men tend to outnumber women in professions such as law enforcement, the military, and politics; women tend to outnumber men in care-related occupations such as childcare, healthcare, and social work. These occupational roles are examples of typical American male and female behavior, derived not from biology or genetics, but from our culture's traditions. Adherence to these roles demonstrates fulfillment of social expectations, but not necessarily personal preference (Diamond, 2002).

2.6: Sexuality

Human sexuality *refers to people's sexual interest in and attraction to others, as well as their capacity to have erotic experiences and responses.* Sexuality may be experienced and expressed in a variety of ways, including thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships. These may manifest themselves in biological, physical, emotional, social, or spiritual aspects. The biological and physical aspects of sexuality largely concern the human reproductive functions, including the human sexual-response cycle and the basic biological drive that exists in all species. Emotional aspects of sexuality include bonds between individuals that are expressed through profound feelings or physical manifestations of love, trust, and care. Social aspects deal with the effects of human society on one's sexuality, while spirituality concerns an individual's spiritual connection with others through sexuality. Sexuality also impacts, and is impacted by cultural, political, legal, philosophical, moral, ethical, and religious aspects of life.

The Sexual Response Cycle: *Sexual motivation, often referred to as* **libido**, *is a person's overall sexual drive or desire for sexual activity.* This motivation is determined by biological, psychological, and social factors. In most mammalian species, sex hormones control the ability to engage in sexual behaviors. However, sex hormones do not directly regulate the ability to copulate in primates (including humans); rather, they are only one influence on the motivation to engage in sexual behaviors. Social factors, such as work and family also have an impact, as do internal psychological factors like personality and stress. Sex drive may also be affected by hormones, medical conditions, medications, lifestyle stress, pregnancy, and relationship issues.

The **sexual response cycle** *is a model that describes the physiological responses that take place during sexual activity.* According to Kinsey, Pomeroy, and Martin (1948), the cycle consists of four phases: excitement, plateau, orgasm, and resolution. The excitement **phase** *is the phase in which the intrinsic (inner) motivation to pursue sex arises.* The plateau **phase** *is the period of sexual excitement with increased heart rate and circulation that sets the stage for orgasm.* Orgasm *is the release of tension*, and the resolution **period** *is the unaroused state before the cycle begins again.*

The Brain and Sex: The brain is the structure that translates the nerve impulses from the skin into pleasurable sensations. It controls nerves and muscles used during sexual behavior. The brain regulates the release of hormones, which are believed to be the physiological origin of sexual desire. The cerebral cortex, which is the outer layer of the brain that allows for thinking and reasoning, is believed to be the origin of sexual thoughts and fantasies. Beneath the cortex is the limbic system, which consists of the amygdala, hippocampus, cingulate gyrus, and septal area. These structures are where emotions and feelings are believed to originate, and are important for sexual behavior.

The **hypothalamus** is the most important part of the brain for sexual functioning. *This is the small area at the base of the brain consisting of several groups of nerve-cell bodies that receives input from the limbic system.* Studies with lab animals have shown that destruction of certain areas of the hypothalamus causes complete elimination of sexual behavior. One of the reasons for the importance of the hypothalamus is that it controls the pituitary gland, which secretes hormones that control the other glands of the body.

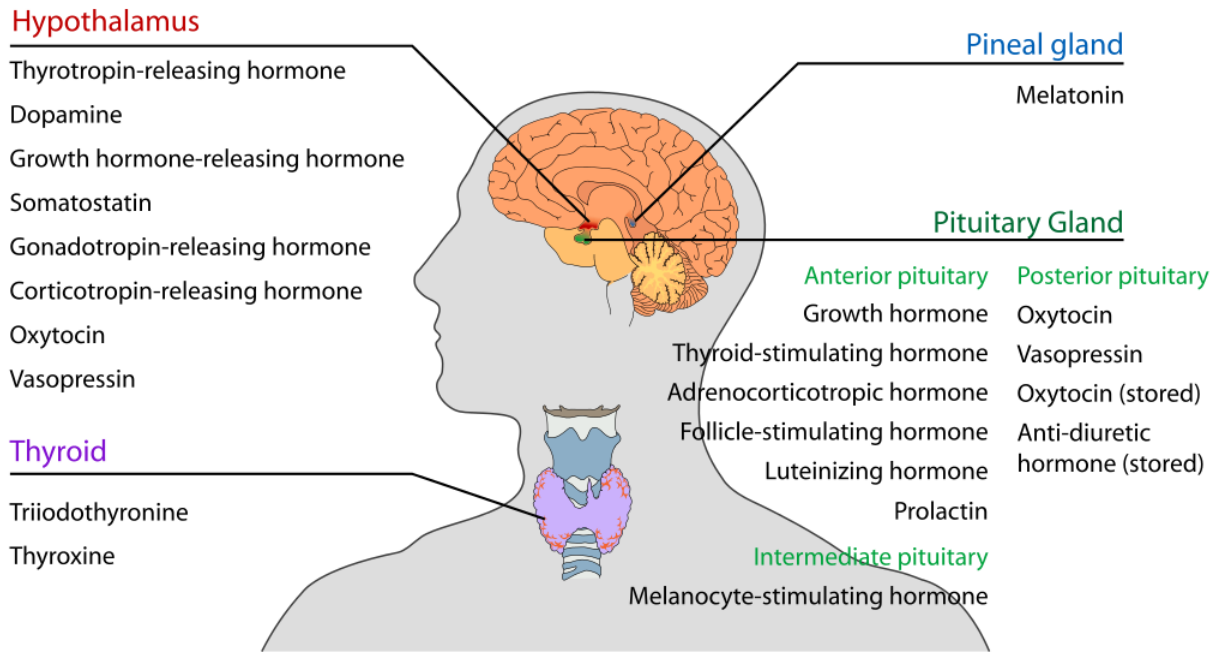

Figure 7.12. Source.

Hormones: Several important sexual hormones are secreted by the pituitary gland. Oxytocin**,** also known as the hormone of love, *is released during sexual intercourse when an orgasm is achieved*. Oxytocin is also released in females when they give birth or are breast feeding; it is believed that oxytocin is involved with maintaining close relationships. Both prolactin and oxytocin stimulate milk production in females. Follicle-stimulating hormone (FSH) *is responsible for ovulation in females by triggering egg maturity; it also stimulates sperm production in males.* Luteinizing hormone (LH) *triggers the release of a mature egg in females during the process of ovulation.*

In males, testosterone appears to be a major contributing factor to sexual motivation. Vasopressin *is involved in the male arousal phase*, and the increase of vasopressin during erectile response may be directly associated with increased motivation to engage in sexual behavior.

The relationship between hormones and female sexual motivation is not as well understood, largely due to the overemphasis on male sexuality in Western research. Estrogen and progesterone typically *regulate motivation to engage in sexual behavior for females, with estrogen increasing motivation and progesterone decreasing it.* The levels of these hormones rise and fall throughout a woman's menstrual cycle. Research suggests that testosterone, oxytocin, and vasopressin are also implicated in female sexual motivation in similar ways as they are in males, but more research is needed to understand these relationships.

Sexual Responsiveness Peak: Men and women tend to reach their peak of sexual responsiveness at different ages. For men, sexual responsiveness tends to peak in the late teens and early twenties. Sexual arousal can easily occur in response to physical stimulation or fantasizing. Sexual responsiveness begins a slow decline in the late twenties and into the thirties, although a man may continue to be sexually active. Through time, a man may require more intense stimulation in order to become aroused. Women often find that they become more sexually responsive throughout their 20s and 30s and may peak in the late 30s or early 40s. This is likely due to greater self-confidence and reduced inhibitions about sexuality.

Sexually Transmitted Infections: Sexually transmitted infections (STIs), also referred to as sexually transmitted diseases (STDs) or venereal diseases (VDs), *are illnesses that have a significant probability of transmission by means of sexual behavior, including vaginal intercourse, anal sex, and oral sex.* Some STIs can also be contracted by sharing intravenous drug needles with an infected person, as well as through childbirth or breastfeeding.

Common STIs include:

- Chlamydia;
- Herpes (HSV-1 and HSV-2);
- Human papillomavirus (HPV);
- Gonorrhea;

- Syphilis;
- Trichomoniasis;
- HIV (human immunodeficiency virus) and AIDS (acquired immunodeficiency syndrome).

According to the Centers for Disease Control and Prevention (CDC) (2014), there was an increase in the three most common types of STDs in 2014. These include 1.4 million cases of chlamydia, 350,000 cases of gonorrhea, and 20,000 cases of syphilis. Those most affected by STDS include those younger, gay/bisexual males, and females. The most effective way to prevent transmission of STIs is to practice safe sex and avoid direct contact of skin or fluids which can lead to transfer with an infected partner. Proper use of safe-sex supplies (such as male condoms, female condoms, gloves, or dental dams) reduces contact and risk and can be effective in limiting exposure; however, some disease transmission may occur even with these barriers.

Societal Views on Sexuality: Society's views on sexuality are influenced by everything from religion to philosophy, and they have changed throughout history and are continuously evolving. Historically, religion has been the greatest influence on sexual behavior in the United States; however, in more recent years, peers and the media have emerged as two of the strongest influences, particularly among American teens (Potard, Courtois, & Rusch, 2008).

Mass media in the form of television, magazines, movies, and music continues to shape what is deemed appropriate or normal sexuality, targeting everything from body image to products meant to enhance sex appeal. Media serves to perpetuate a number of social scripts about sexual relationships and the sexual roles of men and women, many of which have been shown to have both empowering and problematic effects on people's (especially women's) developing sexual identities and sexual attitudes.

Cultural Differences: In the West, premarital sex is normative by the late teens, more than a decade before most people enter marriage. In the United States and Canada, and in northern and eastern Europe, cohabitation is also normative; most people have at least one cohabiting partnership before marriage. In southern Europe, cohabiting is still taboo, but premarital sex is tolerated in emerging adulthood. In contrast, both premarital sex and cohabitation remain rare and forbidden throughout Asia. Even dating is discouraged until the late twenties, when it would be a prelude to a serious relationship leading to marriage. In cross-cultural comparisons, about three fourths of emerging adults in the United States and Europe report having had premarital sexual relations by age 20, versus less than one fifth in Japan and South Korea (Hatfield & Rapson, 2006).

Sexual Orientation: A person's **sexual orientation** *is their emotional and sexual attraction to a particular sex or gender.* It is a personal quality that inclines people to feel romantic or sexual attraction (or a combination of these) to persons of a given sex or gender. According to the American Psychological Association (APA) (2016), sexual orientation also refers to a person's sense of identity based on those attractions, related behaviors, and membership in a community of others who share those attractions.

Sexual Orientation on a Continuum: Sexuality researcher Alfred Kinsey was among the first to conceptualize sexuality as a continuum rather than a strict dichotomy of gay or straight. To classify this continuum of heterosexuality and homosexuality, Kinsey et al. (1948) created a seven-point rating scale that ranged from exclusively heterosexual to exclusively homosexual. Research done over several decades has supported this idea that sexual orientation ranges along a continuum, from exclusive attraction to the opposite sex/gender to exclusive attraction to the same sex/gender (Carroll, 2016).

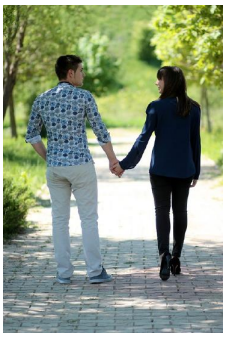

Figure 7.13a. Source.

However, sexual orientation now can be defined in many ways. **Heterosexuality**, which is often referred to as being straight, *is attraction to individuals of the opposite sex/gender*, while **homosexuality**, being gay or lesbian, *is attraction to individuals of one's own sex/gender.* **Bisexuality** *was a term traditionally used to refer to attraction to individuals of either male or female sex, but it has recently been used in nonbinary models of sex and gender* (i.e., models that do not assume there are only two sexes or two genders) to refer to attraction to *any* sex or gender. Alternative terms such as **pansexuality** and **polysexuality** have also been developed, *referring to attraction to **all** sexes/genders and attraction to multiple sexes/genders, respectively* (Carroll, 2016).

Figure 7.13b. Source.

Asexuality *refers to having no sexual attraction to any sex/gender*. According to Bogaert (2015) about one percent of the population is asexual. Being asexual is not due to any physical problems, and the lack of interest in sex does not cause the individual any distress. Asexuality is being researched as a distinct sexual orientation.

Development of Sexual Orientation: According to current scientific understanding, individuals are usually aware of their sexual orientation between middle childhood and early adolescence. However, this is not always the case, and some do not become aware of their sexual orientation until much later in life. It is not necessary to participate in sexual activity to be aware of these emotional, romantic, and physical attractions; people can be celibate and still recognize their sexual orientation. Some researchers argue that sexual orientation is not static and inborn, but is instead fluid and changeable throughout the lifespan.

There is no scientific consensus regarding the exact reasons why an individual holds a particular sexual orientation. Research has examined possible biological, developmental, social, and cultural influences on sexual orientation, but there has been no evidence that links sexual orientation to one factor (APA, 2016). Biological explanations, that include genetics, hormones, and birth order, will be explored further.

Figure 7.14. Source.

Using both twin and familial studies, heredity provides one biological explanation for sexual orientation. Bailey and Pillard (1991) studied pairs of male twins and found that the concordance rate for identical twins was 52%, while the rate for fraternal twins was only 22%. Bailey, Pillard, Neale, and Agyei (1993) studied female twins and found a similar difference with a concordance rate of 48% for identical twins and 16% for fraternal twins. Schwartz, Kim, Kolundzija, Rieger, and Sanders (2010) found that gay men had more homosexual male relatives than heterosexual men, and sisters of gay men were more likely to be lesbians than sisters of straight men.

Excess or deficient exposure to hormones during prenatal development has also been theorized as an explanation for sexual orientation. One-third of females exposed to abnormal amounts of prenatal androgens, a condition called congenital adrenal hyperplasia (CAH), identify as bisexual or lesbian (Cohen-Bendahan, van de Beek, & Berenbaum, 2005). In contrast, too little exposure to prenatal androgens may affect male sexual orientation by not masculinizing the male brain (Carlson, 2011).

Another explanation attempts to explain why gay men tend to have a greater number of older brothers than heterosexual men (Blanchard, 2001). This difference is explained by the **maternal immune hypothesis** which proposes *"a progressive immunization to male-specific antigens after the birth of successive sons in some mothers, which increases the effect of anti-male antibodies on the sexual differentiation of the brain in the developing fetus"* (Carroll, 2016, p. 264). Consequently, in some families with multiple brothers, those born later have demonstrated higher rates of homosexuality.

Sexual Orientation Discrimination: The United States is **heteronormative**, *meaning that society supports heterosexuality as the norm.* Consider, for example, that homosexuals are often asked, "When did you know you were gay?" but heterosexuals are rarely asked, "When did you know you were straight?" (Ryle, 2011). Living in a culture that privileges heterosexuality has a significant impact on the ways in which non-heterosexual people are able to develop and express their sexuality.

Figure 7.15. Source.

Open identification of one's sexual orientation may be hindered by **homophobia** *which encompasses a range of negative attitudes and feelings toward homosexuality or people who are identified or perceived as being lesbian, gay, bisexual, or transgender (LGBT).* It can be expressed as antipathy, contempt, prejudice, aversion, or hatred; it may be based on irrational fear and is sometimes related to religious beliefs (Carroll, 2016). Homophobia is observable in critical and hostile behavior, such as discrimination and violence on the basis of sexual orientations that are non- heterosexual. Recognized types of homophobia include institutionalized homophobia, *such as religious and state-sponsored homophobia*, and internalized homophobia *in which people with same-sex attractions internalize, or believe, society's negative views and/or hatred of themselves.*

Gays, lesbians, and bisexual people regularly experience stigma, harassment, discrimination, and violence based on their sexual orientation (Carroll, 2016). Research has shown that gay, lesbian, and bisexual teenagers are at a higher risk of depression and suicide due to exclusion from social groups, rejection from peers and family, and negative media portrayals of homosexuals (Bauermeister et al., 2010). Discrimination can occur in the workplace, in housing, at schools, and in numerous public settings. Much of this discrimination is based on stereotypes and misinformation. Major policies to prevent discrimination based on sexual orientation have only come into effect in the United States in the last few years.

The majority of empirical and clinical research on lesbian, gay, bisexual, and transgender (LGBT) populations are done with largely white, middle-class, well-educated samples. This demographic limits our understanding of more marginalized sub-populations that are also affected by racism, classism, and other forms of oppression. In the United States, non-Caucasian LGBT individuals may find themselves in a double minority, in which they are not fully accepted or understood by Caucasian LGBT communities, and are also not accepted by their own ethnic group (Tye, 2006). Many people experience racism in the dominant LGBT community where racial stereotypes merge with gender stereotypes.

2.7: Cognitive Development in Emerging and Early Adulthood

Learning Objectives: Cognitive Development in Emerging and Early Adulthood

- Distinguish between formal and postformal thought
- Describe dialectical thought
- Describe the changes in educational attainment and the costs of education
- Describe the benefits of education beyond high school
- Describe the stages in career development, millennial employment, and NEETS
- Describe sexism and how it affects hiring, employment, and education

Beyond Formal Operational Thought: Postformal Thought

As mentioned in chapter 6, according to Piaget's theory adolescents acquire formal operational thought. The hallmark of this type of thinking is the ability to think abstractly or to consider possibilities and ideas about circumstances never directly experienced. Thinking abstractly is only one characteristic of adult thought, however. If you compare a 15 year-old with someone in their late 30s, you would probably find that the latter considers not only what is possible, but also what is likely. Why the change? The adult has gained experience and understands why possibilities do not always become realities. *They learn to base decisions on what is realistic and practical, not idealistic, and can make adaptive choices. Adults are also not as influenced by what others think. This advanced type of thinking is referred to as* **Postformal Thought** (Sinnott, 1998).

Dialectical Thought: In addition to moving toward more practical considerations, thinking in early adulthood may also become more flexible and balanced. Abstract ideas that the adolescent believes in firmly may become standards by which the adult evaluates reality. Adolescents tend to think in **dichotomies**; *ideas are true or false; good or bad; and there is no middle ground*. However, with experience, the adult comes to recognize that there is some right and some wrong in each position, some good or some bad in a policy or approach, some truth and some falsity in a particular idea. *This ability to bring together salient aspects of two opposing viewpoints or positions is referred to as* **dialectical thought** and is considered one of the most advanced aspects of postformal thinking (Basseches, 1984). Such thinking is more realistic because very few positions, ideas, situations, or people are completely right or wrong. So, for example, parents who were considered angels or devils by the adolescent eventually become just people with strengths and weaknesses, endearing qualities, and faults to the adult.

Does everyone reach postformal or even formal operational thought? Formal operational thought involves being able to think abstractly; however, this ability does not apply to all situations or all adults. Formal operational thought is influenced by experience and education. Some adults lead lives in which they are not challenged to think abstractly about their world. Many adults do not receive any formal education and are not taught to think abstractly about situations they have never experienced. Further, they are also not exposed to conceptual tools used to formally analyze hypothetical situations. Those who do think abstractly, in fact, may be able to do so more easily in some subjects than others. For example, psychology majors may be able to think abstractly about psychology, but be unable to use abstract reasoning in physics or chemistry. Abstract reasoning in a particular field requires a knowledge base that we might not have in all areas. Consequently, our ability to think abstractly depends to a large extent on our experiences.

2.8: Education and a Career

According to the National Center for Higher Education Management Systems (NCHEMS) (2016a), in the United States about 84% of 18 to 24 year olds have a high school diploma or GED. Nearly 9 out of every 10 adults aged 25 and up (88%) in the United States have a high school diploma or its equivalent (Ryan & Bauman, 2016). College is an important aspect of the lives of many young adults in the United States, with 36% of 18 to 24 year olds (NCHEMS, 2016b) and 7% of 25 to 49 year olds attending college (NCHEMS, 2016c). More than half of those 25 and older (59%) have completed some college, and 1 in 3 (32.5%) have a bachelor's degree or higher, with slightly more women (33%) than men (32%) holding a college degree (Ryan & Bauman, 2016). Fifty-six percent of four-year college students earn a Bachelor's degree within six years (NCHEMS, 2016d).

The rate of college attainment has grown more slowly in the United States than in a number of other nations in recent years (OCED, 2014). This may be due to fact that the cost of attaining a degree is higher in the U.S. than in many other nations.

Table 7.1: Select state data on student debc (2013-14)

State	Average Debt	Rank	Proportion with Debt
Illinois	28,984	16	67%
Wisconsin	28,810	17	70%
Michigan	29,450	9	62%
Indiana	29,222	13	91%
Utah (lowest)	18,921	-	54%
Delaware (highest)	33,808	-	62%

TICSA, 2015 Data

In 2014, 7 out of every 10 graduates in the U.S. owed an average of nearly $29,000, up 2 percent from the previous year (The Institute for College Access and Success [TICAS], 2015). As the level of State funding of higher education declines, students are finding that the cost of college is outpacing the rate of inflation, Pell grant increases, and other student scholarships. One in six students are funding their education through personal loans (TICAS, 2015). See Table 7.1 for a comparison of several U.S. States regarding student debt.

Is college worth the time and investment? College is certainly a substantial investment each year, with the financial burden falling on students and their families in the U.S., and mainly by the government in many other nations. Nonetheless, the benefits both to the individual and the society outweighs the initial costs. As can be seen in Figure 7.18, those in America with the most advanced degrees earn the highest income and have the lowest unemployment.

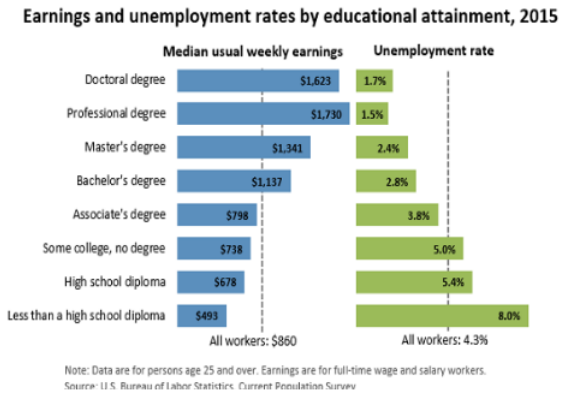

Figure 7.16.

Worldwide, over 80% of college educated adults are employed, compared with just over 70% of those with a high school or equivalent diploma, and only 60% of those with no high school diploma (OECD, 2015). Those with a college degree will earn more over the course of their life time. Moreover, the benefits of college education go beyond employment and finances. The OECD found that around the world, adults with higher educational attainment were more likely to volunteer, felt they had more control over their lives, and thus were more interested in the world around them. Studies of U.S. college students find that they gain

a more distinct identity and become more socially competent, less dogmatic and ethnocentric compared to those not in college (Pascarella, 2006).

Career Development and Employment

Work plays a significant role in the lives of people, and emerging and early adulthood is the time when most of us make choices that will establish our careers. Career development has a number of stages:

- **Stage One:** As children we may select careers based on what appears glamorous or exciting to us (Patton & McMahon, 1999). There is little regard in this stage for whether we are suited for our occupational choices.
- **Stage Two:** In the second stage, teens include their abilities and limitations, in addition to the glamour of the occupation when narrowing their choices.
- **Stage Three:** Older teens and emerging adults narrow their choices further and begin to weigh more objectively the requirements, rewards, and downsides to careers, along with comparing possible careers with their own interests, values, and future goals (Patton & McMahon, 1999). However, some young people in this stage "fall-into" careers simply because these were what were available at the time, because of family pressures to pursue particular paths, or because these were high paying jobs, rather than from an intrinsic interest in that career path (Patton & McMahon, 1999).
- **Stage Four:** Super (1980) suggests that by our mid to late thirties, many adults settle in their careers. Even though they might change companies or move up in their position, there is a sense of continuity and forward motion in their career. However, some people at this point in their working life may feel trapped, especially if there is little opportunity for advancement in a more dead-end job.

How have things changed for Millennials compared with previous generations of early adults? In recent years, young adults are more likely to find themselves job-hopping, and periodically returning to school for further education and retraining than in prior generations. However, researchers find that occupational interests remain fairly stable. Thus, despite the more frequent change in jobs, most people are generally seeking jobs with similar interests rather than entirely new careers (Rottinghaus, Coon, Gaffey & Zytowski, 2007).

Figure 7.17. Source.

Recent research also suggests that Millennials are looking for something different in their place of employment. According to a recent Gallup poll report (2016), Millennials want more than a paycheck, they want a purpose. Unfortunately, only 29% of Millennials surveyed by Gallup reported that they were "engaged" at work. In fact, they report being less engaged than Gen Xers and Baby Boomers; with 55% of Millennials saying they are not engaged at all with their job. This indifference to their workplace may explain the greater tendency to switch jobs. With their current job giving them little reason to stay, they are more likely to take any new opportunity to move on. Only half of Millennials saw themselves working at the same company a year later. Gallup estimates that this employment turnover and lack of engagement costs businesses $30.5 billion a year.

NEETs: Around the world, teens and young adults were some of the hardest hit by the economic downturn in recent years (Desilver, 2016). Consequently, a number of young people have become **NEET**s, *neither employed nor in education or training*. While the number of young people who are NEETs has declined, there is concern that "without assistance, economically inactive young people won't gain critical job skills and will never fully integrate into the wider economy or achieve their full earning potential" (Desilver, 2016, para. 3). In Europe, where the rates of NEETs are persistently high, there is also concern that having such large numbers of young adults with little opportunity may increase the chances of social unrest.

In the United States, in 2015 nearly 17% of 16 to 29 year-olds were neither employed nor in school, according to data Desilver (2016) obtained from the Bureau of Labor Statistics. This is down slightly from 2013, when approximately 18.5% of this age group

fit the category. As noted in Table 7.2, more women than men find themselves unemployed and not in school. Additionally, most NEETs have high school or less education, and Asians are less likely to be NEETs than any other ethnic group.

The rate of NEETs varies in European nations, with higher rates found in nations that have been the hardest hit by economic recessions and government austerity measures. For example, more than 25% of those 15-29 (European data use a lower age group: 15 rather than 16) in Greece and Italy are unemployed and not seeking or receiving further education. In contrast, countries less affected by an economic downturn, such as Denmark, had much lower rates (7.3%).

Table 7.2: Who are the American NEETs?

	Number (in 1000s)	% of all NEETs	% of total subgroup
Total	10,200	100.0%	16.9%
Male	4,300	42.6	14.4
Female	5,900	57.4	19.5
16-19	2,200	21.7	13.3
20-24	3,800	37.6	17.5
25-29	4,200	40.7	19.1
White	7,000	69.1	15.8
Black	2,000	19.7	22.2
Asian	600	5.0	14.2
Other	500	6.2	20.9
Hispanic	2,500	24.5	19.5
Less than HS grad	2,700	26.7	-
HS grad, no college	4,100	40.0	-
Some college	1,700	16.9	-
Associate degree	500	5.1	-
Bachelor's degree or higher	1,100	11.2	-

Note: Hispanics can be of any race. Totals may not sum to 100% because of rounding. Source: Pew Research Center analysis of Bureau of Labor Statistics data.

What role does gender play on career and employment? Gender also has an impact on career choices. Despite the rise in the number of women who work outside of the home, there are some career fields that are still pursued more by men than women. Jobs held by women still tend to cluster in the service sector, such as education, nursing, and child-care worker. While in more technical and scientific careers, women are greatly outnumbered by men. Jobs that have been traditionally held by women tend to have lower status, pay, benefits, and job security (Ceci & Williams, 2007).

In recent years, women have made inroads into fields once dominated by males, and today women are almost as likely as men to become medical doctors or lawyers. Despite these changes, women are more likely to have lower-status, and thus less pay than men in these professions. For instance, women are more likely to be a family practice doctor than a surgeon, or are less likely to make partner in a law firm (Ceci & Williams, 2007).

Sexism

Sexism or gender discrimination *is prejudice or discrimination based on a person's sex or gender.* Sexism can affect any sex that is marginalized or oppressed in a society; however, it is particularly documented as affecting females. It has been linked to stereotypes and gender roles and includes the belief that males are intrinsically superior to other sexes and genders. Extreme sexism may foster sexual harassment, rape, and other forms of sexual violence.

Sexism can exist on a societal level, such as in hiring, employment opportunities, and education. In the United States, women are less likely to be hired or promoted in male-dominated professions, such as engineering, aviation, and construction (Blau, Ferber, & Winkler, 2010; Ceci & Williams, 2011). In many areas of the world, young girls are not given the same access to nutrition,

healthcare, and education as boys. Sexism also includes people's expectations of how members of a gender group should behave. For example, women are expected to be friendly, passive, and nurturing; when a woman behaves in an unfriendly or assertive manner, she may be disliked or perceived as aggressive because she has violated a gender role (Rudman, 1998). In contrast, a man behaving in a similarly unfriendly or assertive way might be perceived as strong or even gain respect in some circumstances.

Figure 7.18. Source.

Occupational sexism *involves discriminatory practices, statements, or actions, based on a person's sex, that occur in the workplace.* One form of occupational sexism is wage discrimination. In 2008, the Organisation for Economic Co-operation and Development (OECD) found that while female employment rates have expanded, and gender employment and wage gaps have narrowed nearly everywhere, on average women still have a 20 percent less chance to have a job. The Council of Economic Advisors (2015) found that despite women holding 49.3% of the jobs, they are paid only 78 cents for every $1.00 a man earns. It also found that despite the fact that many countries, including the U.S., have established anti-discrimination laws, these laws are difficult to enforce. In the United States, women account for 47% of the overall labor force, yet they make up only 6 percent of corporate CEOs and top executives. Some researchers see the root cause of this situation in the tacit discrimination based on gender, conducted by current top executives and corporate directors (who are primarily male).

2.9: Psychosocial Development in Emerging and Early Adulthood

Learning Objectives: Psychosocial Development in Emerging and Early Adulthood

- Describe the relationship between infant and adult temperament
- Explain personality in early adulthood
- Explain the five factor model of personality
- Describe adult attachment styles
- Explain adult gender identity
- Describe gender roles

Temperament and Personality in Adulthood

If you remember from chapter 3, **temperament** is defined as *the innate characteristics of the infant, including mood, activity level, and emotional reactivity, noticeable soon after birth*. Does one's temperament remain stable through the lifespan? Do shy and inhibited babies grow up to be shy adults, while the sociable child continues to be the life of the party? Like most developmental research the answer is more complicated than a simple yes or no. Chess and Thomas (1987), who identified children as easy, difficult, slow-to-warm-up or blended, found that children identified as easy grew up to became well-adjusted adults, while those who exhibited a difficult temperament were not as well-adjusted as adults. Jerome Kagan (2002) has studied the temperamental category of inhibition to the unfamiliar in children. Infants exposed to unfamiliarity reacted strongly to the stimuli and cried loudly, pumped their limbs, and had an increased heart rate. Research has indicated that these highly reactive children show temperamental stability into early childhood, and Bohlin and Hagekull (2009) found that shyness in infancy was linked to social anxiety in adulthood.

An important aspect of this research on inhibition was looking at the response of the amygdala, which is important for fear and anxiety, especially when confronted with possible threatening events in the environment. Using functional magnetic resonance imaging (FMRIs) young adults identified as strongly inhibited toddlers showed heightened activation of the amygdala when compared to those identified as uninhibited toddlers (Davidson & Begley, 2012).

The research does seem to indicate that temperamental stability holds for many individuals through the lifespan, yet we know that one's environment can also have a significant impact. Recall from our discussion on **epigenesis** or *how environmental factors are thought to change gene expression by switching genes on and off*. Many cultural and environmental factors can affect one's temperament, including supportive versus abusive child-rearing, socioeconomic status, stable homes, illnesses, teratogens, etc. Additionally, individuals often choose environments that support their temperament, which in turn further strengthens them (Cain, 2012). In summary, because temperament is genetically driven, genes appear to be the major reason why temperament remains stable into adulthood. In contrast, the environment appears mainly responsible for any change in temperament (Clark & Watson, 1999).

Everybody has their own unique **personality***; that is, their characteristic manner of thinking, feeling, behaving, and relating to others* (John, Robins, & Pervin, 2008). Personality traits refer to these characteristic, routine ways of thinking, feeling, and relating to others. Personality integrates one's temperament with cultural and environmental influences. Consequently, there are signs or indicators of these traits in childhood, but they become particularly evident when the person is an adult. Personality traits are integral to each person's sense of self, as they involve what people value, how they think and feel about things, what they like to do, and, basically, what they are like most every day throughout much of their lives.

Five-Factor Model

There are hundreds of different personality traits, and all of these traits can be organized into the broad dimensions referred to as the Five-Factor Model (John, Naumann, & Soto, 2008). These five broad domains include: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Think OCEAN to remember). This applies to traits that you may use to describe yourself. Table 7.3 provides illustrative traits for low and high scores on the five domains of this model of personality.

Table 7.3 Descriptions of the Big Five Personality Traits

Dimension	Description	Examples of behaviors predicted by the trait

Dimension	Description	Examples of behaviors predicted by the trait
Openness to experience	A general appreciation for art, emotion, adventure, unusual ideas, imagination, curiosity, and variety of experience	Individuals who are highly open to experience and tend to have distinctive and unconventional decorations in their home. They are also likely to have books on a wide variety of topics, a diverse music collection, and works of art on display.
Conscientiousness	A tendency to show self-discipline, act dutifully, and aim for achievement	Individuals who are conscientious have a preference for planned rather than spontaneous behavior.
Extraversion	The tendency to experience positive emotions and to seek out stimulation and the company of others	Extroverts enjoy being with people. In groups, they like to talk, assert themselves, and draw attention to themselves.
Agreebleness	A tendency to be compassionate and cooperative rather than suspicious and antagonistic toward others; reflects individual differences in general concern for social harmony	Agreeable individuals value getting along with others. They are generally considerate, friendly, generous, helpful, and willing to compromise their interest with those of others.
Neuroticism	The tendency to experience negative emotions, such as anger, anxiety, or depression; sometimes called "emotional instability".	Those who score high in neuroticism are more likely to interpret ordinary situations as threatening and minor frustrations and hopelessly difficult. They may have trouble thinking clearly, making decisions, and coping effectively with stress.

Adapted from John, Naumann, and Soto (2008)

Does personality change throughout adulthood? Previously the answer was no, but contemporary research shows that although some people's personalities are relatively stable over time, others' are not Lucas & Donnellan, 2011; Roberts & Mroczek, 2008). Longitudinal studies reveal average changes during adulthood in the expression of some traits (e.g., neuroticism and openness decrease with age and conscientiousness increases) and individual differences in these patterns due to idiosyncratic life events (e.g., divorce, illness). Longitudinal research also suggests that adult personality traits, such as conscientiousness, predict important life outcomes including job success, health, and longevity (Friedman et al., 1993; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

The Harvard Health Letter (2012) identifies research correlations between conscientiousness and lower blood pressure, lower rates of diabetes and stroke, fewer joint problems, being less likely to engage in harmful behaviors, being more likely to stick to healthy behaviors, and more likely to avoid stressful situations. Conscientiousness also appears related to career choices, friendships, and stability of marriage. Lastly, a person possessing both self-control and organizational skills, both related to conscientiousness, may withstand the effects of aging better and have stronger cognitive skills than one who does not possess these qualities.

2.10: Attachment in Young Adulthood

Hazan and Shaver (1987) described the attachment styles of adults, using the same three general categories proposed by Ainsworth's research on young children; secure, avoidant, and anxious/ambivalent. Hazan and Shaver developed three brief paragraphs describing the three adult attachment styles. Adults were then asked to think about romantic relationships they were in and select the paragraph that best described the way they felt, thought, and behaved in these relationships (Table 7.4).

Table 7.4: Which of the following best describes you in your romantic relationships?

Secure	I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don't often worry about being abandoned or about someone getting too close to me.
Avoidant	I am somewhat uncomfortable being close to others. I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being.
Nervous/Ambivalent	I find that others are reluctant to get as close as I would like. I often worry that my partner doesn't really love me or won't stay with me. I want to merge completely with another person, and this sometimes scares people away.

Bartholomew (1990) challenged the categorical view of attachment in adults and suggested that adult attachment was best described as varying along two dimensions; attachment related-anxiety and attachment-related avoidance. **Attachment-related anxiety** *refers to the extent to which an adult worries about whether their partner really loves them.* Those who score high on this dimension fear that their partner will reject or abandon them (Fraley, Hudson, Heffernan, & Segal, 2015). **Attachment-related avoidance** *refers to whether an adult can open up to others, and whether they trust and feel they can depend on others*. Those who score high on attachment- related avoidance are uncomfortable with opening up and may fear that such dependency may limit their sense of autonomy (Fraley et al., 2015). According to Bartholomew (1990) this would yield four possible attachment styles in adults; secure, dismissing, preoccupied, and fearful-avoidant (see Figure 7.19).

Figure 7.19: Four-Category Model with the Two- Dimensions of Attachment. Source: Adapted from Fraley, et al., 2015. p. 355

Securely attached adults score lower on both dimensions. They are comfortable trusting their partners and do not worry excessively about their partner's love for them. Adults with a dismissing style score low on attachment-related anxiety, but higher on attachment-related avoidance. Such adults dismiss the importance of relationships. They trust themselves, but do not trust others, thus do not share their dreams, goals, and fears with others. They do not depend on other people, and feel uncomfortable when they have to do so.

Those with a preoccupied attachment are low in attachment-related avoidance, but high in attachment-related anxiety. Such adults are often prone to jealousy and worry that their partner does not love them as much as they need to be loved. Adults whose attachment style is fearful- avoidant score high on both attachment-related avoidance and attachment-related anxiety. These adults want close relationships, but do not feel comfortable getting emotionally close to others. They have trust issues with others and often do not trust their own social skills in maintaining relationships.

Research on attachment in adulthood has found that:

- Adults with insecure attachments report lower satisfaction in their relationships (Butzer, & Campbell, 2008; Holland, Fraley, & Roisman, 2012).
- Those high in attachment-related anxiety report more daily conflict in their relationships (Campbell, Simpson, Boldry, & Kashy, 2005).

- Those with avoidant attachment exhibit less support to their partners (Simpson, Rholes, Oriña, & Grich, 2002).
- Young adults show greater attachment-related anxiety than do middle-aged or older adults (Chopik, Edelstein, & Fraley, 2013).
- Some studies report that young adults show more attachment-related avoidance (Schindler, Fagundes, & Murdock, 2010), while other studies find that middle-aged adults show higher avoidance than younger or older adults (Chopik et al., 2013).
- Young adults with more secure and positive relationships with their parents make the transition to adulthood more easily than do those with more insecure attachments (Fraley, 2013).

Do people with certain attachment styles attract those with similar styles? When people are asked what kinds of psychological or behavioral qualities they are seeking in a romantic partner, a large majority of people indicate that they are seeking someone who is kind, caring, trustworthy, and understanding, that is the kinds of attributes that characterize a "secure" caregiver (Chappell & Davis, 1998). However, we know that people do not always end up with others who meet their ideals. Are secure people more likely to end up with secure partners, and, vice versa, are insecure people more likely to end up with insecure partners? The majority of the research that has been conducted to date suggests that the answer is "yes." Frazier, Byer, Fischer, Wright, and DeBord (1996) studied the attachment patterns of more than 83 heterosexual couples and found that, if the man was relatively secure, the woman was also likely to be secure.

One important question is whether these findings exist because (a) secure people are more likely to be attracted to other secure people, (b) secure people are likely to create security in their partners over time, or (c) some combination of these possibilities. Existing empirical research strongly supports the first alternative. For example, when people have the opportunity to interact with individuals who vary in security in a speed-dating context, they express a greater interest in those who are higher in security than those who are more insecure (McClure, Lydon, Baccus, & Baldwin, 2010). However, there is also some evidence that people's attachment styles mutually shape one another in close relationships. For example, in a longitudinal study, Hudson, Fraley, Vicary, and Brumbaugh (2012) found that, if one person in a relationship experienced a change in security, his or her partner was likely to experience a change in the same direction.

Figure 7.20: Sharing food, celebrations and traditions are some of the ways we establish secure attachments with our loved ones from an early age. [Image: skeeze]

Do early experiences as children shape adult attachment? The majority of research on this issue is retrospective; that is, it relies on adults' reports of what they recall about their childhood experiences. This kind of work suggests that secure adults are more likely to describe their early childhood experiences with their parents as being supportive, loving, and kind (Hazan & Shaver, 1987). A number of longitudinal studies are emerging that demonstrate prospective associations between early attachment experiences and adult attachment styles and/or interpersonal functioning in adulthood. For example, Fraley, Roisman, Booth-LaForce, Owen, and Holland (2013) found in a sample of more than 700 individuals studied from infancy to adulthood that maternal sensitivity across development prospectively predicted security at age 18. Simpson, Collins, Tran, and Haydon (2007) found that attachment security, assessed in infancy in the strange situation, predicted peer competence in grades one to three, which, in turn, predicted the quality of friendship relationships at age 16, which, in turn, predicted the expression of positive and negative emotions in their adult romantic relationships at ages 20 to 23.

It is easy to come away from such findings with the mistaken assumption that early experiences "determine" later outcomes. To be clear: Attachment theorists assume that the relationship between early experiences and subsequent outcomes is probabilistic, not deterministic. Having supportive and responsive experiences with caregivers early in life is assumed to set the stage for positive social development. But that does not mean that attachment patterns are set in stone. In short, even if an individual has far from optimal experiences in early life, attachment theory suggests that it is possible for that individual to develop well-functioning adult relationships through a number of corrective experiences, including relationships with siblings, other family members, teachers, and close friends. Security is best viewed as a culmination of a person's attachment history rather than a reflection of his or her

early experiences alone. Those early experiences are considered important, not because they determine a person's fate, but because they provide the foundation for subsequent experiences.

Relationships with Parents and Siblings

In early adulthood the parent-child relationship has to transition toward a relationship between two adults. This involves a reappraisal of the relationship by both parents and young adults. One of the biggest challenges for parents, especially during emerging adulthood, is coming to terms with the adult status of their children. Aquilino (2006) suggests that parents who are reluctant or unable to do so may hinder young adults' identity development. This problem becomes more pronounced when young adults still reside with their parents. Arnett (2004) reported that leaving home often helped promote psychological growth and independence in early adulthood.

Sibling relationships are one of the longest-lasting bonds in people's lives. Yet, there is little research on the nature of sibling relationships in adulthood (Aquilino, 2006). What is known is that the nature of these relationships change, as adults have a choice as to whether they will maintain a close bond and continue to be a part of the life of a sibling. Siblings must make the same reappraisal of each other as adults, as parents have to with their adult children. Research has shown a decline in the frequency of interactions between siblings during early adulthood, as presumably peers, romantic relationships, and children become more central to the lives of young adults. Aquilino (2006) suggests that the task in early adulthood may be to maintain enough of a bond so that there will be a foundation for this relationship in later life. Those who are successful can often move away from the "older-younger" sibling conflicts of childhood, toward a more equal relationship between two adults. Siblings that were close to each other in childhood are typically close in adulthood (Dunn, 1984, 2007), and in fact, it is unusual for siblings to develop closeness for the first time in adulthood. Overall, the majority of adult sibling relationships are close (Cicirelli, 2009).

Erikson: Intimacy vs. Isolation

Erikson's (1950, 1968) sixth stage focuses on establishing intimate relationships or risking social isolation. Intimate relationships are more difficult if one is still struggling with identity. Achieving a sense of identity is a life-long process, as there are periods of identity crisis and stability. However, once identity is established intimate relationships can be pursued. These intimate relationships include acquaintanceships and friendships, but also the more important close relationships, which are the long-term romantic relationships that we develop with another person, for instance, in a marriage (Hendrick & Hendrick, 2000).

2.11: Factors Influencing Attraction

Because most of us enter into a close relationship at some point, it is useful to know what psychologists have learned about the principles of liking and loving. A major interest of psychologists is the study of interpersonal **attraction**, *or what makes people like, and even love, each other.*

Figure 7.21: Birds of a feather flock together. Black-headed gulls in Colwick Country Park, UK. Source.

Similarity: One important factor in attraction is a perceived similarity in values and beliefs between the partners (Davis & Rusbult, 2001). Similarity is important for relationships because it is more convenient if both partners like the same activities and because similarity supports one's values. We can feel better about ourselves and our choice of activities if we see that our partner also enjoys doing the same things that we do. *Having others like and believe in the same things we do makes us feel validated in our beliefs.* This is referred to as **consensual validation** and is an important aspect of why we are attracted to others.

Self-Disclosure: Liking is also enhanced by **self-disclosure**, *the tendency to communicate frequently, without fear of reprisal, and in an accepting and empathetic manner.* Friends are friends because we can talk to them openly about our needs and goals and because they listen and respond to our needs (Reis & Aron, 2008). However, self-disclosure must be balanced. If we open up about our concerns that are important to us, we expect our partner to do the same in return. If the self-disclosure is not reciprocal, the relationship may not last.

Proximity: Another important determinant of liking is **proximity,** *or the extent to which people are physically near us.* Research has found that we are more likely to develop friendships with people who are nearby, for instance, those who live in the same dorm that we do, and even with people who just happen to sit nearer to us in our classes (Back, Schmukle, & Egloff, 2008).

Proximity has its effect on liking through the principle of **mere exposure**, which is *the tendency to prefer stimuli (including, but not limited to people) that we have seen more frequently*. The effect of mere exposure is powerful and occurs in a wide variety of situations. Infants tend to smile at a photograph of someone they have seen before more than they smile at a photograph of someone they are seeing for the first time (Brooks-Gunn & Lewis, 1981), and people prefer side- to-side reversed images of their own faces over their normal (nonreversed) face, whereas their friends prefer their normal face over the reversed one (Mita, Dermer, & Knight, 1977). This is expected on the basis of mere exposure, since people see their own faces primarily in mirrors, and thus are exposed to the reversed face more often.

Mere exposure may well have an evolutionary basis. We have an initial fear of the unknown, but as things become more familiar they seem more similar and safe, and thus produce more positive affect and seem less threatening and dangerous (Harmon-Jones & Allen, 2001; Freitas, Azizian, Travers, & Berry, 2005). When the stimuli are people, there may well be an added effect. Familiar people become more likely to be seen as part of the ingroup rather than the outgroup, and this may lead us to like them more. Leslie Zebrowitz and her colleagues found that we like people of our own race in part because they are perceived as similar to us (Zebrowitz, Bornstad, & Lee, 2007).

2.12: Friendship

In our twenties, intimacy needs may be met in friendships rather than with partners. This is especially true in the United States today as many young adults postpone making long-term commitments to partners, either in marriage or in cohabitation. The kinds of friendships shared by women tend to differ from those shared by men (Tannen, 1990). Friendships between men are more likely to involve sharing information, providing solutions, or focusing on activities rather than discussion problems or emotions. Men tend to discuss opinions or factual information or spend time together in an activity of mutual interest. Friendships between women are more likely to focus on sharing weaknesses, emotions, or problems. Women talk about difficulties they are having in other relationships and express their sadness, frustrations, and joys. These differences in approaches lead to problems when men and women come together. She may want to vent about a problem she is having; he may want to provide a solution and move on to some activity. But when he offers a solution, she thinks he does not care.

Friendships between men and women become more difficult because of the unspoken question about whether the friendships will lead to a romantic involvement. Consequently, friendships may diminish once a person has a partner or single friends may be replaced with couple friends.

2.13: Love

Sternberg (1988) suggests that there are three main components of love: Passion, intimacy, and commitment (Figure 7.24). Love relationships vary depending on the presence or absence of each of these components. **Passion** *refers to the intense, physical attraction partners feel toward one another***. Intimacy** *involves the ability the share feelings, personal thoughts and psychological closeness with the other*. **Commitment** *is the conscious decision to stay together.* Passion can be found in the early stages of a relationship, but intimacy takes time to develop because it is based on knowledge of the partner. Once intimacy has been established, partners may resolve to stay in the relationship. Although many would agree that all three components are important to a relationship, many love relationships do not consist of all three. Let's look at other possibilities.

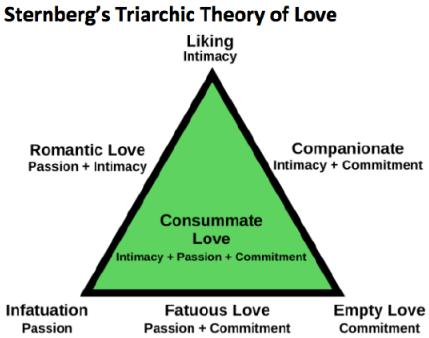

Figure 7.22. Source.

Liking: In this relationship, intimacy or knowledge of the other and a sense of closeness is present. Passion and commitment, however, are not. Partners feel free to be themselves and disclose personal information. They may feel that the other person knows them well and can be honest with them and let them know if they think the person is wrong. These partners are friends. However, being told that your partner "thinks of you as a friend" can be a devastating blow if you are attracted to them and seeking a romantic involvement.

Infatuation: Perhaps, this is Sternberg's version of "love at first sight". Infatuation consists of an immediate, intense physical attraction to someone. A person who is infatuated finds it hard to think of anything but the other person. Brief encounters are played over and over in one's head; it may be difficult to eat and there may be a rather constant state of arousal. Infatuation is rather short-lived, however, lasting perhaps only a matter of months or as long as a year or so. It tends to be based on physical attraction and an image of what one "thinks" the other is all about.

Fatuous Love: However, some people who have a strong physical attraction push for commitment early in the relationship. Passion and commitment are aspects of fatuous love. There is no intimacy and the commitment is premature. Partners rarely talk seriously or share their ideas. They focus on their intense physical attraction and yet one, or both, is also talking of making a lasting commitment. Sometimes this is out of a sense of insecurity and a desire to make sure the partner is locked into the relationship.

Empty Love: This type of love may be found later in a relationship or in a relationship that was formed to meet needs other than intimacy or passion, including financial needs, childrearing assistance, or attaining/maintaining status. Here the partners are committed to staying in the relationship for the children, because of a religious conviction, or because there are no alternatives. However, they do not share ideas or feelings with each other and have no physical attraction for one another.

Romantic Love: Intimacy and passion are components of romantic love, but there is no commitment. The partners spend much time with one another and enjoy their closeness, but have not made plans to continue. This may be true because they are not in a position to make such commitments or because they are looking for passion and closeness and are afraid it will die out if they commit to one another and start to focus on other kinds of obligations.

Companionate Love: Intimacy and commitment are the hallmarks of companionate love. Partners love and respect one another and they are committed to staying together. However, their physical attraction may have never been strong or may have just died out over time. Nevertheless, partners are good friends and committed to one another.

Consummate Love: Intimacy, passion, and commitment are present in consummate love. This is often perceived by western cultures as "the ideal" type of love. The couple shares passion; the spark has not died, and the closeness is there. They feel like best friends, as well as lovers, and they are committed to staying together.

2.14: Adult Lifestyles

Singlehood: Being single is the most common lifestyle for people in their early 20s, and there has been an increase in the number of adults staying single. In 1960, only about 1 in 10 adults age 25 or older had never been married, in 2012 that had risen to 1 in 5 (Wang & Parker, 2014). While just over half (53%) of unmarried adults say they would eventually like to get married, 32 percent are not sure, and 13 percent do not want to get married. It is projected that by the time current young adults reach their mid-40s and 50s, almost 25% of them may not have married. The U.S. is not the only country to see a rise in the number of single adults.

Table 7.5: Reasons for staying single

Have not met the right person	30%
Do not have financial stability	27%
Not ready to settle down	22%
Too young to marry	22%

Based on data from Wang & Parker (2014) Pew Research Center

Table 7.5 lists some of the reasons young adults give for staying single. In addition, adults are marrying later in life, cohabitating, and raising children outside of wedlock in greater numbers than in previous generations. Young adults also have other priorities, such as education, and establishing their careers. This may be reflected by changes in attitudes about the importance of marriage. In a recent Pew Research survey of Americans, respondents were asked to indicate which of the following statements came closer to their own views:

- "Society is better off if people make marriage and having children a priority"
- "Society is just as well off if people have priorities other than marriage and children"

Slightly more adults endorsed the second statement (50%) than those who chose the first (46%), with the remainder either selecting neither, both equally, or not responding (Wang & Parker, 2014). Young adults age 18-29 were more likely to endorse this view than adults age 30 to 49; 67 percent and 53 percent respectively. In contrast, those age 50 or older were more likely to endorse the first statement (53 percent).

Hooking Up: United States demographic changes have significantly affected the romantic relationships among emerging and early adults. As previously described, the age for puberty has declined, while the times for one's first marriage and first child have been pushed to older ages. This results in a "historically unprecedented time gap where young adults are physiologically able to reproduce, but not psychologically or socially ready to settle down and begin a family and child rearing," (Garcia, Reiber, Massey, & Merriwether, 2012, p. 172). Consequently, according to Bogle (2007, 2008) traditional forms of dating have shifted to more casual **hookups** *that involve uncommitted sexual encounters.*

Figure 7.23. Source.

Even though most research on hooking up involves college students, 70% of sexually active 12-21 year olds reported having had uncommitted sex during the past year (Grello, Welsh, Harper, & Dickson, 2003). Additionally, Manning, Giordano and Longmore (2006) found that 61% of sexually active seventh, ninth, and eleventh graders reported being involved in a sexual encounter outside of a dating relationship.

Friends with Benefits

Hookups are different than those relationships that involve continued mutual exchange. These relationships are often referred to as **Friends with Benefits** (FWB) or "Booty Calls." *These relationships involve friends having casual sex without commitment.* Hookups do not include a friendship relationship. Bisson and Levine (2009) found that 60% of 125 undergraduates reported a FWB relationship. The concern with FWB is that one partner may feel more romantically invested than the other (Garcia et al., 2012).

Hooking up Gender Differences: When asked about their motivation for hooking up, both males and females indicated physical gratification, emotional gratification, and a desire to initiate a romantic relationship as reasons (Garcia & Reiber, 2008). Although males and females are more similar than different in their sexual behaviors, a consistent finding among the research is that males demonstrate a greater permissiveness to casual sex (Oliver & Hyde, 1993). In another study involving 16,288 individuals across 52 nations, males reported a greater desire of sexual partner variety than females, regardless of relationship status or sexual orientation (Schmitt et al., 2003). This difference can be attributed to gender role expectations for both males and females regarding sexual promiscuity. Additionally, the risks of sexual behavior are higher for females and include unplanned pregnancy, increased sexually transmitted diseases, and susceptibility to sexual violence (Garcia et al., 2012).

Although hooking up relationships have become normalized for emerging adults, some research indicates that the majority of both sexes would prefer a more traditional romantic relationship (Garcia et al., 2012). Additionally, Owen and Fincham (2011) surveyed 500 college students with experience with hookups, and 65% of women and 45% of men reported that they hoped their hookup encounter would turn into a committed relationship. Further, 51% of women and 42% of men reported that they tried to discuss the possibility of starting a relationship with their hookup partner. Casual sex has also been reported to be the norm among gay men, but they too indicate a desire for romantic and companionate relationships (Clarke & Nichols, 1972).

Emotional Consequences of Hooking up: Concerns regarding hooking up behavior certainly are evident in the research literature. One significant finding is the high comorbidity of hooking up and substance use. Those engaging in non-monogamous sex are more likely to have used marijuana, cocaine, and alcohol, and the overall risks of sexual activity are drastically increased with the addition of alcohol and drugs (Garcia et al., 2012). Regret has also been expressed, and those who had the most regret after hooking up also had more symptoms of depression (Welsh, Grello, & Harper, 2006). Hook ups were also found to lower self-esteem, increase guilt, and foster feelings of using someone or feeling used. Females displayed more negative reactions than males, and this may be due to females identifying more emotional involvement in sexual encounters than males.

Hooking up can best be explained by a biological, psychological, and social perspective. Research indicates that emerging adults feel it is necessary to engage in hooking up behavior as part of the sexual script depicted in the culture and media. Additionally, they desire sexual gratification. However, they also want a more committed romantic relationship and may feel regret with uncommitted sex.

Online Dating: The ways people are finding love has changed with the advent of the Internet. In a poll, 49% of all American adults reported that either themselves or someone they knew had dated a person they met online (Madden & Lenhart, 2006). Online dating has also increased dramatically among those age 18 to 24. Today, one in five emerging adults report using a mobile dating app, while in 2013 only 5% did, and 27% report having used online dating, almost triple the rate in 2013 (Smith & Anderson, 2016). As Finkel, Burnette, and Scissors (2007) found, social networking sites and the Internet perform three important tasks. Specifically, sites provide individuals with access to a database of other individuals who are interested in meeting someone. Dating sites generally reduce issues of proximity, as individuals do not have to be close in proximity to meet. Also, they provide a medium in which individuals can communicate with others. Finally, some Internet dating websites advertise special matching strategies, based on factors such as personality, hobbies, and interests, to identify the "perfect match" for people looking for love online. Social networking sites have provided opportunities for meeting others you would not have normally met. However, social networking sites can also be forums for unsuspecting people to be duped, as the person may not be who he or she says.

Online communication differs from face-to-face interaction in a number of ways. In face-to-face meetings, people have many cues upon which to base their first impressions. A person's looks, voice, mannerisms, dress, scent, and surroundings all provide information in face-to-face meetings, but in computer-mediated meetings, written messages are the only cues provided. Fantasy is used to conjure up images of voice, physical appearance, mannerisms, and so forth. The anonymity of online involvement makes it easier to become intimate without fear of interdependence. When online, people tend to disclose more intimate details about themselves more quickly. A shy person can open up without worrying about whether or not the partner is frowning or looking away. Someone who has been abused may feel safer in virtual relationships. It is easier to tell one's secrets because there is little

fear of loss. One can find a virtual partner who is warm, accepting, and undemanding (Gwinnell, 1998), and exchanges can be focused more on emotional attraction than physical appearance.

To evaluate what individuals are looking for online, Menkin, Robles, Wiley and Gonzaga (2015) reviewed data from an eHarmony.com relationship questionnaire completed by a cross-sectional representation of 5,434 new users. Their results indicated that users consistently valued communication and characteristics such as personality and kindness over sexual attraction. Females valued communication over sexual attraction even more when compared to males, and older users rated sexual attraction as less important than younger users. Alterovitz and Mendelsohn (2011) analyzed 600 Internet personal ads across the lifespan, and found that men sought physical attractiveness and offered status related information more than women, while women were more selective than men and sought status more than men. These findings were consistent with previous research on gender differences regarding the importance of physical/sexual attraction.

Cohabitation: In American society, as well as in a number of other cultures, cohabitation has become increasingly commonplace.

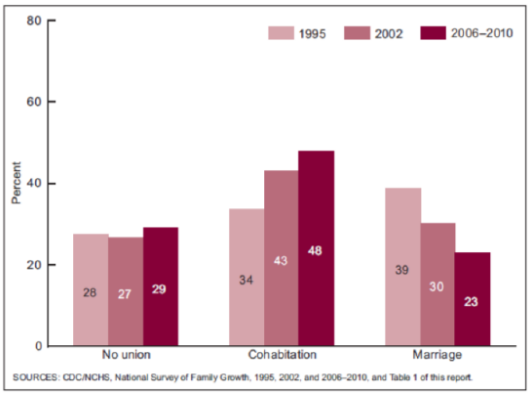

Figure 7.24 Type of first unions in women age 15- 44 in 1995, 2002, and 2006-2010

As shown in Figure 7.26, in 1995, 34 percent of women cohabitated as the first union with their partner, and by 2010 almost half of all women did (Copen, Daniels, & Mosher, 2013). Copen and colleagues also found that from 1995 to 2010 the median length of the cohabitation relationship has increased regardless of whether the relationship resulted in marriage, remained intact, or had since dissolved. In 1995 the median length of the cohabitation relationship was 13 months, whereas it was 22 months by 2010. Cohabitation for all racial/ethnic groups, except for Asian women increased between 1995 and 2010 (Table 7.6). Forty percent of the cohabitations transitioned into marriage within three years, 32% were still cohabitating, and 27% of cohabitating relationships had dissolved within the three years.

Table 7.6 Percentage of women by race/ethnicity whose first union was cohabitation

	1995	2006-2010
Hispanic	30%	47%
White	35%	49%
Black	35%	49%
Asian	22%	22%

Based on data from Copen et al., 2013.

Three explanations have been given for the rise of cohabitation in Western cultures. The first notes that the increase in individualism and secularism, and the resulting decline in religious observance, has led to greater acceptance and adoption of cohabitation (Lesthaeghe & Surkyn, 1988). Moreover, the more people view cohabitating couples, the more normal this relationship becomes, and the more couples who will then cohabitate. Thus, cohabitation is both a cause and the effect of greater cohabitation.

A second explanation focuses on the economic changes. The growth of industry and the modernization of many cultures has improved women's social status, leading to greater gender equality and sexual freedom, with marriage no longer being the only long-term relationship option (Bumpass, 1990). A final explanation suggests that the change in employment requirements, with many jobs now requiring more advanced education, has led to a competition between marriage and pursuing post-secondary education (Yu & Xie, 2015). This might account for the increase in the age of first marriage in many nations. Taken together, the

greater acceptance of premarital sex, and the economic and educational changes would lead to a transition in relationships. Overall, cohabitation may become a step in the courtship process or may, for some, replace marriage altogether.

Similar increases in cohabitation have also occurred in other industrialized countries. For example, rates are high in Great Britain, Australia, Sweden, Denmark, and Finland. In fact, more children in Sweden are born to cohabiting couples than to married couples. The lowest rates of cohabitation in industrialized countries are in Ireland, Italy, and Japan (Benokraitis, 2005).

