

5.3: Types of STDs/STIs

What are some types of sexually transmitted diseases or sexually transmitted infections (STDs/STIs)?

Approximately 20 different infections are known to be transmitted through sexual contact. Here are descriptions of some of the most common and well known:

- Chlamydia
- Gonorrhea
- Genital Herpes
- HIV/AIDS
- Human Papillomavirus (HPV)
- Syphilis
- Bacterial Vaginosis
- Trichomoniasis
- Viral Hepatitis

Chlamydia

Chlamydia is a common STD/STI caused by the bacterium *Chlamydia trachomatis*. Chlamydia can be transmitted during vaginal, oral, or anal sexual contact with an infected partner. While many individuals will not experience symptoms, chlamydia can cause fever, abdominal pain, and unusual discharge of the penis or vagina.

In women, whether or not they are having symptoms and know about their infection, chlamydia can cause pelvic inflammatory disease (PID). In PID, the untreated STD/STI progresses and involves other parts of the woman's reproductive system, including the uterus and fallopian tubes. This progression can lead to permanent damage to the woman's reproductive organs. This damage may lead to ectopic pregnancy (in which the fetus develops in abnormal places outside of the womb, a condition that can be life-threatening) and infertility.

Additionally, if the woman is pregnant, her developing fetus is at risk, because chlamydia can be passed on during her pregnancy or delivery and could lead to eye infections or pneumonia in the infant. If chlamydia is detected early, it can be treated easily with an antibiotic taken by mouth.

Gonorrhea

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae*, which can grow rapidly and multiply easily in the warm, moist areas of the reproductive tract. The most common symptoms of gonorrheal infection are a discharge from the vagina or penis and painful or difficult urination.

As with chlamydial infection, the most common and serious complications of gonorrhea occur in women and include pelvic inflammatory disease (PID), ectopic pregnancy, infertility, and the potential spread to the developing fetus if acquired during pregnancy. Gonorrhea also can infect the mouth, throat, eyes, and rectum and can spread to the blood and joints, where it can become a life-threatening illness.

In addition, people with gonorrhea can more easily contract HIV, the virus that causes AIDS. HIV-infected people with gonorrhea are also more likely to transmit the virus to someone else.

Genital Herpes

Genital herpes is a contagious infection caused by the herpes simplex virus (HSV). There are two different strains, or types, of HSV: herpes simplex virus type 1 (HSV-1) and type 2 (HSV-2). Both can cause genital herpes, although most cases of genital herpes are caused by HSV-2. When symptomatic, HSV-1 usually appears as fever blisters or cold sores on the lips, but it can also infect the genital region through oral-genital or genital-genital contact. Symptomatic HSV-2 typically causes painful, watery skin blisters on or around the genitals or anus. However, substantial numbers of people who carry these viruses have no or only minimal signs or symptoms.

Neither HSV-1 nor HSV-2 can be cured, and even during times when an infected person has no symptoms, the virus can be found in the body's nerve cells. Periodically, some people will experience outbreaks in which new blisters form on the skin in the genital

area; at those times, the virus is more likely to be passed on to other people.

Pregnant women, especially those who acquire genital herpes for the first time during pregnancy, may pass the infection to their newborns, causing life-threatening neonatal HSV, an infection affecting the infant's skin, brain, and other organs.

HIV/AIDS

HIV, or the human immunodeficiency virus, is the virus that causes AIDS (acquired immunodeficiency syndrome). HIV destroys the body's immune system by killing the blood cells that fight infection. Once HIV destroys a substantial proportion of these cells (CD4 cells), the body's ability to fight off and recover from infections is compromised. This advanced stage of HIV infection is known as AIDS.

The CD4 count is like a snapshot of how well your immune system is functioning. CD4 cells (also known as CD4+ T cells) are white blood cells that fight infection. The more you have, the better. These are the cells that the HIV virus kills. As HIV infection progresses, the number of these cells declines. When the CD4 count drops below 200 due to advanced HIV disease, a person is diagnosed with AIDS. A normal range for CD4 cells is about 500-1,500. Usually, when a person with low CD4 cells starts HIV medicines, the CD4 cell count increases as the HIV virus is controlled. Most, but not all, people will experience an increase in CD4 cells with effective HIV treatment.

People whose HIV has progressed to AIDS are very susceptible to opportunistic infections that do not normally make people sick and to certain forms of cancer.

AIDS can be prevented by early initiation of antiretroviral therapy in those with HIV infection. Transmission of the virus primarily occurs during unprotected sexual activity and by sharing needles used to inject intravenous drugs, although the virus also can spread from mother to infant during pregnancy, delivery, and breastfeeding.

In 2013, NIH-supported researchers reported that a 2-year-old child who was born with HIV and was treated starting in the first few days of life has had her HIV infection go into remission. This appears to be the first case of [functional cure of HIV](#).

Human Papillomavirus (HPV)

HPV is the most common STD/STI. More than 40 HPV types exist, and all of them can infect both men and women. The types of HPVs vary in their ability to cause genital warts; infect other regions of the body, including the mouth and throat; and cause cancers of the cervix, vulva, penis, and mouth.

