

20.26: Sugar Consumption in the US Diet

Learning Objectives

- Sugar Consumption in the US Diet between 1822 and 2005

Research conducted by

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Case study prepared by

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Overview

Sugar has many forms: cane sugar, beet sugar, honey, molasses, fruit juice concentrate, glucose, sucrose, fructose, high-fructose corn syrup, maple syrup, brown rice syrup, barley malt syrup, agave nectar, to list a few. High-fructose corn syrup, in particular, was introduced into the US food industry in the early 1970s and has become ubiquitous in processed foods and soft drinks. Many of the added sugars in packaged foods and beverages could be considered "hidden sugar" because, if we do not examine the ingredients list on food labels or know sugar's many aliases, we are most likely unaware of how much sugar we consume each day.

To explore sugar consumption trends in the US, researchers Stephan Guyenet and Jeremy Landen compiled data on caloric sweetener sales spanning 184 years. They extracted annual caloric sweetener sales per capita for 1822 to 1908 from US Department of Commerce and Labor reports, and for 1909 to 2005 from the US Department of Agriculture (USDA) web site. The researchers adjusted the sales data for post-production losses using the USDA's 1970 – 2005 loss estimate of 28.8 percent to obtain reasonable estimates of annual per capita consumption of added sugars. Post-production losses of a food commodity occur at the retail, foodservice and consumer levels from, for example, spoilage, pests, cooking losses and plate waste.

Guyenet presents a striking graph and regression analysis of sugar consumption in the US from 1822 to 2005 in a blog to promote awareness and discussion.

Questions to Answer

Do different time periods between 1822 and 2005 reveal different trends in sugar consumption in the US diet? Can a regression graph be used to make predictions outside the range of the study data?

Design Issues

The data represent added caloric sugars such as cane sugar, high-fructose corn syrup and maple syrup, not naturally occurring sugars such as those in fruits and vegetables. Thus the data do not represent total sugar consumption. The data are not direct measures of consumption, but rather estimates derived from sales figures by adjusting for losses before consumption. The adjustment, applied across all years, is based on the USDA loss estimate from 1970 – 2005, which may or may not underestimate sugar consumption in earlier time periods.

Descriptions of Variables

Table 20.26.1: Description of Variables

Variable	Description
year	All years from 1822 to 2005
sugar_consum	Estimated consumption of added sugars in the US diet in pounds per year per person

Data Files

Sugar.xls

Links

By 2606, the US Diet will be 100 Percent Sugar, a blog by Stephan Guyenet

How to Spot Added Sugar on Food Labels

Dietary Sugars Intake and Cardiovascular Health: A Scientific Statement From the American Heart Association

Sugar: The Bitter Truth, a lecture by Robert H. Lustig

60 Minutes: Is Sugar Toxic?

References

- Johnson, R. K., Appel, L. J., Brands, M., Howard, B. V., Lefevre, M., Lustig, R. H., Sacks, F., Steffen, L. M., Wylie-Rosett, J. (2009). Dietary sugars intake and cardiovascular health: A scientific statement from the American Heart Association. *Circulation*, 120, 1011-1020.

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