Cohabitation in Non-Western Cultures, The Philippines and China: Similar to other nations, young people in the Philippines are more likely to delay marriage, to cohabitate, and to engage in premarital sex as compared to previous generations (Williams, Kabamalan, & Ogena, 2007). Despite these changes, many young people are still not in favor of these practices. Moreover, there is still a persistence of traditional gender norms as there are stark differences in the acceptance of sexual behavior out of wedlock for men and women in Philippine society. Young men are given greater freedom. In China, young adults are cohabitating in higher numbers than in the past (Yu & Xie, 2015). Unlike many Western cultures, in China adults with higher, rather than lower, levels of education are more likely to cohabitate. Yu and Xie suggest this may be due to seeing cohabitation as being a more "innovative" behavior and that those who are more highly educated may have had more exposure to Western culture.

Marriage Worldwide: Cohen (2013) reviewed data assessing most of the world's countries and found that marriage has declined universally during the last several decades. This decline has occurred in both poor and rich countries, however, the countries with the biggest drops in marriage were mostly rich: France, Italy, Germany, Japan and the U.S. Cohen states that the decline is not only due to individuals delaying marriage, but also because of high rates of non-marital cohabitation. Delayed or reduced marriage is associated with higher income and lower fertility rates that are reflected worldwide.

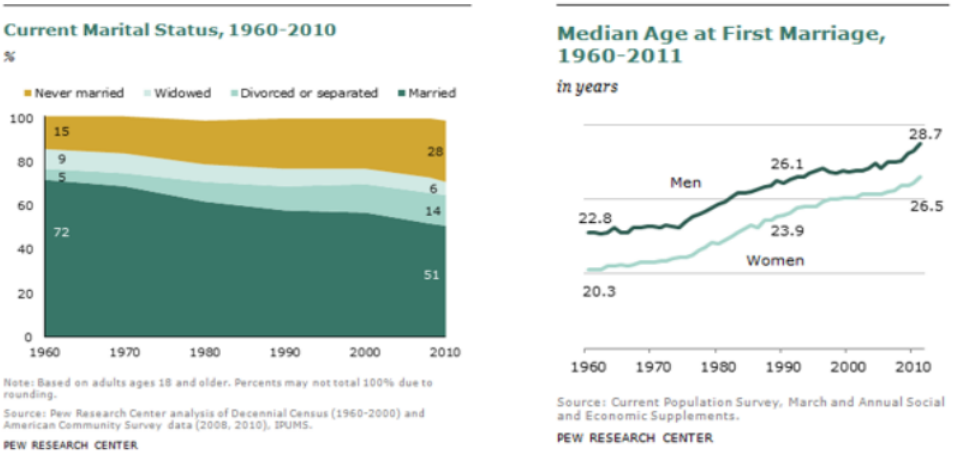

Figure 7.25 Marriage in the U.S.

Marriage in the United States: In 1960, 72% of adults age 18 or older were married, in 2010 this had dropped to barely half (Wang & Taylor, 2011). At the same time, the age of first marriage has been increasing for both men and women. In 1960, the average age for first marriage was 20 for women and 23 for men. By 2010 this had increased to 26.5 for women and nearly 29 for men (Figure 7.25). Many of the explanations for increases in singlehood and cohabitation previously given can also account for the drop and delay in marriage.

Figure 7.26. Photo courtesy Salvor Gissurardottir.

Same-Sex Marriage: In June 26, 2015, the United States Supreme Court ruled that the Constitution guarantees same-sex marriage. The decision indicated that limiting marriage to only heterosexual couples violated the 14th amendment's guarantee of equal protection under the law. This ruling occurred 11 years after same-sex marriage was first made legal in Massachusetts, and at the

time of the high court decision, 36 states and the District of Columbia had legalized same sex marriage. Worldwide, 23 countries currently have national laws allowing gays and lesbians to marry (Pew Research Center, 2015). As can be seen in Table 7.7, these countries are located mostly in Europe and the Americas.

Table 7.7 Pew Research Center: Countries That Allow Gay Marriage and the Year Passed

Argentina (2010)	Denmark (2012)	Iceland (2010)	Norway (2009)	Sweden (2009)
Belgium (2003)	England/Wales (2013)	Ireland (2015)	Portugal (2010)	United States (2015)
Brazil (2013)	Finland (2015)	Luxembourg (2014)	Scotland (2014)	Uruguay (2013)
Canada (2005)	France (2013)	The Netherlands (2000)	South Africa (2006)	
Colombia (2016)	Greenland (2015)	New Zealand (2013)	Spain (2005)	
Countries Where Gay Marriage is Legal in Some Jurisdictions				
Mexico (2009)				

Source.

Cultural Influences on Marriage: Many cultures have both explicit and unstated rules that specify who is an appropriate mate. Consequently, mate selection is not completely left to the individual. Rules of **endogamy** *indicate the groups we should marry within and those we should not marry in* (Witt, 2009). For example, many cultures specify that people marry within their own race, social class, age group, or religion. Endogamy reinforces the cohesiveness of the group. Additionally, these rules encourage **homogamy** *or marriage between people who share social characteristics*. The majority of marriages in the U. S. are homogamous with respect to race, social class, age and to a lesser extent, religion. Homogamy is also seen in couples with similar personalities and interests.

Arranged Marriages and Elopement: Historically, marriage was not a personal choice, but one made by one's family. Arranged marriages often ensured proper transference of a family's wealth and the support of ethnic and religious customs. Such marriages were a marriage of families rather than of individuals. In Western Europe, starting in the 18th century the notion of personal choice in a marital partner slowly became the norm. Arranged marriages were seen as "traditional" and marriages based on love "modern". Many of these early "love" marriages were obtained by eloping (Thornton, 2005).

Around the world, more and more young couples are choosing their partners, even in nations where arranged marriages are still the norm, such as India and Pakistan. Desai and Andrist (2010) found that only 5% of the women they surveyed, aged 25-49, had a primary role in choosing their partner. Only 22% knew their partner for more than one month before they were married. However, the younger cohort of women was more likely to have been consulted by their families before their partner was chosen than were the older cohort, suggesting that family views are changing about personal choice. Allendorf (2013) reports that this 5% figure may also underestimate young people's choice, as only women were surveyed. Many families in India are increasingly allowing sons veto power over the parents' choice of his future spouse, and some families give daughters the same say.

Marital Arrangements in India: As the number of arranged marriages in India is declining, elopement is increasing. Allendorf's (2013) study of a rural village in India, describes the elopement process. In many cases the female leaves her family home and goes to the male's home, where she stays with him and his parents. After a few days, a member of his family will inform her family of her whereabouts, and gain consent for the marriage. In other cases, where the couple anticipate some degree of opposition to the union, the couple may run away without the knowledge of either family, often going to a relative of the male. After a few days, the couple comes back to the home of his parents, where at that point consent is sought from both families. Although, in some cases families may sever all ties with their child or encourage him or her to abandon the relationship, typically, they agree to the union as the couple have spent time together overnight. Once consent has been given, the couple lives with his family and are considered married. A more formal ceremony takes place a few weeks or months later.

Arranged marriages are less common in the more urban regions of India than they are outside of the cities. In rural regions, often the family farm is the young person's only means of employment. Thus, going against family choices may carry bigger consequences. Young people who live in urban centers have more employment options. As a result, they are often less economically dependent on their families, and may feel freer to make their own choices. Thornton (2005) suggests these changes are also being driven by mass media, international travel, and general Westernization of ideas. Besides India, China, Nepal, and several nations in Southeast Asia have seen a decline in the number of arranged marriages, and an increase in elopement or couples choosing their own partners with their families' blessings (Allendorf, 2013).

Predictors of Marital Harmony: Advice on how to improve one's marriage is centuries old. One of today's experts on marital communication is John Gottman. Gottman (1999) differs

from many marriage counselors in his belief that having a good marriage does not depend on compatibility. Rather, the way that partners communicate to one another is crucial. At the University of Washington in Seattle, Gottman has measured the physiological responses of thousands of couples as they discuss issues of disagreement. Fidgeting in one's chair, leaning closer to or further away from the partner while speaking, and increases in respiration and heart rate are all recorded and analyzed along with videotaped recordings of the partners' exchanges. Gottman believes he can accurately predict whether or not a couple will stay together by analyzing their communication. In marriages destined to fail, partners engage in the "marriage killers": Contempt, criticism, defensiveness, and stonewalling. Each of these undermines the politeness and respect that healthy marriages require. Stonewalling, or shutting someone out, is the strongest sign that a relationship is destined to fail.

Gottman, Carrere, Buehlman, Coan, and Ruckstuhl (2000) researched the perceptions newlyweds had about their partner and marriage. The Oral History Interview used in the study, which looks at eight variables in marriage including: Fondness/affection, we-ness, expansiveness/ expressiveness, negativity, disappointment, and three aspects of conflict resolution (chaos, volatility, glorifying the struggle), was able to predict the stability of the marriage with 87% accuracy at the four to six year-point and 81% accuracy at the seven to nine year-point. Gottman (1999) developed workshops for couples to strengthen their marriages based on the results of the Oral History Interview. Interventions include increasing the positive regard for each other, strengthening their friendship, and improving communication and conflict resolution patterns.

Accumulated Positive Deposits: When there is a positive balance of relationship deposits this can help the overall relationship in times of conflict. For instance, some research indicates that a husband's level of enthusiasm in everyday marital interactions was related to a wife's affection in the midst of conflict (Driver & Gottman, 2004), showing that being pleasant and making deposits can change the nature of conflict. Also, Gottman and Levenson (1992) found that couples rated as having more pleasant interactions, compared with couples with less pleasant interactions, reported marital problems as less severe, higher marital satisfaction, better physical health, and less risk for divorce. Finally, Janicki, Kamarck, Shiffman, and Gwaltney (2006) showed that the intensity of conflict with a spouse predicted marital satisfaction, unless there was a record of positive partner interactions, in which case the conflict did not matter as much. Again, it seems as though having a positive balance through prior positive deposits helps to keep relationships strong even in the midst of conflict.

2.15: Intimate Partner Abuse

Violence in romantic relationships is a significant concern for women in early adulthood as females aged 18 to 34 generally experience the highest rates of intimate partner violence. The last National Intimate Partner and Sexual Violence Survey (NISVS) was conducted in 2011 (Breiding et al., 2014). The NISVS examines the prevalence of intimate partner violence, sexual violence, and stalking among women and men in the United States over the respondent's lifetime and during the 12 months before the interview. A total of 6,879 women and 5,848 men completed the survey. Based on the results, women are disproportionately affected by intimate partner violence, sexual violence, and stalking.

Results included:

- Nearly 1 in 5 women and 1 in 59 men have been raped in their lifetime.
- Almost 1 in 4 women have been the victim of severe physical violence by an intimate partner, while 1 in 7 men have experienced the same.
- A little over 1 in 6 women have been stalked during their lifetime, compared to 1 in 19 men.
- More than 1 in 4 women and more than 1 in 10 men have experienced contact sexual violence, physical violence, or stalking by an intimate partner and reported significant short- or long-term impacts, such as post-traumatic stress disorder symptoms and injury.
- An estimated 1 in 2 individuals experienced at least one act of psychological aggression by an intimate partner during their lifetime.
- Female victims of intimate partner violence experience different patterns of violence (rape, physical violence, stalking) than male victims who most often experienced physical violence.
- Men and women who experienced these forms of violence were more likely to report frequent headaches, chronic pain, difficulty with sleeping, activity limitations, poor physical health, and poor mental health than men and women who did not experience these forms of violence.

Figure 2.27. Source.

2.16: Parenthood

Parenthood is undergoing changes in the United States and elsewhere in the world. Children are less likely to be living with both parents, and women in the United States have fewer children than they did previously. The average fertility rate of women in the United States was about seven children in the early 1900s and has remained relatively stable at 2.1 since the 1970s (Hamilton, Martin, & Ventura, 2011; Martinez, Daniels, & Chandra, 2012). Not only are parents having fewer children, the context of parenthood has also changed. Parenting outside of marriage has increased dramatically among most socioeconomic, racial, and ethnic groups, although college-educated women are substantially more likely to be married at the birth of a child than are mothers with less education (Dye, 2010).

Figure 7.28. Source.

People are having children at older ages, too. This is not surprising given that many of the age markers for adulthood have been delayed, including marriage, completing education, establishing oneself at work, and gaining financial independence. In 2014 the average age for American first-time mothers was 26.3 years (CDC, 2015a). The birth rate for women in their early 20s has declined in recent years, while the birth rate for women in their late 30s has risen. In 2011, 40% of births were to women ages 30 and older. For Canadian women, birth rates are even higher for women in their late 30s than in their early 20s. In 2011, 52% of births were to women ages 30 and older, and the average first-time Canadian mother was 28.5 years old (Cohn, 2013). Improved birth control methods have also enabled women to postpone motherhood. Despite the fact that young people are more often delaying childbearing, most 18- to 29-year-olds want to have children and say that being a good parent is one of the most important things in life (Wang & Taylor, 2011).

Influences on Parenting: Parenting is a complex process in which parents and children influence on another. There are many reasons that parents behave the way they do. The multiple influences on parenting are still being explored. Proposed influences on parenting include: Parent characteristics, child characteristics, and contextual can sociocultural characteristics. (Belsky, 1984; Demick, 1999).

Parent Characteristics: Parents bring unique traits and qualities to the parenting relationship that affect their decisions as parents. These characteristics include the age of the parent, gender, beliefs, personality, developmental history, knowledge about parenting and child development, and mental and physical health. Parents' personalities affect parenting behaviors. Mothers and fathers who are more agreeable, conscientious, and outgoing are warmer and provide more structure to their children. Parents who are more agreeable, less anxious, and less negative also support their children's autonomy more than parents who are anxious and less agreeable (Prinzie, Stams, Dekovic, Reijntes, & Belsky, 2009). Parents who have these personality traits appear to be better able to respond to their children positively and provide a more consistent, structured environment for their children.

Figure 7.29. Source.

Parents' developmental histories, or their experiences as children, also affect their parenting strategies. Parents may learn parenting practices from their own parents. Fathers whose own parents provided monitoring, consistent and age-appropriate discipline, and warmth were more likely to provide this constructive parenting to their own children (Kerr, Capaldi, Pears, & Owen, 2009). Patterns of negative parenting and ineffective discipline also appear from one generation to the next. However, parents who are dissatisfied with their own parents' approach may be more likely to change their parenting methods with their own children.

Child Characteristics: Parenting is bidirectional. *Not only do parents affect their children, children influence their parents.* Child characteristics, such as gender, birth order, temperament, and health status, affect parenting behaviors and roles. For example, an infant with an easy temperament may enable parents to feel more effective, as they are easily able to soothe the child and elicit smiling and cooing. On the other hand, a cranky or fussy infant elicits fewer positive reactions from his or her parents and may result in parents feeling less effective in the parenting role (Eisenberg et al., 2008). Over time, parents of more difficult children may become more punitive and less patient with their children (Clark, Kochanska, & Ready, 2000; Eisenberg et al., 1999; Kiff, Lengua, & Zalewski, 2011). Parents who have a fussy, difficult child are less satisfied with their marriages and have greater challenges in balancing work and family roles (Hyde, Else-Quest, & Goldsmith, 2004). Thus, child temperament, as previously discussed in chapter 3, is one of the child characteristics that influences how parents behave with their children.

Another child characteristic is the gender of the child. Parents respond differently to boys and girls. Parents often assign different household chores to their sons and daughters. Girls are more often responsible for caring for younger siblings and household chores, whereas boys are more likely to be asked to perform chores outside the home, such as mowing the lawn (Grusec, goodnow, & Cohen, 1996). Parents also talk differently with their sons and daughters, providing more scientific explanations to their sons and using more emotion words with their daughters (Crowley, Callanan, Tenenbaum, & Allen, 2001).

Contextual Factors and Sociocultural Characteristics: The parent–child relationship does not occur in isolation. Sociocultural characteristics, including economic hardship, religion, politics, neighborhoods, schools, and social support, also influence parenting. Parents who experience economic hardship are more easily frustrated, depressed, and sad, and these emotional characteristics affect their parenting skills (Conger & Conger, 2002). Culture also influences parenting behaviors in fundamental ways. Although promoting the development of skills necessary to function effectively in one's community is a universal goal of parenting, the specific skills necessary vary widely from culture to culture. Thus, parents have different goals for their children that partially depend on their culture (Tamis-LeMonda et al., 2008). Parents vary in how much they emphasize goals for independence and individual achievements, maintaining harmonious relationships, and being embedded in a strong network of social relationships. Other important contextual characteristics, such as the neighborhood, school, and social networks, also affect parenting, even though these settings do not always include both the child and the parent (Brofenbrenner, 1989). Culture is also a contributing contextual factor, as discussed previously in chapter four. For example, Latina mothers who perceived their neighborhood as more dangerous showed less warmth with their children, perhaps because of the greater stress associated with living a threatening environment (Gonzales et al., 2011). The different influences are shown in Figure 7.30.

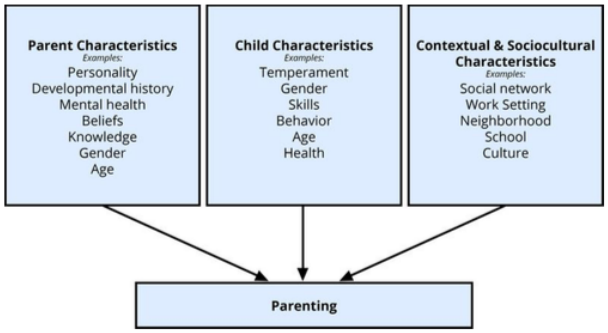

Figure 7.30: Influences on parenting. Source.

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CHAPTER OVERVIEW

Chapter 3: Middle Adulthood

Learning Objectives: Physical Development in Middle Adulthood

- Explain the difference between primary and secondary aging
- Describe sensory changes that occur during middle adulthood
- Identify health concerns in middle adulthood
- Explain what occurs during the climacteric for females and males
- Describe sexuality during middle adulthood
- Explain the importance of sleep and consequences of sleep deprivation
- Describe the importance of exercise and nutrition for optimal health
- Describe brain functioning in middle adulthood

Middle adulthood, or midlife, refers to the period of the lifespan between early adulthood and late adulthood. Although ages and tasks are culturally defined, the most common age definition is from 40-45 to 60-65. This may be the least studied time of the lifespan, and research on this developmental period is relatively new as many aspects of midlife are still being explored. In the United States, the large Baby Boom cohort (those born between 1946 and 1964) are now midlife adults (and some even late adults) and this has led to increased interest in this developmental stage. We do know that this stage reflects both developmental gains and losses and that there are considerable individual differences, but there is still much to learn about this age group.

3.1: Physical Development in Middle Adulthood

Each person experiences age-related physical changes based on many factors: *biological factors, such as molecular and cellular changes, and oxidative damage are called* **primary aging**, while *aging that occurs due to controllable factors, such as an unhealthy lifestyle including lack of physical exercise and poor diet, is called* **secondary aging** (Busse, 1969). These factors are shown in Figure 8.1

Figure 8.1: Contributors to Aging. Source.

Getting out of shape is not an inevitable part of aging; it is probably due to the fact that middle adults become less physically active and have experienced greater stress. Smoking tobacco, drinking alcohol, poor diet, stress, physical inactivity, and chronic disease such as diabetes or arthritis reduce overall health. However, there are things can be done to combat many of these changes by adopting healthier lifestyles.

Physical Changes

Hair: When asked to imagine someone in middle adulthood, we often picture someone with the beginnings of wrinkles and gray or thinning hair. What accounts for these physical changes? Hair color is due to a pigment called melanin which is produced by hair follicles (Martin, 2014). With aging, the hair follicles produce less melanin and this causes the hair to become gray. Hair color typically starts turning lighter at the temples, but eventually all the hair will become white. For many, graying begins in the 30s, but it is largely determined by your genes. Gray hair occurs earlier in white people and later in Asians.

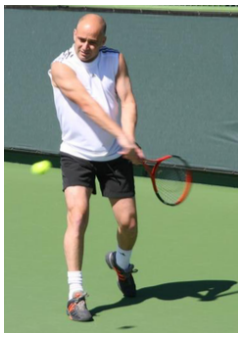

Figure 8.2: Andre Agassi.

Genes also determine how much hair remains on your head. Almost everyone has some hair loss with aging, and the rate of hair growth slows with aging. Many hair follicles stop producing new hairs and hair strands become smaller. Men begin showing signs of balding by 30 and some are nearly bald by 60. Male-pattern baldness is related to testosterone and is identified by a receding hairline followed by hair loss at the top of the head. Figure 8.2 shows tennis champion Andre Agassi's characteristic male-patterned baldness. Women can also develop female- patterned baldness as their hair becomes less dense and the scalp becomes visible (Martin, 2014). Sudden hair loss, however, can be a symptom of a health problem.

Skin: Skin continues to dry out and is prone to more wrinkling, particularly on the sensitive face area. Wrinkles, or creases in the skin, are a normal part of aging. As we get older, our skin dries and loses the underlying layer of fat, so our face no longer appears smooth. Loss of muscle tone and thinning skin can make the face appear flabby or drooping. Although wrinkles are a natural part of aging and genetics plays a role, frequent sun exposure and smoking will cause wrinkles to appear sooner. Dark spots and blotchy skin also occur as one ages and are due to exposure to sunlight (Moskowitz, 2014). Blood vessels become more apparent as the skin continues to dry and get thinner.

Sarcopenia: *The loss of muscle mass and strength that occurs with aging* is referred to as **Sarcopenia** (Morley, Baumgartner, Roubenoff, Mayer, & Nair, 2001). Sarcopenia is thought to be a significant factor in the frailty and functional impairment that occurs when older. The decline of growth and anabolic hormones, especially testosterone, and decreased physical activity have been implicated as causes of sarcopenia (Proctor, Balagopal, & Nair, 1998). This decline in muscle mass can occur as early as 40 years of age and contributes significantly to a decrease in life quality, increase in health care costs, and early death in older adults (Karakelides & Nair, 2005). Exercise is certainly important to increase strength, aerobic capacity, and muscle protein synthesis, but unfortunately it does not reverse all the age-related changes that occur. The muscle-to-fat ratio for both men and women also changes throughout middle adulthood, with an accumulation of fat in the stomach area.

Lungs: The lungs serve two functions: Supply oxygen and remove carbon dioxide. Thinning of the bones with age can change the shape of the rib cage and result in a loss of lung expansion. Age related changes in muscles, such as the weakening of the diaphragm, can also reduce lung capacity. Both of these changes will lower oxygen levels in the blood and increase the levels of carbon dioxide. Experiencing shortness of breath and feeling tired can result (NIH, 2014b). In middle adulthood, these changes and their effects are often minimal, especially in people who are non-smokers and physically active. However, in those with chronic bronchitis, or who have experienced frequent pneumonia, asthma other lung related disorders, or who are smokers, the effects of these normal age changes can be more pronounced.

Sensory Changes

Vision: A normal change of the eye due to age is **presbyopia**, which is Latin for "old vision." It refers to a loss of elasticity in the lens of the eye that makes it harder for the eye to focus on objects that are closer to the person. When we look at something far away, the lens flattens out; when looking at nearby objects tiny muscle fibers around the lens enable the eye to bend the lens. With age these muscles weaken and can no longer accommodate the lens to focus the light. Anyone over the age of 35 is at risk for developing presbyopia. According to the National Eye Institute (NEI) (2016), signs that someone may have presbyopia include:

- Hard time reading small print
- Having to hold reading material farther than arm's distance
- Problems seeing objects that are close
- Headaches
- Eyestrain

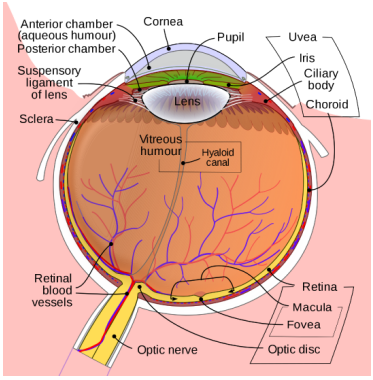

Figure 8.3: Interior of the Human Eye. Source.

Another common eye problem people experience as they age are **floaters**, *little spots or "cobwebs" that float around the field of vision*. They are most noticeable if you are looking at the sky on a sunny day, or at a lighted blank screen. Floaters occur when the vitreous, a gel-like substance in the interior of the eye, slowly shrinks. As it shrinks, it becomes somewhat stringy, and these strands can cast tiny shadows on the retina. In most cases, floaters are harmless, more of an annoyance than a sign of eye problems. However, floaters that appear suddenly, or that darken and obscure vision can be a sign of more serious eye problems, such a retinal tearing, infection, or inflammation. People who are very nearsighted (myopic), have diabetes, or who have had cataract surgery are also more likely to have floaters (NEI, 2009).

During midlife, adults may begin to notice a drop in **scotopic sensitivity**, *the ability to see in dimmer light*. By age 60, the retina receives only one third as much light as it did at age 20, making working in dimmer light more difficult (Jackson & Owsley, 2000). Night vision is also affected as the pupil loses some of its ability to open and close to accommodate drastic changes in light. Eyes

become more sensitive to glare from headlights and street lights making it difficult to see people and cars, and movements outside of our direct line of sight (NIH, 2016c).

Finally, some people experience **dry eye syndrome**, which *occurs when the eye does not produce tears properly, or when the tears evaporate too quickly because they are not the correct consistency* (NEI, 2013). While dry eye can affect people at any age, nearly 5 million Americans over the age of 50 experience dry eye. It affects women more than men, especially after menopause. Women who experienced an early menopause may be more likely to experience dry eye, which can cause surface damage to the eye.

Hearing: Hearing problems increase during middle adulthood. According to a recent UK study (Dawes et al., 2014), the rate of hearing problems in their sample doubled between the ages of 40 and 55 and tripled by age 64. Similar statistics are found in U.S. samples of middle-aged adults. Prior to age 40, about 5.5% of adults report hearing problems. This jumps to 19% among 40 to 69 year-olds (American Psychological Association, 2016). Middle-aged adults may experience more problems understanding speech when in noisy environments, in comparison to younger adults (Füllgrabe, Moore, & Stone, 2015; Neidleman, Wambacq, Besing, Spitzer, & Koehnke, 2015).

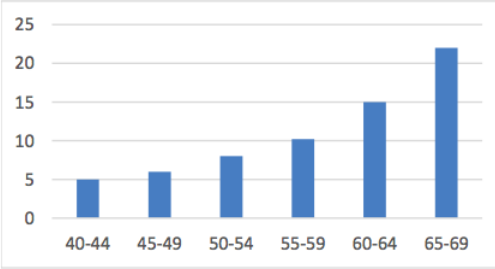

Figure 8.4: Incidence of Hearing Impairment in UK Adults. Adapted from Dawes, et al., (2014).

As we age we also lose the ability to hear higher frequencies (Humes, Kewley-Port, Fogerty, & Kinney, 2010). Hearing changes are more common among men than women, but males may underestimate their hearing problems (Uchida, Nakashima, Ando, Niino, & Shimokata, 2003). For many adults, hearing loss accumulates after years of being exposed to intense noise levels. Men are more likely to work in noisy occupations. Hearing loss is also exacerbated by cigarette smoking, high blood pressure, and stroke. Most hearing loss could be prevented by guarding against being exposed to extremely noisy environments.

3.2: Health Concerns

Heart Disease: According to the most recent National Vital Statistics Reports (Xu, Murphy, Kochanek, & Bastian, 2016) heart disease continues to be the number one cause of death for Americans as it claimed 23.5% of those who died in 2013. It is also the number one cause of death worldwide (World Health Organization, 2013). Heart disease develops slowly over time and typically appears in midlife (Hooker & Pressman, 2016).

Heart disease can include heart defects and heart rhythm problems, as well as narrowed, blocked, or stiffened blood vessels referred to as cardiovascular disease. The blocked blood vessels prevent the body and heart from receiving adequate blood. **Atherosclerosis,** *or a buildup of fatty plaque in the arteries*, is the most common cause of cardiovascular disease. The plaque buildup thickens the artery walls and restricts the blood flow to organs and tissues. Cardiovascular disease can lead to a heart attack, chest pain (angina), or stroke (Mayo Clinic, 2014a). Figure 8.5 illustrates atherosclerosis.

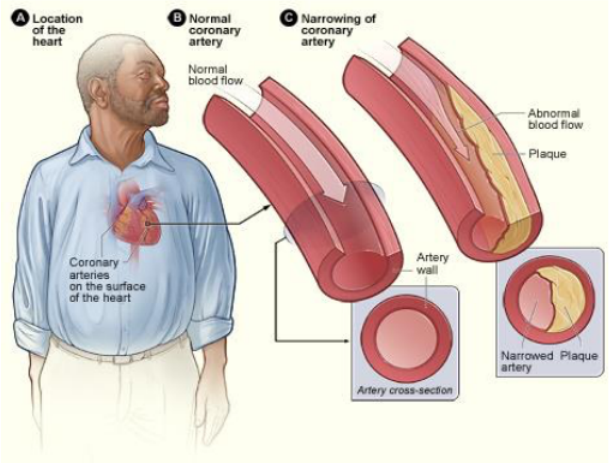

Figure 8.5: Atherosclerosis. Source.

Symptoms of cardiovascular disease differ for men and women. Males are more likely to suffer chest pain, while women are more likely to demonstrate shortness of breath, nausea, and extreme fatigue. Symptoms can also include pain in the arms, legs, neck, jaw, throat, abdomen or back (Mayo Clinic, 2014a).

According to the Mayo Clinic (2014a) there are many risk factors for developing heart disease, including medical conditions, such as high blood pressure, high cholesterol, diabetes, and obesity. Other risk factors include:

- **Advanced Age**-increased risk for narrowed arteries and weakened or thickened heart muscle.
- **Sex**-males are at greater risk, but a female's risk increases after menopause.
- **Family History**-increased risk, especially if male parent or brother developed heart disease before age 55 or female parent or sister developed heart disease before age 65.
- **Smoking**-nicotine constricts blood vessels and carbon monoxide damages the inner lining.
- **Poor Diet**-a diet high in fat, salt, sugar, and cholesterol.
- **Stress**-unrelieved stress can damage arteries and worsen other risk factors.
- **Poor Hygiene**-establishing good hygiene habits can prevent viral or bacterial infections that can affect the heart. Poor dental care can also contribute to heart disease.

Complications of heart disease can include heart failure, when the heart cannot pump enough blood to the meet the body's needs, and a heart attack, when a blood clot blocks the blood flow to the heart. This blockage can damage or destroy a part of the heart muscle, and atherosclerosis is a factor in a heart attack. Treatment for heart disease includes medication, surgery, and lifestyle changes including exercise, healthy diet, and refraining from smoking.

Sudden cardiac arrest is the unexpected loss of heart functioning, breathing, and consciousness, often caused by an arrhythmia or abnormal heartbeat. The heart beat may be too quick, too slow, or irregular. With a healthy heart, it is unlikely for a fatal arrhythmia to develop without an outside factor, such as an electric shock or illegal drugs. If not treated immediately, sudden cardiac arrest can be fatal and result in sudden cardiac death.

Hypertension, or *high blood pressure, is a serious health problem that occurs when the blood flows with a greater force than normal*. One in three American adults (70 million people) have hypertension and only half have it under control (Nwankwo, Yoon,

Burt, & Gu, 2013). It can strain the heart, increase the risk of heart attack and stroke, or damage the kidneys (CDC, 2014a). Uncontrolled high blood pressure in early and middle adulthood can also damage the brain's white matter (axons), and may be linked to cognitive problems later in life (Maillard et al., 2012). Normal blood pressure is under 120/80 (Table 8.1). The first number is the **systolic pressure**, *which is the pressure in the blood vessels when the heart beats*. The second number is the **diastolic pressure**, *which is the pressure in the blood vessels when the heart is at rest*. High blood pressure is sometimes referred to as the *silent killer*, as most people with hypertension experience no symptoms.

Table 8.1 Blood Pressure Levels

	Systolic Pressure	Diastolic Pressure
Normal	Under 120	Under 80
Prehypertension (at risk)	20-139	80-89
Hypertension	140 or high	90 or higher

Source: adapted from CDC (2014c).

Risk factors for high blood pressure include:

- Family history of hypertension
- Diet that is too high in sodium, often found in processed foods, and too low in potassium
- Sedentary lifestyle
- Obesity
- Too much alcohol consumption
- Tobacco use, as nicotine raises blood pressure (CDC, 2014b).

Making lifestyle changes can often reduce blood pressure in many people.

Cancer: After heart disease, cancer was the second leading cause of death for Americans in 2013 as it accounted for 22.5% of all deaths (Xu et al., 2016). According to the National Institutes of Health (2015), **cancer** *is the name given to a collection of related diseases in which the body's cells begin to divide without stopping and spread into surrounding tissues.* These extra cells can divide and form growths called tumors, which are typically masses of tissue. Cancerous tumors are malignant, which means they can invade nearby tissues. When removed malignant tumors may grow back. Unlike malignant tumors, benign tumors do not invade nearby tissues. Benign tumors can sometimes be quite large, and when removed usually do not grow back. Although benign tumors in the body are not cancerous, benign brain tumors can be life threatening.

Cancer cells can prompt nearby normal cells to form blood vessels that supply the tumors with oxygen and nutrients, which allows them to grow. These blood vessels also remove waste products from the tumors. Cancer cells can also hide from the immune system, a network of organs, tissues, and specialized cells that protects the body from infections and other conditions. Lastly, cancer cells can metastasize, which means they can break from where they first formed, called the primary cancer, and travel through the lymph system or blood to form new tumors in other parts of the body. This new metastatic tumor is the same type as the primary tumor (National Institutes of Health, 2015). Figure 8.6 illustrates how cancers can metastasize.

Cancer can start almost anywhere in the human body. While normal cells mature into very distinct cell types with specific functions, cancer cells do not and continue to divide without stopping. Further, cancer cells are able to ignore the signals that normally tell cells to stop dividing or to begin a process known as programmed cell death which the body uses to get rid of unneeded cells. With the growth of cancer cells, normal cells are crowded out and the body is unable to work the way it is supposed to. For example, the cancer cells in lung cancer form tumors which interfere with the functioning of the lungs and how oxygen is transported to the rest of the body.

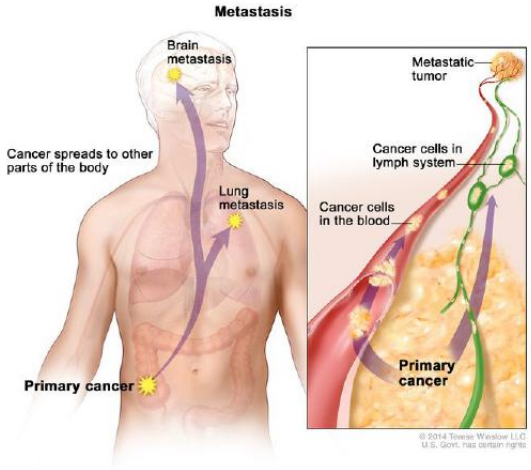

Figure 8.6. Source.

There are more than 100 types of cancer. The American Cancer Society assemblies a list of the most common types of cancers in the United States. To qualify for the 2016 list, the estimated annual incidence had to be 40, 000 cases or more. The most common type of cancer on the list is breast cancer, with more than 249,000 new cases expected in 2016. The next most common cancers are lung cancer and prostate cancer. Table 8.2 lists the estimated number of new cases and deaths for each common cancer type (American Cancer Society, 2016).

Table 8.2 2016 Estimates of Cancer Types

Cancer Type	Estimated New Cases	Estimated Deaths
Bladder	76,960	16,390
Breast (Female - Male)	246,660 - 2,600	40,450 - 440
Colon and rectal (combined)	134,490	49,190
Endometrial	60,050	10,470
Kidney (renal cell and renal pelvis) cancer	62,700	14,420
Leukemia (all types)	60,140	24,400
Lung (including bronchus)	224,390	158,080
Melanoma	76,380	10,130
Non-Hodgkin Lymphoma	72,580	20,150
Pancreatic	53,070	41,780
Prostate	180,890	26,120
Thyroid	64,300	1,980

Source.

Cholesterol *is a waxy fatty substance carried by lipoprotein molecules in the blood.* It is created by the body to create hormones and digest fatty foods, and is also found in many foods. Your body needs cholesterol, but too much can cause heart disease and stroke. Two important kinds of cholesterol are **low-density lipoprotein (LDL)** and **high-density lipoprotein (HDL)**. A third type of fat is called **triglycerides**. Your total cholesterol score is based on all three types of lipids (Table 8.3). Total cholesterol is calculated by adding HDL plus LDL plus 20% of the Triglycerides.

Table 8.3: Normal Levels of Cholesterol

	Normal
Total Cholesterol	Less than 200 mg/dl*
LDL	Less than 100 mg/dl

	Normal
HDL	40 mg/dl or higher
Triglycerides	Less than 150 mg/dl
*Cholesterol levels are measured in miligrams (mg) of cholesterol per deciliter (dL) in blood	

Source: Adapted from CDC (2015).

LDL cholesterol makes up the majority of the body's cholesterol, however, it is often referred to as "bad" cholesterol because at high levels it can form plaque in the arteries leading to heart attack and stroke. HDL cholesterol, often referred to as "good" cholesterol, absorbs cholesterol and carries it back to the liver, where it is then flushed from the body. Higher levels of HDL can reduce the risk of heart attack and stroke. Triglycerides are a type of fat in the blood used for energy. High levels of triglycerides can also increase your risk for heart disease and stroke when coupled with high LDL and low HDL. All adults 20 or older should have their cholesterol checked. In early adulthood, doctors may check every few years if the numbers have previously been normal, and there are no other signs of heart disease. In middle adulthood, this may become part of the annual check-up (CDC, 2015).

Risk factors for high cholesterol include: A family history for high cholesterol, diabetes, a diet high in saturated fats, trans fat, and cholesterol, physical inactivity, and obesity. Almost 32% of American adults have high LDL cholesterol levels, and the majority do not have it under control, nor have they made lifestyle changes (CDC, 2015).

Diabetes (Diabetes Mellitus) *is a disease in which the body does not control the amount of glucose in the blood.* This disease occurs when the body does not make enough insulin or does not use it the way it should (NIH, 2016a). Insulin is a type of hormone that helps glucose in the blood enter cells to give them energy. In adults, 90% to 95% of all diagnosed cases of diabetes are type 2 (American Diabetes Association (ADA), 2016). Type 2 diabetes usually begins with insulin resistance, *a disorder in which the cells in the muscles, liver, and fat tissue do not use insulin properly* (CDC, 2014d). As the need for insulin increases, cells in the pancreas gradually lose the ability to produce enough insulin. In some Type 2 diabetics, pancreatic beta cells will cease functioning, and the need for insulin injections will become necessary. Some people with diabetes experience insulin resistance with only minor dysfunction of the beta cell secretion of insulin. Other diabetics experience only slight insulin resistance, with the primary cause being a lack of insulin secretion (CDC, 2014d).

Figure 8.7. Source (CDC, 2014d).

One in three adults are estimated to have prediabetes, and 9 in 10 of them do not know. According to the CDC (2014d) without intervention, 15% to 30% of those with prediabetes will develop diabetes within 5 years. In 2012, 29 million people (over 9% of the population) were living with diabetes in America, mostly adults age 20 and up.

Table 8.4: Estimated Number and Percentage of Adults age 20 and over Living with Diabetes in 2012

	Number with Diabetes (millions)	Percentage with Diabetes (unadjusted)
Total		
20 years or older	28.9	12.3
By age		
20-44	4.3	4.1
45-64	13.4	16.2
65 years or older	11.2	25.9
By sex		
Men	15.5	13.6
Women	13.4	11.2

	Number with Diabetes (millions)	Percentage with Diabetes (unadjusted)
Source: 2009-2012 National Health and Nutrition Examination Survey estimates applied to 2012 U.S. Census data.		

Table 8.4 shows the numbers in millions and percentage of adults, by age and gender, living with diabetes. The median age of diagnosis is 54 (CDC, 2014d). During middle adulthood, the number of people with diabetes dramatically increases; with 4.3 million living with diabetes prior to age 45, to over 13 million between the ages of 45 to 64; a four-fold increase. Men are slightly more likely to experience diabetes than are women.

Diabetes also affects ethnic and racial groups differently. Non-Hispanic Whites (7.6%) are less likely to be diagnosed with diabetes than are Asian Americans (9%), Hispanics (12.8%), non- Hispanic Blacks (13.2%), and American Indians/Alaskan Natives (15.9%). However, these general figures hide the variations within these groups. For instance the rate of diabetes was less for Central, South, and Cuban Americans than for Mexican Americans and Puerto Ricans, and four times less for Alaskan Natives than the American Indians of southern Arizona (CDC, 2014d).

The risk factors for diabetes include:

- Those over age 45
- Obesity
- Family history of diabetes
- History of gestational diabetes (Chapter 2)
- Race and ethnicity
- Physical inactivity
- Diet

Diabetes has been linked to numerous health complications. Adults with diabetes are 1.7 times more likely to have cardiovascular disease, 1.8 times more likely to experience a heart attack, and 1.5 times more likely to experience stroke than adults without diabetes. Diabetes can cause blindness and other eye problems. In diabetics age 40 or older, 28.5% showed signs of diabetic retinopathy, *damage to the small blood vessels in the retina that may lead to loss of vision*. More than 4% showed advanced diabetic retinopathy. Diabetes is linked as the primary cause of almost half (44%) of new cases of kidney failure each year. About 60% of non-traumatic limb amputations occur in people with diabetes. Diabetes has been linked to hearing loss, tinnitus (ringing in the ears), gum disease, and neuropathy (nerve disease) (CDC, 2014d).

Typical tests for diabetes include a fasting glucose test and the A1C (Table 8.5). Fasting glucose levels should be under 100mg/dl (ADA, 2016). The A1C provides information about the average levels of blood glucose over the last 3 months (NIH, 2014a). The A1C should be under 5.7, where a 5.0 = 97mg/dl and a 6.0 = 126 mg/dl (ADA, 2016).

Table 8.5 Diagnostic Blood Tests for Diabetes

	Normal	Prediabetes	Diabetes
Fasting Glucose	Below 100 mg/dl	100-125 mg/dl	126+ mg/dl
A1C	Under 5.7	5.7 - 6.9	7+

Adapted from the American Diabetes Association (2016).

Metabolic Syndrome *is a cluster of several cardiometabolic risk factors, including large waist circumference, high blood pressure, and elevated triglycerides, LDL, and blood glucose levels, which can lead to diabetes and heart disease* (Crist et al., 2012). The prevalence of metabolic syndrome in the U.S. is approximately 34% and is especially high among Hispanics and African Americans (Ford, Li, & Zhao, 2010). Prevalence increases with age, peaking in one's 60s (Ford et al., 2010). Metabolic syndrome increases morbidity from cardiovascular disease and diabetes (Hu et al., 2004; Malik, 2004). Hu and colleagues found that even having one or two of the risk factors for metabolic syndrome increased the risk of mortality. Crist et al. (2012) found that increasing aerobic activity and reducing weight led to a drop in many of the risk factors of metabolic syndrome, including a reduction in waist circumference and blood pressure, and an increase in HDL cholesterol.

Rheumatoid arthritis (RA) *is an inflammatory disease that causes pain, swelling, stiffness, and loss of function in the joints* (NIH, 2016b). RA occurs when the immune system attacks the membrane lining the joints (Figure 8.8).

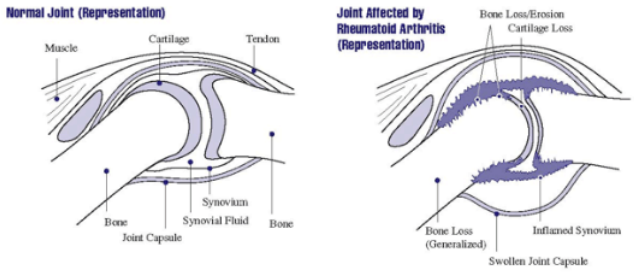

Figure 8.8. Source.

RA is the second most common form of arthritis after osteoarthritis, which is the normal wear and tear on the joints discussed in chapter 9. Unlike osteoarthritis, RA is symmetric in its attack of the body, thus, if one shoulder is affected so is the other. In addition, those with RA may experience fatigue and fever. Below are the common features of RA (NIH, 2016b).

Features of Rheumatoid Arthritis

- Tender, warm, swollen joints
- Symmetrical pattern of affected joints
- Joint inflammation *often* affecting the wrist and finger joints closest to the hand
- Joint inflammation *sometimes* affecting other joints, including the neck, shoulders, elbows, hips, knees, ankles, and feet
- Fatigue, occasional fevers, a loss of energy
- Pain and stiffness lasting for more than 30 minutes in the morning or after a long rest
- Symptoms that last for many years
- Variability of symptoms among people with the disease.

About 1.5 million people (approximately 0.6%) of Americans experience rheumatoid arthritis. It occurs across all races and age groups, although the disease often begins in middle adulthood and occurs with increased frequency in older people. Like some other forms of arthritis, rheumatoid arthritis occurs much more frequently in women than in men. About two to three times as many women as men have the disease (NIH, 2016b). The lifetime risk for RA for women is 3.6% and 1.7% for men (Crowson, et al., 2011).

Genes play a role in the development of RA. However, individual genes by themselves confer only a small risk of developing the disease, as some people who have these particular genes never develop RA. Scientists think that something must occur to trigger the disease process in people whose genetic makeup makes them susceptible to rheumatoid arthritis. For instance, some scientists also think hormonal factors may be involved. In women who experience RA, the symptoms may improve during pregnancy and flare after pregnancy. Women who use oral contraceptives may increase their likelihood of developing RA. This suggests hormones, or possibly deficiencies or changes in certain hormones, may increase the risk of developing RA in a genetically susceptible person (NIH, 2016b).

Rheumatoid arthritis can affect virtually every area of a person's life, and it can interfere with the joys and responsibilities of work and family life. Fortunately, current treatment strategies allow most people with RA to lead active and productive lives. Pain-relieving drugs and medications can slow joint damage, and establishing a balance between rest and exercise can also lessen the symptoms of RA (NIH, 2016b).

Digestive Issues

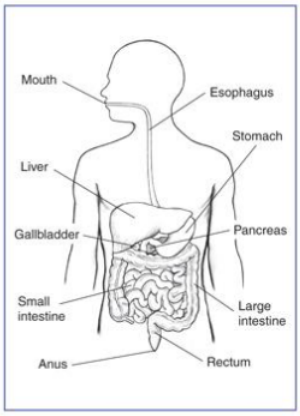

Figure 8.9: Digestive system. Source.

Heartburn, also called acid indigestion or pyrosis, is a common digestive problem in adults and is the result of stomach acid backing up into the esophagus. Prolonged contact with the digestive juices injures the lining of the esophagus and causes discomfort. Heartburn that occurs more frequently may be due to gastroesophageal reflux disease, GERD. Normally the lower sphincter muscle in the esophagus keeps the acid in the stomach from entering the esophagus. In GERD this muscle relaxes too frequently and the stomach acid flows into the esophagus. In the U.S. 60 million people experience heartburn at least once a month, and 15 million experience it every day. Prolonged problems with heartburn can lead to more serious complications, including esophageal cancer, one of the most lethal forms of cancer in the U.S. Problems with heartburn can be linked to eating fatty or spicy foods, caffeine, smoking, and eating before bedtime (American College of Gastroenterology, 2016a).

Gallstones *are hard particles, including fatty materials, bile pigments, and calcium deposits, that can develop in the gallbladder*. Ranging in size from a grain of sand to a golf ball, they typically take years to develop, but in some people have developed over the course of a few months. About 75% of gallstones do not create any symptoms, but those that do may cause sporadic upper abdominal pain when stones block bile or pancreatic ducts. If stones become lodged in the ducts, it may necessitate surgery or other medical intervention as it could become life-threatening if left untreated (American College of Gastroenterology, 2016b).

Gallstones are present in about 20% of women and 10% of men over the age of 55 (American College of Gastroenterology, 2016b). Risk factors include a family history of gallstones, diets high in calories and refined carbohydrates (such as, white bread and rice), diabetes, metabolic syndrome, Crohn's disease, and obesity, which increases the cholesterol in the bile and thus increases the risk of developing gallstones (NIH, 2013).

3.3: Sleep

According to the American Academy of Sleep Medicine (Kasper, 2015) adults require at least 7 hours of sleep per night to avoid the health risks associated with chronic sleep deprivation. Less than 6 hours and more than 10 hours is also not recommended for those in middle adulthood (National Sleep Foundation, 2015). Not surprisingly, many Americans do not receive the 7-9 hours of sleep recommended. Additional results included that in 1993, 67% of Americans felt they were getting enough sleep, but in 2013 only 56% felt they received as much sleep as needed. Additionally, 43% of Americans in 2013 believed they would feel better with more sleep. In 2013, only 59% of U.S. adults met that standard, while in 1942, 84% did (Jones, 2013). This means 41% of Americans receive less than the recommended amount of nightly sleep.

Sleep problems: According to the Sleep in America poll (National Sleep Foundation, 2015), 9% of Americans report being diagnosed with a sleep disorder, and of those 71% have sleep apnea and 24% suffer from insomnia. Pain is also a contributing factor in the difference between the amount of sleep Americans say they need and the amount they are getting. An average of 42 minutes of sleep debt occur for those with chronic pain, and 14 minutes for those who have suffered from acute pain in the past week. Stress and overall poor health are also key components of shorter sleep durations and worse sleep quality. Those in midlife with lower life satisfaction experienced greater delay in the onset of sleep than those with higher life satisfaction. Delayed onset of sleep could be the result of worry and anxiety during midlife, and improvements in those areas should improve sleep. Lastly, menopause can affect a woman's sleep duration and quality (National Sleep Foundation, 2016).

Children in the home and sleep: As expected, having children at home affects the amount of sleep one receives. According to a 2016 National Center for Health Statistics analysis (CDC, 2016) having children decreases the amount of sleep an individual receives, however, having a partner can improve the amount of sleep for both males and females. Table 8.6 illustrates the percentage of individuals not receiving seven hours of sleep per night based on parental role.

Table 8.6

Demographic	Sleep Less than 7 Hours
Single Mothers	43.5%
Mothers with Partner	31.2%
Women without Children	29.7%
Single Father	37.5%
Fathers with Partner	34.1%
Men without Children	32.3%

Negative consequences of insufficient sleep: There are many consequences of too little sleep, and they include physical, cognitive, and emotional changes. Sleep deprivation suppresses immune responses that fight off infection, and can lead to obesity, memory impairment, and hypertension (Ferrie et al., 2007; Kushida, 2005). Insufficient sleep is linked to an increased risk for colon cancer, breast cancer, heart disease and type 2 diabetes (Pattison, 2015). A lack of sleep can increase stress as cortisol (a stress hormone) remains elevated which keeps the body in a state of alertness and hyperarousal which increases blood pressure. Sleep is also associated with longevity. Dew et al. (2003) found that older adults who had better sleep patterns also lived longer. During deep sleep a growth hormone is released which stimulates protein synthesis, breaks down fat that supplies energy, and stimulates cell division. Consequently, a decrease in deep sleep contributes to less growth hormone being released and subsequent physical decline seen in aging (Pattison, 2015).

Figure 8.10: The importance of sleep. Source.

Sleep disturbances can also impair glucose functioning in middle adulthood. Caucasian, African American, and Chinese non-shift-working women aged 48–58 years who were not taking insulin-related medications, participated in the Study of Women's Health

across the Nation (SWAN) Sleep Study and were subsequently examined approximately 5 years later (Taylor et al., 2016). Body mass index (BMI) and insulin resistance were measured at two time points. Results indicated that irregular sleep schedules, including highly variable bedtimes and staying up much later than usual, are associated in midlife women with insulin resistance, which is an important indicator of metabolic health, including diabetes risk. Diabetes risk increases in midlife women, and irregular sleep schedules may be an important reason because irregular bedtime schedules expose the body to varying levels of light, which is the most important timing cue for the body's circadian clock. By disrupting circadian timing, bedtime variability may impair glucose metabolism and energy homeostasis.

3.4: Exercise, Nutrition, and Weight

The impact of exercise: Exercise is a powerful way to combat the changes we associate with aging. Exercise builds muscle, increases metabolism, helps control blood sugar, increases bone density, and relieves stress. Unfortunately, fewer than half of midlife adults exercise and only about 20 percent exercise frequently and strenuously enough to achieve health benefits. Many stop exercising soon after they begin an exercise program, particularly those who are very overweight. The best exercise programs are those that are engaged in regularly, regardless of the activity. A well-rounded program that is easy to follow includes walking and weight training. Having a safe, enjoyable place to walk can make the difference in whether or not someone walks regularly. Weight lifting and stretching exercises at home can also be part of an effective program. Exercise is particularly helpful in reducing stress in midlife. Walking, jogging, cycling, or swimming can release the tension caused by stressors. Learning relaxation techniques can also have healthful benefits. Exercise can be thought of as preventative health care. Promoting exercise for the 78 million "baby boomers" may be one of the best ways to reduce health care costs and improve quality of life (Shure & Cahan, 1998).

According to the Office of Disease Prevention and Health Promotion (2008), the following are exercise guidelines for adults:

- Adults should avoid being inactive. Any activity will result in some health benefits.
- For substantial health benefits, adults should engage in at least 150 minutes per week of moderate intensity exercise OR at least 75 minutes of vigorous intensity aerobic activity. Aerobic activity should occur for at least 10 minutes and preferably spread throughout the week.
- For more extensive health benefits, adults can increase their aerobic activity to 300 minutes per week of moderate intensity OR 150 minutes per week of vigorous intensity aerobic activity.
- Adults should also participate in muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on two or more days per week.

Nutritional concerns: Aging brings about a reduction in the number of calories a person requires (see Table 8.7 for estimated caloric needs in middle-aged adults). Many Americans respond to weight gain by dieting. However, eating less does not typically mean eating right and people often suffer vitamin and mineral deficiencies as a result. All adults need to be especially cognizant of the amount of sodium, sugar, and fat they are ingesting.

Table 8.7 Estimated Calorie Needs per Day, by Age, Sex, & Physical Activity Level

Source: Adapted from 2015-2020 Dietary Guidelines for Americans

[a]Sedentary means a lifestyle that includes only the physical activity of independent living
[b]Moderate activity means a lifestyle that includes physical activity equivalent to walking more than 1.5 to 3 miles per day at 3 or 4 miles per hour, in addition to the activities of independent living.
[c]Active means a lifestyle that includes physical activity of walking more than 3 miles per day at 3 or 4 miles per hour, in addition to the activities of independent living.
[d]Estimates for females do not include women who are pregnant or breastfeeding

Excess Sodium: According to dietary guidelines, adults should consume less than 2,300mg (1 teaspoon) per day of sodium. The American Heart Association (2016) reports that the average sodium intake among Americans is 3440mg per day. Processed foods are the main culprits of excess sodium. High sodium levels in the diet is correlated with increased blood pressure, and its reduction does show corresponding drops in blood pressure. Adults with high blood pressure are strongly encouraged to reduce their sodium intake to 1500mg (U.S. Department of Health and Human Services & U.S. Department of Agriculture (USHHS & USDA), 2015).

Excess Fat: Dietary guidelines also suggests that adults should consume less than 10 percent of calories per day from saturated fats. The American Heart Association (2016) says optimally we should aim for a dietary pattern that achieves 5% to 6% of calories from saturated fat. In a 2000 calorie diet that is about 120 calories from saturated fat. In the average American diet about 34.3% of the diet comes from fat, with 15.0% from saturated fat (Berglund et al., 1999). Diets high in fat not only contribute to weight gain, but have been linked to heart disease, stroke, and high cholesterol.

Added Sugar: According to the recent Dietary Guidelines for Americans (USHHS & USDA, 2015) eating healthy means adults should consume less than 10 percent of calories per day from added sugars. Yet, currently about 15% of the calories in the American adult diet come from added sugars, or about 22 teaspoons of sugar per day (NIH, 2014c). Excess sugar not only contributes to weight gain, but diabetes and other health problems.

Metabolism and Weight Gain: One of the common complaints of midlife adults is weight gain, especially the accumulation of fat in the abdomen, which is often referred to as the middle-aged spread (Lachman, 2004). Men tend to gain fat on their upper abdomen and back, while women tend to gain more fat on their waist and upper arms. Many adults are surprised at this weight gain because their diets have not changed, however, their metabolism has slowed during midlife. ***Metabolism*** *is the process by which the body converts food and drink into energy.* The calories consumed are combined with oxygen to release the energy needed to function (Mayo Clinic, 2014b). People who have more muscle burn more calories, even at rest, and thus have a higher metabolism.

However, as you get older, the amount of muscle decreases. Consequently, fat accounts for more of one's weight in midlife and slows down the amount of calories burned. To compensate, midlife adults have to increase their level of exercise, eat less, and watch their nutrition to maintain their earlier physique.

Figure 8.11: Exercise is Very Important in Middle Age. Source.

Obesity: As discussed in the early adulthood chapter, obesity is a significant health concern for adults throughout the world, and especially America. Obesity rates continue to increase, and being overweight is associated with a myriad of health conditions including diabetes, high blood pressure, and heart disease. New research is now linking obesity to Alzheimer's disease. Chang et al. (2016) found that being overweight in midlife was associated with earlier onset of Alzheimer's disease. The study looked at 1,394 men and women who were part of the Baltimore Longitudinal Study of Aging. Their average age was around 60, and they were followed for 14 years. Results indicated that people with the highest body mass index, or BMI, at age 50 were more likely to develop Alzheimer's disease. In fact, each one-point increase in BMI was associated with getting Alzheimer's six to seven months earlier. Those with the highest BMIs also had more brain changes typical of Alzheimer's, even if they did not have symptoms of the disease. Scientists speculate that fat cells may produce harmful chemicals that promote inflammation in blood vessels throughout the body, including in the brain. The conclusion of the study was that a healthy BMI at midlife may delay the onset of Alzheimer's disease.

Concluding Thoughts: Many of the changes that occur in midlife can be easily compensated for, such as buying glasses, exercising, and watching what one eats. However, the percentage of middle adults who have a significant health concern has increased in the past 15 years.

According to the 2016 United Health Foundation's America's Health Rankings Senior Report, the next generation of seniors will be less healthy than the current seniors (United Health Foundation, 2016). The study compared the health of middle-aged Americans (50-64 years of age) in 2014 to middle-aged Americans in 1999. Results indicated that in the past 15 years the prevalence of diabetes has increased by 55% and the prevalence of obesity has increased by 25%. At the state level, Massachusetts ranked first for healthy seniors, while Louisiana ranked last. Illinois ranked 36th, while Wisconsin scored higher at 13th.

What can we conclude from this information? Lifestyle has a strong impact on the health status of midlife adults, and it becomes important for midlife adults to take preventative measures to enhance physical well-being. Those midlife adults who have a strong sense of mastery and control over their lives, who engage in challenging physical and mental activity, who engage in weight bearing exercise, monitor their nutrition, receive adequate sleep, and make use of social resources are most likely to enjoy a plateau of good health through these years (Lachman, 2004).

3.5: Climacteric

The **climacteric**, *or the midlife transition when fertility declines*, is biologically based but impacted by the environment. During midlife, men may experience a reduction in their ability to reproduce. Women, however, lose their ability to reproduce once they reach menopause.

Female Sexual and Reproductive Health: **Perimenopause** *refers to a period of transition in which a woman's ovaries stop releasing eggs and the level of estrogen and progesterone production decreases.* **Menopause** *is defined as 12 months without menstruation*. The average age of menopause is approximately 51, however, many women begin experiencing symptoms in their 40s. These symptoms occur during perimenopause, which can occur 2 to 8 years before menopause (Huang, 2007). A woman may first begin to notice that her periods are more or less frequent than before. After a year without menstruation, a woman is considered menopausal and no longer capable of reproduction.

Symptoms: The symptoms that occur during perimenopause and menopause are typically caused by the decreased production of estrogen and progesterone (North American Menopause Society, 2016). The shifting hormones can contribute to the inability to fall asleep. Additionally, the declining levels of estrogen may make a woman more susceptible to environmental factors and stressors which disrupt sleep. A **hot flash** *is a surge of adrenaline* that can awaken the brain from sleep. It often produces sweat and a change of temperature that can be disruptive to sleep and comfort levels. Unfortunately, it may take time for adrenaline to recede and allow sleep to occur again (National Sleep Foundation, 2016).

The loss of estrogen also affects vaginal lubrication which diminishes and becomes waterier and can contribute to pain during intercourse. The vaginal wall also becomes thinner, and less elastic. Estrogen is also important for bone formation and growth, and decreased estrogen can cause osteoporosis resulting in decreased bone mass. Depression, irritability, and weight gain are often associated with menopause, but they are not menopausal (Avis, Stellato & Crawford, 2001; Rossi, 2004). Weight gain can occur due to an increase in intra-abdominal fat followed by a loss of lean body mass after menopause (Morita et al., 2006). Consequently, women may need to change their lifestyle to counter any weight gain. Depression and mood swings are more common during menopause in women who have prior histories of these conditions rather than those who have not. Additionally, the incidence of depression and mood swings is not greater among menopausal women than non-menopausal women.

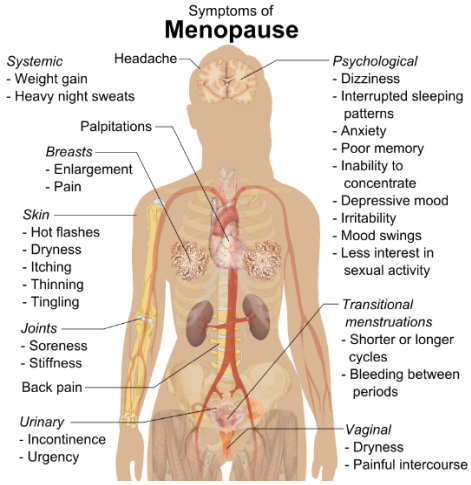

Figure 8.12. Source.