Although no cure exists for HPV infection once it occurs, regular screening with a Pap smear test can prevent or detect at an early stage most cases of HPV-caused cervical cancer. (A Pap smear test involves a health care provider taking samples of cells from the cervix during a standard gynecologic exam; these cells are examined under a microscope for signs of developing cancer).

A newly available vaccine protects against most (but not all) HPV types that cause cervical cancer. The American Academy of Pediatrics recommends this vaccine for school-aged boys and girls.

Syphilis

Syphilis infections, caused by the bacterium *Treponema pallidum*, are passed from person to person during vaginal, anal, or oral sex through direct contact with sores, called chancres. Between 2001 and 2009, the Centers for Disease Control and Prevention (CDC) data show that the syphilis rate increased each year. Those people at highest risk for syphilis include men having sex with both men and women and people residing in the south. The first sign of syphilis is a chancre, a painless genital sore that most often appears on the penis or in and around the vagina. Beyond being the first sign of a syphilis infection, chancres make a person two to five times more likely to contract an HIV infection. If the person is already infected with HIV, chancres also increase the likelihood that the virus will be passed on to a sexual partner. These sores typically resolve on their own, even without treatment. However, the body does not clear the infection on its own, and, over time, syphilis may involve other organs, including the skin, heart, blood vessels, liver, bones, and joints in secondary syphilis. If the illness is still not treated, tertiary syphilis can develop over a period of years and involve the nerves, eyes, and brain and can potentially cause death.

Expectant mothers harboring the bacterium are at an increased risk of miscarriage and stillbirth, and they can pass the infection on to their fetuses during pregnancy and delivery. Infants that acquire congenital syphilis during pregnancy may suffer from skeletal deformity, difficulty with speech and motor development, seizure, anemia, liver disease, and neurologic problems.

Bacterial Vaginosis

Bacterial vaginosis is a common, possibly sexually transmitted, vaginal infection in women of reproductive age. While it is healthy and normal for a vagina to have bacteria, just like the skin, mouth, or gastrointestinal (GI) tract, sometimes changes in the balance of different types of bacteria can cause problems.

Bacterial vaginosis occurs when problematic bacteria that are normally present only in small amounts increase in number, replace normal vaginal lactobacilli bacteria, and upset the usual balance. This situation becomes more likely if a woman douches frequently or has new or multiple sexual partners. The most common sign of a bacterial vaginosis infection is a thin, milky discharge that is often described as having a “fishy” odor. However, some women will have no symptoms at all.

Regardless of symptoms, having bacterial vaginosis increases the risk of getting other STDs/STIs and is also associated with pelvic inflammatory disease (PID), an infection of the female reproductive organs, including the uterus and the fallopian tubes (which carry eggs to the uterus), and postoperative infections. Preterm labor and birth are also possibly more common in women with bacterial vaginosis.

Trichomoniasis

Trichomoniasis infection is caused by the single-celled protozoan parasite *Trichomonas vaginalis* and is common in young, sexually active women. The parasite also infects men, though less frequently. The parasite can be transmitted between men and women as well as between women whenever physical contact occurs between the genital areas. Although *Trichomonas* infections do not always cause symptoms, they can cause frequent, painful, or burning urination in men and women as well as vaginal discharge, genital soreness, redness, or itching in women. Because the infection can occur without symptoms, a person may be unaware that he or she is infected and continue to re-infect a sexual partner who is having recurrent signs of infection. As with bacterial STDs/STIs, all sexual partners should be treated at the same time to avoid re-infection.

NICHD-sponsored research has shown that during pregnancy, *Trichomonas* infection is associated with an increased risk of premature birth and infants with low birth weight. Moreover, infants born to mothers with *Trichomonas* infection are more than twice as likely as infants born to uninfected women to be stillborn or to die as newborns.

Viral Hepatitis

Viral hepatitis is a serious liver disease that can be caused by several different viruses, which can be transmitted through sexual contact.

- Hepatitis A virus (HAV) causes a short-term or self-limited liver infection that can be quite serious, although it does not result in chronic infection. While there are other ways the virus can be transmitted, HAV can be spread from person to person during sexual activity through oral-rectal contact. Vaccination can prevent HAV infection.
- Hepatitis B virus (HBV) causes a serious liver disease that can result in both immediate illness and lifelong infection leading to permanent liver scarring (cirrhosis), cancer, liver failure, and death. HBV spreads through both heterosexual and homosexual contact as well as through contact with other bodily fluids, such as blood, through shared contaminated needles used for injecting intravenous (IV) drugs, tattooing, and piercing. Pregnant women with HBV can transmit the virus to their infants during delivery. HBV infection is preventable through vaccination.
- Hepatitis C virus (HCV) can cause an immediate illness affecting the liver, but it more commonly becomes a silent, chronic infection that leads to liver scarring (cirrhosis), cancer, liver failure, and death. HCV is most commonly transmitted through sharing needles or exposure to infected blood. However, it can spread through sexual contact or from mother to fetus during pregnancy and delivery. There is no vaccine for HCV, and treatments are not always effective.

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