

The following resources related to this article are available online at jada.ada.org (this information is current as of March 11, 2010):

Updated information and services including high-resolution figures, can be found in the online version of this article at:

<http://jada.ada.org/cgi/content/full/133/4/527>

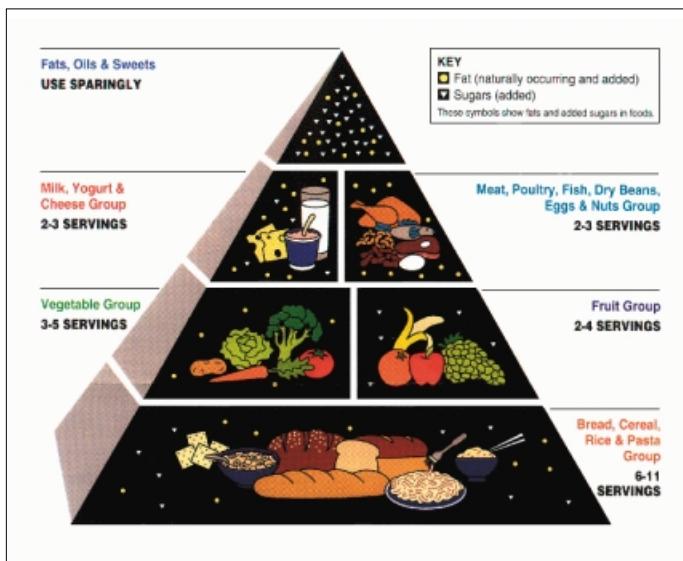
Information about obtaining **reprints** of this article or about permission to reproduce this article in whole or in part can be found at:

<http://www.ada.org/prof/resources/pubs/jada/permissions.asp>

Diet and tooth decay

Dentists have long recognized the link between good oral health and sound nutrition. For years, the American Dental Association has recommended that children and adults limit eating and drinking between meals and, when they must snack, give preference to nutritious foods identified by the U.S. Department of Agriculture's, or USDA's, dietary guidelines.

Think about the human body as a complex machine that needs daily attention if it is to run well. Without exercise and a balanced diet, it doesn't get the fuel it needs to perform efficiently or effectively. And it may



Structuring your diet according to the Food Guide Pyramid can help you avoid tooth decay. Source: U.S. Department of Agriculture and U.S. Department of Health and Human Services.

be less able to ward off disease or infection.

The foods we choose as fuel generally affect our overall health, including our teeth and gums. Health and nutrition experts recommend following the USDA's Food Guide Pyramid.

SUGAR AND TOOTH DECAY

Eating patterns and food choices among children and teens are important factors that affect how quickly youngsters may develop tooth decay. The reason is a sticky film of bacteria, called "plaque," that constantly forms on the teeth and gums. Each and every time bacteria come in contact with sugar or starch in the mouth, acid is produced, which attacks the teeth for 20 minutes or more. This eventually can result in tooth decay.

The USDA's Dietary Guidelines encourage consumers to limit intake of beverages and foods high in added sugars that may crowd out other healthy foods from their daily diet. The agency identifies soft drinks as a major source of added sugar.

Americans drank more than 53 gallons of soft drinks—per person—in 2000. This amount surpassed all other beverages, including milk, beer, coffee and water. One of every four beverages consumed in America today is a soft drink, and it is clear that soft drinks have displaced nutritious beverages and foods from the diet.

Did you know that some nondiet soft drinks contain as many as 11 teaspoons of sugar per serving? Although there are few studies reported in scientific literature that specifically evaluate the role of soft drinks in the development of tooth decay, increased sugar in the diet increases the risk of decay. There is a positive association between consumption, especially heavy consumption, of sugar-containing soft drinks and risk of developing tooth decay, according to published studies.

Most soft drinks contain phosphoric acid and citric acid. Prolonged exposure to acids can do permanent damage to teeth by producing a condition called "erosion," or the loss of hard tissues from the tooth surface. It is widely accepted that acid in food and beverages plays a major role in the development of enamel erosion. Diet soft drinks rely on nonnutritive sweeteners instead of sugar. They also are acidic and may increase the risk of experiencing enamel erosion, although the research on the role of soft drinks and tooth erosion is preliminary.

WINNING THE BATTLE AGAINST PLAQUE

There are things you can do to beat plaque. Limit eating and drinking between meals and, when snacking, give preference to nutritious foods. Be mindful of the effects of frequent consumption of sugary beverages and nonnutritious snack foods. Brush twice a day, floss or use an interdental cleaner once a day, and have regular dental check-ups.

For more information, visit the American Dental Association's Web site, "www.ada.org", and the USDA's Web site at "www.usda.gov/cnpp". ■

Prepared by the ADA Division of Communications, in cooperation with The Journal of the American Dental Association. Unlike other portions of JADA, this page may be clipped and copied as a handout for patients, without first obtaining reprint permission from ADA Publishing, a division of ADA Business Enterprises Inc. Any other use, copying or distribution, whether in printed or electronic form, is strictly prohibited without prior written consent of ADA Publishing.

"For the Dental Patient" provides general information on dental treatments to dental patients. It is designed to prompt discussion between dentist and patient about treatment options and does not substitute for the dentist's professional assessment based on the individual patient's needs and desires.