Figure 8.12 identifies symptoms experienced by women during menopause, however, women vary greatly in the extent to which these symptoms are experienced. Most American women go through menopause with few problems (Carroll, 2016). Overall, menopause is not seen as universally distressing (Lachman, 2004).

Hormone Replacement Therapy: Concerns about the effects of hormone replacement has changed the frequency with which estrogen replacement and hormone replacement therapies have been prescribed for menopausal women. Estrogen replacement therapy was once commonly used to treat menopausal symptoms. However, more recently, hormone replacement therapy has been associated with breast cancer, stroke, and the development of blood clots (NIH,
2007). Most women do not have symptoms severe enough to warrant estrogen or hormone replacement therapy. If so, they can be treated with lower doses of estrogen and monitored with more frequent breast and pelvic exams. There are also some other ways to

reduce symptoms. These include avoiding caffeine and alcohol, eating soy, remaining sexually active, practicing relaxation techniques, and using water-based lubricants during intercourse.

Menopause and Ethnicity: In a review of studies that mentioned menopause, symptoms varied greatly across countries, geographic regions, and even across ethnic groups within the same region (Palacios, Henderson, & Siseles, 2010). For example, the Study of Women's Health across the Nation (SWAN) examined 14,906 white, African American, Hispanic, Japanese

American, and Chinese American women's menopausal experiences (Avis et al., 2001). After controlling for age, educational level, general health status, and economic stressors, white women were more likely to disclose symptoms of depression, irritability, forgetfulness, and headaches compared to women in the other racial/ethnic groups. African American women experienced more night sweats, but this varied across research sites. Finally, Chinese American and Japanese American reported fewer menopausal symptoms when compared to the women in the other groups. Overall, the Chinese and Japanese group reported the fewest symptoms, while white women reported more psychosomatic symptoms and African American women reported more vasomotor symptoms.

Figure 8.13. Source.

Cultural Differences: Cultural influences seem to also play a role in the way menopause is experienced. Further, the prevalence of language specific to menopause is an important indicator of the occurrence of menopausal symptoms in a culture. Hmong tribal women living in Australia and Mayan women report that there is no word for "hot flashes" and both groups did not experience these symptoms (Yick-Flanagan, 2013). When asked about physical changes during menopause, the Hmong women reported lighter or no periods. They also reported no emotional symptoms and found the concept of emotional difficulties caused by menopause amusing (Thurston & Vissandjee, 2005). Similarly, a study with First Nation women in Canada found there was no single word for "menopause" in the Oji-Cree or Ojibway languages, with women referring to menopause only as "that time when periods stop" (Madden, St Pierre-Hansen & Kelly, 2010).

While some women focus on menopause as a loss of youth, womanhood, and physical attractiveness, career-oriented women tend to think of menopause as a liberating experience. Japanese women perceive menopause as a transition from motherhood to a more whole person, and they no longer feel obligated to fulfill certain expected social roles, such as the duty to be a mother (Kagawa-Singer, Wu, & Kawanishi, 2002). In India, 94% of women said they welcomed menopause. Aging women gain status and prestige and no longer have to go through self-imposed menstrual restrictions, which may contribute to Indian women’s experiences (Kaur, Walia, & Singh, 2004). Overall, menopause signifies many different things to women around the world and there is no typical experience. Further, normalizing rather than pathologizing menopause is supported by research and women’s experiences.

Male Sexual and Reproductive Health: Although males can continue to father children throughout middle adulthood, erectile dysfunction (ED) becomes more common. Erectile dysfunction refers to the inability to achieve an erection or an inconsistent ability to achieve an erection (Swierzewski, 2015). Intermittent ED affects as many as 50% of men between the ages of 40 and 70. About 30 million men in the United States experience chronic ED, and the percentages increase with age. Approximately 4% of men in their 40s, 17% of men in their 60s, and 47% of men older than 75 experience chronic ED.

Causes for ED are primarily due to medical conditions, including diabetes, kidney disease, alcoholism, and atherosclerosis (build-up of plaque in the arteries). Plaque is made up of fat, cholesterol, calcium and other substances found in the blood. Over time plaque builds up, hardens, and restricts the blood flow in the arteries (NIH, 2014d). This build-up limits the flow of oxygenated blood to organs and the penis. Overall, diseases account for 70% of chronic ED, while psychological factors, such as stress, depression and anxiety account for 10%-20% of all cases. Many of these causes are treatable, and ED is not an inevitable result of aging.

Figure 8.14: Medical Check-ups are Important for Men. Source.

Men during middle adulthood may also experience prostate enlargement, which can interfere with urination, and deficient testosterone levels which decline throughout adulthood, but especially after age 50. If testosterone levels decline significantly, it is referred to as andropause or late-onset hypogonadism. Identifying whether testosterone levels are low is difficult because individual blood levels vary greatly. Low testosterone is not a concern unless it accompanied by negative symptoms such as low sex drive, ED, fatigue, loss of muscle, loss of body hair, or breast enlargement. Low testosterone is also associated with medical conditions, such as diabetes, obesity, high blood pressure, and testicular cancer. The effectiveness of supplemental testosterone is mixed, and long term testosterone replacement therapy for men can increase the risk of prostate cancer, blood clots, heart attack and stroke (WebMD, 2016). Most men with low testosterone do not have related problems (Berkeley Wellness, 2011).

The Climacteric and Sexuality

Sexuality is an important part of people's lives at any age, and many older adults are very interested in staying sexually active (Dimah & Dimah, 2004). According to the National Survey of Sexual Health and Behavior (NSSHB) (Center for Sexual Health Promotion, 2010), 74% of males and 70% of females aged 40-49 engaged in vaginal intercourse during the previous year, while 58% of males and 51% of females aged 50-59 did so.


Figure 8.15. Source.

Despite these percentages indicating that middle adults are sexually active, age-related physical changes can affect sexual functioning. For women, decreased sexual desire and pain during vaginal intercourse because of menopausal changes have been identified (Schick et al., 2010). A woman may also notice less vaginal lubrication during arousal which can affect overall pleasure (Carroll, 2016). Men may require more direct stimulation for an erection and the erection may be delayed or less firm (Carroll, 2016). As previously discussed men may experience erectile dysfunction or experience a medical conditions (such as diabetes or heart disease) that impact sexual functioning. Couples can continue to enjoy physical intimacy and may engage in more foreplay, oral sex, and other forms of sexual expression rather than focusing as much on sexual intercourse.

Risk of pregnancy continues until a woman has been without menstruation for at least 12 months, however, and couples should continue to use contraception. People continue to be at risk of contracting sexually transmitted infections, such as genital herpes, chlamydia, and genital warts. In 2014, 16.7% of the country’s new HIV diagnoses (7,391 of 44,071) were among people 50 and older, according to the Centers for Disease Control and Prevention (2014e). This was an increase from 15.4% in 2005. Practicing safe sex is important at any age, but unfortunately adults over the age of 40 have the lowest rates of condom use (Center for Sexual Health Promotion, 2010). This low rate of condom use suggests the need to enhance education efforts for older individuals regarding STI risks and prevention. Hopefully, when partners understand how aging affects sexual expression, they will be less likely to misinterpret these changes as a lack of sexual interest or displeasure in the partner and more able to continue to have satisfying and safe sexual relationships.

- **8.5: Climacteric** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

3.6: Brain Functioning

The brain at midlife has been shown to not only maintain many of the abilities of young adults, but also gain new ones. Some individuals in middle age actually have improved cognitive functioning (Phillips, 2011). The brain continues to demonstrate plasticity and rewires itself in middle age based on experiences. Research has demonstrated that older adults use more of their brains than younger adults. In fact, older adults who perform the best on tasks are more likely to demonstrate bilateralization than those who perform worst. Additionally, the amount of white matter in the brain, which is responsible for forming connections among neurons, increases into the 50s before it declines.

Emotionally, the middle aged brain is calmer, less neurotic, more capable of managing emotions, and better able to negotiate social situations (Phillips, 2011). Older adults tend to focus more on positive information and less on negative information than those younger. In fact, they also remember positive images better than those younger. Additionally, the older adult's amygdala responds less to negative stimuli. Lastly, adults in middle adulthood make better financial decisions, which seems to peak at age 53, and show better economic understanding. Although greater cognitive variability occurs among middle adults when compared to those both younger and older, those in midlife with cognitive improvements tend to be more physically, cognitively, and socially active.

Learning Objectives: Cognitive Development in Middle Adulthood

- Describe crystalized versus fluid intelligence
- Describe research from the Seattle Longitudinal Study
- Explain the importance of flow to creativity and life satisfaction
- Describe how middle adults are turning to college for advanced training
- Describe the difference between an expert and a novice
- Describe the changes in the U.S. work force, especially among middle adults
- Explain the importance of leisure to mental health and a successful retirement

Crystallized versus Fluid Intelligence

Intelligence is influenced by heredity, culture, social contexts, personal choices, and certainly age. One distinction in specific intelligences noted in adulthood, is between **fluid intelligence**, *which refers to the capacity to learn new ways of solving problems and performing activities quickly and abstractly*, and **crystallized intelligence**, *which refers to the accumulated knowledge of the world we have acquired throughout our lives* (Salthouse, 2004). These intelligences are distinct, and crystallized intelligence increases with age, while fluid intelligence tends to decrease with age (Horn, Donaldson, & Engstrom, 1981; Salthouse, 2004).

Research demonstrates that older adults have more crystallized intelligence as reflected in semantic knowledge, vocabulary, and language. As a result, adults generally outperform younger people on measures of history, geography, and even on crossword puzzles, where this information is useful (Salthouse, 2004). It is this superior knowledge, combined with a slower and more complete processing style, along with a more sophisticated understanding of the workings of the world around them, that gives older adults the advantage of "wisdom" over the advantages of fluid intelligence which favor the young (Baltes, Staudinger, & Lindenberger, 1999; Scheibe, Kunzmann, & Baltes, 2009).

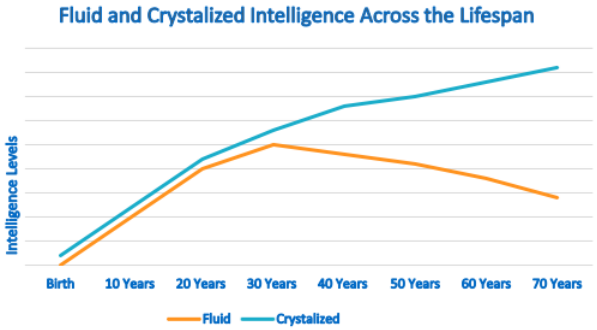

Figure 8.16. Adapted from Horn, Donaldson and Engstrom (1981)

The differential changes in crystallized versus fluid intelligence help explain why older adults do not necessarily show poorer performance on tasks that also require experience (i.e., crystallized intelligence), although they show poorer memory overall. A young chess player may think more quickly, for instance, but a more experienced chess player has more knowledge to draw on.

Seattle Longitudinal Study: The Seattle Longitudinal Study has tracked the cognitive abilities of adults since 1956. Every seven years the current participants are evaluated and new individuals are also added. Approximately 6000 people have participated thus far, and 26 people from the original group are still in the study today. Current results demonstrate that middle-aged adults perform better on four out of six cognitive tasks than those same individuals did when they were young adults. Verbal memory, spatial skills, inductive reasoning (generalizing from particular examples), and vocabulary increase with age until ones '70s (Schaie, 2005; Willis & Schaie, 1999). However, numerical computation and perceptual speed decline in middle and late adulthood (see Figure 8.17).

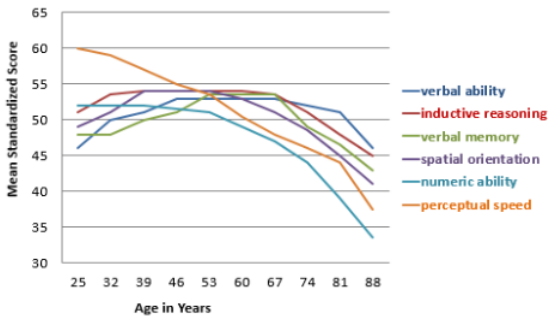

Figure 8.17: Seattle Longitudinal Study ages 25 to 88

Cognitive skills in the aging brain have been studied extensively in pilots, and similar to the Seattle Longitudinal Study results, older pilots show declines in processing speed and memory capacity, but their overall performance seems to remain intact. According to Phillips (2011) researchers tested pilots age 40 to 69 as they performed on flight simulators. Older pilots took longer to learn to use the simulators, but performed better than younger pilots at avoiding collisions.

Flow *is the mental state of being completely present and fully absorbed in a task* (Csikszentmihalyi, 1990). When in a state of flow, the individual is able to block outside distractions and the mind is fully open to producing. Additionally, the person is achieving great joy or intellectual satisfaction from the activity and accomplishing a goal. Further, when in a state of flow, the individual is not concerned with extrinsic rewards. Csikszentmihalyi (1996) used his theory of flow to research how some people exhibit high levels of creativity as he believed that a state of flow is an important factor to creativity (Kaufman & Gregoire, 2016). Other characteristics of creative people identified by Csikszentmihalyi (1996) include curiosity and drive, a value for intellectual endeavors, and an ability to lose our sense of self and feel a part of something greater. In addition, he believed that the tortured creative person was a myth and that creative people were very happy with their lives. According to Nakamura and Csikszentmihalyi (2002) people describe flow as the height of enjoyment. The more they experience it, the more they judge their lives to be gratifying. The qualities that allow for flow are well-developed in middle adulthood.

Tacit knowledge *is knowledge that is pragmatic or practical and learned through experience rather than explicitly taught*, and it also increases with age (Hedlund, Antonakis, & Sternberg, 2002). Tacit knowledge might be thought of as "know-how" or "professional instinct." It is referred to as tacit because it cannot be codified or written down. It does not involve academic knowledge, rather it involves being able to use skills and to problem-solve in practical ways. Tacit knowledge can be understood in the workplace and used by blue collar workers, such as carpenters, chefs, and hair dressers.

3.7: Middle Adults Returning to Education

Midlife adults in the United States often find themselves in college classrooms. In fact, the rate of enrollment for older Americans entering college, often part-time or in the evenings, is rising faster than traditionally aged students. Students over age 35, accounted for 17% of all college and graduate students in 2009, and are expected to comprise 19% of that total by 2020 (Holland, 2014). In some cases, older students are developing skills and expertise in order to launch a second career, or to take their career in a new direction. Whether they enroll in school to sharpen particular skills, to retool and reenter the workplace, or to pursue interests that have previously been neglected, older students tend to approach the learning process differently than younger college students (Knowles, Holton, & Swanson, 1998).

Figure 8.18: Middle adults in college. Source.

The mechanics of cognition, such as working memory and speed of processing, gradually decline with age. However, they can be easily compensated for through the use of higher order cognitive skills, such as forming strategies to enhance memory or summarizing and comparing ideas rather than relying on rote memorization (Lachman, 2004). Although older students may take a bit longer to learn material, they are less likely to forget it quickly. Adult learners tend to look for relevance and meaning when learning information. Older adults have the hardest time learning material that is meaningless or unfamiliar. They are more likely to ask themselves, "Why is this important?" when being introduced to information or when trying to memorize concepts or

facts. Older adults are more task-oriented learners and want to organize their activity around problem-solving. However, these differences may decline as new generations, equipped with higher levels of education, begin to enter midlife.

To address the educational needs of those over 50, The American Association of Community Colleges (2016) developed the **Plus 50 Initiative** *that assists community college in creating or expanding programs that focus on workforce training and new careers for the plus-50 population*. Since 2008 the program has provided grants for programs to 138 community colleges affecting over 37,000 students. The participating colleges offer workforce training programs that prepare 50 plus adults for careers in such fields as early childhood educators, certified nursing assistants, substance abuse counselors, adult basic education instructors, and human resources specialists. These training programs are especially beneficial as 80% of people over the age of 50 say they will retire later in life than their parents or continue to work in retirement, including in a new field.

3.8: Gaining Expertise - The Novice and the Expert

Expertise refers to specialized skills and knowledge that pertain to a particular topic or activity. In contrast, a **novice** is someone who has limited experiences with a particular task. Everyone develops some level of "selective" expertise in things that are personally meaningful to them, such as making bread, quilting, computer programming, or diagnosing illness. Expert thought is often characterized as intuitive, automatic, strategic, and flexible.

- **Intuitive:** Novices follow particular steps and rules when problem solving, whereas experts can call upon a vast amount of knowledge and past experience. As a result, their actions appear more intuitive than formulaic. A novice cook may slavishly follow the recipe step by step, while a chef may glance at recipes for ideas and then follow her own procedure.
- **Automatic:** Complex thoughts and actions become more routine for experts. Their reactions appear instinctive over time, and this is because expertise allows us to process information faster and more effectively (Crawford & Channon, 2002).
- **Strategic:** Experts have more effective strategies than non-experts. For instance, while both skilled and novice doctors generate several hypotheses within minutes of an encounter with a patient, the more skilled clinicians' conclusions are likely to be more accurate. In other words, they generate better hypotheses than the novice. This is because they are able to discount misleading symptoms and other distractors and hone in on the most likely problem the patient is experiencing (Norman, 2005). Consider how your note taking skills may have changed after being in school over a number of years. Chances are you do not write down everything the instructor says, but the more central ideas. You may have even come up with your own short forms for commonly mentioned words in a course, allowing you to take down notes faster and more efficiently than someone who may be a novice academic note taker.
- **Flexible:** Experts in all fields are more curious and creative; they enjoy a challenge and experiment with new ideas or procedures. The only way for experts to grow in their knowledge is to take on more challenging, rather than routine tasks.

Expertise takes time. It is a long-process resulting from experience and practice (Ericsson, Feltovich, & Prietula, 2006). Middle-aged adults, with their store of knowledge and experience, are likely to find that when faced with a problem they have likely faced something similar before. This allows them to ignore the irrelevant and focus on the important aspects of the issue. Expertise is one reason why many people often reach the top of their career in middle adulthood.

However, expertise cannot fully make-up for all losses in general cognitive functioning as we age. The superior performance of older adults in comparison to younger novices appears to be task specific (Charness & Krampe, 2006). As we age, we also need to be more deliberate in our practice of skills in order to maintain them. Charness and Krampe (2006) in their review of the literature on aging and expertise, also note that the rate of return for our effort diminishes as we age. In other words, increasing practice does not recoup the same advances in older adults as similar efforts do at younger ages.

3.9: Work and Leisure at Midlife

Work

Who is the U.S. workforce? The civilian, non-institutionalized workforce; that is the population of those aged 16 and older, who are employed has steadily declined since it reached its peak in the late 1990s, when 67% of the civilian workforce population was employed. In 2012 the rate had dropped to 64% and by 2022 it is projected to decline to 62%. The U.S. population is expected to grow more slowly based on census projections for the next few years. Those new entrants to the labor force, adults age 16 to 24, are the only population of adults that will shrink in size over the next few years by nearly half a percent, while those age 55 and up will grow by 2.3% over current rates, and those age 65 to 74 will grow by nearly 4% (Monthly Labor Review (MLR), 2013). In 1992, 26% of the population was 55+, by 2022 it is projected to be 38%. Table 8.8 shows the rates of employment by age. In 2002, baby boomers were between the ages of 38 to 56, the prime employment group. In 2012, the youngest baby boomers were 48 and the oldest had just retired (age 66). These changes might explain some of the steady decline in work participation as this large population cohort ages out of the workforce.

In 2012, 53% of the workforce was male. For both genders and for most age groups the rate of participation in the labor force has declined from 2002 to 2012, and it is projected to decline further by 2022. The exception is among the older middle-age groups (the baby boomers), and especially for women 55 and older.

Table 8.8: Percentage of the non-institutionalized civilian workforce employed by gender & age.

	Males			Females		
	2002	**2012**	**2022***	**2002**	**2012**	**2022**
16-19	47.5	34	27.8	47.3	34.6	26.7
20-24	80.7	74.5	69.9	72.1	67.4	64.7
25-34	92.4	89.5	88.8	75.1	74.1	73.4
35-44	92.1	90.7	90.4	76.4	74.8	73.3
45-54	88.5	86.1	85.1	76	74.7	74.9
55-59	78	78	77.8	63.8	67.3	73.3
60-64	57.6	60.5	64.3	44.1	50.4	55.6
16+ totals	74.1	70.2	67.6	59.6	57.7	56

**Projected rates of employment (adapted from Monthly Labor Review, 2013).*

Hispanic males have the highest rate of participation in the labor force. In 2012, 76% of Hispanic males, compared with 71% of White, 72% of Asian, and 64% of Black men ages 16 or older were employed. Among women, Black women were more likely to be participating in the workforce (58%) compared with almost 57% of Hispanic and Asian, and 55% of White females. The rates for all racial and ethnic groups are expected to decline by 2022 (MLR, 2013).

Climate in the Workplace for Middle-aged Adults: A number of studies have found that job satisfaction tends to peak in middle adulthood (Besen, Matz-Costa, Brown, Smyer, & Pitt- Catsouphers, 2013; Easterlin, 2006). This satisfaction stems from not only higher wages, but often greater involvement in decisions that affect the workplace as they move from worker to supervisor or manager. Job satisfaction is also influenced by being able to do the job well, and after years of experience at a job many people are more effective and productive. Another reason for this peak in job satisfaction is that at midlife many adults lower their expectations and goals (Tangri, Thomas, & Mednick, 2003). Middle-aged employees may realize they have reached the highest they are likely to in their career. This satisfaction at work translates into lower absenteeism, greater productivity, and less job hopping in comparison to younger adults (Easterlin, 2006).

However, not all middle-aged adults are happy in the work place. Women may find themselves up against the **glass ceiling**, *organizational discrimination in the workplace that limits the career advancement of women*. This may explain why females employed at large corporations are twice as likely to quit their jobs as are men (Barreto, Ryan, & Schmitt, 2009). Another problem older workers may encounter is job **burnout**, *becoming disillusioned and frustrated at work*. American workers may experience

more burnout than do workers in many other developed nations, because most developed nations guarantee by law a set number of paid vacation days (International Labour Organization, ILO, 2011), the United States does not (U.S. Department of Labor, 2016).

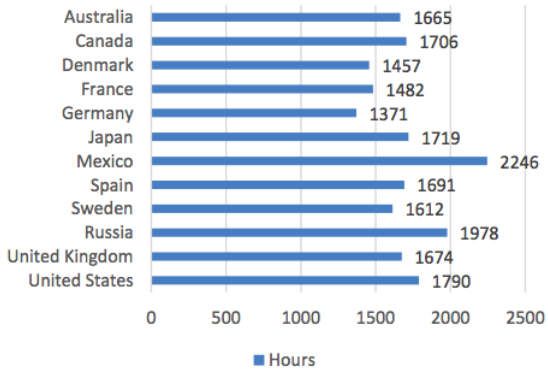

Figure 8.19: Average Annual Hours Actually Worked per Worker

Not all employees are covered under overtime pay laws (U.S. Department of Labor, 2016). This is important when you considered that the 40-hour work week is a myth for most Americans. Only 4 in 10 U.S. workers work the typical 40-hour work week. The average work week for many is almost a full day longer (47 hours), with 39% working 50 or more hours per week (Saad, 2014). In comparison to workers in many other developed nations, American workers work more hours per year (Organisation for Economic Cooperation and Development, OECD, 2016). As can be seen in Figure 8.19, Americans work more hours than most European nations, especially western and northern Europe, although they work less hours than workers in other nations, especially Mexico.

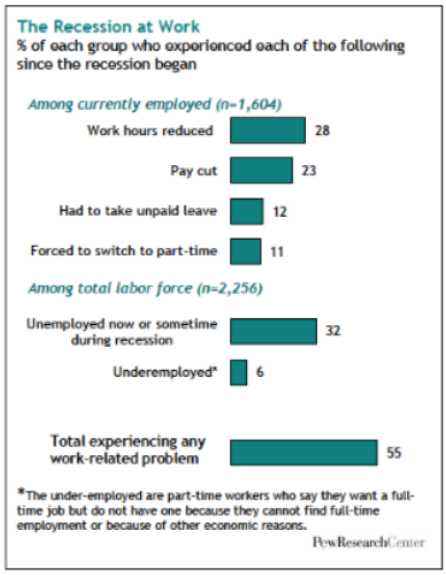

Figure 8.20.

Challenges in the Workplace for Middle-aged Adults: In recent years middle aged adults have been challenged by economic downturns, starting in 2001, and again in 2008. Fifty-five percent of adults reported some problems in the workplace, such as fewer hours, pay-cuts, having to switch to part-time, etc., during the most recent economic recession (see Figure 8.20, Pew Research Center, 2010a). While young adults took the biggest hit in terms of levels of unemployment, middle-aged adults also saw their overall financial resources suffer as their retirement nest eggs disappeared and house values shrank, while foreclosures increased (Pew Research Center, 2010b). Not surprisingly this age group reported that the recession hit them worse than did other age groups, especially those age 50-64. Middle aged adults who find themselves unemployed are likely to remain unemployed longer than those in early adulthood (U.S. Government Accountability Office, 2012). In the eyes of employers, it may be more cost effective to hire a young adult, despite their limited experience, as they would be starting out at lower levels of the pay scale. In addition, hiring someone who is 25 and has many years of work ahead of them versus someone who is 55 and will likely retire in 10 years may also be part of the decision to hire a younger worker (Lachman, 2004). American workers are also competing with global markets and changes in technology. Those who are able to keep up with all these changes, or are willing to uproot and move around the country

or even the world have a better chance of finding work. The decision to move may be easier for people who are younger and have fewer obligations to others.

Leisure

As most developed nations restrict the number of hours an employer can demand that an employee work per week, and require employers to offer vacation time, what do middle aged adults do with their *time off from work and duties*, referred to as **leisure**? Around the world the most common leisure activity in both early and middle adulthood is watching television (Marketing Charts Staff, 2014). On average, middle aged adults spend 2-3 hours per day watching TV (Gripsrud, 2007) and watching TV accounts for more than half of all the leisure time (see Figure 8.21).

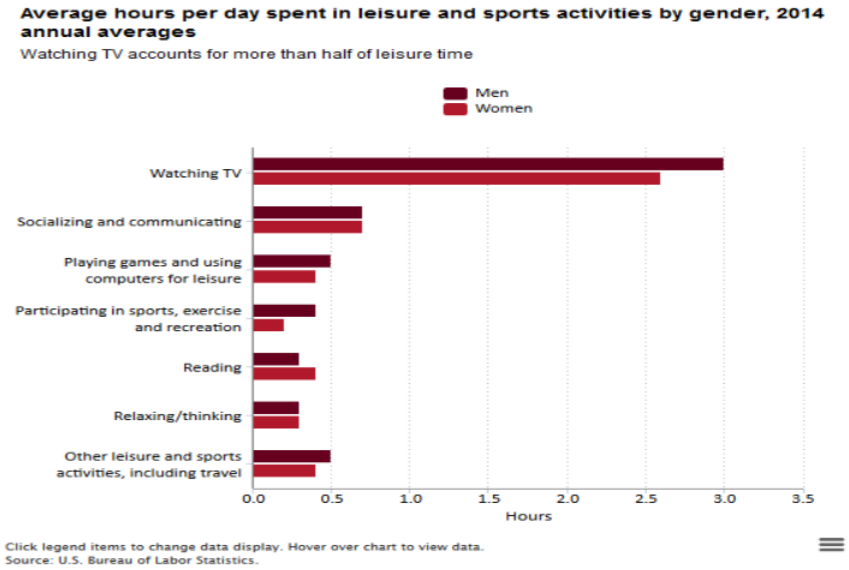

Figure 8.21.

In the United States, men spend about 5 hours more per week in leisure activities, especially on weekends, than do women (Drake, 2013; U.S. Bureau of Labor Statistics, 2016). The leisure gap between mothers and fathers is slightly smaller, about 3 hours a week, than among those without children under age 18 (Drake, 2013). Those age 35-44 spend less time on leisure activities than any other age group, 15 or older (U.S. Bureau of Labor Statistics, 2016). This is not surprising as this age group are more likely to be parents and still working up the ladder of their career, so they may feel they have less time for leisure.

Americans have less leisure time than people in many other developed nations. As you read earlier, there are no laws in many job sectors guaranteeing paid vacation time in the United States (see Figure 8.22). Ray, Sanes and Schmitt (2013) report that several other nations also provide additional time off for young and older workers and for shift workers. In the United States, those in higher paying jobs and jobs covered by a union contract are more likely to have paid vacation time and holidays (Ray & Schmitt, 2007).

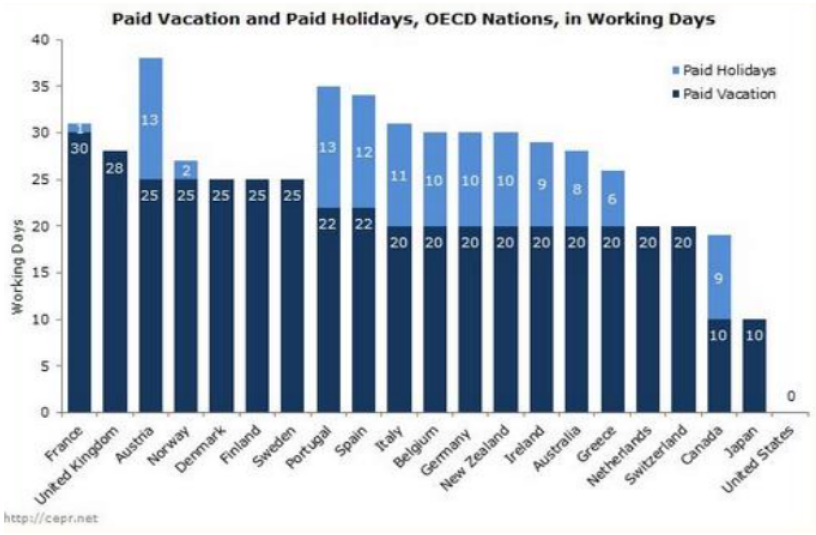

Figure 8.22 Legally Mandated Time Off

But do U.S. workers take their time off? According to Project Time-Off (2016), 55% of U.S. workers in 2015 did not take all of their paid vacation and holiday leave. A large percentage of this leave is lost. It cannot be rolled-over into the next year or paid out. A total of 658 million vacation days, or an average of 2 vacation days per worker was lost in 2015. The reasons most often given for not taking time off was worry that there would be a mountain of work to return to (40%), concern that no one else could do the job (35%), not being able to afford a vacation (33%), feeling it was harder to take time away when you have or are moving up in the company (33%), and not wanting to seem replaceable (22%). Since 2000, more American workers are willing to work for free rather than take the time that is allowed to them. A lack of support from their boss and even their colleagues to take a vacation is often a driving force in deciding to forgo time off. In fact, 80% of the respondents to the survey above said they would take time away if they felt they had support from their boss. Two-thirds reported that they hear nothing, mixed messages, or discouraging remarks about taking their time off. Almost a third (31%) feel they should contact their workplace, even while on vacation.

The benefits of taking time away from work: Several studies have noted the benefits of taking time away from work. It reduces job stress burnout (Nimrod, Kleiber, & Berdychevesky, 2012), improves both mental health (Qian, Yarnal, & Almeida, 2013) and physical health (Stern & Konno, 2009), especially if that leisure time also includes moderate physical activity (Lee et al., 2015). Leisure activities can also improve productivity and job satisfaction (Kühnel & Sonnentag, 2011) and help adults deal with balancing family and work obligations (Lee, et al., 2015).

3.10: Psychosocial Development in Middle Adulthood

Learning Objectives: Psychosocial Development in Middle Adulthood

- *Explain the controversy surrounding the concept of a midlife crisis*
- *Explain the sources of stress confronting adults in midlife and the strategies to cope*
- *Summarize Erikson's seventh psychosocial task of generativity vs stagnation*
- *Describe the relationships middle-aged adults have with their children, parents, and other family members*
- *Describe singlehood, marriage, divorce, and remarriage at midlife*
- *Describe the contemporary roles of grandparents*
- *Describe friendships at midlife*
- *Explain how women are uniquely affected at midlife*
- *Explain the role of religion at midlife*

There are many socioemotional changes that occur in how middle-aged adults perceive themselves. While people in their early 20s may emphasize how old they are to gain respect or to be viewed as experienced, by the time people reach their 40s they tend to emphasize how young they are. For instance, few 40 year olds cut each other down for being so young stating: "You're only 43? I'm 48!" A previous focus on the future gives way to an emphasis on the present. Neugarten (1968) notes that in midlife, people no longer think of their lives in terms of how long they have lived. Rather, life is thought of in terms of how many years are left.

Midlife Crisis?

In 1978 Daniel Levinson published a book entitled *The Seasons of a Man's Life* in which he presented a theory of development in adulthood. Levinson's work was based on in-depth interviews with 40 men between the ages of 35-45. Levinson (1978) indicated that adults go through stages and have an image of the future that motivates them. This image is called "the dream" and for the men interviewed, it was a dream of how their career paths would progress and where they would be at midlife. According to Levinson the midlife transition (40-45) was a time of reevaluating previous commitments; making dramatic changes if necessary; giving expression to previously ignored talents or aspirations; and feeling more of a sense of urgency about life and its meaning. By the time the men entered middle adulthood (45-50), they believed they committed to the new choices made and placed one's energies into these commitments.

Levinson believed that a midlife crisis was a normal part of development as the person is more aware of how much time has gone by and how much time is left. The future focus of early adulthood gives way to an emphasis on the present in midlife, and the men interviewed had difficulty reconciling the "dream" they held about the future with the reality they experienced. Consequently, they felt impatient and were no longer willing to postpone the things they had always wanted to do. Although Levinson believed his research demonstrated the existence of a midlife crisis, his study has been criticized for his research methods, including small sample size, similar ages, and concerns about a cohort effect. In fact, other research does not support his theory of the midlife crisis.

Vaillant (2012) believed that it was the cross-sectional design of Levinson's study that led to the erroneous conclusion of an inevitable midlife crisis. Instead, he believed that longitudinal studies of an individual's entire life was needed to determine the factors associated with optimum health and potential. Vaillant was one of the main researchers in the 75 year-old Harvard Study of Adult Development, and he considered a midlife crisis to be a rare occurrence among the participants (Vaillant, 1977). Additional findings of this longitudinal study will be discussed in the next chapter on late adulthood.

Most research suggests that most people in the United States today do not experience a midlife crisis. Results of a 10-year study conducted by the MacArthur Foundation Research Network on Successful Midlife Development, based on telephone interviews with over 3,000 midlife adults, suggest that the years between 40 and 60 are ones marked by a sense of well-being. Only 23% of their participants reported experiencing a midlife crisis. The crisis tended to occur among the highly educated and was triggered by a major life event rather than out of a fear of aging (Research Network on Successful Midlife Development, 2007).

- **8.10: Psychosocial Development in Middle Adulthood** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

3.11: Stress

We all know that stress plays a major role in our mental and physical health, but what exactly is stress? The term **stress** *is defined as* pattern of physical and psychological responses in an organism after it perceives a a threatening event that disturbs its homeostasis and taxes its abilities to cope with the event (Hooker & Pressman, 2016). Stress was originally derived from the field of mechanics where it is used to describe materials under pressure. The word was first used in a *psychological* manner by researcher Hans Selye, who was examining the effect of an ovarian hormone that he thought caused sickness in a sample of rats. Surprisingly, he noticed that almost any injected hormone produced this same sickness. He smartly realized that it was not the hormone under investigation that was causing these problems, but instead the aversive experience of being handled and injected by researchers led to high physiological arousal, and eventually to health problems like ulcers.

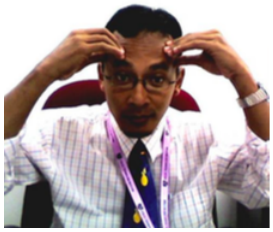

Figure 8.23 Are you Stressed? Source.

Selye (1946) coined the term **stressor** *to label a stimulus that had this effect on the body (that is, causing stress).* He developed a model of the stress response called the **General Adaptation Syndrome**, *which is a three-phase model of stress, which includes a mobilization of physiological resources phase, a coping phase, and an exhaustion phase (i.e., when an organism fails to cope with the stress adequately and depletes its resources).* Figure 8.24 illustrates the General Adaptation Syndrome.

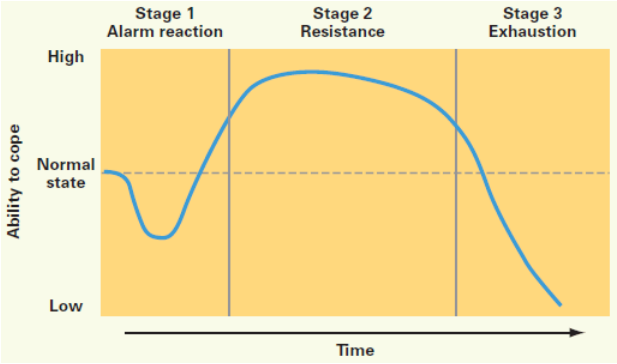

Figure 8.24: General Adaptation Syndrome. Source.

Psychologists have studied stress in a myriad of ways, and it is not just major life stressor (e.g., a family death, a natural disaster) that increase the likelihood of getting sick. Stress can result from negative events, chronically difficult situations, a biological fight-or-flight response, and as clinical illness, such as post-traumatic stress disorder (PTSD). Even small daily hassles, like getting stuck in traffic or fighting with your friend, can raise your blood pressure, alter your stress hormones, and even suppress your immune system function (DeLongis, Folkman, & Lazarus, 1988; Twisk, Snel, Kemper, & van Machelen, 1999). Stress continues to be one of the most important and well-studied psychological correlates of illness, because excessive stress causes potentially damaging wear and tear on the body and can influence almost any disease process.

Dispositions and Stress: Negative dispositions and personality traits have been strongly tied to an array of health risks. One of the earliest negative trait-to-health connections was discovered in the 1950s by two cardiologists. They made the interesting discovery that there were common behavioral and psychological patterns among their heart patients that were not present in other patient samples. *This pattern included being competitive, impatient, hostile, and time urgent.* They labeled it **Type A Behavior**. Importantly, it was found to be associated with *double* the risk of heart disease as compared with **Type B Behavior** *(absence of Type A behaviors)* (Friedman & Rosenman, 1959). Since the 1950s, researchers have discovered that it is the hostility and competitiveness components of Type A that are especially harmful to heart health (Iribarren et al., 2000; Matthews, Glass, Rosenman, & Bortner, 1977; Miller, Smith, Turner, Guijarro, & Hallet, 1996). Hostile individuals are quick to get upset, and this angry arousal can damage the arteries of the heart. In addition, given their negative personality style, hostile people often lack a heath-protective supportive social network.

Figure 8.25: Social Support is important for handling stress. Source.

Social Relationships and Stress: Research has shown that the impact of social isolation on our risk for disease and death is similar in magnitude to the risk associated with smoking regularly (Holt-Lunstad, Smith, & Layton, 2010; House, Landis, & Umberson, 1988). In fact, the importance of social relationships for our health is so significant that some scientists believe our body has developed a physiological system that encourages us to seek out our relationships, especially in times of stress (Taylor et al., 2000). **Social integration** *is the concept used to describe the number of social roles that you have* (Cohen & Willis, 1985). For example, you might be a daughter, a basketball team member, a Humane Society volunteer, a coworker, and a student. Maintaining these different roles can improve your health via encouragement from those around you to maintain a healthy lifestyle. Those in your social network might also provide you with social support (e.g., when you are under stress). This support might include emotional help (e.g., a hug when you need it), tangible help (e.g., lending you money), or advice. By helping to improve health behaviors and reduce stress, social relationships can have a powerful, protective impact on health, and in some cases, might even help people with serious illnesses stay alive longer (Spiegel, Kraemer, Bloom, & Gottheil, 1989).

Caregiving and Stress: A disabled child, spouse, parent, or other family member is part of the lives of some midlife adults. According to the National Alliance for Caregiving (2015), 40 million Americans provide unpaid caregiving. The typical caregiver is a 49 year-old female currently caring for a 69 year-old female who needs care because of a long-term physical condition. Looking more closely at the age of the recipient of caregiving, the typical caregiver for those 18-49 years of age is a female (61%) caring mostly for her own child (32%) followed by a spouse or partner (17%). When looking at older recipients (50+) who receive care, the typical caregiver is female (60%) caring for a parent (47%) or spouse (10%).

Caregiving places enormous stress on the caregiver. Caregiving for a young or adult child with special needs was associated with poorer global health and more physical symptoms among both fathers and mothers (Seltzer, Floyd, Song, Greenberg, & Hong, 2011). Marital relationships are also a factor in how the caring affects stress and chronic conditions. Fathers who were caregivers identified more chronic health conditions than non-caregiving fathers, regardless of marital quality. In contrast, caregiving mothers reported higher levels of chronic conditions when they reported a high level of marital strain (Kang & Marks, 2014). Age can also make a difference in how one is affected by the stress of caring for a child with special needs. Using data from the Study of Midlife in the Unites States, Ha, Hong, Seltzer and Greenberg (2008) found that older parents were significantly less likely to experience the negative effects of having a disabled child than younger parents. They concluded that an age-related weakening of the stress occurred over time. This follows with the greater emotional stability noted at midlife.

Currently 25% of adult children, mainly baby boomers, provide personal or financial care to a parent (Metlife, 2011). Daughters are more likely to provide basic care and sons are more likely to provide financial assistance. Adult children 50+ who work and provide care to a parent are more likely to have fair or poor health when compared to those who do not provide care. Some adult children choose to leave the work force, however, the cost of leaving the work force early to care for a parent is high. For females, lost wages and social security benefits equals $324,044, while for men it equals $283,716 (Metlife, 2011). This loss can jeopardize the adult child's financial future. Consequently, there is a need for greater workplace flexibility for working caregivers.

Spousal Care: Certainly caring for a disabled spouse would be a difficult experience that could negatively affect one's health. However, research indicates that there can be positive health effect for caring for a disabled spouse. Beach, Schulz, Yee and Jackson (2000) evaluated health related outcomes in four groups: Spouses with no caregiving needed (Group 1), living with a disabled spouse but not providing care (Group 2), living with a disabled spouse and providing care (Group 3), and helping a disabled spouse while reporting caregiver strain, including elevated levels of emotional and physical stress (Group 4). Not surprisingly, the participants in Group 4 were the least healthy and identified poorer perceived health, an increase in health-risk behaviors, and an increase in anxiety and depression symptoms. However, those in Group 3 who provided care for a spouse, but did

not identify caregiver strain, actually identified decreased levels of anxiety and depression compared to Group 2 and were actually similar to those in Group 1. It appears that greater caregiving involvement was related to better mental health as long as the caregiving spouse did not feel strain. The beneficial effects of helping identified by the participants were consistent with previous research (Krause, Herzog, & Baker, 1992; Schulz et al., 1997).

Figure 8.26: Caregiving for females is associated with greater stress. Source.

When caring for a disabled spouse, gender differences have also been identified. Female caregivers of a spouse with dementia experienced more burden, had poorer mental and physical health, exhibited increased
depressive symptomatology, took part in fewer health-promoting activities, and received fewer hours of help than male caregivers (Gibbons et al., 2014). This recent study was consistent with previous research findings that women experience more caregiving burden than men, despite similar caregiving situations (Torti, Gwyther, Reed, Friedman, & Schulman, 2004; Yeager, Hyer, Hobbs, & Coyne, 2010). Explanations for why women do not use more external support, which may alleviate some of the burden, include women's expectations that they should assume caregiving roles (Torti et al, 2004) and their concerns with the opinions of others (Arai, Sugiura, Miura, Washio, & Kudo, 2000). Also contributing to women's poorer caregiving outcomes is that disabled males are more aggressive than females, especially males with dementia who display more physical and sexual aggression toward their caregivers (Eastley & Wilcock, 1997; Zuidema, de Jonghe, Verhey, & Koopmans, 2009). Female caregivers are certainly at risk for negative consequences of caregiving, and greater support needs to be available to them.

Stress Management: About 20% of Americans report having stress, with 18–33 year-olds reporting the highest levels (American Psychological Association, 2012). Given that the sources of our stress are often difficult to change (e.g., personal finances, current job), a number of interventions have been designed to help reduce the aversive responses to duress, especially related to health. For example, relaxation activities and forms of meditation are techniques that allow individuals to reduce their stress via breathing exercises, muscle relaxation, and mental imagery. Physiological arousal from stress can also be reduced via **biofeedback,** *a technique where the individual is shown bodily information that is not normally available to them (e.g., heart rate), and then taught strategies to alter this signal.* This type of intervention has even shown promise in reducing heart and hypertension risk, as well as other serious conditions (Moravec, 2008; Patel, Marmot, & Terry, 1981). Reducing stress does not have to be complicated. For example, exercise is a great stress reduction activity (Salmon, 2001) that has a myriad of health benefits.

Figure 8.27: How do you cope with stress when stuck in traffic? Source.

Coping Strategies: Coping is often classified into two categories: Problem-focused coping or emotion-focused coping (Carver, Scheier, & Weintraub, 1989). **Problem-focused coping** *is thought of as actively addressing the event that is causing stress in an effort to solve the issue at hand.* For example, say you have an important exam coming up next week. A problem-focused strategy might be to spend additional time over the weekend studying to make sure you understand all of the material. **Emotion-focused coping**, on the other hand, *regulates the emotions that come with stress.* In the above examination example, this might mean watching a funny movie to take your mind off the anxiety you are feeling. In the short term, emotion-focused coping might reduce feelings of stress, but problem-focused coping seems to have the greatest impact on mental wellness (Billings & Moos, 1981; Herman-Stabl, Stemmler, & Petersen, 1995). That being said, when events are uncontrollable (e.g., the death of a loved one), emotion-focused coping directed at managing your feelings, at first, might be the better strategy. Therefore, it is always important to consider the match of the stressor to the coping strategy when evaluating its plausible benefits.

request.

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3.12: Erikson- Generativity vs Stagnation

According to Erikson (1982) **generativity** *encompasses procreativity, productivity, and creativity.* This stage includes the generation of new beings, new products, and new ideas, as well as self-generation concerned with further identity development. Erikson believed that the stage of generativity, during which one established a family and career, was the longest of all the stages. Individuals at midlife are primarily concerned with leaving a positive legacy of themselves, and according to Erikson (1950) parenthood is the primary generative type. Erikson understood that work and family relationships may be in conflict due to the obligations and responsibilities of each, but he believed it was overall a positive developmental time. In addition to being parents and working, Erikson also described individuals being involved in the community during this stage. A sense of stagnation occurs when one is not active in generative matters, however, stagnation can motive a person to redirect energies into more meaningful activities.

Erikson identified "virtues" for each of his eight stages, and they refer to what the individual achieves when the stage is successfully reconciled. The virtue emerging when one achieves generativity is “Care”. Erikson believed that those in middle adulthood should “take care of the persons, the products, and the ideas one has learned to care for” (Erikson, 1982, p. 67). Further, Erikson believed that the strengths gained from the six earlier stages are essential for the generational task of cultivating strength in the next generation. Erikson further argued that generativity occurred best after the individual had resolved issues of identity and intimacy (Peterson & Duncan, 2007).

Figure 8.28: Generativity at midlife. Source.

Research has demonstrated that generative adults possess many positive characteristics, including good cultural knowledge and healthy adaptation to the world (Peterson & Duncan, 2007). Using the Big 5 personality traits, generative women and men scored high on conscientiousness, extraversion, agreeableness, openness to experience, and low on neuroticism (de St. Aubin & McAdams, 1995; Peterson, Smirles, & Wentworth, 1997). Additionally, women scoring high in generativity at age 52 were rated high in positive personality characteristics, satisfaction with marriage and motherhood, and successful aging at age 62 (Peterson & Duncan, 2007). Similarly, men rated higher in generativity at midlife were associated with stronger global cognitive functioning (e.g., memory, attention, calculation), stronger executive functioning (e.g., response inhibition, abstract thinking, cognitive flexibility), and lower levels of depression in late adulthood (Malone, Liu, Vaillant, Rentz, & Waldinger, 2016).

Erikson (1982) indicated that at the end of this demanding stage, individuals may withdraw as generativity is no longer expected in late adulthood. This releases elders from the task of care taking or working. However, not feeling needed or challenged may result in stagnation, and consequently one should not fully withdraw from generative tasks as they enter Erikson’s last stage in late adulthood.

3.13: Midlife Relationships

The **sandwich generation** refers to adults who have at least one parent age 65 or older and are either raising their own children or providing support for their grown children. According to a recent Pew Research survey, 47% of middle-aged adults are part of this sandwich generation (Parker & Patten, 2013). In addition, 15% of middle-aged adults are providing financial support to an older parent while raising or supporting their own children (see Figure 8.29). According to the same survey, almost half (48%) of middle-aged adults, have supported their adult children in the past year, and 27% are the primary source of support for their grown children.

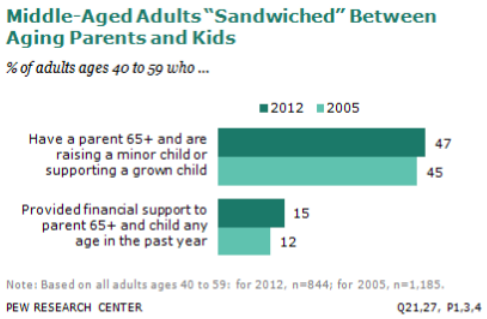

Figure 8.29.

Seventy-one percent of the sandwich generation is age 40-59, 19% were younger than 40, and 10% were 60 or older. Hispanics are more likely to find themselves supporting two generations; 31% have parents 65 or older and a dependent child, compared with 24% of whites and 21% of blacks (Parker & Patten, 2013). Women are more likely to take on the role of care provider for older parents in the U.S. and Germany (Pew Research, 2015). About 1 in 5 women say they have helped with personal care, such as getting dressed or bathing, of aging parents in the past year, compared with 8% of men in the U.S. and 4% in Germany. In contrast, in Italy men are just as likely (25%) as women (26%) to have provided personal care.

The Pew survey found that almost 1 in 3 of the sandwich-generation adults were more likely to say they always feel rushed, while only 23% of other adults said this. However, the survey suggests that those who were supporting both parents and children reported being just as happy as those middle-aged adults who did not find themselves in the sandwich generation (Parker & Patten, 2013). Adults who are supporting both parents and children did report greater financial strain (see Figure 8.30). Only 28% reported that they were living comfortably versus 41% of those who were not also supporting their parents. Almost one third were just making ends meet, compared with 17% of those who did not have the additional financial burden of aging parents.

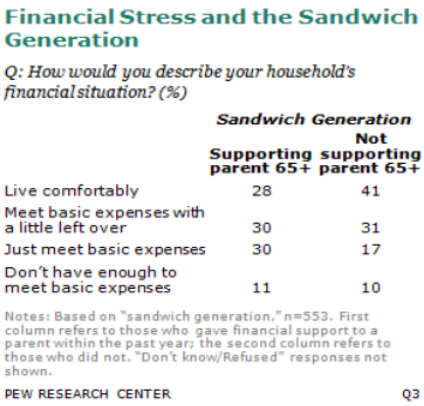

Figure 8.30.

Kinkeeping: At midlife adults may find themselves as a **kinkeeper**. In all families there is a *person or persons who keep the family connected and who promote solidarity and continuity in the family* (Brown & DeRycke, 2010). Who in your own family do you count on to organize family gatherings? Who knows the history of your family? Who do people turn to in your family for advice and support? Who works to strengthen the bonds between members of your family? These are your family's kinkeepers, and they are usually women (Leach & Braithwaite, 1996; Brown & DeRycke, 2010). Leach and Braithwaite found that 86% of their respondents named a woman as their family's kinkeeper, and Brown and DeRycke found that mothers, maternal grandmothers, and

paternal grandmothers were more likely to be a family's kinkeeper than were fathers, young adult children, and grandfathers combined. Brown and DeRycke also found that among young adults, women were more likely to be a kinkeeper than were young adult men.

Kinkeeping can be a source of distress when it interferes with other obligations (Gerstel & Gallagher, 1993). Gerstel and Gallagher found that on average, kinkeepers provide almost a full week of work each month to kinkeeping (almost 34 hours). They also found that the more activities the kinkeeper took on, and the more kin they helped the more stress and higher the levels of depression a kinkeeper experienced. However, unlike other studies on kinkeeping, Gerstel and Gallagher also included a number of activities that would be considered more "caregiving," such as providing transportation, making repairs, providing meals, etc. in addition to the usual activities of kinkeeping.

Empty nest: The **empty nest**, or post-parental period (Dennerstein, Dudley & Guthrie, 2002), *refers to the time period when children are grown up and have left home.* For most parents this occurs during midlife. This time is recognized as a "normative event" as parents are aware that their children will become adults and eventually leave home (Mitchell & Lovegreen, 2009). The empty nest creates complex emotions, both positive and negative, for many parents. Some theorists suggest this is a time of role loss for parents, others suggest it is one of role strain relief (Bouchard, 2013).

The role loss hypothesis predicts that when people lose an important role in their life they experience a decrease in emotional well-being. It is from this perspective that the concept of the **empty nest syndrome** emerged, which *refers to great emotional distress experienced by parents, typically mothers, after children have left home*. The empty nest syndrome is linked to the absence of alternative roles for the parent in which they could establish their identity (Borland, 1982). In Bouchard's (2013) review of the research, she found that few parents reported loneliness or a big sense of loss once all their children had left home.

In contrast, the role stress relief hypothesis suggests that the empty nest period should lead to more positive changes for parents, as the responsibility of raising children has been lifted. The role strain relief hypothesis was supported by many studies in Bouchard's (2013) review. A consistent finding throughout the research literature is that raising children has a negative impact on the quality of martial relationships (Ahlborg, Misvaer, & Möller, 2009; Bouchard, 2013). Several studies have reported that martial satisfaction often increases during the launching phase of the empty nest period, and that this satisfaction endures long after the last child has left home (Gorchoff, John, & Helson, 2008).

However, most of the research on the post-parental period has been with American parents. A number of studies in China suggest that empty-nesters, especially in more rural areas of China, report greater loneliness and depression than their counterparts with children still at home (Wu et al., 2010). Family support for the elderly by their children is a cherished Chinese tradition (Wong & Leung, 2012). With children moving from the rural communities to the larger cities for education and employment this may explain the more pessimistic reaction of Chinese parents than in American samples. The loss of an adult child in a rural region may mean a loss of family income for aging parents. Empty-nesters in urban regions of China did not report the same degree of distress (Su et al., 2012), suggesting that it not so much the event of children leaving, but the additional hardships this may place on aging parents.

Boomerang Kids: As you read in Chapter 7, young adults are living with their parents for a longer duration and in greater numbers than previous generations. In addition to those in early adulthood who are not leaving the home of their parents, there are also *young adults who are returning after having lived independently outside the home*, and these are called **boomerang kids**.

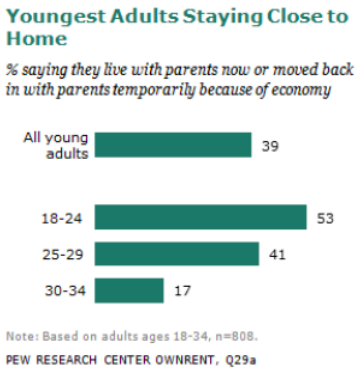

Figure 8.31.

Figure 8.31 shows the number of young people who are still living at home (Parker, 2012). In addition, 63% of 18 to 34 year-olds know someone who has returned to live with their parents. Many of the same financial reasons that are influencing young people's

decisions to delay exit from the home of their parents are underlying their decisions to return home. In addition, to financial reasons, some boomerang kids are returning because of emotional distress, such as mental health issues (Sandberg-Thoma, Snyder, & Jang, 2015).

What is the effect on parents when their adult children return home? Certainly there is considerable research that shows that the stress of raising children can have a negative impact on parents' well-being, and that when children leave home many couples experience less stress and greater life satisfaction (see the section on the empty nest). Early research in the 1980s and 1990s supported the notion that boomerang children, along with those who were failing to exit the home, placed greater financial hardship on the parents, and the parents reported more negative perceptions of this living arrangement (Aquilino, 1991). Recent surveys suggest that today's parents are more tolerant of this, perhaps because this is becoming a more normative experience than in the past. Moreover, children who return are more likely to have had good relationships with their parents growing up, so there may be less stress between parents and their adult children who return (Sandberg-Thoma et al., 2015). Parents of young adults who have moved back home because of economic reasons report that they are just as satisfied with their life as are parents whose adult children are still living independently (Parker, 2012). Parker found that adult children age 25 and older are more likely to contribute financially to the family or complete chores and other household duties. Parker also found that living in a multigenerational household may be acting as an economic safety net for young adults. In comparison to young adults who were living outside of the home, those living with their parents were less likely to be living in poverty (17% versus 10%).

So far we have considered the impact that adult children who have returned home or have yet to leave the nest have on the lives of middle-aged parents. What about the effect on parents who have adult children dealing with personal problems, such as alcoholism, chronic health concerns, mental health issues, trouble with the law, poor social relationships, or academic or job related problems, even if they are not living at home? The life course perspective proposes the idea of **linked lives** (Greenfield & Marks, 2006). *The notion that people in important relationships, such as children and parents, mutually influence each other's developmental pathways*. In previous chapters you have read about the effects that parents have on their children's development, but this relationship is bidirectional. The problems faced by children, even when those children are adults, influence the lives of their parents. Greenfield and Marks found in their study of middle-aged parents and their adult children, those parents whose children were dealing with personal problems reported more negative affect, lower self-acceptance, poorer parent-child interactions, and more family relationship stress. The more problems the adult children were facing, the worse the lives and emotional health of their parents, with single parents faring the worst.

3.14: Middle Adult Lifestyles

Singlehood: According to a recent Pew Research study, 16 per 1,000 adults age 45 to 54 have never-married, and 7 per 1,000 adults age 55 and older have never married in the U. S. (Wang & Parker, 2014). However, some of them may be living with a partner. In addition, some singles at midlife may be single through divorce or widowhood. Bella DePaulo (2014) has challenged the idea that singles, especially the always single, fair worse emotionally and in health when compared to those who are married. DePaulo suggests that there is a bias in how studies examine the benefits of marriage. Most studies focus on only a comparison between married versus not married, which does not include a separate comparison between those who have always been single, and those who are single because of divorce or widowhood. Her research, along with that of others, has found that those who are married may be more satisfied with life than the divorced or widowed, but there is little difference between married and always single, especially when comparing those who are recently married with those who have been married for four or more years. It appears that once the initial blush of the honeymoon wears off, those who are wedded are no happier or healthier than those who remained single. This might also suggest that there may be problems with how the "married" category is also seen as one homogeneous group.

Online Dating: Montenegro (2003) surveyed over 3,000 singles aged 40–69, and almost half of the participants reported their most important reason for dating was to have someone to talk to or do things with. Additionally, sexual fulfillment was also identified as an important goal for many. Alterovitz & Mendelsohn (2013) reviewed online personal ads for men and women over age 40 and found that romantic activities and sexual interests were mentioned at similar rates among the middle-age and young-old age groups, but less for the old-old age group.

Marriage: As you read in Chapter 7, there has been a number of changes in the marriage rate as more people are cohabitating, more are deciding to stay single, and more are getting married at a later age.

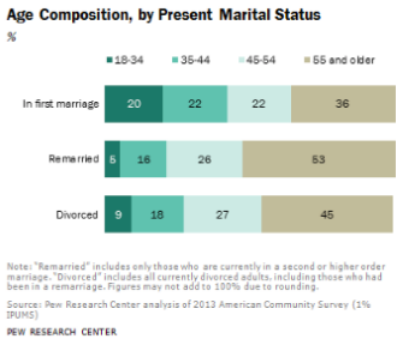

Figure 8.32.

As you can see in Figure 8.32, 48% of adults age 45-54 are married; either in their first marriage (22%) or have remarried (26%). This makes marriage the most common relationship status for middle-aged adults in the United States. Marital satisfaction tends to increase for many couples in midlife as children are leaving home (Landsford, Antonucci, Akiyama, & Takahashi, 2005).

Not all researchers agree. They suggest that those who are unhappy with their marriage are likely to have gotten divorced by now, making the quality of marriages later in life only look more satisfactory (Umberson, Williams, Powers, Chen, & Campbell, 2005).

Divorce: Livingston (2014) found that 27% of adults age 45 to 54 were divorced (see Figure 8.32). Additionally, 57% of divorced adults were women. This reflects the fact that men are more likely to remarry than are women. Two-thirds of divorces are initiated by women (AARP, 2009). Most divorces take place within the first 5 to 10 years of marriage. This time line reflects people's initial attempts to salvage the relationship. After a few years of limited success, the couple may decide to end the marriage. It used to be that divorce after having been married for 20 or more years was rare, but in recent years the divorce rate among more long-term marriages has been increasing. Brown and Lin (2013) note that while the divorce rate in the U.S. has declined since the 1990s, the rate among those 50 and older has doubled. They suggest several reasons for the "graying of divorce". There is less stigma attached to divorce today than in the past. Some older women are out-earning their spouses, and thus may be more financially capable of supporting themselves, especially as most of their children have grown. Finally, given increases in human longevity, the prospect of living several more years or decades with an incompatible spouse may prompt middle-aged and older adults to leave the marriage.

Gottman and Levenson (2000) found that the divorces in early adulthood were more angry and conflictual, with each partner blaming the other for the failures in the marriage. In contrast, they found that at midlife divorces tended to be more about having

grown apart, or a cooling off of the relationship. A survey by AARP (2009) found that men and women had diverse motivations for getting a divorce. Women reported concerns about the verbal and physical abusiveness of their partner (23%), drug/alcohol abuse (18%), and infidelity (17%). In contrast, men mentioned they had simply fallen out of love (17%), no longer shared interests or values (14%), and infidelity (14%). Both genders felt their marriage had been over long before the decision to divorce was made, with many of the middle-aged adults in the survey reporting that they stayed together because they were still raising children. Only 1 in 4 regretted their decision to divorce.

The effects of divorce are varied. Overall, young adults struggle more with the consequences of divorce than do those at midlife, as they have a higher risk of depression or other signs of problems with psychological adjustment (Birditt & Antonucci, 2013). Divorce at midlife is more stressful for women. In the AARP (2009) survey, 44% of middle-aged women mentioned financial problems after divorcing their spouse, in comparison only 11% of men reported such difficulties. However, a number women who divorce in midlife report that they felt a great release from their day-to-day sense of unhappiness. Hetherington (Hetherington & Kelly, 2002) found that among the groups of divorcees she called the **enhancers**, *those who had used the experience to better themselves and seek more productive intimate relationships*, or the **competent loners**, *those who used their divorce experience to grow emotionally, but who choose to stay single*, the overwhelming majority were women.

Dating Post-Divorce: Most divorced adults have dated by one year after filing for divorce (Anderson et al., 2004; Anderson & Greene, 2011). One in four recent filers report having been in or were currently in a serious relationship, and over half were in a serious relationship by one year after filing for divorce. Not surprisingly, younger adults were more likely to be dating than were middle aged or older adults, no doubt due to the larger pool of potential partners from which they could to draw. Of course, these relationships will not all end in marriage. Teachman (2008) found that more than two thirds of women under the age of 45 had cohabited with a partner between their first and second marriages.

Dating for adults with children can be more of a challenge. Courtships are shorter in remarriage than in first marriages. When couples are "dating", there is less going out and more time spent in activities at home or with the children. So the couple gets less time together to focus on their relationship. Anxiety or memories of past relationships can also get in the way. As one Talmudic scholar suggests "when a divorced man marries a divorced woman, four go to bed." (Secombe & Warner, 2004).

Post-divorce parents **gatekeep,** *that is, they regulate the flow of information about their new romantic partner to their children*, in an attempt to balance their own needs for romance with consideration regarding the needs and reactions of their children. Anderson et al. (2004) found that almost half (47%) of dating parents gradually introduce their children to their dating partner, giving both their romantic partner and children time to adjust and get to know each other. Many parents who use this approach do so to avoid their children having to keep meeting someone new until it becomes clearer that this relationship might be more than casual. It might also help if the adult relationship is on firmer ground so it can weather any initial push back from children when it is revealed. Forty percent are open and transparent about the new relationship at the outset with their children. Thirteen percent do not reveal the relationship until it is clear that cohabitation and or remarriage is likely. Anderson and colleagues suggest that practical matters influence which gatekeeping method parents may use. Parents may be able to successfully shield their children from a parade of suitors if there is reliable childcare available. The age and temperament of the child, along with concerns about the reaction of the ex-spouse, may also influence when parents reveal their romantic relationships to their children.

Rates of remarriage: The rate for remarriage, like the rate for marriage, has been declining overall. In 2013 the remarriage rate was approximately 28 per 1,000 adults 18 and older. This represents a 44% decline since 1990 and a 16% decline since 2008 (Payne, 2015). Brown and Lin (2013) found that the rate of remarriage dropped more for younger adults than middle aged and older adults, and Livingston (2014) found that as we age we are more likely to have remarried (see Figure 8.33). This is not surprising as it takes some time to marry, divorce, and then find someone else to marry. However, Livingston found that unlike those younger than 55, those 55 and up are remarrying at a higher rate than in the past. In 2013, 67% of adults 55-64 and 50% of adults 65 and older had remarried, up from 55% and 34% in 1960, respectively.

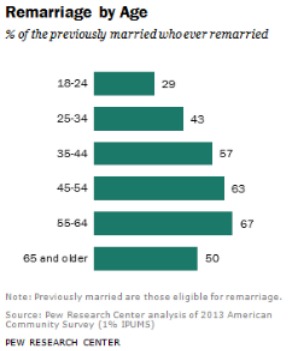

Figure 8.33.

Men have a higher rate of remarriage at every age group starting at age 25 (Payne, 2015). Livingston (2014) reported that in 2013, 64% of divorced or widowed men compared with 52% of divorced or widowed women had remarried. However, this gender gap has narrowed over time. Even though more men still remarry, they are remarrying at a slower rate. In contrast, women are remarrying today more than they did in 1980. This gender gap has closed mostly among young and middle aged adults, but still persists among those 65 and older.

In 2012, Whites who were previously married were more likely to remarry than were other racial and ethnic groups (Livingston, 2014). Moreover, the rate of remarriage has increased among Whites, while the rate of remarriage has declined for other racial and ethnic groups. This increase is driven by White women, whose rate of remarriage has increased, while the rate for White males has declined.

Success of Remarriage: Reviews are mixed as to the happiness and success of remarriages. While some remarriages are more successful, especially if the divorce motivated the adult to engage in self-improvement and personal growth (Hetherington & Kelly, 2002), a number of divorced adults end up in very similar marriages the second or third time around (Hetherington & Kelly, 2002). Remarriages have challenges that are not found in first marriages that may create additional stress in the marital relationship. There can often be a general lack of clarity in family roles and expectations when trying to incorporate new kin into the family structure, even determining the appropriate terms for these kin, along with their roles can be a challenge. Partners may have to navigate carefully their role when dealing with their partners' children. All of this may lead to greater dissatisfaction and even resentment among family members. Even though remarried couples tend to have more realistic expectations for marriage, they tend to be less willing to stay in unhappy situations. The rate of divorce among remarriages is higher than among first marriages (Payne, 2015), which can add additional burdens, especially when children are involved.

Children's Influence on Repartnering: Does having children affect whether a parent remarries? Goldscheider and Sassler (2006) found children residing with their mothers reduces the mothers' likelihood of marriage, only with respect to marrying a man without children. Further, having children in the home appears to increase single men's likelihood of marrying a woman with children (Stewart, Manning, & Smock, 2003). There is also some evidence that individuals who participated in a stepfamily while growing up may feel better prepared for stepfamily living as adults. Goldscheider and Kaufman (2006) found that having experienced family divorce as a child is associated with a greater willingness to marry a partner with children.

Figure 8.34. Source.

When children are present after divorce, one of the challenges the adults encounter is how much influence the child will have when selecting a new partner. Greene, Anderson, Hetherington, Forgatch, and DeGarmo (2003) identified two types of parents. The child- focused parent allows the child's views, reactions, and needs to influence the repartnering. In contrast, the adult-focused parent expects that their child can adapt and should accommodate to parental wishes. Anderson and Greene (2011) found that divorced custodial mothers identified as more adult focused tended to be older, more educated, employed, and more likely to have been married longer. Additionally, adult focused mothers reported having less rapport with their children, spent less time in joint

activities with their children, and the child reported lower rapport with their mothers. Lastly, when the child and partner were resisting one another, adult focused mothers responded more to the concerns of the partner, while the child focused mothers responded more to the concerns of the child. Understanding the implications of these two differing perspectives can assist parents in their attempts to repartner.

Grandparents

In addition to maintaining relationships with their children and aging parents, many people in middle adulthood take on yet another role, becoming a grandparent. The role of grandparent varies around the world. In multigenerational households, grandparents may play a greater role in the day-to-day activities of their grandchildren. While this family dynamic is more common in Latin America, Asia, and Africa, it has been on the increase in the U.S. (Pew Research Center, 2010).

The degree of grandparent involvement also depends on the proximity of the grandparents' home to the grandchildren. In developed nations, the greater mobility of the society can mean that grandparents may live long distances from their grandchildren. Technology has brought grandparents and their more distant grandchildren together. Sorenson and Cooper (2010) found that many of the grandfathers they interviewed would text, email, or Skype with their grandchildren in order to stay in touch.

Figure 8.35. Source.

Cherlin and Furstenberg (1986) describe three styles of grandparents: **Remote:** Thirty percent of grandparents rarely see their grandchildren. Usually they live far away from the grandchildren, but may also have a distant relationship. Contact is typically made on special occasions, such as holidays or birthdays. **Companionate**: Fifty-five percent of grandparents were described as "companionate". These grandparents do things with the grandchild but have little authority or control over them. They prefer to spend time with them without interfering in parenting. They are more like friends to their grandchildren. **Involved**: Fifteen percent of grandparents were described as "involved". These grandparents take a very active role in their grandchild's life. They children might even live with the grandparent. The involved grandparent is one who has frequent contact with and authority over the grandchild. Grandmothers, more so than grandfathers, play this role. In contrast, more grandfathers than grandmothers saw their role as family historian and family advisor (Neugarten and Weinstein, 1964).

Bengtson (2001) suggests that grandparents adopt different styles with different grandchildren, and over time may change styles as circumstances in the family change. Today more grandparents are the sole care providers for grandchildren, or may step in at times of crisis. With these changes grandparents are redefining how they see their role in the family with fewer adopting a more formal role (Hayslip, Henderson & Shore, 2003).

Early research on grandparents has routinely focused on grandmothers, with grandfathers often becoming invisible members of the family (Sorensen & Cooper, 2010). Yet, grandfathers stress the importance of their relationships with their grandchildren as strongly as do grandmothers (Waldrop et al., 1999). For some men, this may provide them with the opportunity to engage in activities that their occupations, as well as their generation's views of fatherhood and masculinity, kept them from engaging in with their own children (Sorenson & Cooper, 2010). Many of the grandfathers in Sorenson and Cooper's study felt that being a grandfather was easier and a lot more enjoyable. Even among grandfathers that took on a more involved role, there was still a greater sense that they could be more light-hearted and flexible in their interactions with their grandchildren. Many grandfathers reported that they were more openly affectionate with their grandchildren than they had been with their own children.

- **8.14: Middle Adult Lifestyles** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

3.15: Friendships

Adults of all ages who reported having a confidante or close friend with whom they could share personal feelings and concerns, believed these friends contributed to a sense of belonging, security, and overall wellbeing (Dunér & Nordstrom, 2007). Having a close friend is a factor in significantly lower odds of psychiatric morbidity including depression and anxiety (Harrison, Barrow, Gask, & Creed, 1999; Newton et al., 2008). The availability of a close friend has also been shown to lessen the adverse effects of stress on health (Kouzis & Eaton, 1998; Hawkley et al., 2008; Tower & Kasl, 1995). Additionally, poor social connectedness in adulthood is associated with a larger risk of premature mortality than cigarette smoking, obesity, and excessive alcohol use (Holt-Lunstad, Smith, & Layton, 2010).

Figure 8.36. Source.

Female friendships and social support networks at midlife contribute significantly to a woman's feeling of life satisfaction and well-being (Borzumato-Gainey, Kennedy, McCabe, & Degges-White, 2009). Degges-White and Myers (2006) found that women who have supportive people in their life experience greater life satisfaction than do those who live a more solitary life. A friendship network or the presence of a confidant have both been identified for their importance to women's mental health (Baruch & Brooks-Gunn, 1984). Unfortunately, with numerous caretaking responsibilities at home, it may be difficult for women to find time and energy to enhance the friendships that provide an increased sense of life satisfaction (Borzumato-Gainey et al., 2009). Emslie, Hunt and Lyons (2013) found that for men in midlife, the shared consumption of alcohol was important to creating and maintaining male friends. Drinking with friends was justified as a way for men to talk to each other, provide social support, relax, and improve mood. Although the social support provided when men drink together can be helpful, the role of alcohol in male friendships can lead to health damaging behavior from excessive drinking.

The importance of social relationships begins in early adulthood by laying down a foundation for strong social connectedness and facilitating comfort with intimacy (Erikson, 1959). To determine the impact of the quantity and quality of social relationships in young adulthood on middle adulthood, Carmichael, Reis, and Duberstein (2015) assessed individuals at age 50 on measures of social connection (types of relationships and friendship quality) and psychological outcomes (loneliness, depression, psychological well-being). Results indicated that the quantity of social interactions at age 20 and the quality, not quantity, of social interaction at age 30 predicted midlife social interactions. Those individuals who had high levels of social information seeking (quantity) at age 20 followed by less quantity in social relationships but greater emotional closeness (quality), resulted in positive psychosocial adjustment at midlife. Continuing to socialize widely in one's 30s appeared to negatively affect the development of intimacy, and consequently resulted in worse psychological outcomes at age 50.

Internet Friendships: What influence does the Internet have on friendships? It is not surprising that people use the Internet with the goal of meeting and making new friends (Fehr, 2008; McKenna, 2008). Researchers have wondered if the issue of not being face-to-face reduces the authenticity of relationships, or if the Internet really allows people to develop deep, meaningful connections. Interestingly, research has demonstrated that virtual relationships are often as intimate as in-person relationships; in fact, Bargh and colleagues found that online relationships are sometimes more intimate (Bargh, McKenna, & Fitsimons, 2002). This can be especially true for those individuals who are more socially anxious and lonely as such individuals are more likely to turn to the Internet to find new and meaningful relationships (McKenna, Green, & Gleason, 2002). McKenna and colleagues suggest that for people who have a hard time meeting and maintaining relationships, due to shyness, anxiety, or lack of face-to-face social skills, the Internet provides a safe, nonthreatening place to develop and maintain relationships. Similarly, Benford (2008) found that for high-functioning autistic individuals, the Internet facilitated communication and relationship development with others, which would have been more difficult in face-to-face contexts, leading to the conclusion that Internet communication could be empowering for those who feel frustrated when communicating face to face.

Workplace Friendships: Friendships often take root in the workplace, due to the fact that people are spending as much, or more, time at work than they are with their family and friends (Kaufman & Hotchkiss, 2003). Often, it is through these relationships that

people receive mentoring and obtain social support and resources, but they can also experience conflicts and the potential for misinterpretation when sexual attraction is an issue. Indeed, Elsesser and Peplau (2006) found that many workers reported that friendships grew out of collaborative work projects, and these friendships made their days more pleasant.

Figure 8.37. Source.

In addition to those benefits, Riordan and Griffeth (1995) found that people who worked in an environment where friendships could develop and be maintained were more likely to report higher levels of job satisfaction, job involvement, and organizational commitment, and they were less likely to leave that job. Similarly, a Gallup poll revealed that employees who had close friends at work were almost 50% more satisfied with their jobs than those who did not (Armour, 2007).

3.16: Women in Midlife

In Western society, aging for women is much more stressful than for men as society emphasizes youthful beauty and attractiveness (Slevin, 2010). The description that aging men are viewed as “distinguished” and aging women are viewed as “old” is referred to as the double standard of aging (Teuscher & Teuscher, 2006). Since women have traditionally been valued for their reproductive capabilities, they may be considered old once they are postmenopausal. In contrast, men have traditionally been valued for their achievements, competence and power, and therefore are not considered old until they are physically unable to work (Carroll, 2016). Consequently, women experience more fear, anxiety, and concern about their identity as they age, and may feel pressure to prove themselves as productive and valuable members of society (Bromberger, Kravitz, & Chang, 2013).

Attitudes about aging, however, do vary by race, culture, and sexual orientation. In some cultures, aging women gain greater social status. For example, as Asian women age they attain greater respect and have greater authority in the household (Fung, 2013). Compared to white women, Black and Latina women possess less stereotypes about aging (Schuler et al., 2008). Lesbians are also more positive about aging and looking older than heterosexuals (Slevin, 2010). The impact of media certainly plays a role in how women view aging by selling anti-aging products and supporting cosmetic surgeries to look younger (Gilleard & Higgs, 2000).

3.17: Religion and Spirituality

Grzywacz and Keyes (2004) found that in addition to personal health behaviors, such as regular exercise, healthy weight, and not smoking, social behaviors, including involvement in religious- related activities, have been shown to be positively related to optimal health. However, it is not only those who are involved in a specific religion that benefit, but so too do those identified as being spiritual. According to Greenfield, Vaillant, and Marks (2009) **religiosity** *refers to engaging with a formal religious group's doctrines, values, traditions, and co-members*. In contrast, **spirituality** *refers to an individual's intrapsychic sense of connection with something transcendent (that which exists apart from an not limited by the material universe) and the subsequent feelings of awe, gratitude, compassion, and forgiveness.* Research has demonstrated a strong relationship between spirituality and psychological well-being, irrespective of an individual's religious participation (Vaillant, 2008). Additionally, Sawatzky, Ratner, & Chiu (2005) found that spirituality was related to a higher quality of life for both individuals and societies.

Figure 8.38. Source.

Based on reports from the 2005 National Survey of Midlife in the United States, Greenfield et al. (2009) found that higher levels of spirituality were associated with lower levels of negative affect and higher levels of positive affect, personal growth, purpose in life, positive relationships with others, self-acceptance, environmental mastery, and autonomy. In contrast, formal religious participation was only associated with higher levels of purpose in life and personal growth among just older adults and lower levels of autonomy. In summary, it appears that formal religious participation and spirituality relate differently to an individual's overall psychological well-being.

Age: Older individuals identify religion/spirituality as being more important in their lives than those younger (Beit-Hallahmi & Argyle, 1998). This age difference has been explained by several factors including that religion and spirituality assist older individuals in coping with age- related losses, provide opportunities for socialization and social support in later life, and demonstrate a cohort effect in that older individuals were socialized more to be religious and spiritual than those younger (Greenfield et al., 2009).

Gender: In the United States, women report identifying as being more religious and spiritual than men do (de Vaus & McAllister, 1987). According to the Pew Research Center (2016), women in the United States are more likely to say religion is very important in their lives than men (60% vs. 47%). American women also are more likely than American men to say they pray daily (64% vs. 47%) and attend religious services at least once a week (40% vs. 32%). Theories to explain this gender difference include that women may benefit more from the social-relational aspects of religion/spirituality because social relationships more strongly influence women's mental health. Additionally, women have been socialized to internalize the behaviors linked with religious values, such as cooperation and nurturance, more than males (Greenfield et al., 2009).

Figure 8.39.

Worldwide: To measure the religious beliefs and practices of men and women around the world, the Pew Research Center (2016) conducted surveys of the general population in 84 countries between 2008 and 2015. Overall, an estimated 83% of women worldwide identified with a religion compared with 80% of men. This equaled 97 million more women than men identifying with a religion. There were no countries in which men were more religious than women by 2 percentage points or more. Among Christians, women reported higher rates of weekly church attendance and higher rates of daily prayer. In contrast, Muslim women and

Muslim men showed similar levels of religiousness, except frequency of attendance at worship services. Because of religious norms, Muslim men worshiped at a mosque more often than Muslim women. Similarly, Jewish men attended a synagogue more often than Jewish women. In Orthodox Judaism, communal worship services cannot take place unless a minyan, or quorum of at least 10 Jewish men, is present, thus insuring that men will have high rates of attendance. Only in Israel, where roughly 22% of all Jewish adults self-identify as Orthodox, did a higher percentage of men than women report engaging in daily prayer.

3.R: Middle Adulthood (References)

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CHAPTER OVERVIEW

Chapter 4: Middle Adulthood

Learning Objectives: Physical Development in Middle Adulthood

- Explain the difference between primary and secondary aging
- Describe sensory changes that occur during middle adulthood
- Identify health concerns in middle adulthood
- Explain what occurs during the climacteric for females and males
- Describe sexuality during middle adulthood
- Explain the importance of sleep and consequences of sleep deprivation
- Describe the importance of exercise and nutrition for optimal health
- Describe brain functioning in middle adulthood

Middle adulthood, or midlife, refers to the period of the lifespan between early adulthood and late adulthood. Although ages and tasks are culturally defined, the most common age definition is from 40-45 to 60-65. This may be the least studied time of the lifespan, and research on this developmental period is relatively new as many aspects of midlife are still being explored. In the United States, the large Baby Boom cohort (those born between 1946 and 1964) are now midlife adults (and some even late adults) and this has led to increased interest in this developmental stage. We do know that this stage reflects both developmental gains and losses and that there are considerable individual differences, but there is still much to learn about this age group.

4.1: Physical Development in Middle Adulthood

Each person experiences age-related physical changes based on many factors: *biological factors, such as molecular and cellular changes, and oxidative damage are called* **primary aging**, while *aging that occurs due to controllable factors, such as an unhealthy lifestyle including lack of physical exercise and poor diet, is called* **secondary aging** (Busse, 1969). These factors are shown in Figure 8.1

Figure 8.1: Contributors to Aging. Source.

Getting out of shape is not an inevitable part of aging; it is probably due to the fact that middle adults become less physically active and have experienced greater stress. Smoking tobacco, drinking alcohol, poor diet, stress, physical inactivity, and chronic disease such as diabetes or arthritis reduce overall health. However, there are things can be done to combat many of these changes by adopting healthier lifestyles.

Physical Changes

Hair: When asked to imagine someone in middle adulthood, we often picture someone with the beginnings of wrinkles and gray or thinning hair. What accounts for these physical changes? Hair color is due to a pigment called melanin which is produced by hair follicles (Martin, 2014). With aging, the hair follicles produce less melanin and this causes the hair to become gray. Hair color typically starts turning lighter at the temples, but eventually all the hair will become white. For many, graying begins in the 30s, but it is largely determined by your genes. Gray hair occurs earlier in white people and later in Asians.

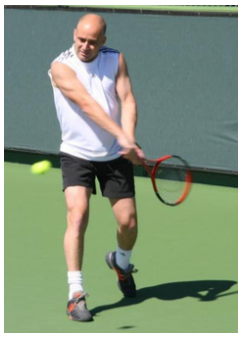

Figure 8.2: Andre Agassi.

Genes also determine how much hair remains on your head. Almost everyone has some hair loss with aging, and the rate of hair growth slows with aging. Many hair follicles stop producing new hairs and hair strands become smaller. Men begin showing signs of balding by 30 and some are nearly bald by 60. Male-pattern baldness is related to testosterone and is identified by a receding hairline followed by hair loss at the top of the head. Figure 8.2 shows tennis champion Andre Agassi's characteristic male-patterned baldness. Women can also develop female- patterned baldness as their hair becomes less dense and the scalp becomes visible (Martin, 2014). Sudden hair loss, however, can be a symptom of a health problem.

Skin: Skin continues to dry out and is prone to more wrinkling, particularly on the sensitive face area. Wrinkles, or creases in the skin, are a normal part of aging. As we get older, our skin dries and loses the underlying layer of fat, so our face no longer appears smooth. Loss of muscle tone and thinning skin can make the face appear flabby or drooping. Although wrinkles are a natural part of aging and genetics plays a role, frequent sun exposure and smoking will cause wrinkles to appear sooner. Dark spots and blotchy skin also occur as one ages and are due to exposure to sunlight (Moskowitz, 2014). Blood vessels become more apparent as the skin continues to dry and get thinner.

Sarcopenia: *The loss of muscle mass and strength that occurs with aging* is referred to as **Sarcopenia** (Morley, Baumgartner, Roubenoff, Mayer, & Nair, 2001). Sarcopenia is thought to be a significant factor in the frailty and functional impairment that occurs when older. The decline of growth and anabolic hormones, especially testosterone, and decreased physical activity have been implicated as causes of sarcopenia (Proctor, Balagopal, & Nair, 1998). This decline in muscle mass can occur as early as 40 years of age and contributes significantly to a decrease in life quality, increase in health care costs, and early death in older adults (Karakelides & Nair, 2005). Exercise is certainly important to increase strength, aerobic capacity, and muscle protein synthesis, but unfortunately it does not reverse all the age-related changes that occur. The muscle-to-fat ratio for both men and women also changes throughout middle adulthood, with an accumulation of fat in the stomach area.

Lungs: The lungs serve two functions: Supply oxygen and remove carbon dioxide. Thinning of the bones with age can change the shape of the rib cage and result in a loss of lung expansion. Age related changes in muscles, such as the weakening of the diaphragm, can also reduce lung capacity. Both of these changes will lower oxygen levels in the blood and increase the levels of carbon dioxide. Experiencing shortness of breath and feeling tired can result (NIH, 2014b). In middle adulthood, these changes and their effects are often minimal, especially in people who are non-smokers and physically active. However, in those with chronic bronchitis, or who have experienced frequent pneumonia, asthma other lung related disorders, or who are smokers, the effects of these normal age changes can be more pronounced.

Sensory Changes

Vision: A normal change of the eye due to age is **presbyopia**, which is Latin for "old vision." It refers to a loss of elasticity in the lens of the eye that makes it harder for the eye to focus on objects that are closer to the person. When we look at something far away, the lens flattens out; when looking at nearby objects tiny muscle fibers around the lens enable the eye to bend the lens. With age these muscles weaken and can no longer accommodate the lens to focus the light. Anyone over the age of 35 is at risk for developing presbyopia. According to the National Eye Institute (NEI) (2016), signs that someone may have presbyopia include:

- Hard time reading small print
- Having to hold reading material farther than arm's distance
- Problems seeing objects that are close
- Headaches
- Eyestrain

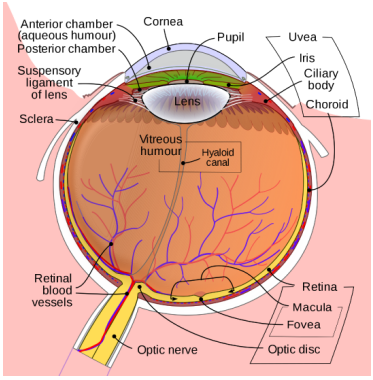

Figure 8.3: Interior of the Human Eye. Source.

Another common eye problem people experience as they age are **floaters**, *little spots or "cobwebs" that float around the field of vision*. They are most noticeable if you are looking at the sky on a sunny day, or at a lighted blank screen. Floaters occur when the vitreous, a gel-like substance in the interior of the eye, slowly shrinks. As it shrinks, it becomes somewhat stringy, and these strands can cast tiny shadows on the retina. In most cases, floaters are harmless, more of an annoyance than a sign of eye problems. However, floaters that appear suddenly, or that darken and obscure vision can be a sign of more serious eye problems, such a retinal tearing, infection, or inflammation. People who are very nearsighted (myopic), have diabetes, or who have had cataract surgery are also more likely to have floaters (NEI, 2009).

During midlife, adults may begin to notice a drop in **scotopic sensitivity**, *the ability to see in dimmer light*. By age 60, the retina receives only one third as much light as it did at age 20, making working in dimmer light more difficult (Jackson & Owsley, 2000). Night vision is also affected as the pupil loses some of its ability to open and close to accommodate drastic changes in light. Eyes

become more sensitive to glare from headlights and street lights making it difficult to see people and cars, and movements outside of our direct line of sight (NIH, 2016c).

Finally, some people experience **dry eye syndrome**, which *occurs when the eye does not produce tears properly, or when the tears evaporate too quickly because they are not the correct consistency* (NEI, 2013). While dry eye can affect people at any age, nearly 5 million Americans over the age of 50 experience dry eye. It affects women more than men, especially after menopause. Women who experienced an early menopause may be more likely to experience dry eye, which can cause surface damage to the eye.

Hearing: Hearing problems increase during middle adulthood. According to a recent UK study (Dawes et al., 2014), the rate of hearing problems in their sample doubled between the ages of 40 and 55 and tripled by age 64. Similar statistics are found in U.S. samples of middle-aged adults. Prior to age 40, about 5.5% of adults report hearing problems. This jumps to 19% among 40 to 69 year-olds (American Psychological Association, 2016). Middle-aged adults may experience more problems understanding speech when in noisy environments, in comparison to younger adults (Füllgrabe, Moore, & Stone, 2015; Neidleman, Wambacq, Besing, Spitzer, & Koehnke, 2015).

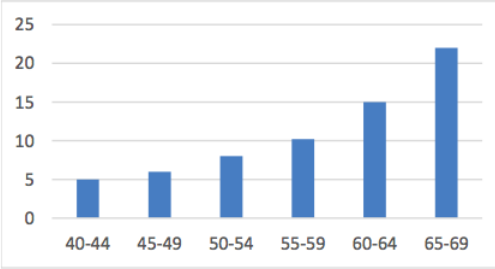

Figure 8.4: Incidence of Hearing Impairment in UK Adults. Adapted from Dawes, et al., (2014).

As we age we also lose the ability to hear higher frequencies (Humes, Kewley-Port, Fogerty, & Kinney, 2010). Hearing changes are more common among men than women, but males may underestimate their hearing problems (Uchida, Nakashima, Ando, Niino, & Shimokata, 2003). For many adults, hearing loss accumulates after years of being exposed to intense noise levels. Men are more likely to work in noisy occupations. Hearing loss is also exacerbated by cigarette smoking, high blood pressure, and stroke. Most hearing loss could be prevented by guarding against being exposed to extremely noisy environments.

4.2: Health Concerns

Heart Disease: According to the most recent National Vital Statistics Reports (Xu, Murphy, Kochanek, & Bastian, 2016) heart disease continues to be the number one cause of death for Americans as it claimed 23.5% of those who died in 2013. It is also the number one cause of death worldwide (World Health Organization, 2013). Heart disease develops slowly over time and typically appears in midlife (Hooker & Pressman, 2016).

Heart disease can include heart defects and heart rhythm problems, as well as narrowed, blocked, or stiffened blood vessels referred to as cardiovascular disease. The blocked blood vessels prevent the body and heart from receiving adequate blood. **Atherosclerosis,** *or a buildup of fatty plaque in the arteries*, is the most common cause of cardiovascular disease. The plaque buildup thickens the artery walls and restricts the blood flow to organs and tissues. Cardiovascular disease can lead to a heart attack, chest pain (angina), or stroke (Mayo Clinic, 2014a). Figure 8.5 illustrates atherosclerosis.

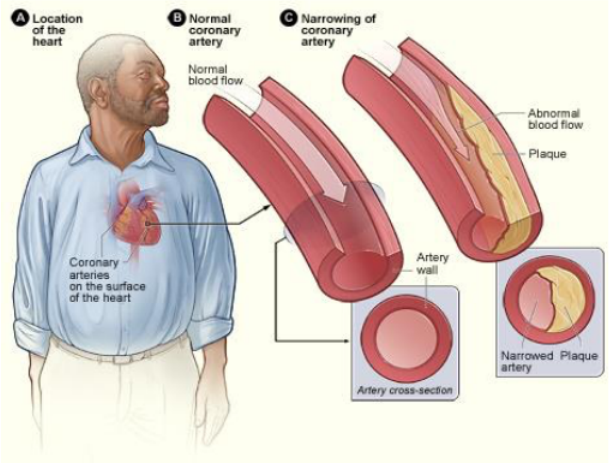

Figure 8.5: Atherosclerosis. Source.

Symptoms of cardiovascular disease differ for men and women. Males are more likely to suffer chest pain, while women are more likely to demonstrate shortness of breath, nausea, and extreme fatigue. Symptoms can also include pain in the arms, legs, neck, jaw, throat, abdomen or back (Mayo Clinic, 2014a).

According to the Mayo Clinic (2014a) there are many risk factors for developing heart disease, including medical conditions, such as high blood pressure, high cholesterol, diabetes, and obesity. Other risk factors include:

- **Advanced Age**-increased risk for narrowed arteries and weakened or thickened heart muscle.
- **Sex**-males are at greater risk, but a female's risk increases after menopause.
- **Family History**-increased risk, especially if male parent or brother developed heart disease before age 55 or female parent or sister developed heart disease before age 65.
- **Smoking**-nicotine constricts blood vessels and carbon monoxide damages the inner lining.
- **Poor Diet**-a diet high in fat, salt, sugar, and cholesterol.
- **Stress**-unrelieved stress can damage arteries and worsen other risk factors.
- **Poor Hygiene**-establishing good hygiene habits can prevent viral or bacterial infections that can affect the heart. Poor dental care can also contribute to heart disease.

Complications of heart disease can include heart failure, when the heart cannot pump enough blood to the meet the body's needs, and a heart attack, when a blood clot blocks the blood flow to the heart. This blockage can damage or destroy a part of the heart muscle, and atherosclerosis is a factor in a heart attack. Treatment for heart disease includes medication, surgery, and lifestyle changes including exercise, healthy diet, and refraining from smoking.

Sudden cardiac arrest is the unexpected loss of heart functioning, breathing, and consciousness, often caused by an arrhythmia or abnormal heartbeat. The heart beat may be too quick, too slow, or irregular. With a healthy heart, it is unlikely for a fatal arrhythmia to develop without an outside factor, such as an electric shock or illegal drugs. If not treated immediately, sudden cardiac arrest can be fatal and result in sudden cardiac death.

Hypertension, or *high blood pressure, is a serious health problem that occurs when the blood flows with a greater force than normal*. One in three American adults (70 million people) have hypertension and only half have it under control (Nwankwo, Yoon,

Burt, & Gu, 2013). It can strain the heart, increase the risk of heart attack and stroke, or damage the kidneys (CDC, 2014a). Uncontrolled high blood pressure in early and middle adulthood can also damage the brain's white matter (axons), and may be linked to cognitive problems later in life (Maillard et al., 2012). Normal blood pressure is under 120/80 (Table 8.1). The first number is the **systolic pressure**, *which is the pressure in the blood vessels when the heart beats*. The second number is the **diastolic pressure**, *which is the pressure in the blood vessels when the heart is at rest*. High blood pressure is sometimes referred to as the *silent killer*, as most people with hypertension experience no symptoms.

Table 8.1 Blood Pressure Levels

	Systolic Pressure	Diastolic Pressure
Normal	Under 120	Under 80
Prehypertension (at risk)	20-139	80-89
Hypertension	140 or high	90 or higher

Source: adapted from CDC (2014c).

Risk factors for high blood pressure include:

- Family history of hypertension
- Diet that is too high in sodium, often found in processed foods, and too low in potassium
- Sedentary lifestyle
- Obesity
- Too much alcohol consumption
- Tobacco use, as nicotine raises blood pressure (CDC, 2014b).

Making lifestyle changes can often reduce blood pressure in many people.

Cancer: After heart disease, cancer was the second leading cause of death for Americans in 2013 as it accounted for 22.5% of all deaths (Xu et al., 2016). According to the National Institutes of Health (2015), **cancer** *is the name given to a collection of related diseases in which the body's cells begin to divide without stopping and spread into surrounding tissues.* These extra cells can divide and form growths called tumors, which are typically masses of tissue. Cancerous tumors are malignant, which means they can invade nearby tissues. When removed malignant tumors may grow back. Unlike malignant tumors, benign tumors do not invade nearby tissues. Benign tumors can sometimes be quite large, and when removed usually do not grow back. Although benign tumors in the body are not cancerous, benign brain tumors can be life threatening.

Cancer cells can prompt nearby normal cells to form blood vessels that supply the tumors with oxygen and nutrients, which allows them to grow. These blood vessels also remove waste products from the tumors. Cancer cells can also hide from the immune system, a network of organs, tissues, and specialized cells that protects the body from infections and other conditions. Lastly, cancer cells can metastasize, which means they can break from where they first formed, called the primary cancer, and travel through the lymph system or blood to form new tumors in other parts of the body. This new metastatic tumor is the same type as the primary tumor (National Institutes of Health, 2015). Figure 8.6 illustrates how cancers can metastasize.

Cancer can start almost anywhere in the human body. While normal cells mature into very distinct cell types with specific functions, cancer cells do not and continue to divide without stopping. Further, cancer cells are able to ignore the signals that normally tell cells to stop dividing or to begin a process known as programmed cell death which the body uses to get rid of unneeded cells. With the growth of cancer cells, normal cells are crowded out and the body is unable to work the way it is supposed to. For example, the cancer cells in lung cancer form tumors which interfere with the functioning of the lungs and how oxygen is transported to the rest of the body.

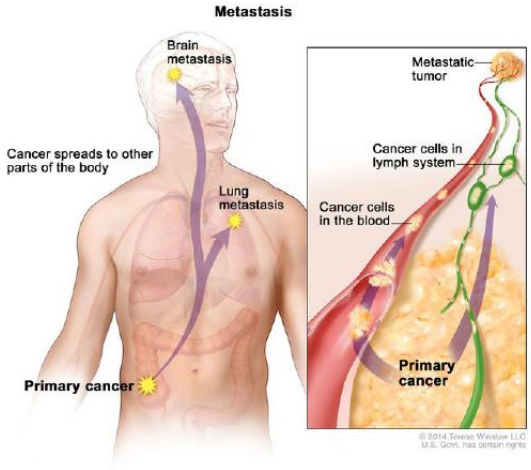

Figure 8.6. Source.

There are more than 100 types of cancer. The American Cancer Society assemblies a list of the most common types of cancers in the United States. To qualify for the 2016 list, the estimated annual incidence had to be 40, 000 cases or more. The most common type of cancer on the list is breast cancer, with more than 249,000 new cases expected in 2016. The next most common cancers are lung cancer and prostate cancer. Table 8.2 lists the estimated number of new cases and deaths for each common cancer type (American Cancer Society, 2016).

Table 8.2 2016 Estimates of Cancer Types

Cancer Type	Estimated New Cases	Estimated Deaths
Bladder	76,960	16,390
Breast (Female - Male)	246,660 - 2,600	40,450 - 440
Colon and rectal (combined)	134,490	49,190
Endometrial	60,050	10,470
Kidney (renal cell and renal pelvis) cancer	62,700	14,420
Leukemia (all types)	60,140	24,400
Lung (including bronchus)	224,390	158,080
Melanoma	76,380	10,130
Non-Hodgkin Lymphoma	72,580	20,150
Pancreatic	53,070	41,780
Prostate	180,890	26,120
Thyroid	64,300	1,980

Source.

Cholesterol *is a waxy fatty substance carried by lipoprotein molecules in the blood.* It is created by the body to create hormones and digest fatty foods, and is also found in many foods. Your body needs cholesterol, but too much can cause heart disease and stroke. Two important kinds of cholesterol are **low-density lipoprotein (LDL)** and **high-density lipoprotein (HDL)**. A third type of fat is called **triglycerides**. Your total cholesterol score is based on all three types of lipids (Table 8.3). Total cholesterol is calculated by adding HDL plus LDL plus 20% of the Triglycerides.

Table 8.3: Normal Levels of Cholesterol

	Normal
Total Cholesterol	Less than 200 mg/dl*
LDL	Less than 100 mg/dl

	Normal
HDL	40 mg/dl or higher
Triglycerides	Less than 150 mg/dl
*Cholesterol levels are measured in miligrams (mg) of cholesterol per deciliter (dL) in blood	

Source: Adapted from CDC (2015).

LDL cholesterol makes up the majority of the body's cholesterol, however, it is often referred to as "bad" cholesterol because at high levels it can form plaque in the arteries leading to heart attack and stroke. HDL cholesterol, often referred to as "good" cholesterol, absorbs cholesterol and carries it back to the liver, where it is then flushed from the body. Higher levels of HDL can reduce the risk of heart attack and stroke. Triglycerides are a type of fat in the blood used for energy. High levels of triglycerides can also increase your risk for heart disease and stroke when coupled with high LDL and low HDL. All adults 20 or older should have their cholesterol checked. In early adulthood, doctors may check every few years if the numbers have previously been normal, and there are no other signs of heart disease. In middle adulthood, this may become part of the annual check-up (CDC, 2015).

Risk factors for high cholesterol include: A family history for high cholesterol, diabetes, a diet high in saturated fats, trans fat, and cholesterol, physical inactivity, and obesity. Almost 32% of American adults have high LDL cholesterol levels, and the majority do not have it under control, nor have they made lifestyle changes (CDC, 2015).

Diabetes (Diabetes Mellitus) *is a disease in which the body does not control the amount of glucose in the blood.* This disease occurs when the body does not make enough insulin or does not use it the way it should (NIH, 2016a). Insulin is a type of hormone that helps glucose in the blood enter cells to give them energy. In adults, 90% to 95% of all diagnosed cases of diabetes are type 2 (American Diabetes Association (ADA), 2016). Type 2 diabetes usually begins with insulin resistance, *a disorder in which the cells in the muscles, liver, and fat tissue do not use insulin properly* (CDC, 2014d). As the need for insulin increases, cells in the pancreas gradually lose the ability to produce enough insulin. In some Type 2 diabetics, pancreatic beta cells will cease functioning, and the need for insulin injections will become necessary. Some people with diabetes experience insulin resistance with only minor dysfunction of the beta cell secretion of insulin. Other diabetics experience only slight insulin resistance, with the primary cause being a lack of insulin secretion (CDC, 2014d).

Figure 8.7. Source (CDC, 2014d).

One in three adults are estimated to have prediabetes, and 9 in 10 of them do not know. According to the CDC (2014d) without intervention, 15% to 30% of those with prediabetes will develop diabetes within 5 years. In 2012, 29 million people (over 9% of the population) were living with diabetes in America, mostly adults age 20 and up.

Table 8.4: Estimated Number and Percentage of Adults age 20 and over Living with Diabetes in 2012

	Number with Diabetes (millions)	Percentage with Diabetes (unadjusted)
Total		
20 years or older	28.9	12.3
By age		
20-44	4.3	4.1
45-64	13.4	16.2
65 years or older	11.2	25.9
By sex		
Men	15.5	13.6
Women	13.4	11.2

	Number with Diabetes (millions)	Percentage with Diabetes (unadjusted)
Source: 2009-2012 National Health and Nutrition Examination Survey estimates applied to 2012 U.S. Census data.		

Table 8.4 shows the numbers in millions and percentage of adults, by age and gender, living with diabetes. The median age of diagnosis is 54 (CDC, 2014d). During middle adulthood, the number of people with diabetes dramatically increases; with 4.3 million living with diabetes prior to age 45, to over 13 million between the ages of 45 to 64; a four-fold increase. Men are slightly more likely to experience diabetes than are women.

Diabetes also affects ethnic and racial groups differently. Non-Hispanic Whites (7.6%) are less likely to be diagnosed with diabetes than are Asian Americans (9%), Hispanics (12.8%), non- Hispanic Blacks (13.2%), and American Indians/Alaskan Natives (15.9%). However, these general figures hide the variations within these groups. For instance the rate of diabetes was less for Central, South, and Cuban Americans than for Mexican Americans and Puerto Ricans, and four times less for Alaskan Natives than the American Indians of southern Arizona (CDC, 2014d).

The risk factors for diabetes include:

- Those over age 45
- Obesity
- Family history of diabetes
- History of gestational diabetes (Chapter 2)
- Race and ethnicity
- Physical inactivity
- Diet

Diabetes has been linked to numerous health complications. Adults with diabetes are 1.7 times more likely to have cardiovascular disease, 1.8 times more likely to experience a heart attack, and 1.5 times more likely to experience stroke than adults without diabetes. Diabetes can cause blindness and other eye problems. In diabetics age 40 or older, 28.5% showed signs of diabetic retinopathy, *damage to the small blood vessels in the retina that may lead to loss of vision*. More than 4% showed advanced diabetic retinopathy. Diabetes is linked as the primary cause of almost half (44%) of new cases of kidney failure each year. About 60% of non-traumatic limb amputations occur in people with diabetes. Diabetes has been linked to hearing loss, tinnitus (ringing in the ears), gum disease, and neuropathy (nerve disease) (CDC, 2014d).

Typical tests for diabetes include a fasting glucose test and the A1C (Table 8.5). Fasting glucose levels should be under 100mg/dl (ADA, 2016). The A1C provides information about the average levels of blood glucose over the last 3 months (NIH, 2014a). The A1C should be under 5.7, where a 5.0 = 97mg/dl and a 6.0 = 126 mg/dl (ADA, 2016).

Table 8.5 Diagnostic Blood Tests for Diabetes

	Normal	Prediabetes	Diabetes
Fasting Glucose	Below 100 mg/dl	100-125 mg/dl	126+ mg/dl
A1C	Under 5.7	5.7 - 6.9	7+

Adapted from the American Diabetes Association (2016).

Metabolic Syndrome *is a cluster of several cardiometabolic risk factors, including large waist circumference, high blood pressure, and elevated triglycerides, LDL, and blood glucose levels, which can lead to diabetes and heart disease* (Crist et al., 2012). The prevalence of metabolic syndrome in the U.S. is approximately 34% and is especially high among Hispanics and African Americans (Ford, Li, & Zhao, 2010). Prevalence increases with age, peaking in one's 60s (Ford et al., 2010). Metabolic syndrome increases morbidity from cardiovascular disease and diabetes (Hu et al., 2004; Malik, 2004). Hu and colleagues found that even having one or two of the risk factors for metabolic syndrome increased the risk of mortality. Crist et al. (2012) found that increasing aerobic activity and reducing weight led to a drop in many of the risk factors of metabolic syndrome, including a reduction in waist circumference and blood pressure, and an increase in HDL cholesterol.

Rheumatoid arthritis (RA) *is an inflammatory disease that causes pain, swelling, stiffness, and loss of function in the joints* (NIH, 2016b). RA occurs when the immune system attacks the membrane lining the joints (Figure 8.8).

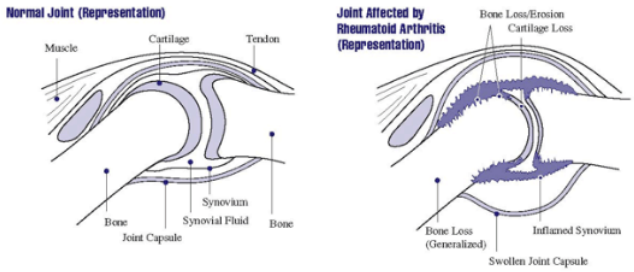

Figure 8.8. Source.

RA is the second most common form of arthritis after osteoarthritis, which is the normal wear and tear on the joints discussed in chapter 9. Unlike osteoarthritis, RA is symmetric in its attack of the body, thus, if one shoulder is affected so is the other. In addition, those with RA may experience fatigue and fever. Below are the common features of RA (NIH, 2016b).

Features of Rheumatoid Arthritis

- Tender, warm, swollen joints
- Symmetrical pattern of affected joints
- Joint inflammation *often* affecting the wrist and finger joints closest to the hand
- Joint inflammation *sometimes* affecting other joints, including the neck, shoulders, elbows, hips, knees, ankles, and feet
- Fatigue, occasional fevers, a loss of energy
- Pain and stiffness lasting for more than 30 minutes in the morning or after a long rest
- Symptoms that last for many years
- Variability of symptoms among people with the disease.

About 1.5 million people (approximately 0.6%) of Americans experience rheumatoid arthritis. It occurs across all races and age groups, although the disease often begins in middle adulthood and occurs with increased frequency in older people. Like some other forms of arthritis, rheumatoid arthritis occurs much more frequently in women than in men. About two to three times as many women as men have the disease (NIH, 2016b). The lifetime risk for RA for women is 3.6% and 1.7% for men (Crowson, et al., 2011).

Genes play a role in the development of RA. However, individual genes by themselves confer only a small risk of developing the disease, as some people who have these particular genes never develop RA. Scientists think that something must occur to trigger the disease process in people whose genetic makeup makes them susceptible to rheumatoid arthritis. For instance, some scientists also think hormonal factors may be involved. In women who experience RA, the symptoms may improve during pregnancy and flare after pregnancy. Women who use oral contraceptives may increase their likelihood of developing RA. This suggests hormones, or possibly deficiencies or changes in certain hormones, may increase the risk of developing RA in a genetically susceptible person (NIH, 2016b).

Rheumatoid arthritis can affect virtually every area of a person's life, and it can interfere with the joys and responsibilities of work and family life. Fortunately, current treatment strategies allow most people with RA to lead active and productive lives. Pain-relieving drugs and medications can slow joint damage, and establishing a balance between rest and exercise can also lessen the symptoms of RA (NIH, 2016b).

Digestive Issues

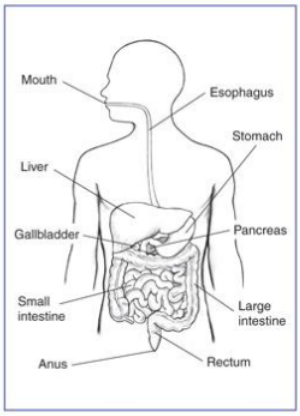

Figure 8.9: Digestive system. Source.

Heartburn, also called acid indigestion or pyrosis, is a common digestive problem in adults and is the result of stomach acid backing up into the esophagus. Prolonged contact with the digestive juices injures the lining of the esophagus and causes discomfort. Heartburn that occurs more frequently may be due to gastroesophageal reflux disease, GERD. Normally the lower sphincter muscle in the esophagus keeps the acid in the stomach from entering the esophagus. In GERD this muscle relaxes too frequently and the stomach acid flows into the esophagus. In the U.S. 60 million people experience heartburn at least once a month, and 15 million experience it every day. Prolonged problems with heartburn can lead to more serious complications, including esophageal cancer, one of the most lethal forms of cancer in the U.S. Problems with heartburn can be linked to eating fatty or spicy foods, caffeine, smoking, and eating before bedtime (American College of Gastroenterology, 2016a).

Gallstones *are hard particles, including fatty materials, bile pigments, and calcium deposits, that can develop in the gallbladder*. Ranging in size from a grain of sand to a golf ball, they typically take years to develop, but in some people have developed over the course of a few months. About 75% of gallstones do not create any symptoms, but those that do may cause sporadic upper abdominal pain when stones block bile or pancreatic ducts. If stones become lodged in the ducts, it may necessitate surgery or other medical intervention as it could become life-threatening if left untreated (American College of Gastroenterology, 2016b).

Gallstones are present in about 20% of women and 10% of men over the age of 55 (American College of Gastroenterology, 2016b). Risk factors include a family history of gallstones, diets high in calories and refined carbohydrates (such as, white bread and rice), diabetes, metabolic syndrome, Crohn's disease, and obesity, which increases the cholesterol in the bile and thus increases the risk of developing gallstones (NIH, 2013).

4.3: Sleep

According to the American Academy of Sleep Medicine (Kasper, 2015) adults require at least 7 hours of sleep per night to avoid the health risks associated with chronic sleep deprivation. Less than 6 hours and more than 10 hours is also not recommended for those in middle adulthood (National Sleep Foundation, 2015). Not surprisingly, many Americans do not receive the 7-9 hours of sleep recommended. Additional results included that in 1993, 67% of Americans felt they were getting enough sleep, but in 2013 only 56% felt they received as much sleep as needed. Additionally, 43% of Americans in 2013 believed they would feel better with more sleep. In 2013, only 59% of U.S. adults met that standard, while in 1942, 84% did (Jones, 2013). This means 41% of Americans receive less than the recommended amount of nightly sleep.

Sleep problems: According to the Sleep in America poll (National Sleep Foundation, 2015), 9% of Americans report being diagnosed with a sleep disorder, and of those 71% have sleep apnea and 24% suffer from insomnia. Pain is also a contributing factor in the difference between the amount of sleep Americans say they need and the amount they are getting. An average of 42 minutes of sleep debt occur for those with chronic pain, and 14 minutes for those who have suffered from acute pain in the past week. Stress and overall poor health are also key components of shorter sleep durations and worse sleep quality. Those in midlife with lower life satisfaction experienced greater delay in the onset of sleep than those with higher life satisfaction. Delayed onset of sleep could be the result of worry and anxiety during midlife, and improvements in those areas should improve sleep. Lastly, menopause can affect a woman's sleep duration and quality (National Sleep Foundation, 2016).

Children in the home and sleep: As expected, having children at home affects the amount of sleep one receives. According to a 2016 National Center for Health Statistics analysis (CDC, 2016) having children decreases the amount of sleep an individual receives, however, having a partner can improve the amount of sleep for both males and females. Table 8.6 illustrates the percentage of individuals not receiving seven hours of sleep per night based on parental role.

Table 8.6

Demographic	Sleep Less than 7 Hours
Single Mothers	43.5%
Mothers with Partner	31.2%
Women without Children	29.7%
Single Father	37.5%
Fathers with Partner	34.1%
Men without Children	32.3%

Negative consequences of insufficient sleep: There are many consequences of too little sleep, and they include physical, cognitive, and emotional changes. Sleep deprivation suppresses immune responses that fight off infection, and can lead to obesity, memory impairment, and hypertension (Ferrie et al., 2007; Kushida, 2005). Insufficient sleep is linked to an increased risk for colon cancer, breast cancer, heart disease and type 2 diabetes (Pattison, 2015). A lack of sleep can increase stress as cortisol (a stress hormone) remains elevated which keeps the body in a state of alertness and hyperarousal which increases blood pressure. Sleep is also associated with longevity. Dew et al. (2003) found that older adults who had better sleep patterns also lived longer. During deep sleep a growth hormone is released which stimulates protein synthesis, breaks down fat that supplies energy, and stimulates cell division. Consequently, a decrease in deep sleep contributes to less growth hormone being released and subsequent physical decline seen in aging (Pattison, 2015).

Figure 8.10: The importance of sleep. Source.

Sleep disturbances can also impair glucose functioning in middle adulthood. Caucasian, African American, and Chinese non-shift-working women aged 48–58 years who were not taking insulin-related medications, participated in the Study of Women's Health

across the Nation (SWAN) Sleep Study and were subsequently examined approximately 5 years later (Taylor et al., 2016). Body mass index (BMI) and insulin resistance were measured at two time points. Results indicated that irregular sleep schedules, including highly variable bedtimes and staying up much later than usual, are associated in midlife women with insulin resistance, which is an important indicator of metabolic health, including diabetes risk. Diabetes risk increases in midlife women, and irregular sleep schedules may be an important reason because irregular bedtime schedules expose the body to varying levels of light, which is the most important timing cue for the body's circadian clock. By disrupting circadian timing, bedtime variability may impair glucose metabolism and energy homeostasis.

4.4: Exercise, Nutrition, and Weight

The impact of exercise: Exercise is a powerful way to combat the changes we associate with aging. Exercise builds muscle, increases metabolism, helps control blood sugar, increases bone density, and relieves stress. Unfortunately, fewer than half of midlife adults exercise and only about 20 percent exercise frequently and strenuously enough to achieve health benefits. Many stop exercising soon after they begin an exercise program, particularly those who are very overweight. The best exercise programs are those that are engaged in regularly, regardless of the activity. A well-rounded program that is easy to follow includes walking and weight training. Having a safe, enjoyable place to walk can make the difference in whether or not someone walks regularly. Weight lifting and stretching exercises at home can also be part of an effective program. Exercise is particularly helpful in reducing stress in midlife. Walking, jogging, cycling, or swimming can release the tension caused by stressors. Learning relaxation techniques can also have healthful benefits. Exercise can be thought of as preventative health care. Promoting exercise for the 78 million "baby boomers" may be one of the best ways to reduce health care costs and improve quality of life (Shure & Cahan, 1998).

According to the Office of Disease Prevention and Health Promotion (2008), the following are exercise guidelines for adults:

- Adults should avoid being inactive. Any activity will result in some health benefits.
- For substantial health benefits, adults should engage in at least 150 minutes per week of moderate intensity exercise OR at least 75 minutes of vigorous intensity aerobic activity. Aerobic activity should occur for at least 10 minutes and preferably spread throughout the week.
- For more extensive health benefits, adults can increase their aerobic activity to 300 minutes per week of moderate intensity OR 150 minutes per week of vigorous intensity aerobic activity.
- Adults should also participate in muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on two or more days per week.

Nutritional concerns: Aging brings about a reduction in the number of calories a person requires (see Table 8.7 for estimated caloric needs in middle-aged adults). Many Americans respond to weight gain by dieting. However, eating less does not typically mean eating right and people often suffer vitamin and mineral deficiencies as a result. All adults need to be especially cognizant of the amount of sodium, sugar, and fat they are ingesting.

Table 8.7 Estimated Calorie Needs per Day, by Age, Sex, & Physical Activity Level

Source: Adapted from 2015-2020 Dietary Guidelines for Americans

[a]Sedentary means a lifestyle that includes only the physical activity of independent living
[b]Moderate activity means a lifestyle that includes physical activity equivalent to walking more than 1.5 to 3 miles per day at 3 or 4 miles per hour, in addition to the activities of independent living.
[c]Active means a lifestyle that includes physical activity of walking more than 3 miles per day at 3 or 4 miles per hour, in addition to the activities of independent living.
[d]Estimates for females do not include women who are pregnant or breastfeeding

Excess Sodium: According to dietary guidelines, adults should consume less than 2,300mg (1 teaspoon) per day of sodium. The American Heart Association (2016) reports that the average sodium intake among Americans is 3440mg per day. Processed foods are the main culprits of excess sodium. High sodium levels in the diet is correlated with increased blood pressure, and its reduction does show corresponding drops in blood pressure. Adults with high blood pressure are strongly encouraged to reduce their sodium intake to 1500mg (U.S. Department of Health and Human Services & U.S. Department of Agriculture (USHHS & USDA), 2015).

Excess Fat: Dietary guidelines also suggests that adults should consume less than 10 percent of calories per day from saturated fats. The American Heart Association (2016) says optimally we should aim for a dietary pattern that achieves 5% to 6% of calories from saturated fat. In a 2000 calorie diet that is about 120 calories from saturated fat. In the average American diet about 34.3% of the diet comes from fat, with 15.0% from saturated fat (Berglund et al., 1999). Diets high in fat not only contribute to weight gain, but have been linked to heart disease, stroke, and high cholesterol.

Added Sugar: According to the recent Dietary Guidelines for Americans (USHHS & USDA, 2015) eating healthy means adults should consume less than 10 percent of calories per day from added sugars. Yet, currently about 15% of the calories in the American adult diet come from added sugars, or about 22 teaspoons of sugar per day (NIH, 2014c). Excess sugar not only contributes to weight gain, but diabetes and other health problems.

Metabolism and Weight Gain: One of the common complaints of midlife adults is weight gain, especially the accumulation of fat in the abdomen, which is often referred to as the middle-aged spread (Lachman, 2004). Men tend to gain fat on their upper abdomen and back, while women tend to gain more fat on their waist and upper arms. Many adults are surprised at this weight gain because their diets have not changed, however, their metabolism has slowed during midlife. ***Metabolism*** *is the process by which the body converts food and drink into energy.* The calories consumed are combined with oxygen to release the energy needed to function (Mayo Clinic, 2014b). People who have more muscle burn more calories, even at rest, and thus have a higher metabolism.

However, as you get older, the amount of muscle decreases. Consequently, fat accounts for more of one's weight in midlife and slows down the amount of calories burned. To compensate, midlife adults have to increase their level of exercise, eat less, and watch their nutrition to maintain their earlier physique.

Figure 8.11: Exercise is Very Important in Middle Age. Source.

Obesity: As discussed in the early adulthood chapter, obesity is a significant health concern for adults throughout the world, and especially America. Obesity rates continue to increase, and being overweight is associated with a myriad of health conditions including diabetes, high blood pressure, and heart disease. New research is now linking obesity to Alzheimer's disease. Chang et al. (2016) found that being overweight in midlife was associated with earlier onset of Alzheimer's disease. The study looked at 1,394 men and women who were part of the Baltimore Longitudinal Study of Aging. Their average age was around 60, and they were followed for 14 years. Results indicated that people with the highest body mass index, or BMI, at age 50 were more likely to develop Alzheimer's disease. In fact, each one-point increase in BMI was associated with getting Alzheimer's six to seven months earlier. Those with the highest BMIs also had more brain changes typical of Alzheimer's, even if they did not have symptoms of the disease. Scientists speculate that fat cells may produce harmful chemicals that promote inflammation in blood vessels throughout the body, including in the brain. The conclusion of the study was that a healthy BMI at midlife may delay the onset of Alzheimer's disease.

Concluding Thoughts: Many of the changes that occur in midlife can be easily compensated for, such as buying glasses, exercising, and watching what one eats. However, the percentage of middle adults who have a significant health concern has increased in the past 15 years.

According to the 2016 United Health Foundation's America's Health Rankings Senior Report, the next generation of seniors will be less healthy than the current seniors (United Health Foundation, 2016). The study compared the health of middle-aged Americans (50-64 years of age) in 2014 to middle-aged Americans in 1999. Results indicated that in the past 15 years the prevalence of diabetes has increased by 55% and the prevalence of obesity has increased by 25%. At the state level, Massachusetts ranked first for healthy seniors, while Louisiana ranked last. Illinois ranked 36th, while Wisconsin scored higher at 13th.

What can we conclude from this information? Lifestyle has a strong impact on the health status of midlife adults, and it becomes important for midlife adults to take preventative measures to enhance physical well-being. Those midlife adults who have a strong sense of mastery and control over their lives, who engage in challenging physical and mental activity, who engage in weight bearing exercise, monitor their nutrition, receive adequate sleep, and make use of social resources are most likely to enjoy a plateau of good health through these years (Lachman, 2004).

4.5: Climacteric

The **climacteric**, *or the midlife transition when fertility declines*, is biologically based but impacted by the environment. During midlife, men may experience a reduction in their ability to reproduce. Women, however, lose their ability to reproduce once they reach menopause.

Female Sexual and Reproductive Health: **Perimenopause** *refers to a period of transition in which a woman's ovaries stop releasing eggs and the level of estrogen and progesterone production decreases.* **Menopause** *is defined as 12 months without menstruation*. The average age of menopause is approximately 51, however, many women begin experiencing symptoms in their 40s. These symptoms occur during perimenopause, which can occur 2 to 8 years before menopause (Huang, 2007). A woman may first begin to notice that her periods are more or less frequent than before. After a year without menstruation, a woman is considered menopausal and no longer capable of reproduction.

Symptoms: The symptoms that occur during perimenopause and menopause are typically caused by the decreased production of estrogen and progesterone (North American Menopause Society, 2016). The shifting hormones can contribute to the inability to fall asleep. Additionally, the declining levels of estrogen may make a woman more susceptible to environmental factors and stressors which disrupt sleep. A **hot flash** *is a surge of adrenaline* that can awaken the brain from sleep. It often produces sweat and a change of temperature that can be disruptive to sleep and comfort levels. Unfortunately, it may take time for adrenaline to recede and allow sleep to occur again (National Sleep Foundation, 2016).

The loss of estrogen also affects vaginal lubrication which diminishes and becomes waterier and can contribute to pain during intercourse. The vaginal wall also becomes thinner, and less elastic. Estrogen is also important for bone formation and growth, and decreased estrogen can cause osteoporosis resulting in decreased bone mass. Depression, irritability, and weight gain are often associated with menopause, but they are not menopausal (Avis, Stellato & Crawford, 2001; Rossi, 2004). Weight gain can occur due to an increase in intra-abdominal fat followed by a loss of lean body mass after menopause (Morita et al., 2006). Consequently, women may need to change their lifestyle to counter any weight gain. Depression and mood swings are more common during menopause in women who have prior histories of these conditions rather than those who have not. Additionally, the incidence of depression and mood swings is not greater among menopausal women than non-menopausal women.

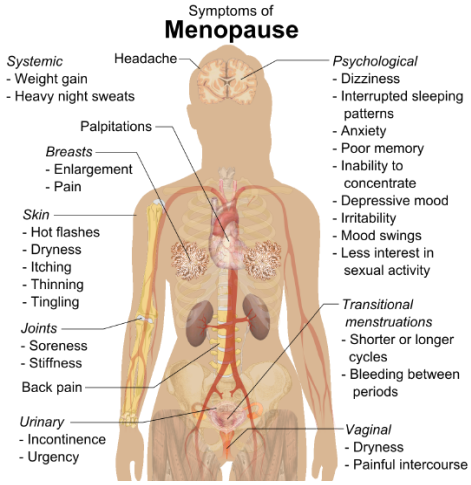

Figure 8.12. Source.

Figure 8.12 identifies symptoms experienced by women during menopause, however, women vary greatly in the extent to which these symptoms are experienced. Most American women go through menopause with few problems (Carroll, 2016). Overall, menopause is not seen as universally distressing (Lachman, 2004).

Hormone Replacement Therapy: Concerns about the effects of hormone replacement has changed the frequency with which estrogen replacement and hormone replacement therapies have been prescribed for menopausal women. Estrogen replacement therapy was once commonly used to treat menopausal symptoms. However, more recently, hormone replacement therapy has been associated with breast cancer, stroke, and the development of blood clots (NIH,
2007). Most women do not have symptoms severe enough to warrant estrogen or hormone replacement therapy. If so, they can be treated with lower doses of estrogen and monitored with more frequent breast and pelvic exams. There are also some other ways to

reduce symptoms. These include avoiding caffeine and alcohol, eating soy, remaining sexually active, practicing relaxation techniques, and using water-based lubricants during intercourse.

Menopause and Ethnicity: In a review of studies that mentioned menopause, symptoms varied greatly across countries, geographic regions, and even across ethnic groups within the same region (Palacios, Henderson, & Siseles, 2010). For example, the Study of Women's Health across the Nation (SWAN) examined 14,906 white, African American, Hispanic, Japanese

American, and Chinese American women's menopausal experiences (Avis et al., 2001). After controlling for age, educational level, general health status, and economic stressors, white women were more likely to disclose symptoms of depression, irritability, forgetfulness, and headaches compared to women in the other racial/ethnic groups. African American women experienced more night sweats, but this varied across research sites. Finally, Chinese American and Japanese American reported fewer menopausal symptoms when compared to the women in the other groups. Overall, the Chinese and Japanese group reported the fewest symptoms, while white women reported more psychosomatic symptoms and African American women reported more vasomotor symptoms.

Figure 8.13. Source.

Cultural Differences: Cultural influences seem to also play a role in the way menopause is experienced. Further, the prevalence of language specific to menopause is an important indicator of the occurrence of menopausal symptoms in a culture. Hmong tribal women living in Australia and Mayan women report that there is no word for "hot flashes" and both groups did not experience these symptoms (Yick-Flanagan, 2013). When asked about physical changes during menopause, the Hmong women reported lighter or no periods. They also reported no emotional symptoms and found the concept of emotional difficulties caused by menopause amusing (Thurston & Vissandjee, 2005). Similarly, a study with First Nation women in Canada found there was no single word for "menopause" in the Oji-Cree or Ojibway languages, with women referring to menopause only as "that time when periods stop" (Madden, St Pierre-Hansen & Kelly, 2010).

While some women focus on menopause as a loss of youth, womanhood, and physical attractiveness, career-oriented women tend to think of menopause as a liberating experience. Japanese women perceive menopause as a transition from motherhood to a more whole person, and they no longer feel obligated to fulfill certain expected social roles, such as the duty to be a mother (Kagawa-Singer, Wu, & Kawanishi, 2002). In India, 94% of women said they welcomed menopause. Aging women gain status and prestige and no longer have to go through self-imposed menstrual restrictions, which may contribute to Indian women’s experiences (Kaur, Walia, & Singh, 2004). Overall, menopause signifies many different things to women around the world and there is no typical experience. Further, normalizing rather than pathologizing menopause is supported by research and women’s experiences.

Male Sexual and Reproductive Health: Although males can continue to father children throughout middle adulthood, erectile dysfunction (ED) becomes more common. Erectile dysfunction refers to the inability to achieve an erection or an inconsistent ability to achieve an erection (Swierzewski, 2015). Intermittent ED affects as many as 50% of men between the ages of 40 and 70. About 30 million men in the United States experience chronic ED, and the percentages increase with age. Approximately 4% of men in their 40s, 17% of men in their 60s, and 47% of men older than 75 experience chronic ED.

Causes for ED are primarily due to medical conditions, including diabetes, kidney disease, alcoholism, and atherosclerosis (build-up of plaque in the arteries). Plaque is made up of fat, cholesterol, calcium and other substances found in the blood. Over time plaque builds up, hardens, and restricts the blood flow in the arteries (NIH, 2014d). This build-up limits the flow of oxygenated blood to organs and the penis. Overall, diseases account for 70% of chronic ED, while psychological factors, such as stress, depression and anxiety account for 10%-20% of all cases. Many of these causes are treatable, and ED is not an inevitable result of aging.

Figure 8.14: Medical Check-ups are Important for Men. Source.

Men during middle adulthood may also experience prostate enlargement, which can interfere with urination, and deficient testosterone levels which decline throughout adulthood, but especially after age 50. If testosterone levels decline significantly, it is referred to as andropause or late-onset hypogonadism. Identifying whether testosterone levels are low is difficult because individual blood levels vary greatly. Low testosterone is not a concern unless it accompanied by negative symptoms such as low sex drive, ED, fatigue, loss of muscle, loss of body hair, or breast enlargement. Low testosterone is also associated with medical conditions, such as diabetes, obesity, high blood pressure, and testicular cancer. The effectiveness of supplemental testosterone is mixed, and long term testosterone replacement therapy for men can increase the risk of prostate cancer, blood clots, heart attack and stroke (WebMD, 2016). Most men with low testosterone do not have related problems (Berkeley Wellness, 2011).

The Climacteric and Sexuality

Sexuality is an important part of people's lives at any age, and many older adults are very interested in staying sexually active (Dimah & Dimah, 2004). According to the National Survey of Sexual Health and Behavior (NSSHB) (Center for Sexual Health Promotion, 2010), 74% of males and 70% of females aged 40-49 engaged in vaginal intercourse during the previous year, while 58% of males and 51% of females aged 50-59 did so.


Figure 8.15. Source.

Despite these percentages indicating that middle adults are sexually active, age-related physical changes can affect sexual functioning. For women, decreased sexual desire and pain during vaginal intercourse because of menopausal changes have been identified (Schick et al., 2010). A woman may also notice less vaginal lubrication during arousal which can affect overall pleasure (Carroll, 2016). Men may require more direct stimulation for an erection and the erection may be delayed or less firm (Carroll, 2016). As previously discussed men may experience erectile dysfunction or experience a medical conditions (such as diabetes or heart disease) that impact sexual functioning. Couples can continue to enjoy physical intimacy and may engage in more foreplay, oral sex, and other forms of sexual expression rather than focusing as much on sexual intercourse.

Risk of pregnancy continues until a woman has been without menstruation for at least 12 months, however, and couples should continue to use contraception. People continue to be at risk of contracting sexually transmitted infections, such as genital herpes, chlamydia, and genital warts. In 2014, 16.7% of the country’s new HIV diagnoses (7,391 of 44,071) were among people 50 and older, according to the Centers for Disease Control and Prevention (2014e). This was an increase from 15.4% in 2005. Practicing safe sex is important at any age, but unfortunately adults over the age of 40 have the lowest rates of condom use (Center for Sexual Health Promotion, 2010). This low rate of condom use suggests the need to enhance education efforts for older individuals regarding STI risks and prevention. Hopefully, when partners understand how aging affects sexual expression, they will be less likely to misinterpret these changes as a lack of sexual interest or displeasure in the partner and more able to continue to have satisfying and safe sexual relationships.

- **8.5: Climacteric** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

4.6: Brain Functioning

The brain at midlife has been shown to not only maintain many of the abilities of young adults, but also gain new ones. Some individuals in middle age actually have improved cognitive functioning (Phillips, 2011). The brain continues to demonstrate plasticity and rewires itself in middle age based on experiences. Research has demonstrated that older adults use more of their brains than younger adults. In fact, older adults who perform the best on tasks are more likely to demonstrate bilateralization than those who perform worst. Additionally, the amount of white matter in the brain, which is responsible for forming connections among neurons, increases into the 50s before it declines.

Emotionally, the middle aged brain is calmer, less neurotic, more capable of managing emotions, and better able to negotiate social situations (Phillips, 2011). Older adults tend to focus more on positive information and less on negative information than those younger. In fact, they also remember positive images better than those younger. Additionally, the older adult's amygdala responds less to negative stimuli. Lastly, adults in middle adulthood make better financial decisions, which seems to peak at age 53, and show better economic understanding. Although greater cognitive variability occurs among middle adults when compared to those both younger and older, those in midlife with cognitive improvements tend to be more physically, cognitively, and socially active.

Learning Objectives: Cognitive Development in Middle Adulthood

- Describe crystalized versus fluid intelligence
- Describe research from the Seattle Longitudinal Study
- Explain the importance of flow to creativity and life satisfaction
- Describe how middle adults are turning to college for advanced training
- Describe the difference between an expert and a novice
- Describe the changes in the U.S. work force, especially among middle adults
- Explain the importance of leisure to mental health and a successful retirement

Crystallized versus Fluid Intelligence

Intelligence is influenced by heredity, culture, social contexts, personal choices, and certainly age. One distinction in specific intelligences noted in adulthood, is between **fluid intelligence**, *which refers to the capacity to learn new ways of solving problems and performing activities quickly and abstractly*, and **crystallized intelligence**, *which refers to the accumulated knowledge of the world we have acquired throughout our lives* (Salthouse, 2004). These intelligences are distinct, and crystallized intelligence increases with age, while fluid intelligence tends to decrease with age (Horn, Donaldson, & Engstrom, 1981; Salthouse, 2004).

Research demonstrates that older adults have more crystallized intelligence as reflected in semantic knowledge, vocabulary, and language. As a result, adults generally outperform younger people on measures of history, geography, and even on crossword puzzles, where this information is useful (Salthouse, 2004). It is this superior knowledge, combined with a slower and more complete processing style, along with a more sophisticated understanding of the workings of the world around them, that gives older adults the advantage of "wisdom" over the advantages of fluid intelligence which favor the young (Baltes, Staudinger, & Lindenberger, 1999; Scheibe, Kunzmann, & Baltes, 2009).

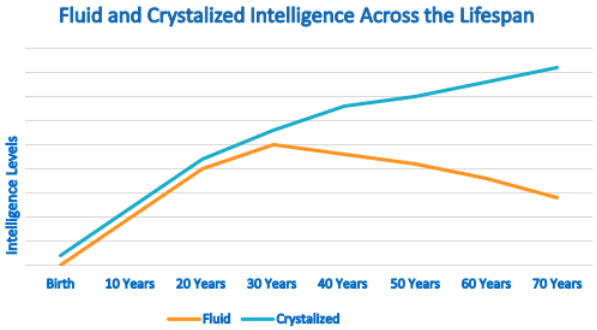

Figure 8.16. Adapted from Horn, Donaldson and Engstrom (1981)

The differential changes in crystallized versus fluid intelligence help explain why older adults do not necessarily show poorer performance on tasks that also require experience (i.e., crystallized intelligence), although they show poorer memory overall. A young chess player may think more quickly, for instance, but a more experienced chess player has more knowledge to draw on.

Seattle Longitudinal Study: The Seattle Longitudinal Study has tracked the cognitive abilities of adults since 1956. Every seven years the current participants are evaluated and new individuals are also added. Approximately 6000 people have participated thus far, and 26 people from the original group are still in the study today. Current results demonstrate that middle-aged adults perform better on four out of six cognitive tasks than those same individuals did when they were young adults. Verbal memory, spatial skills, inductive reasoning (generalizing from particular examples), and vocabulary increase with age until ones '70s (Schaie, 2005; Willis & Schaie, 1999). However, numerical computation and perceptual speed decline in middle and late adulthood (see Figure 8.17).

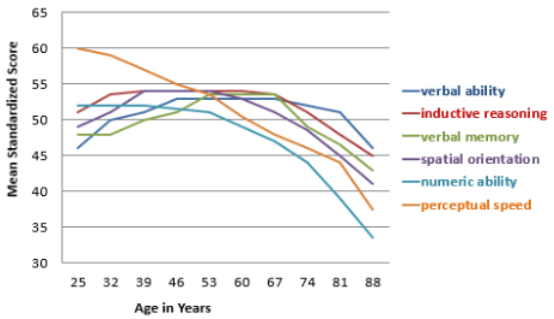

Figure 8.17: Seattle Longitudinal Study ages 25 to 88

Cognitive skills in the aging brain have been studied extensively in pilots, and similar to the Seattle Longitudinal Study results, older pilots show declines in processing speed and memory capacity, but their overall performance seems to remain intact. According to Phillips (2011) researchers tested pilots age 40 to 69 as they performed on flight simulators. Older pilots took longer to learn to use the simulators, but performed better than younger pilots at avoiding collisions.

Flow *is the mental state of being completely present and fully absorbed in a task* (Csikszentmihalyi, 1990). When in a state of flow, the individual is able to block outside distractions and the mind is fully open to producing. Additionally, the person is achieving great joy or intellectual satisfaction from the activity and accomplishing a goal. Further, when in a state of flow, the individual is not concerned with extrinsic rewards. Csikszentmihalyi (1996) used his theory of flow to research how some people exhibit high levels of creativity as he believed that a state of flow is an important factor to creativity (Kaufman & Gregoire, 2016). Other characteristics of creative people identified by Csikszentmihalyi (1996) include curiosity and drive, a value for intellectual endeavors, and an ability to lose our sense of self and feel a part of something greater. In addition, he believed that the tortured creative person was a myth and that creative people were very happy with their lives. According to Nakamura and Csikszentmihalyi (2002) people describe flow as the height of enjoyment. The more they experience it, the more they judge their lives to be gratifying. The qualities that allow for flow are well-developed in middle adulthood.

Tacit knowledge *is knowledge that is pragmatic or practical and learned through experience rather than explicitly taught*, and it also increases with age (Hedlund, Antonakis, & Sternberg, 2002). Tacit knowledge might be thought of as "know-how" or "professional instinct." It is referred to as tacit because it cannot be codified or written down. It does not involve academic knowledge, rather it involves being able to use skills and to problem-solve in practical ways. Tacit knowledge can be understood in the workplace and used by blue collar workers, such as carpenters, chefs, and hair dressers.

4.7: Middle Adults Returning to Education

Midlife adults in the United States often find themselves in college classrooms. In fact, the rate of enrollment for older Americans entering college, often part-time or in the evenings, is rising faster than traditionally aged students. Students over age 35, accounted for 17% of all college and graduate students in 2009, and are expected to comprise 19% of that total by 2020 (Holland, 2014). In some cases, older students are developing skills and expertise in order to launch a second career, or to take their career in a new direction. Whether they enroll in school to sharpen particular skills, to retool and reenter the workplace, or to pursue interests that have previously been neglected, older students tend to approach the learning process differently than younger college students (Knowles, Holton, & Swanson, 1998).

Figure 8.18: Middle adults in college. Source.

The mechanics of cognition, such as working memory and speed of processing, gradually decline with age. However, they can be easily compensated for through the use of higher order cognitive skills, such as forming strategies to enhance memory or summarizing and comparing ideas rather than relying on rote memorization (Lachman, 2004). Although older students may take a bit longer to learn material, they are less likely to forget it quickly. Adult learners tend to look for relevance and meaning when learning information. Older adults have the hardest time learning material that is meaningless or unfamiliar. They are more likely to ask themselves, "Why is this important?" when being introduced to information or when trying to memorize concepts or

facts. Older adults are more task-oriented learners and want to organize their activity around problem-solving. However, these differences may decline as new generations, equipped with higher levels of education, begin to enter midlife.

To address the educational needs of those over 50, The American Association of Community Colleges (2016) developed the **Plus 50 Initiative** *that assists community college in creating or expanding programs that focus on workforce training and new careers for the plus-50 population*. Since 2008 the program has provided grants for programs to 138 community colleges affecting over 37,000 students. The participating colleges offer workforce training programs that prepare 50 plus adults for careers in such fields as early childhood educators, certified nursing assistants, substance abuse counselors, adult basic education instructors, and human resources specialists. These training programs are especially beneficial as 80% of people over the age of 50 say they will retire later in life than their parents or continue to work in retirement, including in a new field.

4.8: Gaining Expertise - The Novice and the Expert

Expertise refers to specialized skills and knowledge that pertain to a particular topic or activity. In contrast, a **novice** is someone who has limited experiences with a particular task. Everyone develops some level of "selective" expertise in things that are personally meaningful to them, such as making bread, quilting, computer programming, or diagnosing illness. Expert thought is often characterized as intuitive, automatic, strategic, and flexible.

- **Intuitive:** Novices follow particular steps and rules when problem solving, whereas experts can call upon a vast amount of knowledge and past experience. As a result, their actions appear more intuitive than formulaic. A novice cook may slavishly follow the recipe step by step, while a chef may glance at recipes for ideas and then follow her own procedure.
- **Automatic:** Complex thoughts and actions become more routine for experts. Their reactions appear instinctive over time, and this is because expertise allows us to process information faster and more effectively (Crawford & Channon, 2002).
- **Strategic:** Experts have more effective strategies than non-experts. For instance, while both skilled and novice doctors generate several hypotheses within minutes of an encounter with a patient, the more skilled clinicians' conclusions are likely to be more accurate. In other words, they generate better hypotheses than the novice. This is because they are able to discount misleading symptoms and other distractors and hone in on the most likely problem the patient is experiencing (Norman, 2005). Consider how your note taking skills may have changed after being in school over a number of years. Chances are you do not write down everything the instructor says, but the more central ideas. You may have even come up with your own short forms for commonly mentioned words in a course, allowing you to take down notes faster and more efficiently than someone who may be a novice academic note taker.
- **Flexible:** Experts in all fields are more curious and creative; they enjoy a challenge and experiment with new ideas or procedures. The only way for experts to grow in their knowledge is to take on more challenging, rather than routine tasks.

Expertise takes time. It is a long-process resulting from experience and practice (Ericsson, Feltovich, & Prietula, 2006). Middle-aged adults, with their store of knowledge and experience, are likely to find that when faced with a problem they have likely faced something similar before. This allows them to ignore the irrelevant and focus on the important aspects of the issue. Expertise is one reason why many people often reach the top of their career in middle adulthood.

However, expertise cannot fully make-up for all losses in general cognitive functioning as we age. The superior performance of older adults in comparison to younger novices appears to be task specific (Charness & Krampe, 2006). As we age, we also need to be more deliberate in our practice of skills in order to maintain them. Charness and Krampe (2006) in their review of the literature on aging and expertise, also note that the rate of return for our effort diminishes as we age. In other words, increasing practice does not recoup the same advances in older adults as similar efforts do at younger ages.

4.9: Work and Leisure at Midlife

Work

Who is the U.S. workforce? The civilian, non-institutionalized workforce; that is the population of those aged 16 and older, who are employed has steadily declined since it reached its peak in the late 1990s, when 67% of the civilian workforce population was employed. In 2012 the rate had dropped to 64% and by 2022 it is projected to decline to 62%. The U.S. population is expected to grow more slowly based on census projections for the next few years. Those new entrants to the labor force, adults age 16 to 24, are the only population of adults that will shrink in size over the next few years by nearly half a percent, while those age 55 and up will grow by 2.3% over current rates, and those age 65 to 74 will grow by nearly 4% (Monthly Labor Review (MLR), 2013). In 1992, 26% of the population was 55+, by 2022 it is projected to be 38%. Table 8.8 shows the rates of employment by age. In 2002, baby boomers were between the ages of 38 to 56, the prime employment group. In 2012, the youngest baby boomers were 48 and the oldest had just retired (age 66). These changes might explain some of the steady decline in work participation as this large population cohort ages out of the workforce.

In 2012, 53% of the workforce was male. For both genders and for most age groups the rate of participation in the labor force has declined from 2002 to 2012, and it is projected to decline further by 2022. The exception is among the older middle-age groups (the baby boomers), and especially for women 55 and older.

Table 8.8: Percentage of the non-institutionalized civilian workforce employed by gender & age.

	Males			Females		
	2002	**2012**	**2022***	**2002**	**2012**	**2022**
16-19	47.5	34	27.8	47.3	34.6	26.7
20-24	80.7	74.5	69.9	72.1	67.4	64.7
25-34	92.4	89.5	88.8	75.1	74.1	73.4
35-44	92.1	90.7	90.4	76.4	74.8	73.3
45-54	88.5	86.1	85.1	76	74.7	74.9
55-59	78	78	77.8	63.8	67.3	73.3
60-64	57.6	60.5	64.3	44.1	50.4	55.6
16+ totals	74.1	70.2	67.6	59.6	57.7	56

**Projected rates of employment (adapted from Monthly Labor Review, 2013).*

Hispanic males have the highest rate of participation in the labor force. In 2012, 76% of Hispanic males, compared with 71% of White, 72% of Asian, and 64% of Black men ages 16 or older were employed. Among women, Black women were more likely to be participating in the workforce (58%) compared with almost 57% of Hispanic and Asian, and 55% of White females. The rates for all racial and ethnic groups are expected to decline by 2022 (MLR, 2013).

Climate in the Workplace for Middle-aged Adults: A number of studies have found that job satisfaction tends to peak in middle adulthood (Besen, Matz-Costa, Brown, Smyer, & Pitt- Catsouphers, 2013; Easterlin, 2006). This satisfaction stems from not only higher wages, but often greater involvement in decisions that affect the workplace as they move from worker to supervisor or manager. Job satisfaction is also influenced by being able to do the job well, and after years of experience at a job many people are more effective and productive. Another reason for this peak in job satisfaction is that at midlife many adults lower their expectations and goals (Tangri, Thomas, & Mednick, 2003). Middle-aged employees may realize they have reached the highest they are likely to in their career. This satisfaction at work translates into lower absenteeism, greater productivity, and less job hopping in comparison to younger adults (Easterlin, 2006).

However, not all middle-aged adults are happy in the work place. Women may find themselves up against the **glass ceiling**, *organizational discrimination in the workplace that limits the career advancement of women*. This may explain why females employed at large corporations are twice as likely to quit their jobs as are men (Barreto, Ryan, & Schmitt, 2009). Another problem older workers may encounter is job **burnout**, *becoming disillusioned and frustrated at work*. American workers may experience

more burnout than do workers in many other developed nations, because most developed nations guarantee by law a set number of paid vacation days (International Labour Organization, ILO, 2011), the United States does not (U.S. Department of Labor, 2016).

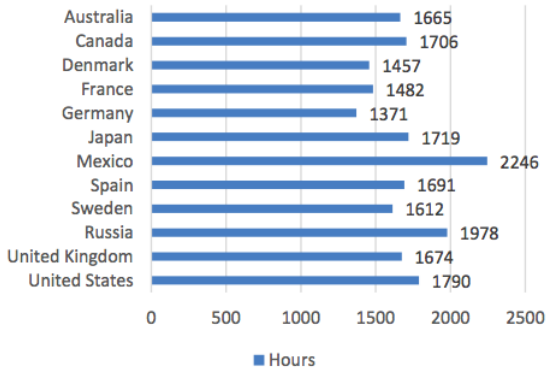

Figure 8.19: Average Annual Hours Actually Worked per Worker

Not all employees are covered under overtime pay laws (U.S. Department of Labor, 2016). This is important when you considered that the 40-hour work week is a myth for most Americans. Only 4 in 10 U.S. workers work the typical 40-hour work week. The average work week for many is almost a full day longer (47 hours), with 39% working 50 or more hours per week (Saad, 2014). In comparison to workers in many other developed nations, American workers work more hours per year (Organisation for Economic Cooperation and Development, OECD, 2016). As can be seen in Figure 8.19, Americans work more hours than most European nations, especially western and northern Europe, although they work less hours than workers in other nations, especially Mexico.

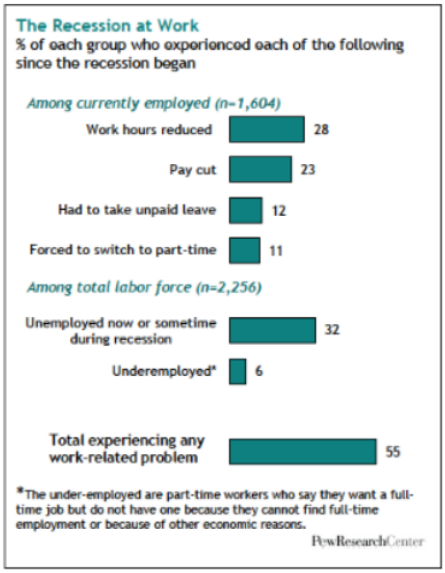

Figure 8.20.

Challenges in the Workplace for Middle-aged Adults: In recent years middle aged adults have been challenged by economic downturns, starting in 2001, and again in 2008. Fifty-five percent of adults reported some problems in the workplace, such as fewer hours, pay-cuts, having to switch to part-time, etc., during the most recent economic recession (see Figure 8.20, Pew Research Center, 2010a). While young adults took the biggest hit in terms of levels of unemployment, middle-aged adults also saw their overall financial resources suffer as their retirement nest eggs disappeared and house values shrank, while foreclosures increased (Pew Research Center, 2010b). Not surprisingly this age group reported that the recession hit them worse than did other age groups, especially those age 50-64. Middle aged adults who find themselves unemployed are likely to remain unemployed longer than those in early adulthood (U.S. Government Accountability Office, 2012). In the eyes of employers, it may be more cost effective to hire a young adult, despite their limited experience, as they would be starting out at lower levels of the pay scale. In addition, hiring someone who is 25 and has many years of work ahead of them versus someone who is 55 and will likely retire in 10 years may also be part of the decision to hire a younger worker (Lachman, 2004). American workers are also competing with global markets and changes in technology. Those who are able to keep up with all these changes, or are willing to uproot and move around the country

or even the world have a better chance of finding work. The decision to move may be easier for people who are younger and have fewer obligations to others.

Leisure

As most developed nations restrict the number of hours an employer can demand that an employee work per week, and require employers to offer vacation time, what do middle aged adults do with their *time off from work and duties*, referred to as **leisure**? Around the world the most common leisure activity in both early and middle adulthood is watching television (Marketing Charts Staff, 2014). On average, middle aged adults spend 2-3 hours per day watching TV (Gripsrud, 2007) and watching TV accounts for more than half of all the leisure time (see Figure 8.21).

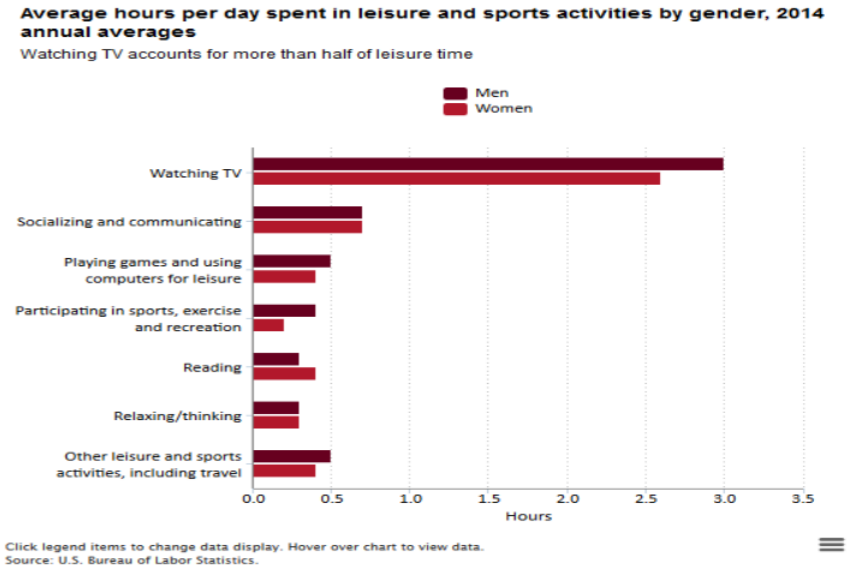

Figure 8.21.

In the United States, men spend about 5 hours more per week in leisure activities, especially on weekends, than do women (Drake, 2013; U.S. Bureau of Labor Statistics, 2016). The leisure gap between mothers and fathers is slightly smaller, about 3 hours a week, than among those without children under age 18 (Drake, 2013). Those age 35-44 spend less time on leisure activities than any other age group, 15 or older (U.S. Bureau of Labor Statistics, 2016). This is not surprising as this age group are more likely to be parents and still working up the ladder of their career, so they may feel they have less time for leisure.

Americans have less leisure time than people in many other developed nations. As you read earlier, there are no laws in many job sectors guaranteeing paid vacation time in the United States (see Figure 8.22). Ray, Sanes and Schmitt (2013) report that several other nations also provide additional time off for young and older workers and for shift workers. In the United States, those in higher paying jobs and jobs covered by a union contract are more likely to have paid vacation time and holidays (Ray & Schmitt, 2007).

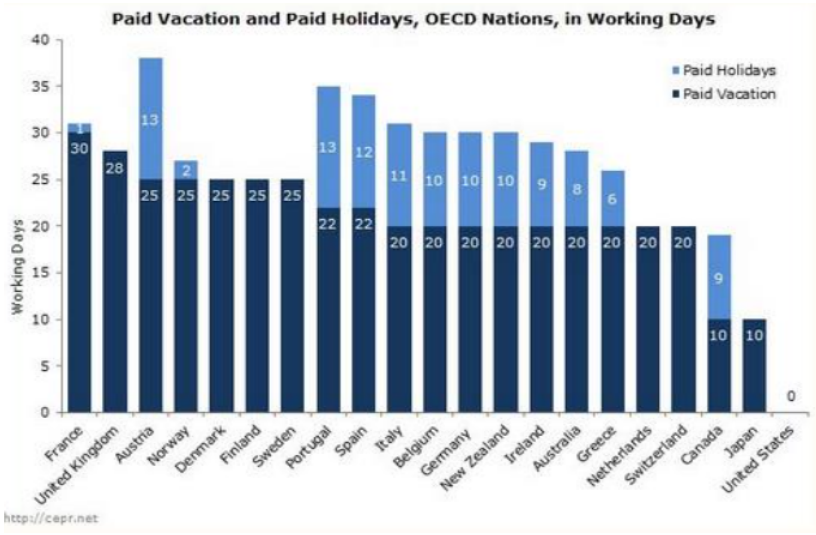

Figure 8.22 Legally Mandated Time Off

But do U.S. workers take their time off? According to Project Time-Off (2016), 55% of U.S. workers in 2015 did not take all of their paid vacation and holiday leave. A large percentage of this leave is lost. It cannot be rolled-over into the next year or paid out. A total of 658 million vacation days, or an average of 2 vacation days per worker was lost in 2015. The reasons most often given for not taking time off was worry that there would be a mountain of work to return to (40%), concern that no one else could do the job (35%), not being able to afford a vacation (33%), feeling it was harder to take time away when you have or are moving up in the company (33%), and not wanting to seem replaceable (22%). Since 2000, more American workers are willing to work for free rather than take the time that is allowed to them. A lack of support from their boss and even their colleagues to take a vacation is often a driving force in deciding to forgo time off. In fact, 80% of the respondents to the survey above said they would take time away if they felt they had support from their boss. Two-thirds reported that they hear nothing, mixed messages, or discouraging remarks about taking their time off. Almost a third (31%) feel they should contact their workplace, even while on vacation.

The benefits of taking time away from work: Several studies have noted the benefits of taking time away from work. It reduces job stress burnout (Nimrod, Kleiber, & Berdychevesky, 2012), improves both mental health (Qian, Yarnal, & Almeida, 2013) and physical health (Stern & Konno, 2009), especially if that leisure time also includes moderate physical activity (Lee et al., 2015). Leisure activities can also improve productivity and job satisfaction (Kühnel & Sonnentag, 2011) and help adults deal with balancing family and work obligations (Lee, et al., 2015).

4.10: Psychosocial Development in Middle Adulthood

Learning Objectives: Psychosocial Development in Middle Adulthood

- *Explain the controversy surrounding the concept of a midlife crisis*
- *Explain the sources of stress confronting adults in midlife and the strategies to cope*
- *Summarize Erikson's seventh psychosocial task of generativity vs stagnation*
- *Describe the relationships middle-aged adults have with their children, parents, and other family members*
- *Describe singlehood, marriage, divorce, and remarriage at midlife*
- *Describe the contemporary roles of grandparents*
- *Describe friendships at midlife*
- *Explain how women are uniquely affected at midlife*
- *Explain the role of religion at midlife*

There are many socioemotional changes that occur in how middle-aged adults perceive themselves. While people in their early 20s may emphasize how old they are to gain respect or to be viewed as experienced, by the time people reach their 40s they tend to emphasize how young they are. For instance, few 40 year olds cut each other down for being so young stating: "You're only 43? I'm 48!" A previous focus on the future gives way to an emphasis on the present. Neugarten (1968) notes that in midlife, people no longer think of their lives in terms of how long they have lived. Rather, life is thought of in terms of how many years are left.

Midlife Crisis?

In 1978 Daniel Levinson published a book entitled *The Seasons of a Man's Life* in which he presented a theory of development in adulthood. Levinson's work was based on in-depth interviews with 40 men between the ages of 35-45. Levinson (1978) indicated that adults go through stages and have an image of the future that motivates them. This image is called "the dream" and for the men interviewed, it was a dream of how their career paths would progress and where they would be at midlife. According to Levinson the midlife transition (40-45) was a time of reevaluating previous commitments; making dramatic changes if necessary; giving expression to previously ignored talents or aspirations; and feeling more of a sense of urgency about life and its meaning. By the time the men entered middle adulthood (45-50), they believed they committed to the new choices made and placed one's energies into these commitments.

Levinson believed that a midlife crisis was a normal part of development as the person is more aware of how much time has gone by and how much time is left. The future focus of early adulthood gives way to an emphasis on the present in midlife, and the men interviewed had difficulty reconciling the "dream" they held about the future with the reality they experienced. Consequently, they felt impatient and were no longer willing to postpone the things they had always wanted to do. Although Levinson believed his research demonstrated the existence of a midlife crisis, his study has been criticized for his research methods, including small sample size, similar ages, and concerns about a cohort effect. In fact, other research does not support his theory of the midlife crisis.

Vaillant (2012) believed that it was the cross-sectional design of Levinson's study that led to the erroneous conclusion of an inevitable midlife crisis. Instead, he believed that longitudinal studies of an individual's entire life was needed to determine the factors associated with optimum health and potential. Vaillant was one of the main researchers in the 75 year-old Harvard Study of Adult Development, and he considered a midlife crisis to be a rare occurrence among the participants (Vaillant, 1977). Additional findings of this longitudinal study will be discussed in the next chapter on late adulthood.

Most research suggests that most people in the United States today do not experience a midlife crisis. Results of a 10-year study conducted by the MacArthur Foundation Research Network on Successful Midlife Development, based on telephone interviews with over 3,000 midlife adults, suggest that the years between 40 and 60 are ones marked by a sense of well-being. Only 23% of their participants reported experiencing a midlife crisis. The crisis tended to occur among the highly educated and was triggered by a major life event rather than out of a fear of aging (Research Network on Successful Midlife Development, 2007).

4.11: Stress

We all know that stress plays a major role in our mental and physical health, but what exactly is stress? The term **stress** *is defined as* pattern of physical and psychological responses in an organism after it perceives a a threatening event that disturbs its homeostasis and taxes its abilities to cope with the event (Hooker & Pressman, 2016). Stress was originally derived from the field of mechanics where it is used to describe materials under pressure. The word was first used in a *psychological* manner by researcher Hans Selye, who was examining the effect of an ovarian hormone that he thought caused sickness in a sample of rats. Surprisingly, he noticed that almost any injected hormone produced this same sickness. He smartly realized that it was not the hormone under investigation that was causing these problems, but instead the aversive experience of being handled and injected by researchers led to high physiological arousal, and eventually to health problems like ulcers.

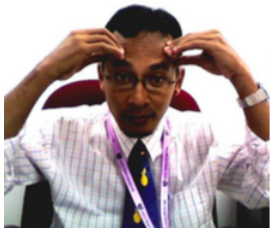

Figure 8.23 Are you Stressed? Source.

Selye (1946) coined the term **stressor** *to label a stimulus that had this effect on the body (that is, causing stress).* He developed a model of the stress response called the **General Adaptation Syndrome**, *which is a three-phase model of stress, which includes a mobilization of physiological resources phase, a coping phase, and an exhaustion phase (i.e., when an organism fails to cope with the stress adequately and depletes its resources).* Figure 8.24 illustrates the General Adaptation Syndrome.

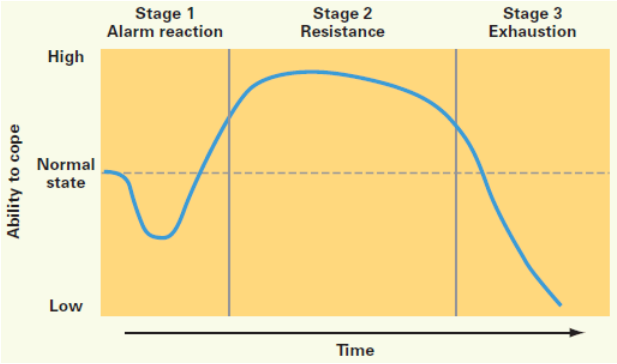

Figure 8.24: General Adaptation Syndrome. Source.

Psychologists have studied stress in a myriad of ways, and it is not just major life stressor (e.g., a family death, a natural disaster) that increase the likelihood of getting sick. Stress can result from negative events, chronically difficult situations, a biological fight-or-flight response, and as clinical illness, such as post-traumatic stress disorder (PTSD). Even small daily hassles, like getting stuck in traffic or fighting with your friend, can raise your blood pressure, alter your stress hormones, and even suppress your immune system function (DeLongis, Folkman, & Lazarus, 1988; Twisk, Snel, Kemper, & van Machelen, 1999). Stress continues to be one of the most important and well-studied psychological correlates of illness, because excessive stress causes potentially damaging wear and tear on the body and can influence almost any disease process.

Dispositions and Stress: Negative dispositions and personality traits have been strongly tied to an array of health risks. One of the earliest negative trait-to-health connections was discovered in the 1950s by two cardiologists. They made the interesting discovery that there were common behavioral and psychological patterns among their heart patients that were not present in other patient samples. *This pattern included being competitive, impatient, hostile, and time urgent.* They labeled it **Type A Behavior**. Importantly, it was found to be associated with *double* the risk of heart disease as compared with **Type B Behavior** *(absence of Type A behaviors)* (Friedman & Rosenman, 1959). Since the 1950s, researchers have discovered that it is the hostility and competitiveness components of Type A that are especially harmful to heart health (Iribarren et al., 2000; Matthews, Glass, Rosenman, & Bortner, 1977; Miller, Smith, Turner, Guijarro, & Hallet, 1996). Hostile individuals are quick to get upset, and this angry arousal can damage the arteries of the heart. In addition, given their negative personality style, hostile people often lack a heath-protective supportive social network.

Figure 8.25: Social Support is important for handling stress. Source.

Social Relationships and Stress: Research has shown that the impact of social isolation on our risk for disease and death is similar in magnitude to the risk associated with smoking regularly (Holt-Lunstad, Smith, & Layton, 2010; House, Landis, & Umberson, 1988). In fact, the importance of social relationships for our health is so significant that some scientists believe our body has developed a physiological system that encourages us to seek out our relationships, especially in times of stress (Taylor et al., 2000). **Social integration** *is the concept used to describe the number of social roles that you have* (Cohen & Willis, 1985). For example, you might be a daughter, a basketball team member, a Humane Society volunteer, a coworker, and a student. Maintaining these different roles can improve your health via encouragement from those around you to maintain a healthy lifestyle. Those in your social network might also provide you with social support (e.g., when you are under stress). This support might include emotional help (e.g., a hug when you need it), tangible help (e.g., lending you money), or advice. By helping to improve health behaviors and reduce stress, social relationships can have a powerful, protective impact on health, and in some cases, might even help people with serious illnesses stay alive longer (Spiegel, Kraemer, Bloom, & Gottheil, 1989).

Caregiving and Stress: A disabled child, spouse, parent, or other family member is part of the lives of some midlife adults. According to the National Alliance for Caregiving (2015), 40 million Americans provide unpaid caregiving. The typical caregiver is a 49 year-old female currently caring for a 69 year-old female who needs care because of a long-term physical condition. Looking more closely at the age of the recipient of caregiving, the typical caregiver for those 18-49 years of age is a female (61%) caring mostly for her own child (32%) followed by a spouse or partner (17%). When looking at older recipients (50+) who receive care, the typical caregiver is female (60%) caring for a parent (47%) or spouse (10%).

Caregiving places enormous stress on the caregiver. Caregiving for a young or adult child with special needs was associated with poorer global health and more physical symptoms among both fathers and mothers (Seltzer, Floyd, Song, Greenberg, & Hong, 2011). Marital relationships are also a factor in how the caring affects stress and chronic conditions. Fathers who were caregivers identified more chronic health conditions than non-caregiving fathers, regardless of marital quality. In contrast, caregiving mothers reported higher levels of chronic conditions when they reported a high level of marital strain (Kang & Marks, 2014). Age can also make a difference in how one is affected by the stress of caring for a child with special needs. Using data from the Study of Midlife in the Unites States, Ha, Hong, Seltzer and Greenberg (2008) found that older parents were significantly less likely to experience the negative effects of having a disabled child than younger parents. They concluded that an age-related weakening of the stress occurred over time. This follows with the greater emotional stability noted at midlife.

Currently 25% of adult children, mainly baby boomers, provide personal or financial care to a parent (Metlife, 2011). Daughters are more likely to provide basic care and sons are more likely to provide financial assistance. Adult children 50+ who work and provide care to a parent are more likely to have fair or poor health when compared to those who do not provide care. Some adult children choose to leave the work force, however, the cost of leaving the work force early to care for a parent is high. For females, lost wages and social security benefits equals $324,044, while for men it equals $283,716 (Metlife, 2011). This loss can jeopardize the adult child's financial future. Consequently, there is a need for greater workplace flexibility for working caregivers.

Spousal Care: Certainly caring for a disabled spouse would be a difficult experience that could negatively affect one's health. However, research indicates that there can be positive health effect for caring for a disabled spouse. Beach, Schulz, Yee and Jackson (2000) evaluated health related outcomes in four groups: Spouses with no caregiving needed (Group 1), living with a disabled spouse but not providing care (Group 2), living with a disabled spouse and providing care (Group 3), and helping a disabled spouse while reporting caregiver strain, including elevated levels of emotional and physical stress (Group 4). Not surprisingly, the participants in Group 4 were the least healthy and identified poorer perceived health, an increase in health-risk behaviors, and an increase in anxiety and depression symptoms. However, those in Group 3 who provided care for a spouse, but did

not identify caregiver strain, actually identified decreased levels of anxiety and depression compared to Group 2 and were actually similar to those in Group 1. It appears that greater caregiving involvement was related to better mental health as long as the caregiving spouse did not feel strain. The beneficial effects of helping identified by the participants were consistent with previous research (Krause, Herzog, & Baker, 1992; Schulz et al., 1997).

Figure 8.26: Caregiving for females is associated with greater stress. Source.

When caring for a disabled spouse, gender differences have also been identified. Female caregivers of a spouse with dementia experienced more burden, had poorer mental and physical health, exhibited increased
depressive symptomatology, took part in fewer health-promoting activities, and received fewer hours of help than male caregivers (Gibbons et al., 2014). This recent study was consistent with previous research findings that women experience more caregiving burden than men, despite similar caregiving situations (Torti, Gwyther, Reed, Friedman, & Schulman, 2004; Yeager, Hyer, Hobbs, & Coyne, 2010). Explanations for why women do not use more external support, which may alleviate some of the burden, include women's expectations that they should assume caregiving roles (Torti et al, 2004) and their concerns with the opinions of others (Arai, Sugiura, Miura, Washio, & Kudo, 2000). Also contributing to women's poorer caregiving outcomes is that disabled males are more aggressive than females, especially males with dementia who display more physical and sexual aggression toward their caregivers (Eastley & Wilcock, 1997; Zuidema, de Jonghe, Verhey, & Koopmans, 2009). Female caregivers are certainly at risk for negative consequences of caregiving, and greater support needs to be available to them.

Stress Management: About 20% of Americans report having stress, with 18–33 year-olds reporting the highest levels (American Psychological Association, 2012). Given that the sources of our stress are often difficult to change (e.g., personal finances, current job), a number of interventions have been designed to help reduce the aversive responses to duress, especially related to health. For example, relaxation activities and forms of meditation are techniques that allow individuals to reduce their stress via breathing exercises, muscle relaxation, and mental imagery. Physiological arousal from stress can also be reduced via **biofeedback,** *a technique where the individual is shown bodily information that is not normally available to them (e.g., heart rate), and then taught strategies to alter this signal.* This type of intervention has even shown promise in reducing heart and hypertension risk, as well as other serious conditions (Moravec, 2008; Patel, Marmot, & Terry, 1981). Reducing stress does not have to be complicated. For example, exercise is a great stress reduction activity (Salmon, 2001) that has a myriad of health benefits.

Figure 8.27: How do you cope with stress when stuck in traffic? Source.

Coping Strategies: Coping is often classified into two categories: Problem-focused coping or emotion-focused coping (Carver, Scheier, & Weintraub, 1989). **Problem-focused coping** *is thought of as actively addressing the event that is causing stress in an effort to solve the issue at hand.* For example, say you have an important exam coming up next week. A problem-focused strategy might be to spend additional time over the weekend studying to make sure you understand all of the material. **Emotion-focused coping**, on the other hand, *regulates the emotions that come with stress.* In the above examination example, this might mean watching a funny movie to take your mind off the anxiety you are feeling. In the short term, emotion-focused coping might reduce feelings of stress, but problem-focused coping seems to have the greatest impact on mental wellness (Billings & Moos, 1981; Herman-Stabl, Stemmler, & Petersen, 1995). That being said, when events are uncontrollable (e.g., the death of a loved one), emotion-focused coping directed at managing your feelings, at first, might be the better strategy. Therefore, it is always important to consider the match of the stressor to the coping strategy when evaluating its plausible benefits.

request.

- **8.11: Stress** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

4.12: Erikson- Generativity vs Stagnation

According to Erikson (1982) **generativity** *encompasses procreativity, productivity, and creativity.* This stage includes the generation of new beings, new products, and new ideas, as well as self-generation concerned with further identity development. Erikson believed that the stage of generativity, during which one established a family and career, was the longest of all the stages. Individuals at midlife are primarily concerned with leaving a positive legacy of themselves, and according to Erikson (1950) parenthood is the primary generative type. Erikson understood that work and family relationships may be in conflict due to the obligations and responsibilities of each, but he believed it was overall a positive developmental time. In addition to being parents and working, Erikson also described individuals being involved in the community during this stage. A sense of stagnation occurs when one is not active in generative matters, however, stagnation can motive a person to redirect energies into more meaningful activities.

Erikson identified "virtues" for each of his eight stages, and they refer to what the individual achieves when the stage is successfully reconciled. The virtue emerging when one achieves generativity is “Care”. Erikson believed that those in middle adulthood should “take care of the persons, the products, and the ideas one has learned to care for” (Erikson, 1982, p. 67). Further, Erikson believed that the strengths gained from the six earlier stages are essential for the generational task of cultivating strength in the next generation. Erikson further argued that generativity occurred best after the individual had resolved issues of identity and intimacy (Peterson & Duncan, 2007).

Figure 8.28: Generativity at midlife. Source.

Research has demonstrated that generative adults possess many positive characteristics, including good cultural knowledge and healthy adaptation to the world (Peterson & Duncan, 2007). Using the Big 5 personality traits, generative women and men scored high on conscientiousness, extraversion, agreeableness, openness to experience, and low on neuroticism (de St. Aubin & McAdams, 1995; Peterson, Smirles, & Wentworth, 1997). Additionally, women scoring high in generativity at age 52 were rated high in positive personality characteristics, satisfaction with marriage and motherhood, and successful aging at age 62 (Peterson & Duncan, 2007). Similarly, men rated higher in generativity at midlife were associated with stronger global cognitive functioning (e.g., memory, attention, calculation), stronger executive functioning (e.g., response inhibition, abstract thinking, cognitive flexibility), and lower levels of depression in late adulthood (Malone, Liu, Vaillant, Rentz, & Waldinger, 2016).

Erikson (1982) indicated that at the end of this demanding stage, individuals may withdraw as generativity is no longer expected in late adulthood. This releases elders from the task of care taking or working. However, not feeling needed or challenged may result in stagnation, and consequently one should not fully withdraw from generative tasks as they enter Erikson’s last stage in late adulthood.

4.13: Midlife Relationships

The **sandwich generation** refers to adults who have at least one parent age 65 or older and are either raising their own children or providing support for their grown children. According to a recent Pew Research survey, 47% of middle-aged adults are part of this sandwich generation (Parker & Patten, 2013). In addition, 15% of middle-aged adults are providing financial support to an older parent while raising or supporting their own children (see Figure 8.29). According to the same survey, almost half (48%) of middle-aged adults, have supported their adult children in the past year, and 27% are the primary source of support for their grown children.

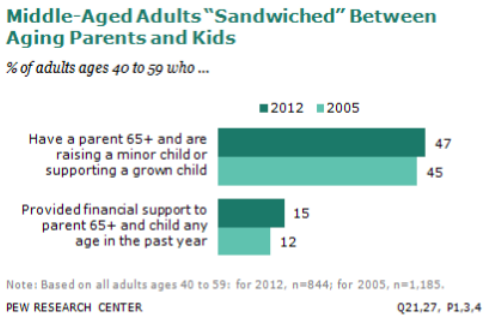

Figure 8.29.

Seventy-one percent of the sandwich generation is age 40-59, 19% were younger than 40, and 10% were 60 or older. Hispanics are more likely to find themselves supporting two generations; 31% have parents 65 or older and a dependent child, compared with 24% of whites and 21% of blacks (Parker & Patten, 2013). Women are more likely to take on the role of care provider for older parents in the U.S. and Germany (Pew Research, 2015). About 1 in 5 women say they have helped with personal care, such as getting dressed or bathing, of aging parents in the past year, compared with 8% of men in the U.S. and 4% in Germany. In contrast, in Italy men are just as likely (25%) as women (26%) to have provided personal care.

The Pew survey found that almost 1 in 3 of the sandwich-generation adults were more likely to say they always feel rushed, while only 23% of other adults said this. However, the survey suggests that those who were supporting both parents and children reported being just as happy as those middle-aged adults who did not find themselves in the sandwich generation (Parker & Patten, 2013). Adults who are supporting both parents and children did report greater financial strain (see Figure 8.30). Only 28% reported that they were living comfortably versus 41% of those who were not also supporting their parents. Almost one third were just making ends meet, compared with 17% of those who did not have the additional financial burden of aging parents.

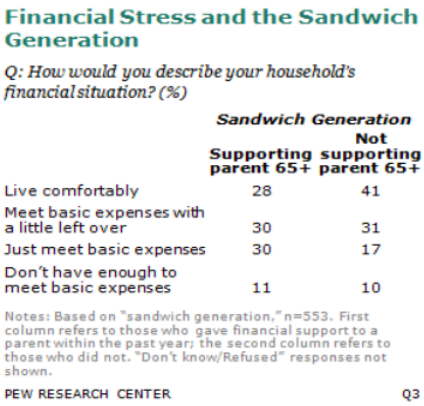

Figure 8.30.

Kinkeeping: At midlife adults may find themselves as a **kinkeeper**. In all families there is a *person or persons who keep the family connected and who promote solidarity and continuity in the family* (Brown & DeRycke, 2010). Who in your own family do you count on to organize family gatherings? Who knows the history of your family? Who do people turn to in your family for advice and support? Who works to strengthen the bonds between members of your family? These are your family's kinkeepers, and they are usually women (Leach & Braithwaite, 1996; Brown & DeRycke, 2010). Leach and Braithwaite found that 86% of their respondents named a woman as their family's kinkeeper, and Brown and DeRycke found that mothers, maternal grandmothers, and

paternal grandmothers were more likely to be a family's kinkeeper than were fathers, young adult children, and grandfathers combined. Brown and DeRycke also found that among young adults, women were more likely to be a kinkeeper than were young adult men.

Kinkeeping can be a source of distress when it interferes with other obligations (Gerstel & Gallagher, 1993). Gerstel and Gallagher found that on average, kinkeepers provide almost a full week of work each month to kinkeeping (almost 34 hours). They also found that the more activities the kinkeeper took on, and the more kin they helped the more stress and higher the levels of depression a kinkeeper experienced. However, unlike other studies on kinkeeping, Gerstel and Gallagher also included a number of activities that would be considered more "caregiving," such as providing transportation, making repairs, providing meals, etc. in addition to the usual activities of kinkeeping.

Empty nest: The **empty nest**, or post-parental period (Dennerstein, Dudley & Guthrie, 2002), *refers to the time period when children are grown up and have left home.* For most parents this occurs during midlife. This time is recognized as a "normative event" as parents are aware that their children will become adults and eventually leave home (Mitchell & Lovegreen, 2009). The empty nest creates complex emotions, both positive and negative, for many parents. Some theorists suggest this is a time of role loss for parents, others suggest it is one of role strain relief (Bouchard, 2013).

The role loss hypothesis predicts that when people lose an important role in their life they experience a decrease in emotional well-being. It is from this perspective that the concept of the **empty nest syndrome** emerged, which *refers to great emotional distress experienced by parents, typically mothers, after children have left home*. The empty nest syndrome is linked to the absence of alternative roles for the parent in which they could establish their identity (Borland, 1982). In Bouchard's (2013) review of the research, she found that few parents reported loneliness or a big sense of loss once all their children had left home.

In contrast, the role stress relief hypothesis suggests that the empty nest period should lead to more positive changes for parents, as the responsibility of raising children has been lifted. The role strain relief hypothesis was supported by many studies in Bouchard's (2013) review. A consistent finding throughout the research literature is that raising children has a negative impact on the quality of martial relationships (Ahlborg, Misvaer, & Möller, 2009; Bouchard, 2013). Several studies have reported that martial satisfaction often increases during the launching phase of the empty nest period, and that this satisfaction endures long after the last child has left home (Gorchoff, John, & Helson, 2008).

However, most of the research on the post-parental period has been with American parents. A number of studies in China suggest that empty-nesters, especially in more rural areas of China, report greater loneliness and depression than their counterparts with children still at home (Wu et al., 2010). Family support for the elderly by their children is a cherished Chinese tradition (Wong & Leung, 2012). With children moving from the rural communities to the larger cities for education and employment this may explain the more pessimistic reaction of Chinese parents than in American samples. The loss of an adult child in a rural region may mean a loss of family income for aging parents. Empty-nesters in urban regions of China did not report the same degree of distress (Su et al., 2012), suggesting that it not so much the event of children leaving, but the additional hardships this may place on aging parents.

Boomerang Kids: As you read in Chapter 7, young adults are living with their parents for a longer duration and in greater numbers than previous generations. In addition to those in early adulthood who are not leaving the home of their parents, there are also *young adults who are returning after having lived independently outside the home*, and these are called **boomerang kids**.

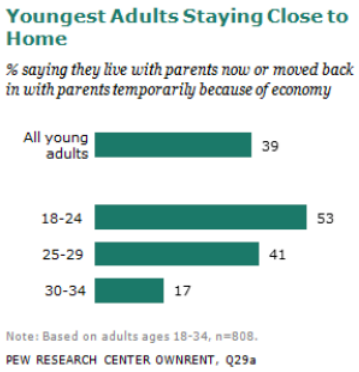

Figure 8.31.

Figure 8.31 shows the number of young people who are still living at home (Parker, 2012). In addition, 63% of 18 to 34 year-olds know someone who has returned to live with their parents. Many of the same financial reasons that are influencing young people's

decisions to delay exit from the home of their parents are underlying their decisions to return home. In addition, to financial reasons, some boomerang kids are returning because of emotional distress, such as mental health issues (Sandberg-Thoma, Snyder, & Jang, 2015).

What is the effect on parents when their adult children return home? Certainly there is considerable research that shows that the stress of raising children can have a negative impact on parents' well-being, and that when children leave home many couples experience less stress and greater life satisfaction (see the section on the empty nest). Early research in the 1980s and 1990s supported the notion that boomerang children, along with those who were failing to exit the home, placed greater financial hardship on the parents, and the parents reported more negative perceptions of this living arrangement (Aquilino, 1991). Recent surveys suggest that today's parents are more tolerant of this, perhaps because this is becoming a more normative experience than in the past. Moreover, children who return are more likely to have had good relationships with their parents growing up, so there may be less stress between parents and their adult children who return (Sandberg-Thoma et al., 2015). Parents of young adults who have moved back home because of economic reasons report that they are just as satisfied with their life as are parents whose adult children are still living independently (Parker, 2012). Parker found that adult children age 25 and older are more likely to contribute financially to the family or complete chores and other household duties. Parker also found that living in a multigenerational household may be acting as an economic safety net for young adults. In comparison to young adults who were living outside of the home, those living with their parents were less likely to be living in poverty (17% versus 10%).

So far we have considered the impact that adult children who have returned home or have yet to leave the nest have on the lives of middle-aged parents. What about the effect on parents who have adult children dealing with personal problems, such as alcoholism, chronic health concerns, mental health issues, trouble with the law, poor social relationships, or academic or job related problems, even if they are not living at home? The life course perspective proposes the idea of **linked lives** (Greenfield & Marks, 2006). *The notion that people in important relationships, such as children and parents, mutually influence each other's developmental pathways*. In previous chapters you have read about the effects that parents have on their children's development, but this relationship is bidirectional. The problems faced by children, even when those children are adults, influence the lives of their parents. Greenfield and Marks found in their study of middle-aged parents and their adult children, those parents whose children were dealing with personal problems reported more negative affect, lower self-acceptance, poorer parent-child interactions, and more family relationship stress. The more problems the adult children were facing, the worse the lives and emotional health of their parents, with single parents faring the worst.

4.14: Middle Adult Lifestyles

Singlehood: According to a recent Pew Research study, 16 per 1,000 adults age 45 to 54 have never-married, and 7 per 1,000 adults age 55 and older have never married in the U. S. (Wang & Parker, 2014). However, some of them may be living with a partner. In addition, some singles at midlife may be single through divorce or widowhood. Bella DePaulo (2014) has challenged the idea that singles, especially the always single, fair worse emotionally and in health when compared to those who are married. DePaulo suggests that there is a bias in how studies examine the benefits of marriage. Most studies focus on only a comparison between married versus not married, which does not include a separate comparison between those who have always been single, and those who are single because of divorce or widowhood. Her research, along with that of others, has found that those who are married may be more satisfied with life than the divorced or widowed, but there is little difference between married and always single, especially when comparing those who are recently married with those who have been married for four or more years. It appears that once the initial blush of the honeymoon wears off, those who are wedded are no happier or healthier than those who remained single. This might also suggest that there may be problems with how the "married" category is also seen as one homogeneous group.

Online Dating: Montenegro (2003) surveyed over 3,000 singles aged 40–69, and almost half of the participants reported their most important reason for dating was to have someone to talk to or do things with. Additionally, sexual fulfillment was also identified as an important goal for many. Alterovitz & Mendelsohn (2013) reviewed online personal ads for men and women over age 40 and found that romantic activities and sexual interests were mentioned at similar rates among the middle-age and young-old age groups, but less for the old-old age group.

Marriage: As you read in Chapter 7, there has been a number of changes in the marriage rate as more people are cohabitating, more are deciding to stay single, and more are getting married at a later age.

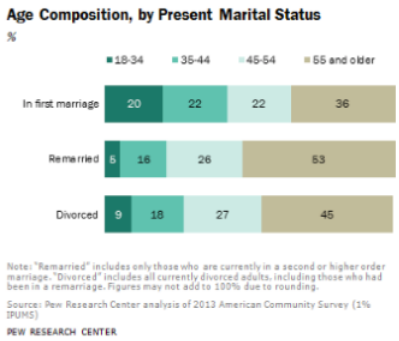

Figure 8.32.

As you can see in Figure 8.32, 48% of adults age 45-54 are married; either in their first marriage (22%) or have remarried (26%). This makes marriage the most common relationship status for middle-aged adults in the United States. Marital satisfaction tends to increase for many couples in midlife as children are leaving home (Landsford, Antonucci, Akiyama, & Takahashi, 2005).

Not all researchers agree. They suggest that those who are unhappy with their marriage are likely to have gotten divorced by now, making the quality of marriages later in life only look more satisfactory (Umberson, Williams, Powers, Chen, & Campbell, 2005).

Divorce: Livingston (2014) found that 27% of adults age 45 to 54 were divorced (see Figure 8.32). Additionally, 57% of divorced adults were women. This reflects the fact that men are more likely to remarry than are women. Two-thirds of divorces are initiated by women (AARP, 2009). Most divorces take place within the first 5 to 10 years of marriage. This time line reflects people's initial attempts to salvage the relationship. After a few years of limited success, the couple may decide to end the marriage. It used to be that divorce after having been married for 20 or more years was rare, but in recent years the divorce rate among more long-term marriages has been increasing. Brown and Lin (2013) note that while the divorce rate in the U.S. has declined since the 1990s, the rate among those 50 and older has doubled. They suggest several reasons for the "graying of divorce". There is less stigma attached to divorce today than in the past. Some older women are out-earning their spouses, and thus may be more financially capable of supporting themselves, especially as most of their children have grown. Finally, given increases in human longevity, the prospect of living several more years or decades with an incompatible spouse may prompt middle-aged and older adults to leave the marriage.

Gottman and Levenson (2000) found that the divorces in early adulthood were more angry and conflictual, with each partner blaming the other for the failures in the marriage. In contrast, they found that at midlife divorces tended to be more about having

grown apart, or a cooling off of the relationship. A survey by AARP (2009) found that men and women had diverse motivations for getting a divorce. Women reported concerns about the verbal and physical abusiveness of their partner (23%), drug/alcohol abuse (18%), and infidelity (17%). In contrast, men mentioned they had simply fallen out of love (17%), no longer shared interests or values (14%), and infidelity (14%). Both genders felt their marriage had been over long before the decision to divorce was made, with many of the middle-aged adults in the survey reporting that they stayed together because they were still raising children. Only 1 in 4 regretted their decision to divorce.

The effects of divorce are varied. Overall, young adults struggle more with the consequences of divorce than do those at midlife, as they have a higher risk of depression or other signs of problems with psychological adjustment (Birditt & Antonucci, 2013). Divorce at midlife is more stressful for women. In the AARP (2009) survey, 44% of middle-aged women mentioned financial problems after divorcing their spouse, in comparison only 11% of men reported such difficulties. However, a number women who divorce in midlife report that they felt a great release from their day-to-day sense of unhappiness. Hetherington (Hetherington & Kelly, 2002) found that among the groups of divorcees she called the **enhancers**, *those who had used the experience to better themselves and seek more productive intimate relationships*, or the **competent loners**, *those who used their divorce experience to grow emotionally, but who choose to stay single*, the overwhelming majority were women.

Dating Post-Divorce: Most divorced adults have dated by one year after filing for divorce (Anderson et al., 2004; Anderson & Greene, 2011). One in four recent filers report having been in or were currently in a serious relationship, and over half were in a serious relationship by one year after filing for divorce. Not surprisingly, younger adults were more likely to be dating than were middle aged or older adults, no doubt due to the larger pool of potential partners from which they could to draw. Of course, these relationships will not all end in marriage. Teachman (2008) found that more than two thirds of women under the age of 45 had cohabited with a partner between their first and second marriages.

Dating for adults with children can be more of a challenge. Courtships are shorter in remarriage than in first marriages. When couples are "dating", there is less going out and more time spent in activities at home or with the children. So the couple gets less time together to focus on their relationship. Anxiety or memories of past relationships can also get in the way. As one Talmudic scholar suggests "when a divorced man marries a divorced woman, four go to bed." (Secombe & Warner, 2004).

Post-divorce parents **gatekeep,** *that is, they regulate the flow of information about their new romantic partner to their children*, in an attempt to balance their own needs for romance with consideration regarding the needs and reactions of their children. Anderson et al. (2004) found that almost half (47%) of dating parents gradually introduce their children to their dating partner, giving both their romantic partner and children time to adjust and get to know each other. Many parents who use this approach do so to avoid their children having to keep meeting someone new until it becomes clearer that this relationship might be more than casual. It might also help if the adult relationship is on firmer ground so it can weather any initial push back from children when it is revealed. Forty percent are open and transparent about the new relationship at the outset with their children. Thirteen percent do not reveal the relationship until it is clear that cohabitation and or remarriage is likely. Anderson and colleagues suggest that practical matters influence which gatekeeping method parents may use. Parents may be able to successfully shield their children from a parade of suitors if there is reliable childcare available. The age and temperament of the child, along with concerns about the reaction of the ex-spouse, may also influence when parents reveal their romantic relationships to their children.

Rates of remarriage: The rate for remarriage, like the rate for marriage, has been declining overall. In 2013 the remarriage rate was approximately 28 per 1,000 adults 18 and older. This represents a 44% decline since 1990 and a 16% decline since 2008 (Payne, 2015). Brown and Lin (2013) found that the rate of remarriage dropped more for younger adults than middle aged and older adults, and Livingston (2014) found that as we age we are more likely to have remarried (see Figure 8.33). This is not surprising as it takes some time to marry, divorce, and then find someone else to marry. However, Livingston found that unlike those younger than 55, those 55 and up are remarrying at a higher rate than in the past. In 2013, 67% of adults 55-64 and 50% of adults 65 and older had remarried, up from 55% and 34% in 1960, respectively.

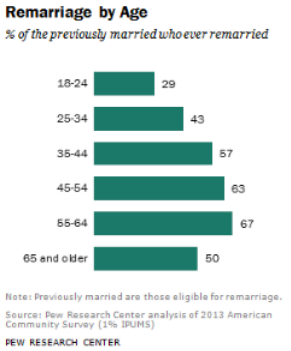

Figure 8.33.

Men have a higher rate of remarriage at every age group starting at age 25 (Payne, 2015). Livingston (2014) reported that in 2013, 64% of divorced or widowed men compared with 52% of divorced or widowed women had remarried. However, this gender gap has narrowed over time. Even though more men still remarry, they are remarrying at a slower rate. In contrast, women are remarrying today more than they did in 1980. This gender gap has closed mostly among young and middle aged adults, but still persists among those 65 and older.

In 2012, Whites who were previously married were more likely to remarry than were other racial and ethnic groups (Livingston, 2014). Moreover, the rate of remarriage has increased among Whites, while the rate of remarriage has declined for other racial and ethnic groups. This increase is driven by White women, whose rate of remarriage has increased, while the rate for White males has declined.

Success of Remarriage: Reviews are mixed as to the happiness and success of remarriages. While some remarriages are more successful, especially if the divorce motivated the adult to engage in self-improvement and personal growth (Hetherington & Kelly, 2002), a number of divorced adults end up in very similar marriages the second or third time around (Hetherington & Kelly, 2002). Remarriages have challenges that are not found in first marriages that may create additional stress in the marital relationship. There can often be a general lack of clarity in family roles and expectations when trying to incorporate new kin into the family structure, even determining the appropriate terms for these kin, along with their roles can be a challenge. Partners may have to navigate carefully their role when dealing with their partners' children. All of this may lead to greater dissatisfaction and even resentment among family members. Even though remarried couples tend to have more realistic expectations for marriage, they tend to be less willing to stay in unhappy situations. The rate of divorce among remarriages is higher than among first marriages (Payne, 2015), which can add additional burdens, especially when children are involved.

Children's Influence on Repartnering: Does having children affect whether a parent remarries? Goldscheider and Sassler (2006) found children residing with their mothers reduces the mothers' likelihood of marriage, only with respect to marrying a man without children. Further, having children in the home appears to increase single men's likelihood of marrying a woman with children (Stewart, Manning, & Smock, 2003). There is also some evidence that individuals who participated in a stepfamily while growing up may feel better prepared for stepfamily living as adults. Goldscheider and Kaufman (2006) found that having experienced family divorce as a child is associated with a greater willingness to marry a partner with children.

Figure 8.34. Source.

When children are present after divorce, one of the challenges the adults encounter is how much influence the child will have when selecting a new partner. Greene, Anderson, Hetherington, Forgatch, and DeGarmo (2003) identified two types of parents. The child- focused parent allows the child's views, reactions, and needs to influence the repartnering. In contrast, the adult-focused parent expects that their child can adapt and should accommodate to parental wishes. Anderson and Greene (2011) found that divorced custodial mothers identified as more adult focused tended to be older, more educated, employed, and more likely to have been married longer. Additionally, adult focused mothers reported having less rapport with their children, spent less time in joint

activities with their children, and the child reported lower rapport with their mothers. Lastly, when the child and partner were resisting one another, adult focused mothers responded more to the concerns of the partner, while the child focused mothers responded more to the concerns of the child. Understanding the implications of these two differing perspectives can assist parents in their attempts to repartner.

Grandparents

In addition to maintaining relationships with their children and aging parents, many people in middle adulthood take on yet another role, becoming a grandparent. The role of grandparent varies around the world. In multigenerational households, grandparents may play a greater role in the day-to-day activities of their grandchildren. While this family dynamic is more common in Latin America, Asia, and Africa, it has been on the increase in the U.S. (Pew Research Center, 2010).

The degree of grandparent involvement also depends on the proximity of the grandparents' home to the grandchildren. In developed nations, the greater mobility of the society can mean that grandparents may live long distances from their grandchildren. Technology has brought grandparents and their more distant grandchildren together. Sorenson and Cooper (2010) found that many of the grandfathers they interviewed would text, email, or Skype with their grandchildren in order to stay in touch.

Figure 8.35. Source.

Cherlin and Furstenberg (1986) describe three styles of grandparents: **Remote:** Thirty percent of grandparents rarely see their grandchildren. Usually they live far away from the grandchildren, but may also have a distant relationship. Contact is typically made on special occasions, such as holidays or birthdays. **Companionate**: Fifty-five percent of grandparents were described as "companionate". These grandparents do things with the grandchild but have little authority or control over them. They prefer to spend time with them without interfering in parenting. They are more like friends to their grandchildren. **Involved**: Fifteen percent of grandparents were described as "involved". These grandparents take a very active role in their grandchild's life. They children might even live with the grandparent. The involved grandparent is one who has frequent contact with and authority over the grandchild. Grandmothers, more so than grandfathers, play this role. In contrast, more grandfathers than grandmothers saw their role as family historian and family advisor (Neugarten and Weinstein, 1964).

Bengtson (2001) suggests that grandparents adopt different styles with different grandchildren, and over time may change styles as circumstances in the family change. Today more grandparents are the sole care providers for grandchildren, or may step in at times of crisis. With these changes grandparents are redefining how they see their role in the family with fewer adopting a more formal role (Hayslip, Henderson & Shore, 2003).

Early research on grandparents has routinely focused on grandmothers, with grandfathers often becoming invisible members of the family (Sorensen & Cooper, 2010). Yet, grandfathers stress the importance of their relationships with their grandchildren as strongly as do grandmothers (Waldrop et al., 1999). For some men, this may provide them with the opportunity to engage in activities that their occupations, as well as their generation's views of fatherhood and masculinity, kept them from engaging in with their own children (Sorenson & Cooper, 2010). Many of the grandfathers in Sorenson and Cooper's study felt that being a grandfather was easier and a lot more enjoyable. Even among grandfathers that took on a more involved role, there was still a greater sense that they could be more light-hearted and flexible in their interactions with their grandchildren. Many grandfathers reported that they were more openly affectionate with their grandchildren than they had been with their own children.

- **8.14: Middle Adult Lifestyles** by Martha Lally and Suzanne Valentine-French is licensed CC BY-NC-SA 3.0. Original source: http://dept.clcillinois.edu/psy/LifespanDevelopment.pdf.

4.15: Friendships

Adults of all ages who reported having a confidante or close friend with whom they could share personal feelings and concerns, believed these friends contributed to a sense of belonging, security, and overall wellbeing (Dunér & Nordstrom, 2007). Having a close friend is a factor in significantly lower odds of psychiatric morbidity including depression and anxiety (Harrison, Barrow, Gask, & Creed, 1999; Newton et al., 2008). The availability of a close friend has also been shown to lessen the adverse effects of stress on health (Kouzis & Eaton, 1998; Hawkley et al., 2008; Tower & Kasl, 1995). Additionally, poor social connectedness in adulthood is associated with a larger risk of premature mortality than cigarette smoking, obesity, and excessive alcohol use (Holt-Lunstad, Smith, & Layton, 2010).

Figure 8.36. Source.

Female friendships and social support networks at midlife contribute significantly to a woman's feeling of life satisfaction and well-being (Borzumato-Gainey, Kennedy, McCabe, & Degges-White, 2009). Degges-White and Myers (2006) found that women who have supportive people in their life experience greater life satisfaction than do those who live a more solitary life. A friendship network or the presence of a confidant have both been identified for their importance to women's mental health (Baruch & Brooks-Gunn, 1984). Unfortunately, with numerous caretaking responsibilities at home, it may be difficult for women to find time and energy to enhance the friendships that provide an increased sense of life satisfaction (Borzumato-Gainey et al., 2009). Emslie, Hunt and Lyons (2013) found that for men in midlife, the shared consumption of alcohol was important to creating and maintaining male friends. Drinking with friends was justified as a way for men to talk to each other, provide social support, relax, and improve mood. Although the social support provided when men drink together can be helpful, the role of alcohol in male friendships can lead to health damaging behavior from excessive drinking.

The importance of social relationships begins in early adulthood by laying down a foundation for strong social connectedness and facilitating comfort with intimacy (Erikson, 1959). To determine the impact of the quantity and quality of social relationships in young adulthood on middle adulthood, Carmichael, Reis, and Duberstein (2015) assessed individuals at age 50 on measures of social connection (types of relationships and friendship quality) and psychological outcomes (loneliness, depression, psychological well-being). Results indicated that the quantity of social interactions at age 20 and the quality, not quantity, of social interaction at age 30 predicted midlife social interactions. Those individuals who had high levels of social information seeking (quantity) at age 20 followed by less quantity in social relationships but greater emotional closeness (quality), resulted in positive psychosocial adjustment at midlife. Continuing to socialize widely in one's 30s appeared to negatively affect the development of intimacy, and consequently resulted in worse psychological outcomes at age 50.

Internet Friendships: What influence does the Internet have on friendships? It is not surprising that people use the Internet with the goal of meeting and making new friends (Fehr, 2008; McKenna, 2008). Researchers have wondered if the issue of not being face-to-face reduces the authenticity of relationships, or if the Internet really allows people to develop deep, meaningful connections. Interestingly, research has demonstrated that virtual relationships are often as intimate as in-person relationships; in fact, Bargh and colleagues found that online relationships are sometimes more intimate (Bargh, McKenna, & Fitsimons, 2002). This can be especially true for those individuals who are more socially anxious and lonely as such individuals are more likely to turn to the Internet to find new and meaningful relationships (McKenna, Green, & Gleason, 2002). McKenna and colleagues suggest that for people who have a hard time meeting and maintaining relationships, due to shyness, anxiety, or lack of face-to-face social skills, the Internet provides a safe, nonthreatening place to develop and maintain relationships. Similarly, Benford (2008) found that for high-functioning autistic individuals, the Internet facilitated communication and relationship development with others, which would have been more difficult in face-to-face contexts, leading to the conclusion that Internet communication could be empowering for those who feel frustrated when communicating face to face.

Workplace Friendships: Friendships often take root in the workplace, due to the fact that people are spending as much, or more, time at work than they are with their family and friends (Kaufman & Hotchkiss, 2003). Often, it is through these relationships that

people receive mentoring and obtain social support and resources, but they can also experience conflicts and the potential for misinterpretation when sexual attraction is an issue. Indeed, Elsesser and Peplau (2006) found that many workers reported that friendships grew out of collaborative work projects, and these friendships made their days more pleasant.

Figure 8.37. Source.

In addition to those benefits, Riordan and Griffeth (1995) found that people who worked in an environment where friendships could develop and be maintained were more likely to report higher levels of job satisfaction, job involvement, and organizational commitment, and they were less likely to leave that job. Similarly, a Gallup poll revealed that employees who had close friends at work were almost 50% more satisfied with their jobs than those who did not (Armour, 2007).

4.16: Women in Midlife

In Western society, aging for women is much more stressful than for men as society emphasizes youthful beauty and attractiveness (Slevin, 2010). The description that aging men are viewed as “distinguished” and aging women are viewed as “old” is referred to as the double standard of aging (Teuscher & Teuscher, 2006). Since women have traditionally been valued for their reproductive capabilities, they may be considered old once they are postmenopausal. In contrast, men have traditionally been valued for their achievements, competence and power, and therefore are not considered old until they are physically unable to work (Carroll, 2016). Consequently, women experience more fear, anxiety, and concern about their identity as they age, and may feel pressure to prove themselves as productive and valuable members of society (Bromberger, Kravitz, & Chang, 2013).

Attitudes about aging, however, do vary by race, culture, and sexual orientation. In some cultures, aging women gain greater social status. For example, as Asian women age they attain greater respect and have greater authority in the household (Fung, 2013). Compared to white women, Black and Latina women possess less stereotypes about aging (Schuler et al., 2008). Lesbians are also more positive about aging and looking older than heterosexuals (Slevin, 2010). The impact of media certainly plays a role in how women view aging by selling anti-aging products and supporting cosmetic surgeries to look younger (Gilleard & Higgs, 2000).

4.17: Religion and Spirituality

Grzywacz and Keyes (2004) found that in addition to personal health behaviors, such as regular exercise, healthy weight, and not smoking, social behaviors, including involvement in religious- related activities, have been shown to be positively related to optimal health. However, it is not only those who are involved in a specific religion that benefit, but so too do those identified as being spiritual. According to Greenfield, Vaillant, and Marks (2009) **religiosity** *refers to engaging with a formal religious group's doctrines, values, traditions, and co-members*. In contrast, **spirituality** *refers to an individual's intrapsychic sense of connection with something transcendent (that which exists apart from an not limited by the material universe) and the subsequent feelings of awe, gratitude, compassion, and forgiveness.* Research has demonstrated a strong relationship between spirituality and psychological well-being, irrespective of an individual's religious participation (Vaillant, 2008). Additionally, Sawatzky, Ratner, & Chiu (2005) found that spirituality was related to a higher quality of life for both individuals and societies.

Figure 8.38. Source.

Based on reports from the 2005 National Survey of Midlife in the United States, Greenfield et al. (2009) found that higher levels of spirituality were associated with lower levels of negative affect and higher levels of positive affect, personal growth, purpose in life, positive relationships with others, self-acceptance, environmental mastery, and autonomy. In contrast, formal religious participation was only associated with higher levels of purpose in life and personal growth among just older adults and lower levels of autonomy. In summary, it appears that formal religious participation and spirituality relate differently to an individual's overall psychological well-being.

Age: Older individuals identify religion/spirituality as being more important in their lives than those younger (Beit-Hallahmi & Argyle, 1998). This age difference has been explained by several factors including that religion and spirituality assist older individuals in coping with age- related losses, provide opportunities for socialization and social support in later life, and demonstrate a cohort effect in that older individuals were socialized more to be religious and spiritual than those younger (Greenfield et al., 2009).

Gender: In the United States, women report identifying as being more religious and spiritual than men do (de Vaus & McAllister, 1987). According to the Pew Research Center (2016), women in the United States are more likely to say religion is very important in their lives than men (60% vs. 47%). American women also are more likely than American men to say they pray daily (64% vs. 47%) and attend religious services at least once a week (40% vs. 32%). Theories to explain this gender difference include that women may benefit more from the social-relational aspects of religion/spirituality because social relationships more strongly influence women's mental health. Additionally, women have been socialized to internalize the behaviors linked with religious values, such as cooperation and nurturance, more than males (Greenfield et al., 2009).

Figure 8.39.

Worldwide: To measure the religious beliefs and practices of men and women around the world, the Pew Research Center (2016) conducted surveys of the general population in 84 countries between 2008 and 2015. Overall, an estimated 83% of women worldwide identified with a religion compared with 80% of men. This equaled 97 million more women than men identifying with a religion. There were no countries in which men were more religious than women by 2 percentage points or more. Among Christians, women reported higher rates of weekly church attendance and higher rates of daily prayer. In contrast, Muslim women and

Muslim men showed similar levels of religiousness, except frequency of attendance at worship services. Because of religious norms, Muslim men worshiped at a mosque more often than Muslim women. Similarly, Jewish men attended a synagogue more often than Jewish women. In Orthodox Judaism, communal worship services cannot take place unless a minyan, or quorum of at least 10 Jewish men, is present, thus insuring that men will have high rates of attendance. Only in Israel, where roughly 22% of all Jewish adults self-identify as Orthodox, did a higher percentage of men than women report engaging in daily prayer.

4.R: Middle Adulthood (References)

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CHAPTER OVERVIEW

Chapter 5: Late Adulthood

Learning Objectives: Late Adulthood Definition and Demographics

- Describe the increase in the number of individuals who are currently identified as late adults
- Describe the increase in late adulthood worldwide
- Explain gender and ethnic differences in the number of individuals identified as late adults
- Explain the different ways developmental psychologists describe aging
- Explain the difference between life span and life expectancy
- Define the three age categories for late adulthood
- Explain what factors contribute to becoming a centenaria

Late adulthood spans the time when we reach our mid-sixties until death. This is the longest developmental stage across the lifespan. In this chapter, we will consider the growth in numbers for those in late adulthood, how that number is expected to change in the future, and the implications this will bring to both the United States and worldwide. We will also examine several theories of human aging, the physical, cognitive, and socioemotional changes that occur with this population, and the vast diversity among those in this developmental stage. Further, ageism and many of the myths associated with those in late adulthood will be explored.

history is available upon request.

5.1: Late Adulthood

Late adulthood, which includes those aged 65 years and above, is the fastest growing age division of the United States population (Gatz, Smyer, & DiGilio, 2016). Currently, one in seven Americans is 65 years of age or older. The first of the baby boomers (born from 1946-1964) turned 65 in 2011, and approximately 10,000 baby boomers turn 65 every day. By the year 2050, almost one in four Americans will be over 65, and will bed expected to live longer than previous generations. According to the U. S. Census Bureau (2014b) a person who turned 65 in 2015 can expect to live another 19 years, which is 5.5 years longer than someone who turned 65 in 1950. This increasingly aged population has been referred to as the "Graying of America". This "graying" is already having significant effects on the nation in many areas, including work, health care, housing, social security, caregiving, and adaptive technologies. Table 9.1 shows the 2012, 2020, and 2030 projected percentages of the U.S. population ages 65 and older.

Table 9.1 Percent of United States Population 65 Years and Older

Percent of United States Population	2012	2020	2030
65 years and older	13.7%	16.8%	20.3%
65-69	4.5%	5.4%	5.6%
70-74	3.2%	4.4%	5.2%
75-79	2.4%	3.0%	4.1%
80-84	1.8%	1.9%	2.9%
85 years and older	1.9%	2.0%	2.5%

Compiled from data from An Aging Nation: The older population in the United States. United States Census Bureau. http://www.census.gov/prod/2014pubs/p25-1140.pdf

The "Graying" of the World

Even though the United States is aging, it is still younger than most other developed countries (Ortman, Velkoff, & Hogan, 2014). Germany, Italy, and Japan all had at least 20% of their population aged 65 and over in 2012, and Japan had the highest percentage of elderly. Additionally, between 2012 and 2050, the proportion aged 65 and over is projected to increase in all developed countries. Japan is projected to continue to have the oldest population in 2030 and 2050. Table 9.2 shows the percentages of citizens aged 65 and older in select developed countries in 2012 and projected for 2030 and 2050.

Table 9.2 Percentage of Citizens 65 years and Older in Six Developed Countries

Percent of Population 65 and Older	**2012**	**2030**	**2050**
America	13.7%	20.3%	22%
Japan	24%	32.2%	40%
Germany	20%	27.9%	30%
Italy	20%	25.5%	31%
Canada	16.5%	25%	26.5%
Russia	13%	20%	26%

Compiled from data from An Aging Nation: The older population in the United States. United States Census Bureau. http://www.census.gov/prod/2014pubs/p25-1140.pdf

According to the National Institute on Aging (NIA, 2015b), there are 524 million people over 65 worldwide. This number is expected to increase from 8% to 16% of the global population by 2050. Between 2010 and 2050, the number of older people in less 250%, compared with only a 71% increase in developed countries. Declines in fertility and improvements in longevity account for the percentage increase for those 65 years and older. In more developed countries, fertility fell below the replacement rate of two live births per woman by the 1970s, down from nearly three children per woman around 1950. Fertility rates also fell in many less

developed countries from an average of six children in 1950 to an average of two or three children in 2005. In 2006, fertility was at or below the two-child replacement level in 44 less developed countries (NIA, 2015d).

Figure 9.1 Age is increasing worldwide. Source.

In total number, the United States is projected to have a larger older population than the other developed nations, but a smaller older population compared with China and India, the world's two most populous nations (Ortman et al., 2014). By 2050, China's older population is projected to grow larger than the total U.S. population today. As the population ages, concerns grow about who will provide for those requiring long-term care. In 2000, there were about 10 people 85 and older for every 100 persons between ages 50 and 64. These midlife adults are the most likely care providers for their aging parents. The number of old requiring support from their children is expected to more than double by the year 2040 (He, Sengupta, Velkoff, & DeBarros, 2005). These families will certainly need external physical, emotional, and financial support in meeting this challenge.

5.2: Life Expectancy

Life Expectancy vs Lifespan

Lifespan or **Maximum Lifespan** *is referred to as the greatest age reached by any member of a given population (or species).* For humans, the lifespan is currently between 120 and 125**. Life Expectancy** *is defined as the average number of years that members of a population (or species) live.* According to the World Health Organization (WHO) (2016) global life expectancy at birth in 2015 was 71.4 years, with females reaching 73.8 years and males reaching 69.1 years.

Women live longer than men around the world, and the gap between the sexes has remained the same since 1990. Overall life expectancy ranged from 60.0 years in the WHO African Region to 76.8 years in the WHO European Region. Global life expectancy increased by 5 years between 2000 and 2015, and the largest increase was in the WHO African Region where life expectancy increased by 9.4 years. This was due primarily to improvements in child survival and access to antiretroviral medication for the treatment of HIV. According to the Central Intelligence Agency (2016) the United States ranks 43rd in the world for life expectancy.

World Healthy Life Expectancy: A better way to appreciate the diversity of people in late adulthood is to go beyond chronological age and examine how well the person is aging. Many in late adulthood enjoy better health and social well-being than average and would be aging at an optimal level. In contrast, others experience poor health and dependence to a greater extent than would be considered normal. When looking at large populations, the WHO (2016) measures how many equivalent years of full health on average a newborn baby is expected to have. *This age takes into account current age-specific mortality, morbidity, and disability risks and is referred to as* **The Healthy Life Expectancy.** In 2015, the global Healthy Life Expectancy was 63.1 years up from 58.5 years in 2000. The WHO African Region had the lowest Healthy Life Expectancy at 52.3 years, while the WHO Western Pacific Region had the highest at 68.7 years.

Life Expectancy in America: In the United States the overall life expectancy is 79.7 years, however, life expectancies vary by sex, race, and ethnicity. Table 9.3 shows the life expectancy of three demographic groups for males and females for a child born in 2012 (Ortman et al., 2014). As can be seen, females enjoy a longer life expectancy, and overall Hispanics have the highest life expectancy.

Table 9.3 2012 U. S. Life Expectancy by Sex, Race, and Ethnic Origin in Years

Demographic	Female	Male
All Groups	81.97	77.32
Non-Hispanic White and Asian or Pacific Islander	81.7	77.1
Non-Hispanic Black and American Indian or Alaskan Native	78.0	71.7
Hispanic	83.7	78.9

Compiled from data from An Aging Nation: The older population in the United States. United States Census Bureau. http://www.census.gov/prod/2014pubs/p25-1140.pdf

American Healthy Life Expectancy: To determine the current United States Healthy Life Expectancy (HLE), factors were evaluated in 2007-2009 to determine how long an individual currently at age 65 will continue to experience good health (CDC, 2013). The highest Healthy Life Expectancy (HLE) was observed in Hawaii with 16.2 years of additional good health, and the lowest was in Mississippi with only 10.8 years of additional good health. Overall, the lowest HLE was among southern states. Females had a greater HLE than males at age 65 years in every state and DC. HLE was greater for whites than for blacks in DC and all states from which data were available, except in Nevada and New Mexico.

Figure 9.2. Source.

Although improvements have occurred in overall life expectancy, children born in the United States today may be the first generation to have a shorter life span than their parents. Much of this decline has been attributed to the increase in sedentary lifestyle and obesity. According to the American Heart Association (2014), currently one in three American children is overweight or obese. The rate of childhood obesity tripled from 1971 to 2011, and obesity in children is associated with a range of health problems, including high blood pressure, type 2 diabetes, elevated blood cholesterol levels, and psychological concerns including low self-esteem, negative body image and depression. Excess weight is associated with an earlier risk of obesity-related diseases and death. In 2007 former Surgeon General Richard Carmona stated, "Because of the increasing rates of obesity, unhealthy eating habits and physical inactivity, we may see the first generation that will be less healthy and have a shorter life expectancy than their parents" (p. 1).

Gender Differences in Life Expectancy

Biological Explanations: Biological differences in sex chromosomes and different pattern of gene expression is theorized as one reason why females live longer (Chmielewski, Boryslawski, & Strzelec, 2016). Males are heterogametic (XY), whereas females are homogametic (XX) with respect to the sex chromosomes. Males can only express their X chromosome genes that come from the mother, while females have an advantage by selecting the "better" X chromosome from their mother or father, while inactivating the "worse" X chromosome. This process of selection for "better" genes is impossible in males and results in the greater genetic and developmental stability of females.

In terms of developmental biology, women are the "default" sex, which means that the creation of a male individual requires a sequence of events at a molecular level. According to Chmilewski et al. (2016):

> *These events are initiated by the activity of the SRY gene located on the Y chromosome. This activity and change in the direction of development results in a greater number of disturbances and developmental disorders, because the normal course of development requires many different factors and mechanisms, each of which must work properly and at a specific stage of the development. (p. 134)*

Men are more likely to contract viral and bacterial infections, and their immunity at the cellular level decreases significantly faster with age. Although women are slightly more prone to autoimmune and inflammatory diseases, such as rheumatoid arthritis, the gradual deterioration of the immune system is slower in women (Caruso, Accardi, Virruso, & Candore, 2013; Hirokawa et al., 2013).

Looking at the influence of hormones, estrogen levels in women appear to have a protective effect on their heart and circulatory systems (Viña, Borrás, Gambini, Sastre, & Pallardó, 2005). Estrogens also have antioxidant properties that protect against harmful effects of free radicals, which damage cell components, cause mutations, and are in part responsible for the aging process. Testosterone levels are higher in men than in women, and are related to more frequent cardiovascular and immune disorders. The level of testosterone is also responsible, in part, for male behavioral patterns, including increased level of aggression and violence (Martin, Poon, & Hagberg, 2011; Borysławski & Chmielewski, 2012). Another factor responsible for risky behavior is the frontal lobe of the brain. The frontal lobe, which controls judgment and consideration of an action's consequences, develops more slowly in boys and young men. This lack of judgment affects lifestyle choices, and consequently many more boys and men die by smoking, excessive drinking, accidents, drunk driving, and violence (Shmerling, 2016).

Lifestyle Factors: Certainly not all the reasons women live longer than men are biological. As previously mentioned, male behavioral patterns and lifestyle play a significant role in the shorter lifespans for males. One significant factor is that males work in more dangerous jobs, including police, fire fighters, and construction, and they are more exposed to violence. According to the Federal Bureau of Investigation (2014) there were 11,961 homicides in the U.S. in 2014 (last year for full data) and of those 77% were males.

Figure 9.3: Men have more dangerous jobs. Source.

Males are also more than three times as likely to commit suicide (CDC, 2016a). Further, males serve in the military in much larger numbers than females. According to the Department of Defense (2015), in 2014 83% of all officers in the Services (Navy, Army, Marine Corps and Air Force) were male, while 85% of all enlisted service members were male.

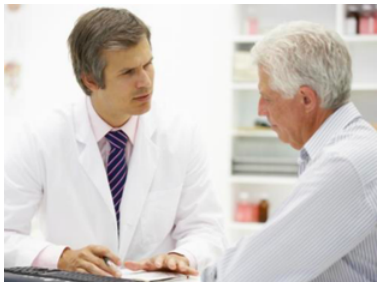


Figure 9.4: Men benefit from a relationship with a doctor. Source.

Additionally, men are less likely than women to have health insurance, develop a regular relationship with a doctor, or seek treatment for a medical condition (Scott, 2015). As mentioned in the middle adulthood chapter, women are more religious than men, which is associated with healthier behaviors (Greenfield, Vaillant & Marks, 2009). Lastly, social contact is also important as loneliness is considered a health hazard. Nearly 20% of men over 50 have contact with their friends less than once a month, compared to only 12% of women who see friends that infrequently (Scott, 2015). Overall, men's lower life expectancy appears to be due to both biological and lifestyle factors.

5.3: Age Categories in Late Adulthood

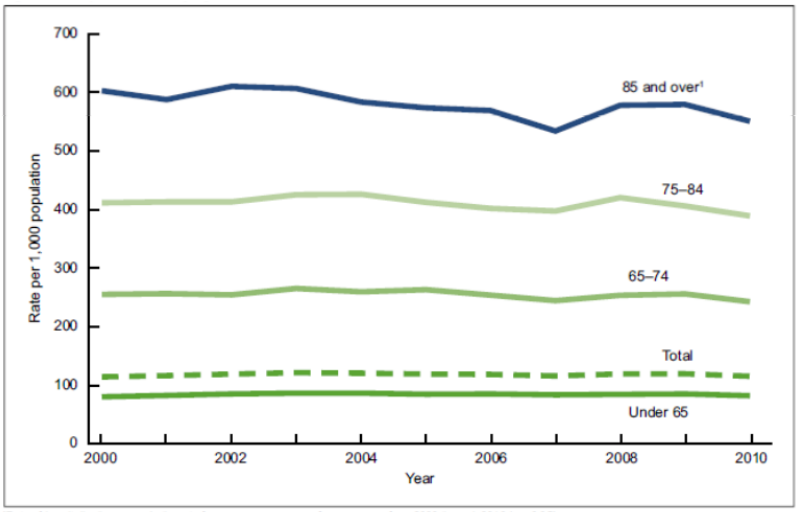
There have been many ways to categorize the ages of individuals in late adulthood. In this chapter, we will be dividing the stage into three categories: Young–old (65-84), oldest-old (85- 99), and centenarians (100+) for comparison. These categories are based on the conceptions of aging including, biological, psychological, social, and chronological differences. They also reflect the increase in longevity of those living to this latter stage.

Figure 9.5: Young-old experience positive well-being. Source.

Young-old: Older adults between the ages of 65 and 84 comprise the young-old category (Ortman et al., 2014). This time-period has also been identified by Laslett (1989) as the "third age" because it follows childhood (the first age) and work and parenting (the second age). According to Barnes (2011a), this age category spans the post-employment years until approximately 80-85 years when age-related limitations occur in the areas of physical, emotional, and cognitive development. Generally, this age span includes many positive aspects and is considered the "golden years" of adulthood. Why so positive?

Individuals at this age often have fewer responsibilities than in previous stages, and when combined with adequate finances and good health, they can pursue leisure and self-fulfillment opportunities. It is also an unusual age in that people are considered both in old age and not in old age (Rubinstein, 2002). When compared to those above 85 (known as the fourth age), the young-old experience relatively good health and social engagement (Smith, 2000), knowledge and expertise (Singer, Verhaeghen, Ghisletta, Lindenberger, & Baltes, 2003), and adaptive flexibility in daily living (Riediger, Freund, & Baltes, 2005). The young-old also show strong performance in attention, memory, and crystallized intelligence. In fact, those identified as young-old are more similar to those in midlife than those who are 85 and older. This group is less likely to require long-term care, to be dependent or poor, and more likely to be married, working for pleasure rather than income, and living independently. Chronic diseases, such as cardiovascular disease, hypertension, and cancer, are among the most common (especially later in this period), but because they are linked to lifestyle choices, they typically can be can prevented, lessoned, or managed (Barnes, 2011b). Overall, those in this age period feel a sense of happiness and emotional well-being that is better than at any other period of adulthood (Carstensen, Fung, & Charles, 2003; George, 2009; Robins & Trzesniewski, 2005).

Oldest-old: This age group is sometimes called the "fourth-age" and often includes people who have more serious chronic ailments among the older adult population. In the U.S., the oldest-old represented 14% of the older adult population in 2015 (He, Goodkind, & Kowal, 2016). This age group is one of the fastest growing worldwide and is projected to increase more than 300% over its current levels (NIA, 2015b). The oldest-old are projected to be nearly 18 million by 2050, or about 4.5% of the U. S. population, compared with less than 2% of the population today. Females comprise more than 60% of those 85 and older, but they also suffer from more chronic illnesses and disabilities than older males (Gatz et al., 2016).



[1]Rate of hospitalization exceeds the rate for younger age groups for every year from 2000 through 2010 ($p < 0.05$).
SOURCE: CDC/NCHS, National Hospital Discharge Survey, 2000–2010.

Figure 9.6: Hospitalizations by age: United States 2000-2010.

While this age group accounts for only 2% of the U. S. population, it accounts for 9% of all hospitalizations (Levant, Chari & DeFrances, 2015). Those 85 and up are less likely to be discharged and more likely to die in hospital. The most common reasons for hospitalization for the oldest-old were congestive heart failure, pneumonia, urinary tract infections, septicemia, stroke, and hip fractures. In recent years, hospitalizations for many of these medical problems have been reduced. However, hospitalization for urinary tract infections and septicemia has increased for those 85 and older.

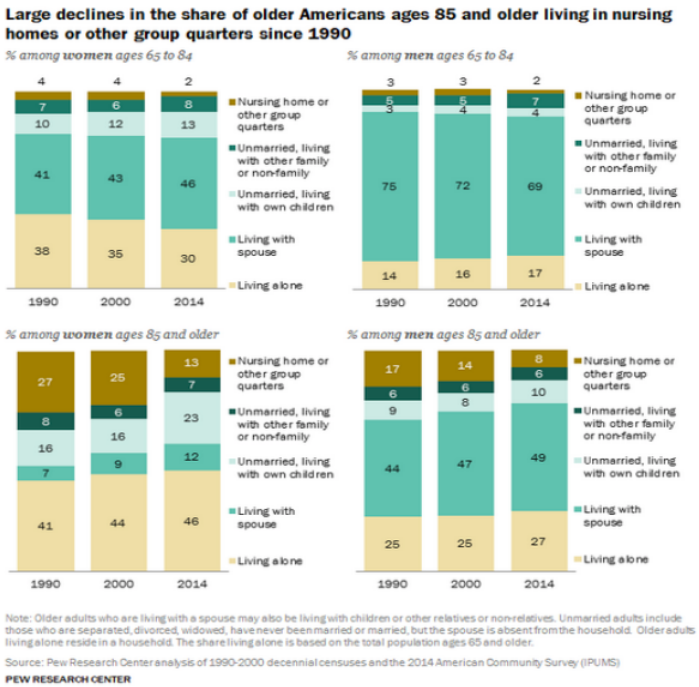


Figure 9.7.

Those 85 and older are more likely to require long-term care and to be in nursing homes than the youngest-old. Almost 50% of the oldest-old require some assistance with daily living activities (APA, 2016). However, most still live in the community rather than a nursing home, as shown in Figure 9.7 (Stepler, 2016b). The oldest-old are less likely to be married and living with a spouse compared with the majority of the young-old (APA, 2016; Stepler, 2016c). As can be seen, in Figure 9.7, gender is also an important factor in the likelihood of being married or living with one's spouse.

Centenarians: A segment of the oldest-old are centenarians, that is, 100 and older, and some are also referred to as supercentarians, those 110 and older (Wilcox, Wilcox & Ferrucci, 2008). In 2015 there were nearly half a million centenarians worldwide, and it is estimated that this age group will grow to almost 3.7 million by 2050. The U. S. has the most centenarians, but

Japan and Italy have the most per capita (Stepler, 2016e). Most centenarians tended to be healthier than many of their peers as they were growing older, and often there was a delay in the onset of any serious disease or disability until their 90s. Additionally, 25% reached 100 with no serious chronic illnesses, such as depression, osteoporosis, heart disease, respiratory illness, or dementia (Ash et al. 2015). Centenarians are more likely to experience a rapid terminal decline in later life, meaning that for most of their adulthood, and even older adult years, they are relatively healthy in comparison to many other older adults (Ash et al., 2015; Wilcox et al., 2008). According to Guinness World Records (2016), Jeanne Louise Calment has been documented to be the longest living person at 122 years and 164 days old (See Figure 9.8).

Figure 9.8: Jeanne Louise Calment from France. Source.

5.4: Theories of Aging

Learning Objectives: Physical Development in Late Adulthood

- *Describe different theories of aging*
- *Describe the changes in physical appearance in late adulthood*
- *Describe the sensory changes in late adulthood*
- *Describe chronic health conditions during late adulthood*
- *Describe the importance of nutrition and exercise in late adulthood*
- *Describe the physical and functional changes in the brain during late adulthood*
- *Explain what happens in Parkinson's disease*
- *Explain how sleep patterns change in late adulthood*
- *Explain how sexuality changes in late adulthood*

Why do we age? There are many theories that attempt to explain how we age, however, researchers still do not fully understand what factors contribute to the human lifespan (Jin, 2010). Research on aging is constantly evolving and includes a variety of studies involving genetics, biochemistry, animal models, and human longitudinal studies (NIA, 2011a). According to Jin (2010), modern biological theories of human aging involve two categories. The first is **Programmed Theories** *that follow a biological timetable, possibly a continuation of childhood development.* This timetable would depend on "changes in gene expression that affect the systems responsible for maintenance, repair, and defense responses," (p. 72). The second category includes **Damage or Error Theories** *which emphasize environmental factors that cause cumulative damage in organisms.* Examples from each of these categories will be discussed.

Figure 9.9. Source.

Genetics: One's genetic make-up certainly plays a role in longevity, but scientists are still attempting to identify which genes are responsible. Based on animal models, some genes promote longer life, while other genes limit longevity. Specifically, longevity may be due to genes that better equip someone to survive a disease. For others, some genes may accelerate the rate of aging, while others decrease the rate. To help determine which genes promote longevity and how they operate, researchers scan the entire genome and compare genetic variants in those who live longer with those who have an average or shorter lifespan. For example, a National Institutes of Health study identified genes possibly associated with blood fat levels and cholesterol, both risk factors for coronary disease and early death (NIA, 2011a). Researchers believe that it is most likely a combination of many genes that affect the rate of aging.

Evolutionary Theory: Evolutionary psychology emphasizes the importance of natural selection; that is, those genes that allow one to survive and reproduce will be more likely to be transmitted to offspring. Genes associated with aging, such as Alzheimer Disease, do not appear until after the individual has passed their main reproductive years. Consequently, natural selection has not eliminated these damaging disorders from the gene pool. If these detrimental disorders occurred earlier in the development cycle, they may have been eliminated already (Gems, 2014).

Cellular Clock Theory: This theory suggests that biological aging is due to the fact that normal cells cannot divide indefinitely. This is known as the Hayflick limit, and is evidenced in cells studied in test tubes, which divide about 40-60 times before they stop (Bartlett, 2014). But what is the mechanism behind this cellular senescence? *At the end of each chromosomal strand is a sequence of DNA that does not code for any particular protein, but protects the rest of the chromosome*, which is called a ***telomere***. With each replication, the telomere gets shorter. Once it becomes too short the cell does one of three things. *It can stop replicating by turning itself off*, called **cellular senescence.** *It can stop replicating by dying*, called **apoptosis.** Or, as in the development of cancer, it can continue to divide and become abnormal. Senescent cells can also create problems. While they may be turned off, they are not dead, thus they still interact with other cells in the body and can lead to an increase risk of disease. When we are young, senescent cells may reduce our risk of serious diseases such as cancer, but as we age they increase our risk of such problems (NIA,

2011a). Understanding why cellular senescence changes from being beneficial to being detrimental is still under investigation. The answer may lead to some important clues about the aging process.

DNA Damage: Over time DNA, which contains the genetic code for all organisms, accumulates damage. This is usually not a concern as our cells are capable of repairing damage throughout our life. Further, some damage is harmless. However, some damage cannot be repaired and remains in our DNA. Scientists believe that this damage, and the body's inability to fix itself, is an important part of aging (NIA, 2011a). As DNA damage accumulates with increasing age, it can cause cells to deteriorate and malfunction (Jin, 2010). Factors that can damage DNA include ultraviolet radiation, cigarette smoking, and exposure to hydrocarbons, such as auto exhaust and coal (Dollemore, 2006).

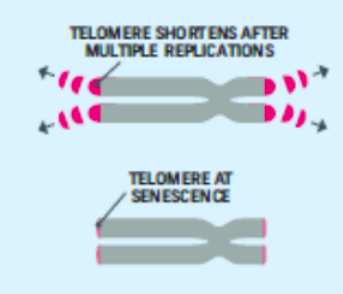


Figure 9.10: Telomeres and Cellular Senescence. Adapted from National Institute on Aging.

Mitochondrial Damage: Damage to mitochondrial DNA can lead to a decaying of the **mitochondria,** *which is a cell organelle that uses oxygen to produce energy from food*. The mitochondria convert oxygen to adenosine triphosphate (ATP) which provides the energy for the cell. When damaged, mitochondria become less efficient and generate less energy for the cell and can lead to cellular death (NIA, 2011a).

Free Radicals: When the mitochondria uses oxygen to produce energy, they also produce potentially harmful byproducts called oxygen free radicals (NIA, 2011a). The **free radicals** *are missing an electron and create instability in surrounding molecules by taking electrons from them*. There is a snowball effect (A takes from B and then B takes from C, etc.) that creates more free radicals which disrupt the cell and causes it to behave abnormally (See Figure 9.11). Some free radicals are helpful as they can destroy bacteria and other harmful organisms, but for the most part they cause damage in our cells and tissue. Free radicals are identified with disorders seen in those of advanced age, including cancer, atherosclerosis, cataracts, and neurodegeneration. Some research has supported adding antioxidants to our diets to counter the effects of free radical damage because the antioxidants can donate an electron that can neutralize damaged molecules. However, the research on the effectiveness of antioxidants is not conclusive (Harvard School of Public Health, 2016).

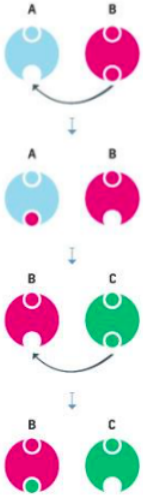


Figure 9.11 Free Radicals. Source.

Immune and Hormonal Stress Theories: Ever notice how quickly U.S. presidents seem to age? Before and after photos reveal how stress can play a role in the aging process. When gerontologists study stress, they are not just considering major life events, such as unemployment, death of a loved one, or the birth of a child. They are also including **metabolic stress**, *the life sustaining*

activities of the body, such as circulating the blood, eliminating waste, controlling body temperature, and neuronal firing in the brain. In other words, all the activities that keep the body alive also create biological stress.

Figure 9.12: Left: Barack Obama 2008. Source. Right: Barack Obama 2012. Source.

To understand how this stress affects aging, researchers note that both problems with the innate and adaptive immune system play a key role. The **innate immune system** *is made up of the skin, mucous membranes, cough reflex, stomach acid, and specialized cells that alert the body of an impending threat*. With age these cells lose their ability to communicate as effectively, making it harder for the body to mobilize its defenses. The **adaptive immune system** *includes the tonsils, spleen, bone marrow, thymus, circulatory system and the lymphatic system that work to produce and transport T cells*. T-cells, *or lymphocytes*, fight bacteria, viruses, and other foreign threats to the body. T-cells are in a "naïve" state before they are programmed to fight an invader, and become "memory cells". These cells now remember how to fight a certain infection should the body ever come across this invader again. Memory cells can remain in your body for many decades, and why the measles vaccine you received as a child is still protecting you from this virus today. As older adults produce fewer new T-cells to be programmed, they are less able to fight off new threats and new vaccines work less effectively. The reason why the shingles vaccine works well with older adults is because they already have some existing memory cells against the varicella virus. The shingles vaccine is acting as a booster (NIA, 2011a).

Hormonal Stress Theory, also known as **Neuroendocrine Theory of Aging,** *suggests that as we age the ability of the hypothalamus to regulate hormones in the body begins to decline leading to metabolic problems* (American Federation of Aging Research (AFAR) 2011). This decline is linked to excess of the stress hormone cortisol. While many of the body's hormones decrease with age, cortisol does not (NIH, 2014a). The more stress we experience, the more cortisol released, and the more hypothalamic damage that occurs. Changes in hormones have been linked to several metabolic and hormone related problems that increase with age, such as diabetes (AFAR, 2011), thyroid problems (NIH, 2013), osteoporosis, and orthostatic hypotension (NIH, 2014a).

5.5: Physical Changes of Aging

The Baltimore Longitudinal Study on Aging (BLSA) (NIA, 2011b) began in 1958 and has traced the aging process in 1,400 people from age 20 to 90. Researchers from the BLSA have found that the aging process varies significantly from individual to individual and from one organ system to another. However, some key generalization can be made including heart muscles thickening with age, arteries becoming less flexible, and lung capacity diminishing. Kidneys become less efficient in removing waste from the blood, and the bladder loses its ability to store urine. Brain cells also lose some functioning, but new neurons can also be produced. Many of these changes are determined by genetics, lifestyle, and disease. Other changes in late adulthood include:

Body Changes: Everyone's body shape changes naturally as they age. According to the National Library of Medicine (2014) after age 30 people tend to lose lean tissue, and some of the cells of the muscles, liver, kidney, and other organs are lost. Tissue loss reduces the amount of water in your body and bones may lose some of their minerals and become less dense (a condition called osteopenia in the early stages and osteoporosis in the later stages). The amount of body fat goes up steadily after age 30, and older individuals may have almost one third more fat compared to when they were younger. Fat tissue builds up toward the center of the body, including around the internal organs.

Skin and Hair: With age skin becomes thinner, less elastic, loses fat, and no longer looks plump and smooth. Veins and bones can be seen more easily and scratches, cuts, and bumps can take longer to heal. Years exposed to the sun may lead to wrinkles, dryness, age spots, and cancer. Older people may bruise more easily, and it can take longer for these bruises to heal. Some medicines or illnesses may also cause bruising. Gravity can cause skin to sag and wrinkle, and smoking can wrinkle the skin. Also, seen in older adults are age spots, previously called "liver spots". They look like flat, brown spots and are often caused by years in the sun. Skin tags are small, usually flesh-colored growths of skin that have a raised surface. They become common as people age, especially for women, but both age spots and skin tags are harmless (NIA, 2015f).

Nearly everyone has hair loss as they age, and the rate of hair growth slows down as many hair follicles stop producing new hairs. The loss of pigment and subsequent graying begun in middle adulthood continues in late adulthood.

Figure 9.13: Exercise helps decrease sarcopenia.

Sarcopenia *is the loss of muscle tissue as a natural part of aging*. Sarcopenia is most noticeable in men, and physically inactive people can lose as much as 3% to 5% of their muscle mass each decade after age 30, but even when active muscle loss still occurs (Webmd, 2016). Symptoms include a loss of stamina and weakness, which can decrease physical activity and subsequently further shrink muscles. Sarcopenia typically happens faster around age 75, but it may also speed up as early as 65 or as late as 80. Factors involved in sarcopenia include a reduction in nerve cells responsible for sending signals to the muscles from the brain to begin moving, a decrease in the ability to turn protein into energy, and not receiving enough calories or protein to sustain adequate muscle mass. Any loss of muscle is important because it lessens strength and mobility, and sarcopenia is a factor in frailty and the likelihood of falls and fractures in older adults. Maintaining strong leg and heart muscles are important for independence. Weight-lifting, walking, swimming, or engaging in other cardiovascular exercises can help strengthen the muscles and prevent atrophy.

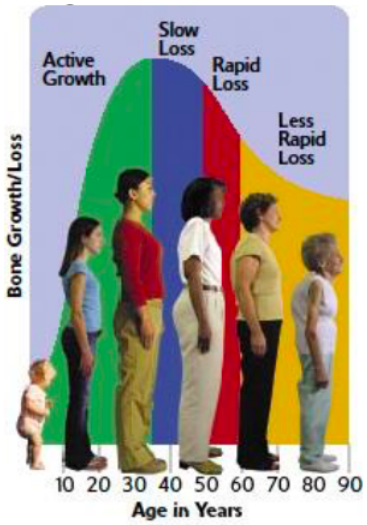


Figure 9.14: Bone growth changes.

Height and Weight: The tendency to become shorter as one ages occurs among all races and both sexes. Height loss is related to aging changes in the bones, muscles, and joints. People typically lose almost one-half inch every 10 years after age 40, and height loss is even more rapid after age 70. A total of 1 to 3 inches in height is lost with aging. Changes in body weight vary for men and woman. Men often gain weight until about age 55, and then begin to lose weight later in life, possibly related to a drop in the male sex hormone testosterone. Women usually gain weight until age 65, and then begin to lose weight. Weight loss later in life occurs partly because fat replaces lean muscle tissue, and fat weighs less than muscle. Diet and exercise are important factors in weight changes in late adulthood (National Library of Medicine, 2014).

Sensory Changes in Late Adulthood

Vision: In late adulthood, all the senses show signs of decline, especially among the oldest-old. In the last chapter, you read about the visual changes that were beginning in middle adulthood, such as presbyopia, dry eyes, and problems seeing in dimmer light. By later adulthood these changes are much more common. Three serious eyes diseases are more common in older adults: Cataracts, macular degeneration, and glaucoma. Only the first can be effectively cured in most people.

Cataracts are *a clouding of the lens of the eye*. The lens of the eye is made up of mostly water and protein. The protein is precisely arranged to keep the lens clear, but with age some of the protein starts to clump. As more of the protein clumps together the clarity of the lens is reduced. While some adults in middle adulthood may show signs of cloudiness in the lens, the area affected is usually small enough to not interfere with vision. More people have problems with cataracts after age 60 (NIH, 2014b) and by age 75, 70% of adults will have problems with cataracts (Boyd, 2014). Cataracts also cause a discoloration of the lens, tinting it more yellow and then brown, which can interfere with the ability to distinguish colors such as black, brown, dark blue, or dark purple.

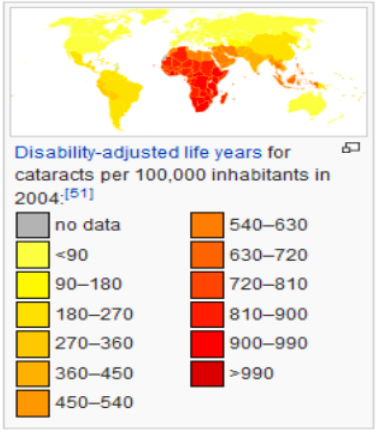


Figure 9.15. Source.

Risk factors besides age include certain health problems such as diabetes, high blood pressure, and obesity, behavioral factors such as smoking, other environmental factors such as prolonged exposure to ultraviolet sunlight, previous trauma to the eye, long-term use of steroid medication, and a family history of cataracts (NEI, 2016a; Boyd, 2014). Cataracts are treated by removing and replacing the lens of the eye with a synthetic lens. In developed countries, such as the United States, cataracts can be easily treated with surgery. However, in developing countries, access to such operations are limited, making cataracts the leading cause of blindness in late adulthood in Third World nations (Resnikoff, Pascolini, Mariotti & Pokharel, 2004). As shown in Figure 9.15, areas of the world with limited medical treatment for cataracts often results in people living more years with a serious disability. For example, of those living in the darkest red color on the map, more than 990 out of 100,00 people have a shortened lifespan due to the disability caused by cataracts.

Older adults are also more likely to develop **age-related macular degeneration**, which is *the loss of clarity in the center field of vision, due to the deterioration of the macula, the center of the retina.* Macular degeneration does not usually cause total vision loss, but the loss of the central field of vision can greatly impair day-to-day functioning. There are two types of macular degeneration: dry and wet. The dry type is the most common form and occurs when tiny pieces of a fatty protein called drusen form beneath the retina. Eventually the macular becomes thinner and stops working properly (Boyd, 2016). About 10% of people with macular degeneration have the wet type, which causes more damage to their central field of vision than the dry form. This form is caused by an abnormal development of blood vessels beneath the retina. These vessels may leak fluid or blood causing more rapid loss of vision than the dry form.

The risk factors for macular degeneration include smoking, which doubles your risk (NIH, 2015a); race, as it is more common among Caucasians than African Americans or Hispanics/Latinos; high cholesterol; and a family history of macular degeneration (Boyd, 2016). At least 20 different genes have been related to this eye disease, but there is no simple genetic test to determine your risk, despite claims by some genetic testing companies (NIH, 2015a). At present, there is no effective treatment for the dry type of macular degeneration. Some research suggests that certain patients may benefit from a cocktail of certain antioxidant vitamins and minerals, but the results are mixed at best. They are not a cure for the disease nor will they restore the vision that has been lost. This “cocktail” can slow the progression of visual loss in some people (Boyd, 2016; NIH, 2015a). For the wet type medications that slow the growth of abnormal blood vessels, and surgery, such as laser treatment to destroy the abnormal blood vessels may be used. Only 25% of those with the wet version may see improvement with these procedures (Boyd, 2016).

A third vision problem that increases with age is **glaucoma**, which *is the loss of peripheral vision, frequently due to a buildup of fluid in eye that damages the optic nerve*. As you age the pressure in the eye may increase causing damage to the optic nerve. The exterior of the optic nerve receives input from retinal cells on the periphery, and as glaucoma progresses more and more of the peripheral visual field deteriorates toward the central field of vision. In the advanced stages of glaucoma, a person can lose their sight. Fortunately, glaucoma tends to progresses slowly (NEI, 2016b).

Figure 9.16: Normal vision vs. cataracts, macular degeneration and glaucoma. Source.

Glaucoma is the most common cause of blindness in the U.S. (NEI, 2016b). African Americans over age 40, and everyone else over age 60 has a higher risk for glaucoma. Those with diabetes, and with a family history of glaucoma also have a higher risk (Owsley et al., 2015). There is no cure for glaucoma, but its rate of progression can be slowed, especially with early diagnosis. Routine eye exams to measure eye pressure and examination of the optic nerve can detect both the risk and presence of glaucoma (NEI, 2016b). Those with elevated eye pressure are given medicated eye drops. Reducing eye pressure lowers the risk of developing glaucoma or slow its progression in those who already have it.

Hearing: As you read in Chapter 8, our hearing declines both in terms of the frequencies of sound we can detect and the intensity of sound needed to hear as we age. These changes continue in late adulthood. Almost 1 in 4 adults aged 65 to 74 and 1 in 2 aged 75 and older have disabling hearing loss (NIH, 2016). Table 9.4 lists some common signs of hearing loss.

Table 9.4: Common Signs of Hearing Loss

Have trouble hearing over the telephone
Find it hard to follow conversations when two or more people are talking
Often ask people to repeat what they are saying
Need to turn up the TV volume so loud that others complain
Have a problem hearing because of background noise
Think that others seem to mumble
Can't understand when women and children speak to you

Adapted from NIA, 2015c

Presbycusis is a *common form of hearing loss in late adulthood that results in a gradual loss of hearing*. It runs in families and affects hearing in both ears (NIA, 2015c). Older adults may also notice **tinnitus**, *a ringing, hissing, or roaring sound in the ears*. The exact cause of tinnitus is unknown, although it can be related to hypertension and allergies. It may come and go or persist and get worse over time (NIA, 2015c). The incidence of both presbycusis and tinnitus increase with age and males have higher rates of both around the world (McCormak, Edmondson-Jones, Somerset, & Hall, 2016).

Your auditory system has two jobs: To help you to hear, and to help you maintain balance. Your balance is controlled by the brain receiving information from the shifting of hair cells in the inner ear about the position and orientation of the body. With age this function of the inner ear declines which can lead to problems with balance when sitting, standing, or moving (Martin, 2014).

Taste and Smell: Our sense of taste and smell are part of our *chemical sensing system*. Our sense of taste, or gustation, appears to age well. Normal taste occurs when molecules that are released by chewing food stimulate taste buds along the tongue, the roof of the mouth, and in the lining of the throat. These cells send messages to the brain, where specific tastes are identified. After age 50 we start to lose some of these sensory cells. Most people do not notice any changes in taste until ones 60s (NIH: Senior Health, 2016b). Given that the loss of taste buds is very gradual, even in late adulthood, many people are often surprised that their loss of taste is most likely the result of a loss of smell.

Table 9.5: Types of Smell Disorders

Presbyomia	Smell loss due to aging
Hyposmia	Loss of only certain odors
Anosmia	Total loss of smell
Dysomia	Change in the perception of odors. Familiar odors are distorted.
Phantosmia	Smell odors that are not present

Adapted from NIH Senior Health: Problems with Smell

Our sense of smell, or olfaction, decreases more with age, and problems with the sense of smell are more common in men than in women. Almost 1 in 4 males in their 60s have a disorder with the sense of smell, while only 1 in 10 women do (NIH: Senior Health, 2016b). This *loss of smell due to aging* is called **presbyosmia**. Olfactory cells are located in a small area high in the nasal cavity. These cells are stimulated by two pathways; when we inhale through the nose, or via the connection between the nose and the throat when we chew and digest food. It is a problem with this second pathway that explains why some foods such as chocolate or coffee seem tasteless when we have a head cold. There are several types of loss of smell. *Total loss of smell*, or **anosmia**, is extremely rare.

Problems with our chemical senses can be linked to other serious medical conditions such as Parkinson's, Alzheimer's, or multiple sclerosis (NIH: Senior Health, 2016a). Any sudden change should be checked out. Loss of smell can change a person's diet, with either a loss of enjoyment of food and eating too little for balanced nutrition, or adding sugar and salt to foods that are becoming blander to the palette.

Touch: Research has found that with age, people may experience reduced or changed sensations of vibration, cold, heat, pressure, or pain (Martin, 2014). Many of these changes are also aligned with a number of medical conditions that are more common among the elderly, such as diabetes. However, there are changes in the touch sensations among healthy older adults. The ability to detect changes in pressure have been shown to decline with age, with it being more pronounced by the 6th decade and diminishing further with advanced age (Bowden & McNelty, 2013). Yet, there is considerable variability, with almost 40% showing sensitivity that is comparable to younger adults (Thornbury & Mistretta, 1981). However, the ability to detect the roughness/smoothness or hardness/softness of an object shows no appreciable change with age (Bowden & McNulty, 2013). Those who show increasing insensitivity to pressure, temperature, or pain are at risk for injury (Martin, 2014).

Pain: According to Molton and Terrill (2014), approximately 60%-75% of people over the age of 65 report at least some chronic pain, and this rate is even higher for those individuals living in nursing homes. Although the presence of pain increases with age, older adults are less sensitive to pain than younger adults (Harkins, Price, & Martinelli, 1986).

Figure 9.17: Pain from arthritis. Source.

Farrell (2012) looked at research studies that included neuroimaging techniques involving older people who were healthy and those who experienced a painful disorder. Results indicated that there were age-related decreases in brain volume in those structures involved in pain. Especially noteworthy were changes in the prefrontal cortex, brainstem, and hippocampus. Women are more likely to identify feeling pain than men (Tsang et al., 2008). Women have fewer opioid receptors in the brain, and women also receive less relief from opiate drugs (Garrett, 2015). Because pain serves an important indicator that there is something wrong, a decreased sensitivity to pain in older adults is a concern because it can conceal illnesses or injuries requiring medical attention.

5.6: Nutrition

A healthy diet is necessary for older adults to increase mental acuteness, resistance to illness and disease, boost energy levels, improve immune system strength, recuperation speed, and have greater effectiveness in the management of chronic health problems (Mayer, 2016). The new MyPlate for Older Adults, a website from Tufts University, suggests that older adults should strive for 50% of their diet being fruits and vegetables; 25% grains, many of which should be whole grains; and 25% protein-rich foods, such as nuts, beans, fish, lean meat, poultry, and fat-free and low-fat Unfortunately, changes in sensory functions, such as smell and taste, along with loss of teeth, can derail an older adult's ability to eat right. Older adults are likely to use salt and sugar to flavor foods that no longer taste the way they once did. Several government websites provide older adults with alternatives to the salt shaker to make foods more palatable.

Figure 9.18: Couple enjoying lunch

5.7: Chronic Conditions

Chronic illnesses *are illnesses that are ongoing, generally incurable conditions that require continuing medical attention and affect daily life*. As individuals live longer, diseases that affect older individuals will become more prevalent, and the burden of chronic illness grows with age. Less than 50% of adults 50-64 have a chronic condition, yet 90% aged 75 and up do (Cohen, 2011). Older women are more likely to have a chronic condition than are older men (83% vs. 88%) (CDC, 2009). Table 9.6 lists the percentage of older adults who have certain chronic illnesses based on the National Health Survey conducted in 2014. Other studies place the figure of diabetes in older adults at 26% (CDC, 2014).

Table 9.6: Percentage of Older Adults with Chronic Conditions

High Cholesterol	58.2
Hypertension	56.7
Arthritis	48.7
Cancer	23.1
Diabetes	20.5
Heart disease	17.9
Ulcers	11.3
Stroke	7.2
Asthma	6.9
Kidney disease	5.1
Chronic bronchitis	5.0
Emphysema	4.0

Adapted from CDC National Health Interview 2014

Cancer and Major Cardiovascular Disease: As discussed in chapter 8, cancer and cardiovascular disease are the overall leading causes of death, and they are especially high reasons for death in middle and late adults. Table 9.7 identifies the percentages of deaths due to cancer and cardiovascular disease for selected age groups in 2013; the most recent year for data (Xu, Murphy, Kochanek, & Bastian, 2016).

Table 9.7 Death Percentages for Cancer and Cardiovascular Disease for Selected Age Groups

	Groups				
2013 Causes of Death	*45-54*	*55-64*	*65-74*	*75-84*	*85+*
Cancer	6.4%	13.7%	24.9%	24.5%	12%
Major Cardiovascular Disease	24.3%	26.5%	27.7%	31.6%	38.9%

Adapted from Xu, Murphy, Kochanek, & Bastian (2016)

Cancer: Advancing age is a significant risk factor for cancer, with persons over 65 accounting for 60% of newly diagnosed cancer and 70% of all cancer deaths (Berger et al., 2006). Additionally, more than 70% of the mortality associated with many cancers, including prostate, bladder, colon, uterus, pancreas, stomach, rectum and lung occur in patients 65 and older. Other conditions that affect the elderly can occur with cancer, including anemia, coronary artery diseases, congestive heart failure, chronic obstructive pulmonary diseases, renal insufficiency, cerebrovascular diseases, neurovascular complications of diabetes mellitus, and arthritis that restricts mobility (Balducci & Extermann, 2000). Comorbidity will complicate treatment.

Balducci and Extermann (2000) examined several concerns of cancer treatment in the elderly. With aging, there is a decline in multiple organ systems that can adversely affect the ability of medications to treat the cancer. Chemotherapy has been found to compromise the cognitive function of those being treated for cancer, and it may further exacerbate dementia and elderly cognitive declines. Frail individuals, defined as having limited life expectancy and near-to- exhausted functional reserves, are also not

considered candidates for more toxic forms of chemotherapy. With cancer, the prevalence and risk of malnutrition are higher, and diminished visual and hearing function makes elderly cancer patients more susceptible to environmental injury. Screening for depression is also recommended because depression is associated with weight loss, failure to thrive, and may reduce the motivation to receive treatment. Consequently, depression has been associated with decreased survival rates in the elderly. Due to the projected increase in the total number of older patients with cancer, it is recommended that physicians and caretakers have expertise in both oncology and geriatrics (Berger et al., 2006).

Heart Disease: There are changes to the heart that happen with age, and some may increase a person's risk of heart disease. These include stiffening blood vessels and valves, which may result in leaks or problems pumping blood out of the heart (NIA, 2012). As previously stated, heart disease is the leading cause of death for those in late adulthood (CDC, 2016b). There are different types of heart disease, and as already discussed in chapter 8, the most common is atherosclerosis, the buildup of fatty deposits or plaques in the walls of arteries. As plaque builds up, blood is unable to flow normally and bring oxygen throughout the body, including to the heart. Depending on where the buildup is, atherosclerosis can cause a heart attack, leg pain, or a stroke. However, Atherosclerosis is not part of normal aging. Many of the problems older people have with their heart and blood vessels are caused by disease and not by aging. For example, an older heart can normally pump blood as strong as a younger heart, while less ability to pump blood is caused by disease. Therefore, leading a heart-healthy lifestyle is most important to keeping one's heart strong in late adulthood.

Arthritis: Arthritis and other rheumatic conditions are the most common cause of disability among US adults, and have been the most common cause of disability among US adults for the past 15 years (NIH: National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2014). According to the NIH, approximately 62% of adults with arthritis are 65 years old and up. Almost 1 in 2 older adults with arthritis have some degree of mobility limitations, such as climbing stairs, walking, and grasping objects. The pain and other limitations of arthritis can also increase the risk of depression and other forms of mental distress.

Osteoarthritis is the most common type of arthritis. "When the cartilage, the slick, cushioning surface on the ends of bones wears away, bone rubs against bone, causing pain, swelling and stiffness. Over time, joints can lose strength and pain may become chronic" (Arthritis Foundation, 2017, para 3). Common risk factors for osteoarthritis include genetics, obesity, age, previous injury, and other medical conditions.

Osteoporosis and Kyphosis: Osteoporosis *is a disease that thins and weakens bones to the point that they become fragile and break easily*. After age 50, 1 in 2 women and 1 in 4 men will experience an osteoporosis related fracture in their lifetime, often leading to hip, spine, and wrist fractures (Dailey & Cravedi, 2006). Broken hips are a very serious problem as we age. They greatly increase the risk of death, especially during the year after they break (NIH Senior Health, 2015). In the U.S., more than 53 million adults either already have osteoporosis or at a high risk due to low bone mass (NIH Senior Health, 2015). *As bones weaken in the spine, adults gradually lose height and their posture becomes hunched over, which is called* **Kyphosis**. Over time a bent spine can make it hard to walk or even sit up. Adults can prevent the loss of bone mass by eating a healthy diet with enough calcium and vitamin D, regularly exercising, limiting alcohol, and not smoking (National Osteoporosis Foundation, 2016).

Figure 9.19: Elderly woman with osteoporosis. Source.

Chronic obstructive pulmonary disease (COPD) *is a progressive lung disease in which the airways become damaged making it difficult to breathe*. COPD includes problems such as emphysema and chronic bronchitis (NIH Senior Health, 2013). COPD kills more than 120,000 people every year, making it one of the leading causes of death.

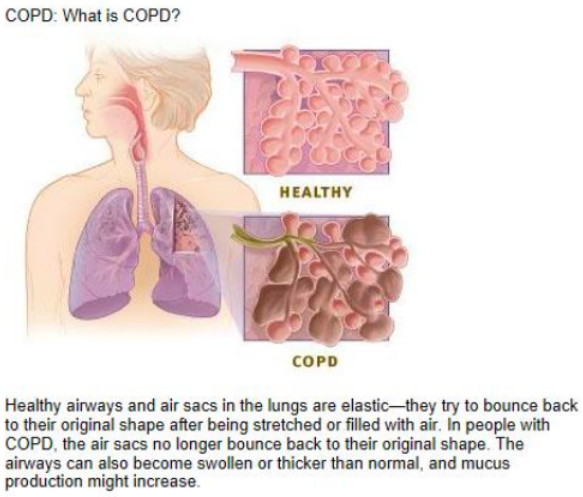


Figure 9.20. Source.

Figure 9.20 compares healthy to damaged lungs due to COPD. As COPD develops slowly, people may not notice the early signs, and may attribute the shortness of breath to age or lack of physical exercise. Most people are not diagnosed until midlife or late adulthood. There is no cure as the damage cannot be reversed. Treatments aim at slowing further damage.

Cigarette smoking is the leading cause of COPD, but other types of tobacco smoking, such as a pipe or cigar, can cause COPD, especially if the smoke is inhaled. Heavy or long-term exposure to second hand smoke can also lead to COPD (NIH Senior Health, 2013). COPD can also occur in people who have long term exposure to other environmental irritants, such as chemical fumes, and dust from the environment and workplace.

About 1 in every 1,600 to 5,000 people have a risk for COPD because of a recessive genetic condition known as alpha-1 antitrypsin (AAT) deficiency (NIH, 2011). AAT is a protein made in the liver that protects organs, especially the lungs, from the effects of other harmful proteins. In those with the genetic defect, the AAT protein created is the wrong shape and cannot leave the liver. This can lead to a heightened risk for lung disease, and even liver disease, as the excess of the AAT protein can lead to **cirrhosis**, *which is a disease in which the liver becomes scarred and does not function properly*. While some people with ATT deficiency are not affected and live a normal life, COPD is more likely to occur in such individuals if their lungs are exposed to environmental irritants.

Shingles: According to the National Institute on Aging (2015e), **shingles** *is a disease that affects your nerves.* Shingles is caused by the same virus as chicken pox, the varicella-zoster virus (VZV). After you recover from chickenpox, the virus continues to live in some of your nerve cells. It is usually inactive, and most adults live with VZV in their body and never get shingles. However, the virus will become active in one in three adults. Instead of causing chickenpox again, it produces shingles. *A risk factor for shingles includes advanced age as people have a* harder time fighting off infections as they get older. About half of all shingles cases are in adults age 60 or older, and the chance of getting shingles becomes much greater by age 70. Other factors that weaken an individual's ability to fight infections, such as cancer, HIV infections, or other medical conditions, can put one at a greater risk for developing shingles.

Figure 9.21: Shingles rash. Source.

Shingles results in pain, burning, tingling, or itching in the affected area, as well as a rash and blisters. Typically, shingles develops only on one side of the body or face and in a small area rather than all over. Most cases of shingles last 3 to 5 weeks. After the shingles rash goes away, some people may be left with ongoing pain, called post-herpetic neuralgia (PHN) in the area where the rash had been (NIA, 2015e). The older one is when getting shingles, the greater the chance of developing PHN. Some people with PHN find it hard to go about their daily activities, like dressing, cooking, and eating. They can also suffer from depression, anxiety and sleeplessness. Medicines can help with pain and usually PHN will disappear. Unfortunately, the blisters from shingles may become infected or leave a scar. Blisters near or in the eye can cause lasting eye damage or blindness. A brief paralysis of the face, hearing loss, and very rarely, swelling of the brain (encephalitis) can also occur. There is a shingles vaccine recommended for those aged 60 and older. Shingles is not contagious, but one can catch chickenpox from someone with shingles.

5.8: Brain Functioning

Research has demonstrated that the brain loses 5% to 10% of its weight between 20 and 90 years of age (Fjell & Walhovd, 2010). This decrease in brain volume appears to be due to the shrinkage of neurons, lower number of synapses, and shorter length of axons. According to Garrett (2015), the normal decline in cognitive ability throughout the lifespan has been associated with brain changes, including reduced activity of genes involved in memory storage, synaptic pruning, plasticity, and glutamate and GABA (neurotransmitters) receptors. There is also a loss in white matter connections between brain areas. Without myelin, neurons demonstrate slower conduction and impede each other's actions. A loss of synapses occurs in specific brain areas, including the hippocampus (involved in memory) and the basal forebrain region. Older individuals also activate larger regions of their attentional and executive networks, located in the parietal and prefrontal cortex, when they perform complex tasks. This increased activation correlates with a reduced performance on both executive tasks and tests of working memory when compared to those younger (Kolb & Whishaw, 2011).

Despite these changes the brain exhibits considerable plasticity, and through practice and training, the brain can be modified to compensate for age-related changes (Erber & Szuchman, 2015). Park and Reuter-Lorenz (2009) proposed the **Scaffolding Theory of Aging and Cognition** *which states that the brain adapts to neural atrophy (dying of brain cells) by building alternative connections, referred to as scaffolding.* This scaffolding allows older brains to retain high levels of performance. Brain compensation is especially noted in the additional neural effort demonstrated by those individuals who are aging well. For example, older adults who performed just as well as younger adults on a memory task used both prefrontal areas, while only the right prefrontal cortex was used in younger participants (Cabeza, Anderson, Locantore, & McIntosh, 2002). Consequently, this decrease in brain lateralization appears to assist older adults with their cognitive skills.

Figure 9.22: Exercise is Important to Brain Functioning. Source.

Can we improve brain functioning? Many training programs have been created to improve brain functioning. ACTIVE (Advanced Cognitive Training for Independent and Vital Elderly), a study conducted between 1999 and 2001 in which 2,802 individuals age 65 to 94, suggests that the answer is "yes". These racially diverse participants received 10 group training sessions and 4 follow up sessions to work on tasks of memory, reasoning, and speed of processing. These mental workouts improved cognitive functioning even 5 years later. Many of the participants believed that this improvement could be seen in everyday tasks as well (Tennstedt et al., 2006). However, programs for the elderly on memory, reading, and processing speed training demonstrate that there is improvement on the specific tasks trained, but there is no generalization to other abilities (Jarrett, 2015). Further, these programs have not been shown to delay or slow the progression of Alzheimer's disease. Although these programs are not harmful, "physical exercise, learning new skills, and socializing remain the most effective ways to train your brain" (p. 207). These activities appear to build a reserve to minimize the effects of primary aging of the brain.

Parkinson's disease *is characterized by motor tremors, loss of balance, poor coordination, rigidity, and difficulty moving* (Garrett, 2015). Parkinson's affects approximately 1% of those over the age of 60, and it appears more frequently in family members in a little less than 10% of cases. Twenty-eight chromosomal areas have been implicated in Parkinson's disease, but environmental factors have also been identified and include brain injury. Being knocked unconscious once increases the risk by 32%, and being knocked out several times increases the risk by 174% (Garrett, 2015). Other environmental influences include toxins, industrial chemicals, carbon monoxide, herbicides and pesticides (Olanow & Tatton, 1999). The symptoms are due to the deterioration of the substantia nigra, an area in the midbrain whose neurons send dopamine-releasing axons to the basal ganglia which affects motor activity.

Treatment typically includes the medication levodopa (L-dopa), which crosses the blood-brain barrier and is converted into dopamine in the brain. Deep brain stimulation, which involves inserting an electrode into the brain that provides electrical stimulation, has resulted in improved motor functioning (Garrett, 2015).

Sleep: Similar to other adults, older adults need between 7 to 9 hours of sleep per night, *but they tend to go to sleep earlier and get up earlier than those younger. This pattern is called* **advanced sleep phase syndrome** and is based on changes in circadian rhythms (National Sleep Foundation, 2009).There are sleep problems in older adults, and insomnia is the most common problem in those 60 and older (NIA, 2016). People with **insomnia** *have trouble falling asleep and staying asleep*. There are many reasons why older people may have insomnia, including certain medications, being in pain, having a medical or psychiatric condition, and even worrying before bedtime about not being able to sleep. Using over the counter sleep aids or medication may only work when used for a short time. Consequently, sleep problems should be discussed with a health care professional.

Also, common in older adults are sleep disorders, including sleep apnea, restless legs syndrome, periodic limb movement disorder, and rapid eye movement sleep behavior disorder (NIA, 2016). **Sleep apnea** *refers to repeated short pauses in breathing, while an individual sleeps, that can lead to reduced oxygen in the blood*. Snoring is a common symptom of sleep apnea and it often worsens with age. Untreated sleep apnea can lead to impaired daytime functioning, high blood pressure, headaches, stroke, and memory loss. **Restless legs syndrome** *feels like there is tingling, crawling, or pins and needles in one or both legs, and this feeling is worse at night.* **Periodic limb movement disorder** *causes people to jerk and kick their legs every 20 to 40 seconds during sleep.* **Rapid eye movement sleep behavior disorder** *occurs when one's muscles can move during REM sleep and sleep is disrupted.*

According to the National Sleep Foundation (2009), there are many medical conditions that affect sleep and include gastroesophageal reflux disease, diabetes mellitus, renal failure, respiratory diseases such as asthma, and immune disorders. Diseases such as Parkinson's disease and multiple sclerosis also commonly cause problems sleeping. Lastly, Alzheimer's disease can interfere with sleeping patterns. Individuals may wake up many times during the night, wander when up, and yell which can alter the amount of time they sleep. Both minor and significant sleep problems in older adults can lead to increased risk of accidents, falls, chronic fatigue, decreased quality of life, cognitive decline, reduced immune function, and depression (Buman, 2013).

Because of sleep problems experienced by those in late adulthood, research has looked into whether exercise can improve their quality of sleep. Results show that 150 minutes per week of exercise can improve sleep quality (Buman, 2013). This amount of exercise is also recommended to improve other health areas including lowering the risk for heart disease, diabetes, and some cancers. Aerobic activity, weight training, and balance programs are all recommended. For those who live in assisted living facilities even light exercise, such as stretching and short walks, can improve sleep. High intensity activity is not necessary to see improvements. Overall, the effects of exercise on sleep may actually be even larger for older adults since their sleep quality may not be ideal to start.

Figure 9.23: Exercise Improves Sleep. Source.

5.9: Sexuality

According to Kane (2008), older men and women are often viewed as genderless and asexual. There is a stereotype that elderly individuals no longer engage in sexual activity and when they do, they are perceived to have committed some kind of offense. These ageist myths can become internalized, and older people have a more difficult time accepting their sexuality (Gosney, 2011). Additionally, some older women indicate that they no longer worry about sexual concerns anymore once they are past the child bearing years.

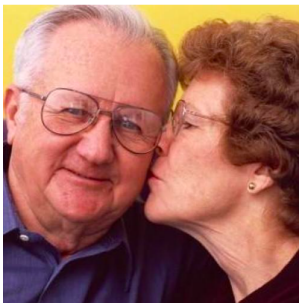


Figure 9.24. Source.

In reality, many older couples find greater satisfaction in their sex life than they did when they were younger. They have fewer distractions, more time and privacy, no worries about getting pregnant, and greater intimacy with a lifelong partner (NIA, 2013). Results from the National Social Life Health, and Aging Project indicated that 72% of men and 45.5% of women aged 52 to 72 reported being sexually active (Karraker, DeLamater, & Schwarz, 2011). Additionally, the National Survey of Sexual Health data indicated that 20%-30% of individuals remain sexually active well into their 80s (Schick et al., 2010). However, there are issues that occur in older adults that can adversely affect their enjoyment of healthy sexual relationships.

Causes of Sexual Problems

According to the National Institute on Aging (2013), chronic illnesses including arthritis (joint pain), diabetes (erectile dysfunction), heart disease (difficulty achieving orgasm for both sexes), stroke (paralysis), and dementia (inappropriate sexual behavior) can all adversely affect sexual functioning. Hormonal changes, physical disabilities, surgeries, and medicines can also affect a senior's ability to participate in and enjoy sex. How one feels about sex can also affect performance. For example, a woman who is unhappy about her appearance as she ages may think her partner will no longer find her attractive. A focus on youthful physical beauty for women may get in the way of her enjoyment of sex. Likewise, most men have a problem with erectile dysfunction (ED) once in a while, and some may fear that ED will become a more common problem as they age. If there is a decline in sexual activity for a heterosexual couple, it is typically due to a decline in the male's physical health (Erber & Szuchman, 2015).

Overall, the best way to experience a healthy sex life in later life is to keep sexually active while aging. However, the lack of an available partner can affect heterosexual women's participation in a sexual relationship. Beginning at age 40 there are more women than men in the population, and the ratio becomes 2 to 1 at age 85 (Karraker et al., 2011). Because older men tend to pair with younger women when they become widowed or divorced, this also decreases the pool of available men for older women (Erber & Szuchman, 2015). In fact, a change in marital status does not result in a decline in the sexual behavior of men aged 57 to 85 years-old, but it does result in a decline for similar aged women (Karraker et al., 2011

Concluding Thoughts

Key players in improving the quality of life among older adults will be those adults themselves. By exercising, reducing stress, stopping smoking, limiting use of alcohol, and consuming more fruits and vegetables, older adults can expect to live longer and more active lives (He et al., 2005). Stress reduction, both in late adulthood and earlier in life, is also crucial. The reduction of societal stressors can promote active life expectancy. In the last 40 years, smoking rates have decreased, but obesity has increased, and physical activity has only modestly increased.

5.10: Cognitive Development in Late Adulthood

Learning Objectives: Cognitive Development in Late Adulthood

- *Describe how memory changes for those in late adulthood*
- *Describe the theories for why memory changes occur*
- *Describe how cognitive losses in late adulthood are exaggerated*
- *Explain the pragmatics and mechanics of intelligence*
- *Define what is a neurocognitive disorder*
- *Explain Alzheimer's disease and other neurocognitive disorders*
- *Describe work and retirement in late adulthood*
- *Explain how those in late adulthood use strategies to compensate for losses*

How Does Aging Affect Information Processing?

There are numerous stereotypes regarding older adults as being forgetful and confused, but what does the research on memory and cognition in late adulthood reveal? Memory comes in many types, such as working, episodic, semantic, implicit, and prospective. There are also many processes involved in memory, thus it should not be a surprise that there are declines in some types of memory and memory processes, while other areas of memory are maintained or even show some improvement with age. In this section, we will focus on changes in memory, attention, problem solving, intelligence, and wisdom, including the exaggeration of losses stereotyped in the elderly.

Memory

Changes in Working Memory: As discussed in chapter 4, working memory is the more active, effortful part of our memory system. Working memory is composed of three major systems: The **phonological loop** *that maintains information about auditory stimuli*, the **visuospatial sketchpad**, *that maintains information about visual stimuli*, and the **central executive,** *that oversees working memory, allocating resources where needed and monitoring whether cognitive strategies are being effective* (Schwartz, 2011). Schwartz reports that it is the central executive that is most negatively impacted by age. In tasks that require allocation of attention between different stimuli, older adults fair worse than do younger adults. In a study by Göthe, Oberauer, and Kliegl (2007) older and younger adults were asked to learn two tasks simultaneously. Young adults eventually managed to learn and perform each task without any loss in speed and efficiency, although it did take considerable practice. None of the older adults were able to achieve this. Yet, older adults could perform at young adult levels if they had been asked to learn each task individually. Having older adults learn and perform both tasks together was too taxing for the central executive. In contrast, working memory tasks that do not require much input from the central executive, such as the digit span test, which uses predominantly the phonological loop, we find that older adults perform on par with young adults (Dixon & Cohen, 2003).

Figure 9.24. Source.

Changes in Long-term Memory: As you should recall, long-term memory is divided into semantic (knowledge of facts), episodic (events), and implicit (procedural skills, classical conditioning and priming) memories. Semantic and episodic memory are part of the explicit memory system, which requires conscious effort to create and retrieve. Several studies consistently reveal that episodic memory shows greater age-related declines than semantic memory (Schwartz, 2011; Spaniol, Madden, & Voss, 2006). It has been suggested that episodic memories may be harder to encode and retrieve because they contain at least two different types of memory, the event and when and where the event took place. In contrast, semantic memories are not tied to any particular time line. Thus, only the knowledge needs to be encoded or retrieved (Schwartz, 2011). Spaniol et al. (2006) found that retrieval of semantic information was considerably faster for both younger and older adults than the retrieval of episodic information, with there being little difference between the two age groups for semantic memory retrieval. They note that older adults' poorer performance on

episodic memory appeared to be related to slower processing of the information and the difficulty of the task. They found that as the task became increasingly difficult, the gap between each age groups' performance increased for episodic memory more so than for semantic memory.

Studies which test general knowledge (semantic memory), such as politics and history (Dixon, Rust, Feltmate, & See, 2007), or vocabulary/lexical memory (Dahlgren, 1998) often find that older adults outperform younger adults. However, older adults do find that they experience more *"blocks" at retrieving information that they know.* In other words, they experience more **tip-of- the-tongue** (TOT) events than do younger adults (Schwartz, 2011).

Implicit memory requires little conscious effort and often involves skills or more habitual patterns of behavior. This type of memory shows few declines with age. Many studies assessing implicit memory measure the effects of priming. **Priming** *refers to changes in behavior as a result of frequent or recent experiences*. If you were shown pictures of food and asked to rate their appearance and then later were asked to complete words such as s_ _ p, you may be more likely to write soup than soap, or ship. The images of food "primed" your memory for words connected to food. Does this type of memory and learning change with age? The answer is typically "no" for most older adults (Schacter, Church, & Osowiecki, 1994).

Figure 9.26: Aids for prospective memory. Source.

Prospective memory *refers to remembering things we need to do in the future*, such as remembering a doctor's appointment next week, or to take medication before bedtime. It has been described as "the flip-side of episodic memory" (Schwartz, 2011, p. 119). Episodic memories are the recall of events in our past, while the focus of prospective memories is of events in our future. In general, humans are fairly good at prospective
memory if they have little else to do in the meantime. However, when there are competing tasks that are also demanding our attention, this type of memory rapidly declines. The explanation given for this is that this form of memory draws on the central executive of working memory, and when this component of working memory is absorbed in other tasks, our ability to remember to do something else in the future is more likely to slip out of memory (Schwartz, 2011). However, prospective memories are often divided into **time-based prospective memories**, *such as having to remember to do something at a future time*, or **event-based prospective memories**, *such as having to remember to do something when a certain event occurs.* When age-related declines are found, they are more likely to be time-based, than event-based, and in laboratory settings rather than in the real-world, where older adults can show comparable or slightly better prospective memory performance (Henry, MacLeod, Phillips & Crawford, 2004; Luo & Craik, 2008). This should not be surprising given the tendency of older adults to be more selective in where they place their physical, mental, and social energy. Having to remember a doctor's appointment is of greater concern than remembering to hit the space-bar on a computer every time the word "tiger" is displayed.

Recall versus Recognition: Memory performance often depends on whether older adults are asked to simply recognize previously learned material or recall material on their own. Generally, for all humans, recognition tasks are easier because they require less cognitive energy. Older adults show roughly equivalent memory to young adults when assessed with a recognition task (Rhodes, Castel, & Jacoby, 2008). With recall measures, older adults show memory deficits in comparison to younger adults. While the effect is initially not that large, starting at age 40 adults begin to show declines in recall memory compared to younger adults (Schwartz, 2011).

Figure 9.24. Source.

The Age Advantage: Fewer age differences are observed when memory cues are available, such as for recognition memory tasks, or when individuals can draw upon acquired knowledge or experience. For example, older adults often perform as well if not better than young adults on tests of word knowledge or vocabulary. With age often comes expertise, and research has pointed to areas where aging experts perform quite well. For example, older typists were found to compensate for age- related declines in speed by looking farther ahead at printed text (Salthouse, 1984). Compared to younger players, older chess experts focus on a smaller set of possible moves, leading to greater cognitive efficiency (Charness, 1981). Accrued knowledge of everyday tasks, such as grocery prices, can help older adults to make better decisions than young adults (Tentori, Osheron, Hasher, & May, 2001).

5.11: Attention and Problem Solving

Changes in Attention in Late Adulthood: Changes in sensory functioning and speed of processing information in late adulthood often translates into changes in attention (Jefferies et al., 2015). Research has shown that older adults are less able to selectively focus on information while ignoring distractors (Jefferies et al., 2015; Wascher, Schneider, Hoffman, Beste, & Sänger, 2012), although Jefferies and her colleagues found that when given double time, older adults could perform at young adult levels. Other studies have also found that older adults have greater difficulty shifting their attention between objects or locations (Tales, Muir, Bayer, & Snowden, 2002). Consider the implication of these attentional changes for older adults.

How do changes or maintenance of cognitive ability affect older adults' everyday lives? Researchers have studied cognition in the context of several different everyday activities. One example is driving. Although older adults often have more years of driving experience, cognitive declines related to reaction time or attentional processes may pose limitations under certain circumstances (Park & Gutchess, 2000). In contrast, research on interpersonal problem solving suggested that older adults use more effective strategies than younger adults to navigate through social and emotional problems (Blanchard-Fields, 2007). In the context of work, researchers rarely find that older individuals perform poorer on the job (Park & Gutchess, 2000). Similar to everyday problem solving, older workers may develop more efficient strategies and rely on expertise to compensate for cognitive decline.

Problem Solving: Problem solving tasks that require processing non-meaningful information quickly (a kind of task that might be part of a laboratory experiment on mental processes) declines with age. However, many real-life challenges facing older adults do not rely on speed of processing or making choices on one's own. Older adults resolve everyday problems by relying on input from others, such as family and friends. They are also less likely than younger adults to delay making decisions on important matters, such as medical care (Strough, Hicks, Swenson, Cheng & Barnes, 2003; Meegan & Berg, 2002).

What might explain these deficits as we age? The **processing speed theory**, proposed by Salthouse (1996, 2004), *suggests that as the nervous system slows with advanced age our ability to process information declines*. This slowing of processing speed may explain age differences on many different cognitive tasks. For instance, as we age, working memory becomes less efficient (Craik & Bialystok, 2006). Older adults also need longer time to complete mental tasks or make decisions. Yet, when given sufficient time older adults perform as competently as do young adults (Salthouse, 1996). Thus, when speed is not imperative to the task healthy older adults do not show cognitive declines.

In contrast, **inhibition theory** *argues that older adults have difficulty with inhibitory functioning, or the ability to focus on certain information while suppressing attention to less pertinent information tasks* (Hasher & Zacks, 1988). Evidence comes from directed forgetting research. In **directed forgetting** *people are asked to forget or ignore some information, but not other information.* For example, you might be asked to memorize a list of words, but are then told that the researcher made a mistake and gave you the wrong list, and asks you to "forget" this list. You are then given a second list to memorize. While most people do well at forgetting the first list, older adults are more likely to recall more words from the "forget-to-recall" list than are younger adults (Andrés, Van der Linden, & Parmentier, 2004).

Figure 9.28. Source.

Cognitive losses exaggerated: While there are information processing losses in late adulthood, overall loss has been exaggerated (Garrett, 2015). One explanation is that the type of tasks that people are tested on tend to be meaningless. For example, older individuals are not motivated to remember a random list of words in a study, but they are motivated for more meaningful material related to their life, and consequently perform better on those tests. Another reason is that the research is often cross-sectional. When age comparisons occur longitudinally, however, the amount of loss diminishes (Schaie, 1994). A third reason is that the loss may be due to a lack of opportunity in using various skills. When older adults practiced skills, they performed as well as they had

previously. Although diminished performance speed is especially noteworthy in the elderly, Schaie (1994) found that statistically removing the effects of speed diminished the individual's performance declines significantly. In fact, Salthouse and Babcock (1991) demonstrated that processing speed accounted for all but 1% of age-related differences in working memory when testing individuals from 18 to 82. Finally, it is well established that our hearing and vision decline as we age. Longitudinal research has proposed that deficits in sensory functioning explain age differences in a variety of cognitive abilities (Baltes & Lindenberger, 1997).

5.12: Intelligence and Wisdom

When looking at scores on traditional intelligence tests, tasks measuring verbal skills show minimal or no age-related declines, while scores on performance tests, which measure solving problems quickly, decline with age (Botwinick, 1984). This profile mirrors crystalized and fluid intelligence. As you recall from last chapter, crystallized intelligence encompasses abilities that draw upon experience and knowledge. Measures of crystallized intelligence include vocabulary tests, solving number problems, and understanding texts. Fluid intelligence refers to information processing abilities, such as logical reasoning, remembering lists, spatial ability, and reaction time. Baltes (1993) introduced two additional types of intelligence to reflect cognitive changes in aging. **Pragmatics of intelligence** *are cultural exposure to facts and procedures that are maintained as one ages and are similar to crystalized intelligence.* **Mechanics of intelligence** *are dependent on brain functioning and decline with age, similar to fluid intelligence.* Baltes indicated that pragmatics of intelligence show little decline and typically increase with age. Additionally, pragmatics of intelligence may compensate for the declines that occur with mechanics of intelligence. In summary, global cognitive declines are not typical as one ages, and individuals compensate for some cognitive declines, especially processing speed.

Wisdom *is the ability to use the accumulated knowledge about practical matters that allows for sound judgment and decision making*. A wise person is insightful and has knowledge that can be used to overcome obstacles in living. Does aging bring wisdom? While living longer brings experience, it does not always bring wisdom. Paul Baltes and his colleagues (Baltes & Kunzmann, 2004; Baltes & Staudinger, 2000) suggest that wisdom is rare. In addition, the emergence of wisdom can be seen in late adolescence and young adulthood, with there being few gains in wisdom over the course of adulthood (Staudinger & Gluck, 2011). This would suggest that factors other than age are stronger determinants of wisdom. Occupations and experiences that emphasize others rather than self, along with personality characteristics, such as openness to experience and generativity, are more likely to provide the building blocks of wisdom (Baltes & Kunzmann, 2004). Age combined with a certain types of experience and/or personality brings wisdom.

5.13: Neurocognitive Disorders

Historically, the term dementia was used to refer to an individual experiencing difficulties with memory, language, abstract thinking, reasoning, decision making, and problem-solving (Erber & Szuchman (2015). However, in the latest edition of the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) (American Psychiatric Association, 2013) the term dementia has been replaced by neurocognitive disorder. A **Major Neurocognitive Disorder** *is diagnosed as a significant cognitive decline from a previous level of performance in one or more cognitive domains and interferes with independent functioning*, while a **Minor Neurocognitive Disorder** *is diagnosed as a modest cognitive decline from a previous level of performance in one of more cognitive domains and does not interfere with independent functioning*. There are several different neurocognitive disorders that are typically demonstrated in late adulthood, and determining the exact type can be difficult because the symptoms may overlap with each other. Diagnosis often includes a medical history, physical exam, laboratory tests, and changes noted in behavior. Alzheimer's disease, Vascular Neurocognitive Disorder and Neurocognitive Disorder with Lewy bodies will be discussed below.

Alzheimer's disease: Probably the most well-known and most common neurocognitive disorder for older individuals is Alzheimer's disease. In 2016 an estimated 5.4 million Americans were diagnosed with Alzheimer's disease (Alzheimer's Association, 2016), which was approximately one in nine aged 65 and over. By 2050 the number of people age 65 and older with Alzheimer's disease is projected to be 13.8 million if there are no medical breakthroughs to prevent or cure the disease. Alzheimer's disease is the 6th leading cause of death in the United States, but the 5th leading cause for those 65 and older. Among the top 10 causes of death in America, Alzheimer's disease is the only one that cannot be prevented, cured, or even slowed. Current estimates indicate that Alzheimer disease affects approximately 50% of those identified with a neurocognitive disorder (Cohen & Eisdorfer, 2011).

Alzheimer's disease has a gradual onset with subtle personality changes and memory loss that differs from normal age-related memory problems occurring first. Confusion, difficulty with change, and deterioration in language, problem-solving skills, and personality become evident next. In the later stages, the individual loses physical coordination and is unable to complete everyday tasks, including self-care and personal hygiene (Erber & Szuchman, 2015). Lastly, individuals lose the ability to respond to their environment, to carry on a conversation, and eventually to control movement (Alzheimer's Association, 2016). On average people with Alzheimer's survive eight years, but some may live up to 20 years. The disease course often depends on the individual's age and whether they have other health conditions.

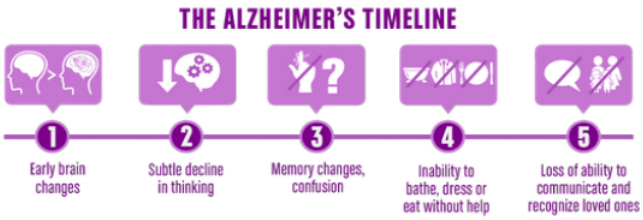


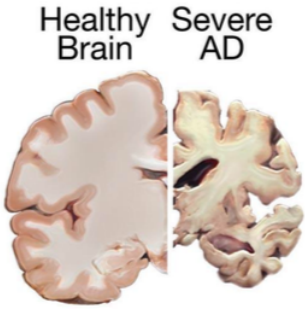
Figure 9.29. Source.

The greatest risk factor for Alzheimer's disease is age, but there are genetic and environmental factors that can also contribute. Some forms of Alzheimer's are hereditary, and with the early onset type, several rare genes have been identified that directly cause Alzheimer's. People who inherit these genes tend to develop symptoms in their 30s, 40s and 50s. Five percent of those identified with Alzheimer's disease are younger than age 65. When Alzheimer's disease is caused by deterministic genes, it is called familial Alzheimer's disease (Alzheimer's Association, 2016). Traumatic brain injury is also a risk factor, as well as obesity, hypertension, high cholesterol, and diabetes (Carlson, 2011).

According to Erber and Szuchman (2015) the problems that occur with Alzheimer's disease are due to the "death of neurons, the breakdown of connections between them, and the extensive formation of plaques and tau, which interfere with neuron functioning and neuron survival" (p. 50). Plaques are abnormal formations of protein pieces called beta-amyloid. Beta-amyloid comes from a larger protein found in the fatty membrane surrounding nerve cells. Because beta-amyloid is sticky, it builds up into plaques (Alzheimer's Association, 2016). These plaques appear to block cell communication and may also trigger an inflammatory response in the immune system, which leads to further neuronal death.

Tau is an important protein that helps maintain the brain's transport system. When tau malfunctions, it changes into twisted strands called tangles that disrupt the transport system. Consequently, nutrients and other supplies cannot move through the cells and they eventually die. The death of neurons lead to the brain shrinking and affecting all aspects of brain functioning. For example, the

hippocampus is involved in learning and memory, and the brain cells in this region are often the first to be damaged. This is why memory loss is often one of the earliest symptoms of Alzheimer's disease. Figures 9.30 and 9.31 illustrate the difference between an Alzheimer's brain and a healthy brain.



Figures 9.30 and 9.31. Source.

Vascular Neurocognitive Disorder is the second most common neurocognitive disorder affecting 0.2% in the 65-70 years age group and 16% of individuals 80 years and older (American Psychiatric Association, 2013). Vascular neurocognitive disorder is associated with a blockage of cerebral blood vessels that affects one part of the brain rather than a general loss of brain cells seen with Alzheimer's disease. Personality is not as affected in vascular neurocognitive disorder, and more males are diagnosed than females (Erber and Szuchman, 2015). It also comes on more abruptly than Alzheimer's disease and has a shorter course before death. Risk factors include smoking, diabetes, heart disease, hypertension, or a history of strokes.

Neurocognitive Disorder with Lewy bodies: According to the National Institute on Aging (2015a), Lewy bodies are microscopic protein deposits found in neurons seen postmortem. They affect chemicals in the brain that can lead to difficulties in thinking, movement, behavior and mood. Neurocognitive Disorder with Lewy bodies is the third most common form and affects more than 1 million Americans. It typically begins at age 50 or older, and appears to affect slightly more men than women. The disease lasts approximately 5 to 7 years from the time of diagnosis to death, but can range from 2 to 20 years depending on the individual's age, health, and severity of symptoms. Lewy bodies can occur in both the cortex and brain stem which results in cognitive as well as motor symptoms (Erber & Szuchman, 2015). The movement symptoms are similar to those with Parkinson's disease and include tremors and muscle rigidity. However, the motor disturbances occur at the same time as the cognitive symptoms, unlike with Parkinson's disease when the cognitive symptoms occur well after the motor symptoms. Individuals diagnosed with Neurocognitive Disorder with Lewy bodies also experience sleep disturbances, recurrent visual hallucinations, and are at risk for falling.

5.14: Work and Retirement

Older adults are just as capable as younger adults at the workplace. In fact, jobs that require social skills, accumulated knowledge, and relevant experiences favor older adults (Erber & Szuchman, 2015). Older adults also demonstrate lower rates of absenteeism and greater investment in their work. In 2015, 8.8 million adults aged 65 or older were employed or actively seeking employment. This constitute about 5.6% of the U.S. labor force (AOA, 2016).

Transitioning into Retirement: For most Americans, retirement is a process and not a one-time event (Quinn & Cahill, 2016). Sixty percent of workers transition straight to bridge jobs, which are often part-time, and occur between a career and full retirement. About 15% of workers get another job after being fully retired. This may be due to not having adequate finances after retirement or not enjoying their retirement. Some of these jobs may be in **encore careers**, or *work in a different field from the one in which they retired*. Approximately 10% of workers begin phasing into retirement by reducing their hours. However, not all employers will allow this due to pension regulations.

Retirement age changes: Looking at retirement data, the average age of retirement declined from more than 70 in 1910 to age 63 in the early 1980s. However, this trend has reversed and the current average age is now 65. Additionally, 18.5% of those over the age of 65 continue to work (US Department of Health and Human Services, 2012) compared with only 12% in 1990 (U. S. Government Accountability Office, 2011). With individuals living longer, once retired the average amount of time a retired worker collects social security is approximately 17-18 years (James, Matz-Costa, & Smyer, 2016).

When to retire: Laws often influence when someone decides to retire. In 1986 the Age Discrimination in Employment Act (ADEA) was amended, and mandatory retirement was eliminated for most workers (Erber & Szuchman, 2015). Pilots, air traffic controllers, federal law enforcement, national park rangers, and fire fighters continue to have enforced retirement ages. Consequently, for most workers they can continue to work if they choose and are able. Social security benefits also play a role. For those born before 1938, they can receive full social security benefits at age 65. For those born between 1943 and 1954, they must wait until age 66 for full benefits, and for those born after 1959 they must wait until age 67 (Social Security Administration, 2016). Extra months are added to those born in years between. For example, if born in 1957, the person must wait until 66 years and 6 months. The longer one waits to receive social security, the more money will be paid out. Those retiring at age 62, will only receive 75% of their monthly benefits. Medicare health insurance is another entitlement that is not available until one is aged 65.

Figure 9.32. Source.

Delayed Retirement: Older adults primarily choose to delay retirement due to economic reasons (Erber & Szchman, 2015). Financially, continuing to work provides not only added income, but also does not dip into retirement savings which may not be sufficient. Historically, there have been three parts to retirement income; that is, social security, a pension plan, and individual savings (Quinn & Cahill, 2016). With the 2008 recession, pension plans lost value for most workers. Consequently, many older workers have had to work later in life to compensate for absent or minimal pension plans and personal savings. Social security was never intended to replace full income, and the benefits provided may not cover all the expenses, so elders continue to work. Unfortunately, many older individuals are unable to secure later employment, and those especially vulnerable include persons with disabilities, single women, the oldest- old, and individuals with intermittent work histories.

Some older adults delay retirement for psychological reasons, such as health benefits and social contacts. Recent research indicates that delaying retirement has been associated with helping one live longer. When looking at both healthy and unhealthy retirees, a one-year delay in retiring was associated with a decreased risk of death from all causes (Wu, Odden, Fisher, & Stawski, 2016).

When individuals are forced to retire due to health concerns or downsizing, they are more likely to have negative physical and psychological consequences (Erber & Szuchman, 2015).

Retirement Stages: Atchley (1994) identified several phases that individuals ago through when they retire:

- **Remote pre-retirement phase** *includes fantasizing about what one wants to do in retirement*
- **Immediate pre-retirement phase** *when concrete plans are established*
- **Actual retirement**
- **Honeymoon phase** *when retirees travel and participate in activities they could not do while working*
- **Disenchantment phase** *when retirees experience an emotional let-down*
- **Reorientation phase** *when the retirees attempt to adjust to retirement by making less hectic plans and getting into a regular routine*

Not everyone goes through every stage, but this model demonstrates that retirement is a process.

Figure 9.33. Source.

Post-retirement: Those who look most forward to retirement and have plans are those who anticipate adequate income (Erber & Szuchman, 2015). This is especially true for males who have worked consistently and have a pension and/or adequate savings. Once retired, staying active and socially engaged is important. Volunteering, caregiving and informal helping can keep seniors engaged. Kaskie, Imhof, Cavanaugh and Culp (2008) found that 70% of retirees who are not involved in productive activities spent most of their time watching TV, which is correlated with negative affect. In contrast, being productive improves well-being.

Elder Education: Attending college is not just for the young as discussed in the previous chapter. There are many reasons why someone in late adulthood chooses to attend college. PNC Financial Services surveyed retirees aged 70 and over, and found that 58% indicated that they had retired before they had planned (Holland, 2014). Many of these individuals chose to pursue additional training to improve skills to return to work in a second career. Others may be looking to take their career in a new direction. For some older students who are no longer focused on financial reasons, returning to school is intended to enable them to pursue work that is personally fulfilling. Attending college in late adulthood is also a great way for seniors to stay young and keep their minds sharp.

Even if an elder chooses not to attend college for a degree, there are many continuing education programs on topics of interest available. In 1975, a nonprofit educational travel organization called Elderhostel began in New Hampshire with five programs for several hundred retired participants (DiGiacomo, 2015). This program combined college classroom time with travel tours and experimental learning techniques. In 2010, the organization changed its name to Road Scholar, and it now serves over 100,000 people per year in the U. S. and in 150 countries. Academic courses, as well as practical skills such as computer classes, foreign languages, budgeting, and holistic medicines, are among the courses offered. Older adults who have higher levels of education are more likely to take continuing education. However, offering more educational experiences to a diverse group of older adults, including those who are institutionalized in nursing homes, can bring enhance the quality of life.

5.15: Psychosocial Development in Late Adulthood

Learning Objectives: Psychosocial Development in Late Adulthood

- Explain the stereotypes of those in late adulthood and how it impacts their lives
- Summarize Erikson's eighth psychosocial task of integrity vs despair
- Explain how self-concept and self-esteem affect those in late adulthood
- Identify sources of despair and regret
- Describe paths to integrity, including the activity, socioemotional selectivity, and convoy theories
- Describe the continuation of generativity in late adulthood
- Describe the relationships those in late adulthood have with their children and other family members
- Describe singlehood, marriage, widowhood, divorce, and remarriage in late adulthood
- Describe the different types of residential living in late adulthood
- Describe friendships in late life
- Explain concerns experienced by those in late adulthood, such as abuse and mental health issues

Ageism

Stereotypes of people in late adulthood lead many to assume that aging automatically brings poor physical health and mental decline. These stereotypes are reflected in everyday conversations, the media, and even in greeting cards (Overstreet, 2006). Age is not revered in the United States, and so laughing about getting older in birthday cards is one way to get relief. The negative attitudes people have about those in late adulthood are examples of **ageism,** *or prejudice based on age*. The term ageism was first used in 1969, and according to Nelson (2016), ageism remains one of the most institutionalized forms of prejudice today.

Figure 9.34

Nelson (2016) reviewed the research on ageism and concluded that when older individuals believed their culture's negative stereotypes about those who are old, their memory and cognitive skills declined. In contrast, older individuals in cultures, such as China, that held more positive views on aging did not demonstrate cognitive deficits. It appears that when one agrees with the stereotype, it becomes a **self-fulfilling prophecy**, *or the belief in one's ability results in actions that make it come true.*

Being the target of stereotypes can adversely affect individuals' *performance on tasks because they worry they will confirm the cultural stereotypes*. This is known as **stereotype threat**, and it was originally used to explain race and gender differences in academic achievement (Gatz et al., 2016). Stereotype threat research has demonstrated that older adults who internalize the aging stereotypes will exhibit worse memory performance, worse physical performance, and reduced self-efficacy (Levy, 2009).

In terms of physically taking care of themselves, those who believe in negative stereotypes are less likely to engage in preventative health behaviors, less likely to recover from illnesses, and more likely to feel stress and anxiety, which can adversely affect immune functioning and cardiovascular health (Nelson, 2016). Additionally, individuals who attribute their health problems to their age, had a higher death rate. Similarly, doctors who believe that illnesses are just natural consequence of aging are less likely to have older adults participate in clinical trials or receive life-sustaining treatment. In contrast, those older adults who possess positive and optimistic views of aging are less likely to have physical or mental health problems and are more likely to live longer. Removing societal stereotypes about aging and helping older adults reject those notions of aging is another way to promote health and life expectancy among the elderly.

Minority status: Older minority adults accounted for approximately 21% of the U. S. population in 2012, but are expected to reach 39% of the population in 2050 (U. S. Census Bureau, 2012). Unfortunately, racism is a further concern for minority elderly already suffering from ageism. Older adults who are African American, Mexican American, and Asian American experience psychological

problems that are often associated with discrimination by the White majority (Youdin, 2016). Ethnic minorities are also more likely to become sick, but less likely to receive medical intervention. Older, minority women can face *ageism, racism, and sexism, often referred to as* **triple jeopardy** (Hinze, Lin, & Andersson, 2012), which can adversely affect their life in late adulthood.

Poverty rates: According to Quinn and Cahill (2016), the poverty rate for older adults varies based on gender, marital status, race, and age. Women aged 65 or older were 70% more likely to be poor than men, and older women aged 80 and above have higher levels of poverty than those younger. Married couples are less likely to be poor than nonmarried men and women, and poverty is more prevalent among older racial minorities. In 2012 the poverty rates for White older men (5.6%) and White older women (9.6%) were lower than for Black older men (14%), Black older women (21%), Hispanic older men (19%), and Hispanic older women (22%).

5.16: Living Arrangements

Do those in late adulthood primarily live alone? No. In 2014, of those 65 years of age and older, approximately 72% of men and 46% of women lived with their spouse (Vespa & Schondelmyer, 2015). Between 1900 and 1990 the number of older adults living alone increased, most likely due to improvements in health and longevity during this time (see Figure 9.35). Since 1990 the number of older adults living alone has declined, because of older women more likely to be living with their spouse or children (Stepler, 2016c).

Women continue to make up the majority of older adults living alone in the U.S., although that number has dropped from those living alone in 1990 (Stepler, 2016a). Older women are more likely to be unmarried, living with children, with other relatives or non-relatives. Older men are more likely to be living alone than they were in 1990, although older men are more likely to reside with their spouse. The rise in divorce among those in late adulthood, along with the drop-in remarriage rate, has resulted in slightly more older men living alone today than in the past (Stepler, 2016c).

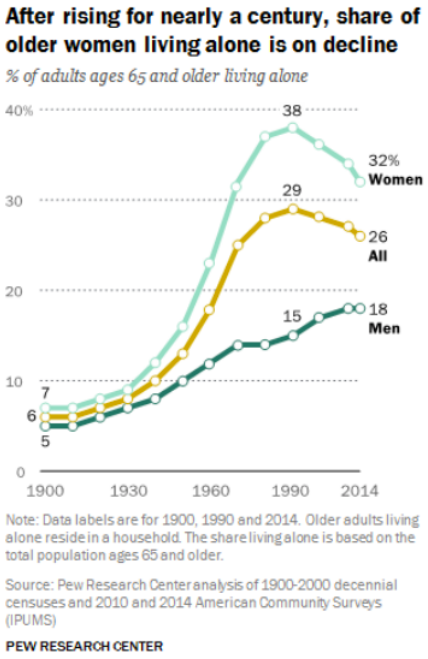


Figure 9.35.

Older adults who live alone report feeling more financially strapped than do those living with others (Stepler, 2016d). According to a Pew Research Center Survey, only 33% of those living alone reported they were living comfortably, while nearly 49% of those living with others said they were living comfortably. Similarly, 12% of those living alone, but only 5% of those living with others, reported that they lacked money for basic needs (Stepler, 2016d).

Do those in late adulthood primarily live with family members? No. There are significantly fewer older adults living in multigenerational housing; that is three generations living together, than in previous generations (Erber & Szuchman, 2015). According to the Pew Research Center (2011), nearly 17% of the population lived in a house with at least two adult generations based on the 2010 census results. However, ethnic differences are noted in the percentage of multigenerational households with Hispanic (22%), Black (23%), and Asian (25%) families living together in greater numbers than White families (13%). Consequently, with the exception of some cultural groups, the majority of older adults wish to live independently for as long as they are able.

Do those in late adulthood move after retirement? No. According to Erber and Szuchman (2015), the majority of those in late adulthood remain in the same location, and often in the same house, where they lived before retiring. Although some younger late adults (65-74 years) may relocate to warmer climates, once they are older (75-84 years) they often return to their home states to be closer to adult children (Stoller & Longino, 2001). Despite the previous trends, however, the recent housing crisis has kept those in late adulthood in their current suburban locations because they are unable to sell their homes (Erber & Szuchman, 2015).

Do those in late adulthood primarily live in institutions? No. Only a small portion (3.2%) of adults older than 65 lived in an institution in 2015 (United States Department of Health and Human Services, 2015). However, as individuals increase in age the percentage of those living in institutions, such as a nursing home, also increases. Specifically: 1% of those 65-74, 3% of those 75-84, and 10% of those 85 years and older lived in an institution in 2015. Due to the increasing number of baby boomers reaching late adulthood, the number of people who will depend on long-term care is expected to rise from 12 million in 2010 to 27 million in 2050 (United States Senate Commission on Long-Term Care, 2013). To meet this higher demand for services, a focus on the least restrictive care alternatives has resulted in a shift toward home and community-based care instead of placement in a nursing home (Gatz et al., 2016).

5.17: Erikson - Integrity vs. Despair

How do people cope with old age? According to Erikson, the last psychosocial stage is **Integrity vs. Despair.** This stage includes, "*a retrospective accounting of one's life to date; how much one embraces life as having been well lived, as opposed to regretting missed opportunities,*" (Erikson, 1982, p. 112). Those in late adulthood need to achieve both the acceptance of their life and the inevitability of their death (Barker, 2016). This stage includes finding meaning in one's life and accepting one's accomplishments, but also acknowledging what in life has not gone as hoped. It is also feeling a sense of contentment and accepting others' deficiencies, including those of their parents. This acceptance will lead to integrity, but if elders are unable to achieve this acceptance, they may experience despair. Bitterness and resentments in relationships and life events can lead one to despair at the end of life. According to Erikson (1982), successful completion of this stage leads to wisdom in late life.

Erikson's theory was the first to propose a lifespan approach to development, and it has encouraged the belief that older adults still have developmental needs. Prior to Erikson's theory, older adulthood was seen as a time of social and leisure restrictions and a focus primarily on physical needs (Barker, 2016). The current focus on aging well by keeping healthy and active, helps to promote integrity. There are many avenues for those in late adulthood to remain vital members of society, and they will be explored next.

Figure 9.36. Source.

Staying Active: Many older adults want to remain active and work toward replacing opportunities lost with new ones. Those who prefer to keep themselves busy demonstrate the **Activity Theory**, *which states that greater satisfaction with one's life occurs with those who remain active* (Lemon, Bengston, & Peterson, 1972). Not surprisingly, more positive views on aging and greater health are noted with those who keep active than those who isolate themselves and disengage with others. Community, faith-based, and volunteer organizations can all provide those in late adulthood with opportunities to remain active and maintain social networks. Erikson's concept of generativity applies to many older adults, just as it did in midlife.

5.18: Generativity in Late Adulthood

Research suggests that generativity is not just a concern for midlife adults, but for many elders, concerns about future generations continue into late adulthood. As previously discussed, some older adults are continuing to work beyond age 65. Additionally, they are volunteering in their community, and raising their grandchildren in greater numbers.

Volunteering

Many older adults spend time volunteering. Hooyman and Kiyak (2011) found that religious organizations are the primary settings for encouraging and providing opportunities to volunteer. Hospitals and environmental groups also provide volunteer opportunities for older adults. While volunteering peaks in middle adulthood, it continues to remain high among adults in their 60s, with about 40% engaging in volunteerism (Hooyman & Kiyak, 2011). While the number of older adults volunteering their time does decline with age, the number of hours older adults volunteer does not show much decline until they are in their late 70s (Hendricks & Cutler, 2004). African-American older adults volunteer at higher levels than other ethnic groups (Taylor, Chatters, & Leving, 2004). Taylor and colleagues attribute this to the higher involvement in religious organizations by older African-Americans.

Figure 9.37.

Volunteering aids older adults as much as it does the community at large. Older adults who volunteer experience more social contact, which has been linked to higher rates of life satisfaction, and lower rates of depression and anxiety (Pilkington, Windsor, & Crisp, 2012).

Longitudinal research also finds a strong link between health in later adulthood and volunteering (Kahana, Bhatta, Lovegreen, Kahana, & Midlarsky, 2013). Lee and colleagues found that even among the oldest-old, the death rate of those who volunteer is half that of non-volunteers (Lee, Steinman, & Tan, 2011). However, older adults who volunteer may already be healthier, which is why they can volunteer compared to their less healthy age mates.

New opportunities exist for older adults to serve as virtual volunteers by dialoguing online with others from around the world and sharing their support, interests, and expertise. These volunteer opportunities range from helping teens with their writing to communicating with ‘neighbors’ in villages of developing countries. Virtual volunteering is available to those who cannot engage in face-to-face interactions, and it opens-up a new world of possibilities and ways to connect, maintain identity, and be productive.

Grandparents raising Grandchildren

According to the 2014 American Community Survey (U.S. Census, 2014a), over 5.5 million children under the age of 18 were living in families headed by a grandparent. This was more than a half a million increase from 2010. While most grandparents raising grandchildren are between the ages of 55 and 64, approximately 25% of grandparents raising their grandchildren are 65 and older (Office on Women’s Health, 2010a).

Figure 9.38.

For many grandparents, parenting a second time can be harder. Older adults have far less energy, and often the reason why they are now acting as parents to their grandchildren is because traumatic events. A survey by AARP (Goyer, 2010) found that grandparents were raising their grandchildren because the parents had problems with drugs and alcohol, had a mental illness, were incarcerated, had divorced, had a chronic illness, were homeless, had neglected or abused the child, were deployed in the military, or had died. While most grandparents state they gain great joy from raising their grandchildren, they also face greater financial, health, education, and housing challenges that often derail their retirement plans than do grandparents who do not have primary responsibility for raising their grandchildren.

5.19: Social Networks in Late Adulthood

A person's social network consists of the people with whom one is directly involved, such as family, friends, and acquaintances (Fischer, 1982). As individuals age, changes occur in these social networks, and The Convoy Model of Social Relations and Socioemotional Selectivity Theory address these changes (Wrzus, Hanel, Wagner, & Neyer, 2013). Both theories indicate that less close relationships will decrease as one ages, while close relationships will persist. However, the two theories differ in explaining why this occurs.

The **Convoy Model of Social Relations** *suggests that the social connections that people accumulate differ in levels of closeness and are held together by exchanges in social support* (Antonucci, 2001; Kahn & Antonucci, 1980). According to the Convoy Model, relationships with a spouse and family members, people in the innermost circle of the convoy, should remain stable throughout the lifespan. In contrast, coworkers, neighbors, and acquaintances, people in the periphery of the convoy, should be less stable. These peripheral relationships may end due to changes in jobs, social roles, location, or other life events. These relationships are more vulnerable to changing situations than family relationships. Therefore, the frequency, type, and reciprocity of the social exchanges with peripheral relationships decrease with age.

The **Socioemotional Selectivity Theory** *focuses on changes in motivation for actively seeking social contact with others* (Carstensen, 1993; Carstensen, Isaacowitz & Charles, 1999). This theory proposes that with increasing age, our motivational goals change based on how much time one has left to live. Rather than focusing on acquiring information from many diverse social

relationships, as noted with adolescents and young adults, older adults focus on the emotional aspects of relationships. To optimize the experience of positive affect, older adults actively restrict their social life to prioritize time spent with emotionally close significant others. In line with this theory, older marriages are found to be characterized by enhanced positive and reduced negative interactions and older partners show more affectionate behavior during conflict discussions than do middle-aged partners (Carstensen, Gottman, & Levenson, 1995). Research showing that older adults have smaller networks compared to young adults, and tend to avoid negative interactions, also supports this theory.

Figure 9.39. Source.

Relationship with adult children: Many older adults provide financial assistance and/or housing to adult children. There is more support going from the older parent to the younger adult children than in the other direction (Fingerman & Birditt, 2011). In addition to providing for their own children, many elders are raising their grandchildren. Consistent with socioemotional selectivity theory, older adults seek, and are helped by, their adult children providing emotional support (Lang & Schütze, 2002). Lang and Schütze, as part of the Berlin Aging Study (BASE), surveyed adult children (mean age 54) and their aging parents (mean age 84). They found that the older parents of adult children who provided emotional support, such as showing tenderness toward their parent, cheering the parent up when he or she was sad, tended to report greater life satisfaction. In contrast, older adults whose children provided informational support, such as providing advice to the parent, reported less life satisfaction. Lang and Schütze found that older adults wanted their relationship with their children to be more emotionally meaningful. Daughters and adult children who were younger, tended to provide such support more than sons and adult children who were older. Lang and Schütze also found that adult children who were more autonomous rather than emotionally dependent on their parents, had more emotionally meaningful relationships with their parents, from both the parents' and adult children's point of view.

Friendships: Friendships are not formed in order to enhance status or careers, and may be based purely on a sense of connection or the enjoyment of being together. Most elderly people have at least one close friend. These friends may provide emotional as well as physical support. Being able to talk with friends and rely on others is very important during this stage of life. Bookwala, Marshall, and Manning (2014) found that the availability of a friend played a significant role in protecting the health from the impact of

widowhood. Specifically, those who became widowed and had a friend as a confidante, reported significantly lower somatic depressive symptoms, better self-rated health, and fewer sick days in bed than those who reported not having a friend as a confidante. In contrast, having a family member as a confidante did not provide health protection for those recently widowed.

Loneliness or solitude? Loneliness is the discrepancy between the social contact a person has and the contacts a person wants (Brehm, Miller, Perlman, & Campbell, 2002). It can result from social or emotional isolation. Women tend to experience loneliness due to social isolation; men from emotional isolation. Loneliness can be accompanied by a lack of self-worth, impatience, desperation, and depression. Being alone does not always result in loneliness. For some, it means solitude. Solitude involves gaining self-awareness, taking care of the self, being comfortable alone, and pursuing one's interests (Brehm et al., 2002).

5.20: Late Adult Lifestyles

Marriage: As can be seen in Figure 9.40, the most common living arrangement for older adults in 2015 was marriage (AOA, 2016). Although this was more common for older men.

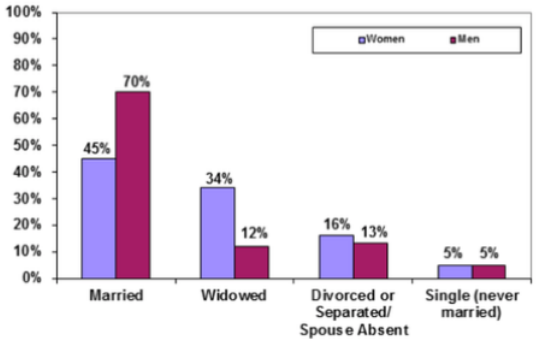


Figure 9.40: Marital status: Age 65+ in 2015. Source.

Widowhood: Losing one's spouse is one of the most difficult transitions in life. The Social Readjustment Rating Scale, commonly known as the Holmes-Rahe Stress Inventory, rates the death of a spouse as the most significant stressor (Holmes & Rahe, 1967). The loss of a spouse after many years of marriage may make an older adult feel adrift in life. They must remake their identity after years of seeing themselves as a husband or wife. Approximately, 1 in 3 women aged 65 and older are widowed, compared with about 1 in 10 men.

Loneliness is the biggest challenge for those who have lost their spouse (Kowalski & Bondmass, 2008). However, several factors can influence how well someone adjusts to this life event. Older adults who are more extroverted (McCrae & Costa, 1988) and have higher self-efficacy, (Carr, 2004b) often fare better. Positive support from adult children is also associated with fewer symptoms of depression and better overall adjustment in the months following widowhood (Ha, 2010).

The context of the death is also an important factor in how people may react to the death of a spouse. The stress of caring for an ill spouse can result in a mixed blessing when the ill partner dies (Erber & Szchman, 2015). The death of a spouse who died after a lengthy illness may come as a relief for the surviving spouse, who may have had the pressure of providing care for someone who was increasingly less able to care for themselves. At the same time, this sense of relief may be intermingled with guilt for feeling relief at the passing of their spouse. The emotional issues of grief are complex and will be discussed in more detail in chapter 10.

Widowhood also poses health risks. The **widowhood mortality effect** *refers to the higher risk of death after the death of a spouse* (Sullivan & Fenelon, 2014). Subramanian, Elwert, and Christakis (2008) found that widowhood increases the risk of dying from almost all causes. However, research suggests that the predictability of the spouse's death plays an important role in the relationship between widowhood and mortality. Elwert and Christakis (2008) found that the rate of mortality for windows and widowers was lower if they had time to prepare for the death of their spouse, such as in the case of a terminal illness like Parkinson's or Alzheimer's. Another factor that influences the risk of mortality is gender. Men show a higher risk of mortality following the death of their spouse if they have higher health problems (Bennett, Hughes, & Smith, 2005). In addition, widowers have a higher risk of suicide than do widows (Ruckenhauser, Yazdani, & Ravaglia, 2007).

Divorce: As noted in Chapter 8, older adults are divorcing at higher rates than in prior generations. However, adults age 65 and over are still less likely to divorce than middle-aged and young adults (Wu & Schimmele, 2007). Divorce poses a number of challenges for older adults, especially women, who are more likely to experience financial difficulties and are more likely to remain single than are older men (McDonald & Robb, 2004).

Figure 9.41. Source.

However, in both America (Lin, 2008) and England (Glaser, Stuchbury, Tomassini, & Askham, 2008) studies have found that the adult children of divorced parents offer more support and care to their mothers than their fathers. While divorced, older men may be better off financially and are more likely to find another partner, they may receive less support from their adult children.

Dating: Due to changing social norms and shifting cohort demographics, it has become more common for single older adults to be involved in dating and romantic relationships (Alterovitz & Mendelsohn, 2011). An analysis of widows and widowers ages 65 and older found that 18 months after the death of a spouse, 37% of men and 15% of women were interested in dating (Carr, 2004a). Unfortunately, opportunities to develop close relationships often diminish in later life as social networks decrease because of retirement, relocation, and the death of friends and loved ones (de Vries, 1996). Consequently, older adults, much like those younger, are increasing their social networks using technologies, including e-mail, chat rooms, and online dating sites (Fox, 2004; Wright & Query, 2004).

Interestingly, older men and women parallel online dating information as those younger. Alterovitz and Mendelsohn (2011) analyzed 600 internet personal ads from different age groups, and across the life span, men sought physical attractiveness and offered status related information more than women. With advanced age, men desired women increasingly younger than themselves, whereas women desired older men until ages 75 and over, when they sought men younger than themselves. Research has previously shown that older women in romantic relationships are not interested in becoming a caregiver or becoming widowed for a second time (Carr, 2004a). Additionally, older men are more eager to repartner than are older women (Davidson, 2001; Erber & Szuchman, 2015). Concerns expressed by older women included not wanting to lose their autonomy, care for a potentially ill partner, or merge their finances with someone (Watson & Stelle, 2011).

Older dating adults also need to know about threats to sexual health, including being at risk for sexually transmitted diseases, including chlamydia, genital herpes, and HIV. Nearly 25% of people living with HIV/AIDS in the United States are 50 or older (Office on Women's Health, 2010b). Githens and Abramsohn (2010) found that only 25% of adults 50 and over who were single or had a new sexual partner indicated that they have used a condom the last time they had sex. Robin (2010) stated that 40% of those 50 and over have never been tested for HIV. These results indicated that educating all individuals, not just adolescents, on healthy sexual behavior is important.

Remarriage and Cohabitation: Older adults who remarry often find that their remarriages are more stable than those of younger adults. Kemp and Kemp (2002) suggest that greater emotional maturity may lead to more realistic expectations regarding marital relationships, leading to greater stability in remarriages in later life. Older adults are also more likely to be seeking companionship in their romantic relationships. Carr (2004a) found that older adults who have considerable emotional support from their friends were less likely to seek romantic relationships. In addition, older adults who have divorced often desire the companionship of intimate relationships without marriage. As a result, cohabitation is increasing among older adults, and like remarriage, cohabitation in later adulthood is often associated with more positive consequences than it is in younger age groups (King & Scott, 2005). No longer being interested in raising children, and perhaps wishing to protect family wealth, older adults may see cohabitation as a good alternative to marriage. In 2014, 2% of adults age 65 and up were cohabitating (Stepler, 2016b).

5.21: Gay and Lesbian Elders

Approximately 3 million older adults in the United States identify as lesbian or gay (Hillman & Hinrichsen, 2014). By 2025 that number is expected to rise to more than 7 million (National Gay and Lesbian Task Force, 2006). Despite the increase in numbers, older lesbian and gay adults are one of the least researched demographic groups, and the research there is portrays a population faced with discrimination. According to the Centers for Disease Control and Prevention (2011), compared to heterosexuals, lesbian and gay adults experience both physical and mental health differences. More than 40% of lesbian and gay adults ages 50 and over suffer from at least one chronic illness or disability, and compared to heterosexuals they are more likely to smoke and binge drink (Hillman & Hinrichsen, 2014). Additionally, gay older adults have an increased risk of prostate cancer (Blank, 2005) and infection from HIV and other sexually transmitted illnesses (Centers for Disease Control and Prevention, 2008). When compared to heterosexuals, lesbian and gay elders have less support from others as they are twice as likely to live alone and four times less likely to have adult children (Hillman & Hinrichsen, 2014).

Lesbian and gay older adults who belong to ethnic and cultural minorities, conservative religions, and rural communities may face additional stressors. Ageism, heterocentrism, sexism, and racism can combine cumulatively and impact the older adult beyond the negative impact of each individual form of discrimination (Hillman & Hinrichsen, 2014). David and Knight (2008) found that older gay black men reported higher rates of racism than younger gay black men and higher levels of perceived ageism than older gay white men.

Figure 9.42.

Although lesbian and gay older adults face many challenges, more than 80% indicate that they engage in some form of wellness or spiritual activity (Fredrickson-Goldsen et al., 2011). They also gather social support from friends and “family members by choice” rather than legal or biological relatives (Hillman & Hinrichsen, 2014). This broader social network provides extra support to gay and lesbian elders.

An important consideration when reviewing the development of gay and lesbian older adults is the cohort in which they grew up (Hillman & Hinrichsen, 2014). The oldest lesbian and gay adults came of age in the 1950s when there were no laws to protect them from victimization. The baby boomers, who grew up in the 1960s and 1970s, began to see states repeal laws that criminalized homosexual behavior. Future lesbian and gay elders will have different experiences due to the legal right for same-sex marriage and greater societal acceptance. Consequently, just like all those in late adulthood, understanding that gay and lesbian elders are a heterogeneous population is important when understanding their overall development.

5.22: Elder Abuse

Current research indicates that at least 1 in 10, or approximately 4.3 million, older Americans are affected by at least one form of elder abuse per year (Roberto, 2016). Those between 60 and 69 years of age are more susceptible than those older. This may be because younger older adults more often live with adult children or a spouse, two groups with the most likely abusers. Cognitive impairment, including confusion and communication deficits, is the greatest risk factor for elder abuse, while a decline in overall health resulting in greater dependency on others is another. Having a disability also places an elder at a higher risk for abuse (Youdin, 2016). Definitions of elder abuse typically recognize five types of abuse as shown in Table 9.8

Consequences of elder abuse are significant and include injuries, new or exacerbated health conditions, hospitalizations, premature institutionalization, and early death (Roberto, 2016). Psychological and emotional abuse is considered the most common form, even though it is underreported and may go unrecognized by the elder. Continual emotional mistreatment is very damaging as it becomes internalized and results in late-life emotional problems and impairment. Financial abuse and exploitation is increasing and costs seniors nearly 3 billion dollars per year (Lichtenberg, 2016). Financial abuse is the second most common form after emotional abuse, and affects approximately 5% of elders. Abuse and neglect occurring in a nursing home is estimated to be 25%-30% (Youdin, 2016). Abuse of nursing home residents is more often found in facilities that are run down and understaffed.

Table 9.8: Types of Elder Abuse

Type	Description
Physical abuse	Physical force resulting in injury, pain, or impairment
Sexual abuse	Nonconsensual sexual contact
Psychological and emotional abuse	Infliction of distress through verbal or nonverbal acts such as yelling, threatening, or isolating
Financial abuse and exploitation	Improper use of an elder's finances, property, or assets
Neglect and abandonment	Intentional or unintentional refusal or failure to fulfill caregiving duties to an elder

Adapted from Roberto (2016)

Older women are more likely to be victims than men, and one reason is due to women living longer. Additionally, a family history of violence makes older women more vulnerable, especially for physical and sexual abuse (Acierno et al., 2010). However, Kosberg (2014) found that men were less likely to report abuse. Recent research indicated no differences among ethnic groups in abuse prevalence, however, cultural norms regarding what constitutes abuse differ based on ethnicity. For example, Dakin and Pearlmutter found that working class White women did not consider verbal abuse as elder abuse, and higher socioeconomic status African American and White women did not consider financial abuse as a form of elder abuse (as cited in Roberto, 2016, p. 304).

Perpetrators of elder abuse are typically family members and include spouses/partners and older children (Roberto, 2016). Children who are abusive tend to be dependent on their parents for financial, housing, and emotional support. Substance use, mental illness, and chronic unemployment increase dependency on parents, which can then increase the possibility of elder abuse. Prosecuting a family member who has financially abused a parent is very difficult. The victim may be reluctant to press charges and the court dockets are often very full resulting in long waits before a case is heard. According to Tanne, family members abandoning older family members with severe disabilities in emergency rooms is a growing problem as an estimated 100,000 are dumped each year (as cited in Berk, 2007). Paid caregivers and professionals trusted to make decisions on behalf of an elder, such as guardians and lawyers, also perpetuate abuse. When elders feel they have social support and are engaged with others, they are less likely to suffer abuse.

5.23: Substance Abuse and the Elderly

Alcohol and drug problems, particularly prescription drug abuse, have become a serious health concern among older adults. Although people 65 years of age and older make up only 13% of the population, they account for almost 30% of all medications prescribed in the United States. According to the National Council on Alcoholism and Drug Dependence (NCADD) (2015), the following statistics illustrate the significance of substance abuse for those in late adulthood:

- There are 2.5 million older adults with an alcohol or drug problem.
- Six to eleven percent of elderly hospital admissions, 14 percent of elderly emergency room admissions, and 20 percent of elderly psychiatric hospital admissions are a result of alcohol or drug problems.
- Widowers over the age of 75 have the highest rate of alcoholism in the U.S.
- Nearly 50 percent of nursing home residents have alcohol related problems.
- Older adults are hospitalized as often for alcoholic related problems as for heart attacks.
- Nearly 17 million prescriptions for tranquilizers are prescribed for older adults each year. Benzodiazepines, a type of tranquilizing drug, are the most commonly misused and abused prescription medications.

Risk factors for psychoactive substance abuse in older adults include social isolation, which can lead to depression (Youdin, 2016). This can be caused by the death of a spouse/partner, family members and/or friends, retirement, moving, and reduced activity levels. Additionally, medical conditions, chronic pain, anxiety, and stress can all lead to the abuse of substances.

Diagnosis Difficulties: Using criteria from the Diagnostic and Statistical Manual of Disorder-5th Edition (American Psychiatric Association, 2013), diagnosing older adults with a substance use disorder can be difficult (Youdin, 2016). For example, compared to adolescents and younger adults, older adults are not looking to get high, but rather become dependent by accident. Additionally, stereotypes of older adults, which include memory deficits, confusion, depression, agitation, motor problems, and hostility, can result in a diagnosis of cognitive impairment instead of a substance use disorder. Further, a diagnosis of a substance use disorder involves impairment in work, school, or home obligations, and because older adults are not typically working, in school or caring for children, these impairments would not be exhibited. Lastly, physicians may be biased against asking those in late adulthood if they have a problem with drugs or alcohol (NCADD, 2015).

Abused Substances: Drugs of choice for older adults include alcohol, benzodiazepines, opioid prescription medications and marijuana. The abuse of prescription medications is expected to increase significantly. Siriwardena, Qureshi, Gibson, Collier, and Lathamn (2006) found that family physicians prescribe benzodiazepines and opioids to older adults to deal with psychosocial and pain problems rather than prescribe alternatives to medication such as therapy. Those in late adulthood are also more sensitive to the effects of alcohol than those younger because of an age-related decrease in the ratio between lean body mass and fat (Erber & Szuchman, 2015).

Figure 9.43. Source.

Additionally, “liver enzymes that metabolize alcohol become less efficient with age and central nervous system sensitivity to drugs increase with age” (p.134). Those in late adulthood are also more likely to be taking other medications, and this can result in unpredictable interactions with the psychoactive substances (Youdin, 2016).

Cannabis Use: Blazer and Wu (2009) found that adults aged 50-64 were more likely to use cannabis than older adults. These “baby boomers” with the highest cannabis use included men, those unmarried/unpartnered, and those with depression. In contrast to the negative effects of cannabis, which include panic reactions, anxiety, perceptual distortions and exacerbation of mood and psychotic disorders, cannabis can provide benefit to the older adult with medical conditions (Youdin, 2016). For example, cannabis can be used in the treatment for multiple sclerosis, Parkinson’s disease, chronic pain, and the fatigue and nausea from the effects of chemotherapy (Williamson & Evans, 2000).

Future Substance Abuse Concerns: There will be an increase in the number of seniors abusing substances in the future because the baby boomer generation has a history of having been exposed to, and having experienced, psychoactive substance use over their adult life. This is a significant difference from the current and previous generations of older adults (National Institutes of Health, 2014c). Efforts will be needed to adequately address these future substance abuse issues for the elderly due to both the health risks for them and the expected burden on the health care system.

5.24: Successful Aging

Although definitions of successful aging are value-laden, Rowe and Kahn (1997) defined three criteria of successful aging that are useful for research and behavioral interventions. They include:

- Relative avoidance of disease, disability, and risk factors, like high blood pressure, smoking, or obesity
- Maintenance of high physical and cognitive functioning
- Active engagement in social and productive activities

For example, research has demonstrated that age-related declines in cognitive functioning across the adult life span may be slowed through physical exercise and lifestyle interventions (Kramer & Erickson, 2007).

Another way that older adults can respond to the challenges of aging is through compensation. Specifically, **selective optimization with compensation** is used when the elder *makes adjustments, as needed, in order to continue living as independently and actively as possible* (Baltes & Dickson, 2001)**.** When older adults lose functioning, referred to as loss-based selection, they may first use new resources/technologies or continually practice tasks to maintain their skills. However, when tasks become too difficult, they may compensate by choosing other ways to achieve their goals. For example, a person who can no longer drive needs to find alternative transportation, or a person who is compensating for having less energy, learns how to reorganize the daily routine to avoid over-exertion.

5.R: Late Adulthood (References)

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CHAPTER OVERVIEW

Chapter 6: Death and Dying

Learning Objectives: Death and Dying

- Define death
- Describe what characterizes physical and social death
- Compare the leading causes of death in the United States with those of developing countries
- Explain where people die
- Describe how attitudes about death and death anxiety change as people age
- Explain the philosophy and practice of palliative care
- Describe the roles of hospice and family caregivers
- Explain the different types of advanced directives
- Describe cultural differences in end of life decisions
- Explain the different types of euthanasia and their controversies
- Describe funeral rituals in different religions
- Differentiate among grief, bereavement, and mourning
- List and describe the stages of loss based on Kübler-Ross's model and describe the criticisms of the model
- Explain the dual-process model of grief
- Identify the impact of losing a child and parent
- Identify the four tasks of mourning
- Explain the importance of support groups for those in grief

We have now reached the end of the lifespan. While it is true that death occurs more commonly at the later stages of age, death can occur at any point in the life cycle. Death is a deeply personal experience evoking many different reactions, emotions, and perceptions. Children and young adults in their prime of life may perceive death differently from adults dealing with chronic illness or the increasing frequency of the death of family and friends. If asked, most people envision their death as quick and peaceful. However, except for a handful of illnesses in which death does often quickly follow diagnosis, or in the case of accidents or trauma, most deaths come after a lengthy period of chronic illness or frailty (Institute of Medicine (IOM), 2015). While modern medicine and better living conditions have led to a rise in life expectancy around the world, death will still be the inevitable final chapter of our lives.

6.1: Death and Dying

One way to understand death and dying is to look more closely at what defines physical death and social death.

Death Defined: According to the Uniform Determination of Death Act (UDDA) (Uniform Law Commissioners, 1980), death is defined clinically as the following:

> *An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards.*

The UDDA was approved for the United States in 1980 by a committee of national commissioners, the American Medical Association, the American Bar Association, and the President's Commission on Medical Ethics. This act has since been adopted by most states and provides a comprehensive and medically factual basis for determining death in all situations.

Death Process: For those individuals who are terminal and death is expected, a series of physical changes occur. Bell (2010) identifies some of the major changes that occur in the weeks, days, and hours leading up to death:

- Weeks Before Passing
  - Minimal appetite; prefer easily digested foods o Increase in the need for sleep
  - Increased weakness
  - Incontinence of bladder and/or bowel
  - Restlessness or disorientation
  - Increased need for assistance with care
- Days Before Passing
  - Decreased level of consciousness
  - Pauses in breathing
  - Decreased blood pressure
  - Decreased urine volume and urine color darkens o Murmuring to people others cannot see
  - Reaching in air or picking at covers
  - Need for assistance with all care
- Days to Hours Before Passing
  - Decreased level of consciousness or comatose-like state
  - Inability to swallow
  - Pauses in breathing become longer
  - Shallow breaths
  - Weak or absent pulse
  - Knees, feet, and/or hands becoming cool or cold
  - Knees, feet, and/or hand discoloring to purplish hue
  - Noisy breathing due to relaxed throat muscles, often called a "death rattle"
  - Skin coloring becoming pale, waxen (pp. 5, 176-177)

Social death begins much earlier than physical death (Pattison, 1977). **Social death** *occurs when others begin to dehumanize and withdraw from someone who is terminally ill or has been diagnosed with a terminal illness* (Glaser & Strauss, 1966). Dehumanization includes ignoring them, talking about them if they were not present, making decisions without consulting them first, and forcing unwanted procedures. Sweeting and Gilhooly (1997) further identified older people in general, and people with a loss of personhood, as having the characteristics necessary to be treated as socially dead. More recently, the concept has been used to describe the exclusion of people with HIV/AIDS, younger people living with terminal illness, and the preference to die at home (Brannelly, 2011). Those diagnosed with conditions such as AIDS or cancer may find that friends, family members, and even health care professionals begin to say less and visit less frequently. Meaningful discussions may be replaced with comments about the weather or other topics of light conversation. Doctors may spend less time with patients after their prognosis becomes poor.

Figure 10.1.

Why do others begin to withdraw? Friends and family members may feel that they do not know what to say or that they can offer no solutions to relieve suffering. They withdraw to protect themselves against feeling inadequate or from having to face the reality of death. Health professionals, trained to heal, may also feel inadequate and uncomfortable facing decline and death. People in nursing homes may live as socially dead for years with no one visiting or calling. Social support is important for quality of life, and those who experience social death are deprived from the benefits that come from loving interaction with others (Bell, 2010).

Why would younger or healthier people dehumanize those who are incapacitated, older, or unwell? One explanation is that dehumanization is the result of the healthier person placing a protective distance between themselves and the incapacitated, older, or unwell person (Brannelly, 2011). This keeps the well person from thinking of themselves as becoming ill or in need of assistance. Another explanation is the repeated experience of loss that paid caregivers experience when working with terminally ill and older people requires a distance which protects against continual grief and sadness, and possibly even burnout.

6.2: Most Common Causes of Death

The United States: In 1900, the most common causes of death were infectious diseases, which brought death quickly. Today, the most common causes of death are chronic diseases in which a slow and steady decline in health ultimately results in death. In 2015, heart disease, cancer, and chronic lower respiratory diseases were the leading causes of death (see Figure 10.2, CDC, 2016).

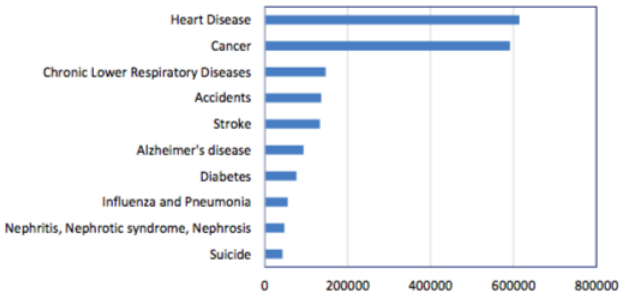


Figure 10.2: Leading Causes of Death in the United States in 2015. Source.

The causes of death vary by age (see Tables 10.1 and 10.2; adapted from CDC, 2015). In infancy, congenital problems and other birth complications are the largest contributors to infant mortality. Accidents, known as unintentional injury, become the leading cause of death throughout childhood and early adulthood. In middle and late adulthood cancer and heart disease become the leading killers.

Table 10.1: Top Five Causes of Death in the United States in 2013 by Age (birth to 24)

< 1	1 - 4	5 - 9	10 - 14	14 - 24
congenital abnormalities	unintentional injury	unintentional injury	unintentional injury	unintentional injury
premature birth	congenital abnormalities	malignant neoplasms	malignant neoplasms	homicide
maternal pregnancy complications	homicide	congenital abnormalities	suicide	suicide
SIDS	malignant neoplasms	homicide	congenital abnormalities	malignant neoplasms
unintentional injury	heart disease	chronic lower respiratory disease	homicide	heart disease

Table 10.2: Top Five Causes of Death in the United States by Age

25 - 34	35 - 44	45 - 54	55 - 64	65+
unintentional injury	unintentional injury	malignant neoplasms	malignant neoplasms	heart disease
suicide	malignant neoplasms	heart disease	heart disease	malignant neoplasms
homicide	heart disease	unintentional injury	unintentional injury	chronic lower respiratory disease
malignant neoplasms	suicide	liver disease	chronic lower respiratory disease	cerebrovascular disease
heart disease	homicide	suicide	diabetes mellitus	Alzheimer's disease

The world: The most recent statistics analyzed by the World Health Organization were in 2012, and non- communicable deaths; that is, those not passed from person- to-person, were responsible for 68% of deaths (WHO, 2016). The four most common noncommunicable diseases were cardiovascular disease, cancer, diabetes, and chronic lung diseases. In contrast, communicable diseases, such as HIV and other infectious diseases, neonatal and maternal mortality, and nutritional problems caused 23% of the deaths, and injuries caused the remaining 9% of the deaths.

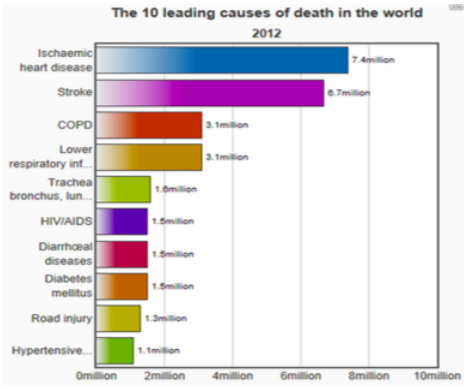


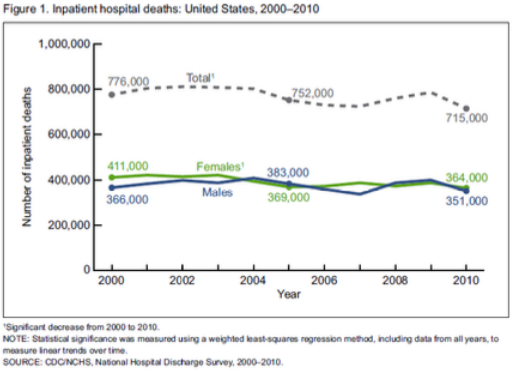
Figure 10.3. Source.

Tobacco use is attributed as one of the top killers, and is often the hidden cause behind many of the diseases that result in death, such as heart disease and chronic lung diseases (WHO, 2016).

These statistics hide the differences in the causes of death among high versus low income nations. In high-income countries, defined as having a per capita annual income of $12,476 or more, 70% of deaths are among people aged 70 and older. Only 1% of deaths occur in children under 15 years of age. People predominantly die of chronic diseases, such as cardiovascular disease, cancers, dementia, or diabetes. Lower respiratory infections remain the only leading infectious cause of death in such nations. In contrast, in low-income countries, defined as having a per capital annual income of $1025 or less, almost 40% of deaths are among children under age 15, and only 20% of deaths are among people aged 70 years and older. People predominantly die of infectious diseases such as lower respiratory infections, HIV/AIDS, diarrheal diseases, malaria and tuberculosis. These account for almost one third of all deaths in these countries. Complications of childbirth due to prematurity, birth asphyxia, and birth trauma are among the leading causes of death for newborns and infants in the poorest of nations (WHO, 2016).

6.3: Where Do People Die?

Gathering statistics on the location of death is not a simple matter. Those with terminal illnesses may be going through the process of dying at home or in a nursing home, only to be transported to a hospital in the final hours of their life. Thus, it should not be a surprise that in the United States, more Americans die in hospitals than in any other settings. However, as can be seen in figure 10.4, there has been a decline in the number of people dying in hospital in the last decade (Hall, Levant, & DeFrances, 2013). This decline can be tied to two changes in the U.S. health care system: Medicare, and other private insurance plans, covering the cost of hospice care, and Medicare paying hospitals to encourage less use of inpatient hospital care (IOM, 1997).



Internationally, 54% of deaths in over 45 nations occurred in hospitals, with the most frequent occurring in Japan (78%) and the least frequent occurring in China (20%), according to a study by Broad et al. (2013). They also found that for older adults, 18% of deaths occurred in some form of residential care, such as nursing homes, and that for each decade after age 65, the rate of dying in a such settings increased 10%. In addition, the number of women dying in residential care was considerably higher than for males.

6.4: Developmental Perceptions of Death and Death Anxiety

The concept of death changes as we develop from early childhood to late adulthood. Cognitive development, societal beliefs, familial responsibilities, and personal experiences all shape an individual's view of death (Batts, 2004; Erber & Szuchman, 2015; National Cancer Institute, 2013).

- **Infancy:** Certainly infants do not comprehend death, however, they do react to the separation caused by death. Infants separated from their mothers may become sluggish and quiet, no longer smile or coo, sleep less, and develop physical symptoms such as weight loss.
- **Early Childhood:** As you recall from Piaget's preoperational stage of cognitive development, young children experience difficulty distinguishing reality from fantasy. It is therefore not surprising that young children lack an understanding of death. They do not see death as permanent, assume it is temporary or reversible, think the person is sleeping, and believe they can wish the person back to life. Additionally, they feel they may have caused the death through their actions, such as misbehavior, words, and feelings.
- **Middle Childhood:** Although children in middle childhood begin to understand the finality of death, up until the age of 9 they may still participate in magical thinking and believe that through their thoughts they can bring someone back to life. They also may think that they could have prevented the death in some way, and consequently feel guilty and responsible for the death.

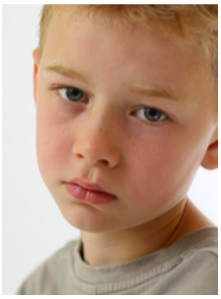


Figure 10.5. Source.

- **Late Childhood:** At this stage, children understand the finality of death and know that everyone will die, including themselves. However, they may also think people die because of some wrong doing on the part of the deceased. They may develop fears of their parents dying and continue to feel guilty if a loved one dies.
- **Adolescence:** Adolescents understand death as well as adults. With formal operational thinking, adolescents can now think abstractly about death, philosophize about it, and ponder their own lack of existence. Some adolescents become fascinated with death and reflect on their own funeral by fantasizing on how others will feel and react. Despite a preoccupation with thoughts of death, the personal fable of adolescence causes them to feel immune to the death. Consequently, they often engage in risky behaviors, such as substance use, unsafe sexual behavior, and reckless driving thinking they are invincible.
- **Early Adulthood:** In adulthood, there are differences in the level of fear and anxiety concerning death experienced by those in different age groups. For those in early adulthood, their overall lower rate of death is a significant factor in their lower rates of death anxiety. Individuals in early adulthood typically expect a long life ahead of them, and consequently do not think about, nor worry about death.
- **Middle Adulthood:** Those in middle adulthood report more fear of death than those in either early and late adulthood. The caretaking responsibilities for those in middle adulthood is a significant factor in their fears. As mentioned previously, middle adults often provide assistance for both their children and parents, and they feel anxiety about leaving them to care for themselves.
- **Late Adulthood:** Contrary to the belief that because they are so close to death, they must fear death, those in late adulthood have lower fears of death than other adults. Why would this occur? First, older adults have fewer caregiving responsibilities and are not worried about leaving family members on their own. They also have had more time to complete activities they had planned in their lives, and they realize that the future will not provide as many opportunities for them. Additionally, they have less anxiety because they have already experienced the death of loved ones and have become accustomed to the likelihood of death. It is not death itself that concerns those in late adulthood; rather, it is having control over how they die.

6.5: Curative, Palliative, and Hospice Care

When individuals become ill, they need to make choices about the treatment they wish to receive. One's age, type of illness, and personal beliefs about dying affect the type of treatment chosen (Bell, 2010).

Curative care *is designed to overcome and cure disease and illness* (Fox, 1997). Its aim is to promote complete recovery, not just to reduce symptoms or pain. An example of curative care would be chemotherapy. While curing illness and disease is an important goal of medicine, it is not its only goal. As a result, some have criticized the curative model as ignoring the other goals of medicine, including preventing illness, restoring functional capacity, relieving suffering, and caring for those who cannot be cured.

Palliative care *focuses on providing comfort and relief from physical and emotional pain to patients throughout their illness, even while being treated* (NIH, 2007). In the past, palliative care was confined to offering comfort for the dying. Now it is offered whenever patients suffer from chronic illnesses, such as cancer or heart disease (IOM, 2015). Palliative care is also part of hospice programs.

Figure 10.6. Source.

Hospice emerged in the United Kingdom in the mid-20th century as a result of the work of Cicely Saunders. This approach became popularized in the U.S. by the work of Elizabeth Kübler-Ross (IOM, 2015), and by 2012 there were 5,500 hospice programs in the U.S. (National Hospice and Palliative Care Organization (NHPCO), 2013).

Hospice care whether at home, in a hospital, nursing home, or hospice facility *involves a team of professionals and volunteers who provide terminally ill patients with medical, psychological, and spiritual support, along with support for their families* (Shannon, 2006). The aim of hospice is to help the dying be as free from pain as possible, and to comfort both the patients and their families during a difficult time. In order to enter hospice, a patient must be diagnosed as terminally ill with an anticipated death within 6 months (IOM, 2015). The patient is allowed to go through the dying process without invasive treatments. Hospice workers try to inform the family of what to expect and reassure them that much of what they see is a normal part of the dying process.

According to Shannon (2006), the basic elements of hospice include:

- Care of the patient and family as a single unit
- Pain and symptom management for the patient
- Having access to day and night care
- Coordination of all medical services
- Social work, counseling, and pastoral services
- Bereavement counseling for the family up to one year after the patient's death

In 2013, an estimated 1.5 million people received hospice care (NHPCO, 2014). The majority of patients on hospice are cancer patients and typically do not enter hospice until the last few weeks prior to death. The median length of stay was 18 days, and one out of three patients were on hospice for less than a week.

Although hospice care has become more widespread, these new programs are subjected to more rigorous insurance guidelines that dictate the types and amounts of medications used, length of stay, and types of patients who are eligible to receive hospice care (Weitz, 2007). Thus, more patients are being served, but providers have less control over the services they provide, and lengths of stay are more limited.

Not all racial and ethnic groups feel the same way about hospice care. African-American families may believe that medical treatment should be pursued on behalf of an ill relative as long as possible and that only God can decide when a person dies. Chinese-American families may feel very uncomfortable discussing issues of death or being near the deceased family member's

body. The view that hospice care should always be used is not held by everyone, and health care providers need to be sensitive to the wishes and beliefs of those they serve (Coolen, 2012).

Family Caregivers

According to the Institute of Medicine (2015), it is estimated that 66 million Americans, or 29% of the adult population, are caregivers for someone who is dying or chronically ill. Two- thirds of these caregivers are women. This care takes its toll physically, emotionally, and financially. Family caregivers may face the physical challenges of lifting, dressing, feeding, bathing, and transporting a dying or ill family member. They may worry about whether they are performing all tasks safely and properly, as they receive little training or guidance. Such caregiving tasks may also interfere with their ability to take care of themselves and meet other family and workplace obligations. Financially, families may face high out of pocket expenses (IOM, 2015).

Figure 10.3. Source.

As can be seen in Table 10.3, most family caregivers are employed, are providing care by themselves with little professional intervention, and there are high costs in lost productivity. As the prevalence of chronic disease rises, the need for family caregivers is growing. Unfortunately, the number of potential family caregivers is declining as the large baby boomer generation enters into late adulthood (Redfoot, Feinberg, & Houser, 2013).

Table 10.3 Characteristics of Family Caregivers in the United States

Characteristic	
No home visits by health care professionals	69%
Caregivers are also employed	72%
Caregivers for the elderly	67%
Duration of employed workers who have been caregiving for 3+ years	55%
Annual cost of lost productivity due to absenteeism from working due to providing care	$25.2 billion

Adapted from IOM, 2015.

6.6: Advanced Directives

Advanced care planning *refers to all documents that pertain to end-of-life care*. These include advance directives and medical orders. **Advance directives** *include documents that mention a health care agent and living wills*. These are initiated by the patient. **Living wills** *are written or video statements that outline the health care initiates the person wishes under certain circumstances*. **Durable power of attorney for health care** *names the person who should make health care decisions in the event that the patient is incapacitated*. In contrast, **medical orders** *are crafted by a medical professional on behalf of a seriously ill patient*. Unlike advanced directives, as these are doctor's orders, they must be followed by other medical personnel. Medical orders include Physician Orders for Life-sustaining Treatment (POLST), do-not-resuscitate, do- not-incubate, or do-not-hospitalize. In some instances, medical orders may be limited to the facility in which they were written. Several states have endorsed POLST so that they are applicable across heath care settings (IOM, 2015).

Figure 10.8: Living wills help identify what treatments are acceptable to the patient or which are refused. Source.

6.7: Cultural Differences in End-of-Life Decisions

According to Searight and Gafford (2005a), cultural factors strongly influence how doctors, other health care providers, and family members communicate bad news to patients, the expectations regarding who makes the health care decisions, and attitudes about end-of-life care. In the United States, doctors take the approach that patients should be told the truth about their health. Outside the United States and among certain racial and ethnic groups within the United States, doctors and family members may conceal the full nature of a terminal illness as revealing such information is viewed as potentially harmful to the patient, or at the very least, is seen as disrespectful and impolite. Holland, Geary, Marchini and Tross (1987) found that many doctors in Japan and in numerous African nations used terms such as “mass,” “growth,” and “unclean tissue” rather than referring to cancer when discussing the illness to patients and their families. Family members actively protect terminally ill patients from knowing about their illness in many Hispanic, Chinese, and Pakistani cultures (Kaufert & Putsch, 1997; Herndon & Joyce, 2004).

Figure 10.9. Source.

In the United States, we view the patient as autonomous in health care decisions (Searight & Gafford, 2005a), while in other nations the family or community plays the main role, or decisions are made primarily by medical professionals, or the doctors in concert with the family make the decisions for the patient. For instance, in comparison to European Americans and African Americans, Koreans and Mexican-Americans are more likely to view family members as the decision makers rather than just the patient (Berger, 1998; Searight & Gafford, 2005a). In many Asian cultures, illness is viewed as a “family event”, not just something that impacts the individual patient (Candib, 2002). Thus, there is an expectation that the family has a say in the health care decisions. As many cultures attribute high regard and respect for doctors, patients and families may defer some of the end-of-life decision making to the medical professionals (Searight & Gafford, 2005b).

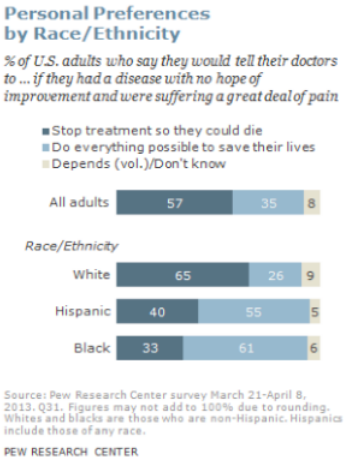


Figure 10.10.

According to a Pew Research Center Survey (Lipka, 2014), while death may not be a comfortable topic to ponder, 37% of their survey respondents had given a great deal of thought about their end-of-life wishes, with 35% having put these in writing. Yet, over 25% had given no thought to this issue. Lipka (2014) also found that there were clear racial and ethnic differences in end-of-life wishes (see Figure 10.10). Whites are more likely than Blacks and Hispanics to prefer to have treatment stopped if they have a terminal illness. While the majority of Blacks (61%) and Hispanics (55%) prefer that everything be done to keep them alive. Searight and Gafford (2005a) suggest that the low rate of completion of advanced directives among non-whites may reflect a distrust of the U.S. health care system as a result of the health care disparities non-whites have experienced. Among Hispanics, patients may also be reluctant to select a single family member to be responsible for end-of- life decisions out of a concern of

isolating the person named and of offending other family members, as this is commonly seen as a “family responsibility” (Morrison, Zayas, Mulvihill, Baskin, & Meier, 1998).

6.8: Euthanasia

Euthanasia is defined as intentionally ending one's life when suffering from a terminal illness or severe disability (Youdin, 2016). Euthanasia is further separated into **active euthanasia**, which is intentionally causing death, usually through a lethal dose of medication, and **passive euthanasia** occurs when life-sustaining support is withdrawn. This can occur through the removal of a respirator, feeding tube, or heart-lung machine.

Physician-assisted suicide *is a form of active euthanasia whereby a physician prescribes the means by which a person can die*. The United States federal government does not legislate physician-assisted suicide as laws are handled at the state level (ProCon.org, 2016). Six states currently allow physician-assisted suicide. The person seeking physician-assisted suicide must be: (1) at least 18 years of age, (2) have six or less months until expected death, and (3) obtain two oral (or least 15 days apart) and one written request from a physician (ProCon.org, 2016). Table 10.4 lists the states that allow physician-assisted suicide and the date the act was passed.

Table 10.4 Six States with Legal Physician-Assisted Suicide

State	Date Passed
Oregon	Passed November 8, 1994, but enacted October 27, 1997
Washington	November 4, 2008
Montana	December 31, 2009
Vermont	May 20, 2013
California	October 5, 2015
Colorado	November 8, 2016

Source.

Since 1997 when the law was passed in Oregon, 1545 people had lethal prescriptions written and 991 patients had died from the medication by the end of 2015 (Oregon Public Health Division, 2016). Canada and several European countries, including Switzerland, Belgium, Luxembourg, and the Netherlands, also allow physician-assisted suicide. As of 2014, Belgium is the only country that allows the right to die to those under the age of 18. Stricter conditions were put in place for children, including parental consent, the child must be suffering from a serious and incurable disease, the child must understand what euthanasia means, and the child's death must be expected in the near future (Narayan, 2016).

Figure 10.11: Hippocratic oath and euthanasia. Source.

The practice of physician-assisted euthanasia is certainly controversial with religious, legal, ethical, and medical experts weighing in with opinions. The main areas where there is disagreement between those who support physician-assisted euthanasia and those who do not include:

1. whether a person has the legal right to die,
2. whether active euthanasia would become a "slippery slope" and start a trend to legalize deaths for individuals who may be disabled or unable to give consent,
3. how to interpret the Hippocratic Oath and what it exactly means for physicians to do no harm,
4. whether the government should be involved in end-of-life decisions, and

5. specific religious restrictions against deliberately ending a life (ProCon.org, 2016).

Not surprisingly, there are strong opinions on both sides of this topic. According to a 2013 Pew Research Center survey, 47% of Americans approve and 49% disapprove of laws that would allow a physician to prescribe lethal doses of drugs that a terminally ill patient could use to commit suicide (Pew Research Center, 2013). Attitudes on physician-assisted suicide were roughly the same in 2005, when 46% approved and 45% disapproved.

6.9: Religious Practices After Death

Funeral rites are expressions of loss that reflect personal and cultural beliefs about the meaning of death and the afterlife. Ceremonies provide survivors a sense of closure after a loss. These rites and ceremonies send the message that the death is real and allow friends and loved ones to express their love and duty to those who die. Under circumstances in which a person has been lost and presumed dead or when family members were unable to attend a funeral, there can continue to be a lack of closure that makes it difficult to grieve and to learn to live with loss. Although many people are still in shock when they attend funerals, the ceremony still provides a marker of the beginning of a new period of one's life as a survivor. The following are some of the religious practices regarding death, however, individual religious interpretations and practices may occur (Dresser & Wasserman, 2010; Schechter, 2009).

Hindu: The Hindu belief in reincarnation accelerates the funeral ritual, and deceased Hindus are cremated as soon as possible. After being washed, the body is anointed, dressed, and then placed on a stand decorated with flowers ready for cremation. Once the body has been cremated, the ashes are collected and, if possible, dispersed in one of India's holy rivers.

Judaism: Among the Orthodox, the deceased is first washed and then wrapped in a simple white shroud. Males are also wrapped in their prayer shawls. Once shrouded the body is placed into a plain wooden coffin. The burial must occur as soon as possible after death, and a simple service consisting of prayers and a eulogy is given. After burial the family members typically gather in one home, often that of the deceased, and receive visitors. This is referred to as "sitting shiva".

Muslim: In Islam the deceased are buried as soon as possible, and it is a requirement that the community be involved in the ritual. The individual is first washed and then wrapped in a plain white shroud called a kafan. Next, funeral prayers are said followed by the burial. The shrouded dead are placed directly in the earth without a casket and deep enough not to be disturbed. They are also positioned in the earth, on their right side, facing Mecca, Saudi Arabia.

Figure 10.12. Source.

Roman Catholic: Before death an ill Catholic individual is anointed by a priest, commonly referred to as the Anointing of the Sick. The priest recites a prayer and applies consecrated oil to the forehead and hands of the ill person. The individual also takes a final communion consisting of consecrated bread and wine. The funeral rites consist of three parts. First is the wake that usually occurs in a funeral parlor. The body is present and prayers and eulogies are offered by family and friends. The funeral mass is next which includes an opening prayer, bible readings, liturgy, communion, and a concluding rite. The funeral then moves to the cemetery where a blessing of the grave, scripture reading, and prayers conclude the funeral ritual.

6.10: Grief, Bereavement, and Mourning

The terms grief, bereavement, and mourning are often used interchangeably, however, they have different meanings. **Grief** *is the normal process of reacting to a loss.* Grief can be in response to a physical loss, such as a death, or a social loss including a relationship or job. **Bereavement** *is the period after a loss during which grief and mourning occurs*. The time spent in bereavement for the loss of a loved one depends on the circumstances of the loss and the level of attachment to the person who died. **Mourning** *is the process by which people adapt to a loss.* Mourning is greatly influenced by cultural beliefs, practices, and rituals (Casarett, Kutner, & Abrahm, 2001).

Grief Reactions: Typical grief reactions involve mental, physical, social and/or emotional responses. These reactions can include feelings of numbness, anger, guilt, anxiety, sadness and despair. The individual can experience difficulty concentrating, sleep and eating problems, loss of interest in pleasurable activities, physical problems, and even illness. Research has demonstrated that the immune systems of individuals grieving is suppressed and their healthy cells behave more sluggishly, resulting in greater susceptibility to illnesses (Parkes & Prigerson, 2010). However, the intensity and duration of typical grief symptoms do not match those usually seen in severe grief reactions, and symptoms typically diminish within 6-10 weeks (Youdin, 2016).

Figure 10.13. Source.

Complicated Grief: After the loss of a loved one, however, some individuals experience **complicated grief**, *which includes atypical grief reactions* (Newson, Boelen, Hek, Hofman, & Tiemeier, 2011). Symptoms of complicated grief include: Feelings of disbelief, a preoccupation with the dead loved one, distressful memories, feeling unable to move on with one's life, and a yearning for the deceased. Additionally, these symptoms may last six months or longer and mirror those seen in major depressive disorder (Youdin, 2016).

According to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; American Psychiatric Association, 2013), distinguishing between major depressive disorder and complicated grief requires clinical judgment. The psychologist needs to evaluate the client's individual history and determine whether the symptoms are focused entirely on the loss of the loved one and represent the individual's cultural norms for grieving, which would be acceptable. Those who seek assistance for complicated grief usually have experienced traumatic forms of bereavement, such as unexpected, multiple and violent deaths, or those due to murders or suicides (Parkes & Prigerson, 2010).

Disenfranchised Grief: *Grief that is not socially recognized is referred to as* **disenfranchised grief** (Doka, 1989)**.** Examples of disenfranchised grief include death due to AIDS, the suicide of a loved one, perinatal deaths, abortions, the death of a pet, lover, or ex-spouse, and psychological losses, such as a partner developing Alzheimer's disease. Due to the type of loss, there is no formal mourning practices or recognition by others that would comfort the grieving individual. Consequently, individuals experiencing disenfranchised grief may suffer intensified symptoms due to the lack of social support (Parkes & Prigerson, 2010).

Anticipatory Grief: *Grief that occurs when a death is expected and survivors have time to prepare to some extent before the loss is referred to as* **anticipatory grief**. This expectation can make adjustment after a loss somewhat easier (Kübler-Ross & Kessler, 2005). A death after a long-term, painful illness may bring family members a sense of relief that the suffering is over, and the exhausting process of caring for someone who is ill is also completed.

Models of Grief

There are several theoretical models of grief, however, none is all encompassing (Youdin, 2016). These models are merely guidelines for what an individual may experience while grieving. However, if individuals do not fit a model, it does not mean there is something "wrong" with the way they experience grief. It is important to remember that there is no one way to grieve, and people move through a variety of stages of grief in various ways.

Five Stages of Grief: Kübler-Ross (1969, 1975) describes five stages of loss experienced by someone who faces the news of their impending death. These "stages" are not really stages that a person goes through in order or only once; nor are they stages that occur with the same
intensity. Indeed, the process of death is influenced by a person's life experiences, the timing of their death in relation to life events, the predictability of their death based on health or illness, their belief system, and their assessment of the quality of their own life. Nevertheless, these stages help us to understand and recognize some of what a dying person experiences psychologically, and by understanding, we are more equipped to support that person as they die.

- **Denial** is often the first reaction to overwhelming, unimaginable news. Denial, or disbelief or shock, protects us by allowing such news to enter slowly and to give us time to come to grips with what is taking place. The person who receives positive test results for life-threatening conditions may question the results, seek second opinions, or may simply feel a sense of disbelief psychologically even though they know that the results are true.
- **Anger** also provides us with protection in that being angry energizes us to fight against something and gives structure to a situation that may be thrusting us into the unknown. It is much easier to be angry than to be sad, in pain, or depressed. It helps us to temporarily believe that we have a sense of control over our future and to feel that we have at least expressed our rage about how unfair life can be. Anger can be focused on a person, a health care provider, at God, or at the world in general. It can be expressed over issues that have nothing to do with our death; consequently, being in this stage of loss is not always obvious.
- **Bargaining** involves trying to think of what could be done to turn the situation around. Living better, devoting self to a cause, being a better friend, parent, or spouse, are all agreements one might willingly commit to if doing so would lengthen life. Asking to just live long enough to witness a family event or finish a task are examples of bargaining.
- **Depression** or sadness is appropriate for such an event. Feeling the full weight of loss, crying, and losing interest in the outside world is an important part of the process of dying. This depression makes others feel very uncomfortable and family members may try to console their loved one. Sometimes hospice care may include the use of antidepressants to reduce depression during this stage.
- **Acceptance** involves learning how to carry on and to incorporate this aspect of the life span into daily existence. Reaching acceptance does not in any way imply that people who are dying are happy about it or content with it. It means that they are facing it and continuing to make arrangements and to say what they wish to say to others. Some terminally ill people find that they live life more fully than ever before after they come to this stage.

According to Kübler-Ross (1969), behind these five stages focused on the identified emotions, there is a sense of hope. Kübler-Ross noted that in all the 200 plus patients she and her students interviewed, a little bit of hope that they might not die was always in the back of their minds.

Criticisms of Kübler-Ross's Five Stages of Grief: Some researchers have been skeptical of the validity of there being stages to grief among the dying (Friedman & James, 2008). As Kübler- Ross notes in her own work, it is difficult to empirically test the experiences of the dying. "How do you do research on dying,...? When you cannot verify your data and cannot set up experiments?" (Kübler-Ross, 1969, p. 19). She and four students from the Chicago Theology Seminary in 1965 decided to listen to the experiences of dying patients, but her ideas about death and dying are based on the interviewers' collective "feelings" about what the dying were experiencing and needed (Kübler-Ross, 1969). While she goes on to say in support of her approach that she and her students read nothing about the prior literature on death and dying, so as to have no preconceived ideas, a later work revealed that her own experiences of grief from childhood undoubtedly colored her perceptions of the grieving process (Kübler-Ross & Kessler, 2005). Kübler-Ross is adamant in her theory that the one stage that all those who are dying go through is anger. It is clear from her 2005 book that anger played a central role in "her" grief, and did so for many years (Friedman & James, 2008).

There have been challenges to the notion that denial and acceptance are beneficial to the grieving process (Telford, Kralik, & Koch, 2006). Denial can become a barrier between the patient and health care specialists, and reduce the ability to educate and treat the patient. Similarly, acceptance of a terminal diagnosis may also lead patients to give up and forgo treatments to alleviate their symptoms. In fact, some research suggests that optimism about one's prognosis may help in one's adjustment and increase longevity (Taylor, Kemeny, Reed, Bower & Gruenewald, 2000).

A third criticism is not so much of Kübler-Ross's work, but how others have assumed that these stages apply to anyone who is grieving. Her research focused only on those who were terminally ill. This does not mean that others who are grieving the loss of someone would necessarily experience grief in the same way. Friedman and James (2008) and Telford et al. (2006) expressed concern that mental health professionals, along with the general public, may assume that grief follows a set pattern, which may create more harm than good.

Lastly, the Yale Bereavement Study, completed between January 2000 and January 2003, did not find support for Kübler-Ross's five stage theory of grief (Maciejewski, Zhang, Block, & Prigerson, 2007). Results indicated that acceptance was the most commonly reported reaction from the start, and yearning was the most common negative feature for the first two years. The other variables, such as disbelief, depression, and anger, were typically absent or minimal.

Although there is criticism of the Five Stages of Grief Model, Kübler-Ross made people more aware of the needs and concerns of the dying, especially those who were terminally ill. As she notes,

> *...when a patient is severely ill, he is often treated like a person with no right to an opinion. It is often someone else who makes the decision if and when and where a patient should be hospitalized. It would take so little to remember that the sick person has feelings, has wishes and opinions, and has – most important of all – the right to be heard. (1969, p. 7-8).*

Dual-Process Model of Grieving: The dual-process model takes into consideration that bereaved individuals move back and forth between grieving and preparing for life without their loved one (Stroebe & Schut, 2001; Stroebe, Schut, & Stroebe, 2005). This model focuses on a **loss orientation**, *which emphasizes the feelings of loss and yearning for the deceased* and a **restoration orientation**, *which centers on the grieving individual reestablishing roles and activities they had prior to the death of their loved one.* When oriented toward loss grieving individuals look back, and when oriented toward restoration they look forward. As one cannot look both back and forward at the same time, a bereaved person must shift back and forth between the two. Both orientations facilitate normal grieving and interact until bereavement has completed.

Grief: Loss of Children and Parents

Loss of a Child: According to Parkes and Prigerson (2010), the loss of a child at any age is considered "the most distressing and long-lasting of all griefs" (p. 142). Bereaved parents suffer an increased risk to both physical and mental health and exhibit an increased mortality rate. Additionally, they earn higher scores on inventories of grief compared to other types of bereavement. Of those recently diagnosed with depression, a high percentage had experienced the death of child within the preceding six months, and 8 percent of women whose child had died attempted or committed suicide. Archer (1999) found that the intensity of grief increased with the child's age until the age of 17, when it declined. Archer explained that women have a greater chance of having another child when younger, and thus with added age comes greater grief as fertility declines. Certainly, the older the child the more the mother has bonded with the child and will experience greater grief.

Even when children are adults, parents may experience intense grief, especially when the death is sudden. Adult children dying in traffic accidents was associated with parents experiencing more intense grief and depression, greater symptoms on a health check list, and more guilt than those parents whose adult children died from cancer (Parkes & Prigerson, 2010). Additionally, the deaths of unmarried adult children still residing at home and those who experienced alcohol and relationship problems were especially difficult for parents. Overall, in societies in which childhood deaths are statistically infrequent, parents are often unprepared for the loss of their daughter or son and suffer high levels of grief.

Figure 10.14: Siblings comfort one another. Source.

Loss of Parents in Adulthood: In contrast to the loss of a child, the loss of parents in adult life is much more common and results in less suffering. In their literature review, Moss and Moss (1995) found that the loss of a parent in adult life is "rarely

pathological.” Those adult children who appear to have the most difficulty dealing with the loss of a parent are adult men who remain unmarried and continue to live with their mothers. In contrast, those who are in satisfying marriages are less likely to require grief assistance (Parkes & Prigerson, 2010). To determine the effects of gender on parental death, Marks, Jun and Song (2007) analyzed longitudinal data from the National Survey of Families and Households that assessed multiple dimensions of psychological well-being in adulthood including depression, happiness, self-esteem, mastery, psychological wellness, alcohol abuse, and physical health. Findings indicated that a father’s death led to more negative effects for sons than daughters, and a mother’s death lead to more negative effects for daughters.

Figure 10.15. Source.

Loss of Parents in Childhood: Parental deaths in childhood have been associated with adjustment problems that may last into adulthood. Ellis, Dowrick and Lloyd-Williams (2013) identified several negative outcomes associated with childhood grief including increased chance of substance abuse, greater susceptibility to depression, higher chance of criminal behavior, school underachievement, and lower employment rates. Typically, professional help is not required in helping children and teens who are dealing with the death of a loved one. However, Worden (2002) identified ten “red flags” displayed by grieving children that may indicate the need for professional assistance:

- Persistent difficulty in talking about the dead person
- Persistent or destructive aggressive behavior
- Persisting anxiety, clinging, or fears
- Somatic complaints (stomachaches, headaches)
- Sleeping difficulties
- Eating disturbance
- Marked social withdrawal
- School difficulties or serious academic reversal
- Persistent self-blame or guilt
- Self-destructive behavior

As parents may also be dealing with funeral arrangements and other end of life matters, they may not always have the time to address questions and concerns that children may have. When explaining death to children it is important to use real words, such as died and death (Dresser & Wasserman, 2010). Children do not understand the meanings of such phrases as “passed away”, “left us”, or “lost”, and they can become confused as to what happened. Saying a loved one died of a disease called cancer, is preferable to saying he was “very sick”. The child may become worried when others become sick that they too will die. Consequently, it is important that children have someone who will listen to, and accurately address their concerns.

Mourning

As a society, are we given the tools and time to adequately mourn? Not all researchers agree that we do. The "death-denying, grief-dismissing world" is the modern world (Kübler-Ross & Kessler, 2005, p. 205). We often grieve privately, quickly, and medicate our suffering with substances or activities. Employers grant 3 to 5 days for bereavement, if the loss is that of an immediate family member, and such leaves are sometimes limited to no more than one per year. Yet grief takes much longer and the bereaved are seldom ready to perform well on the job after just a few days. Obviously life does have to continue, but we need to acknowledge and make more caring accommodations for those who are in grief.

Four Tasks of Mourning: Worden (2008) identified four tasks that facilitate the mourning process. Worden believes that all four tasks must be completed, but they may be completed in any order and for varying amounts of time. These tasks include:

- Acceptance that the loss has occurred
- Working through the pain of grief
- Adjusting to life without the deceased
- Starting a new life while still maintaining a connection with the deceased

Figure 10.16. Source.

Support Groups: Support groups are helpful for grieving individuals of all ages, including those who are sick, terminal, caregiving, or mourning the loss of a loved one. Support groups reduce isolation, connect individuals with others who have similar experiences, and offer those grieving a place to share their pain and learn new ways of coping (Lynn & Harrold, 2011). Support groups are available through religious organizations, hospitals, hospice, nursing homes, mental health facilities, and schools for children.

Viewing death as an integral part of the lifespan will benefit those who are ill, those who are bereaved, and all of us as friends, caregivers, partners, family members and humans in a global society.

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