



University of California
Cooperative Extension
Tulare County

Agriculture and Natural Resources



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SUGARS AND HEALTH

Sugars have been extensively studied for possible cause-and-effect relationships to chronic diseases and health problems such as hyperactivity in children, obesity, diabetes, heart disease and dental caries. Several recent scientific reviews have shown that sugar consumption is not associated with development of any chronic disease or health problem, except for dental caries (tooth decay).

Dental Caries

Dental caries is a bacterial, plaque-dependent disease. Bacteria allowed to amass on dental plaque metabolize any fermentable carbohydrate including sugar. Lactic acid produced by the bacteria demineralizes the enamel and underlying tissues. Data show that many factors must converge to form dental caries. Prevention should focus on fluoridation of water, regular dental care and proper dental hygiene.

Hyperactivity

Many people think sugar consumption is linked to hyperactivity in children. However, scientific evidence does not support an association between sugar intake and hyperactivity or impaired learning in children, even in those who reportedly are sensitive to sugar.

Nutrient Dilution

The amount of added sugars in the diet is often assumed to predict a diet with lower nutrients. This hypothesis was tested using dietary intake surveys from the United States and Europe. The data showed no consistent or nutritionally meaningful variation in nutrient intakes across a wide range of sugar consumption.

Obesity

Assertions continue that increased sugar intake, particularly intake of added sugars, is associated with the rise in obesity. However, obesity is a multi-factorial condition. One important factor is energy balance, that is, an imbalance between energy intake and energy expenditure. The Centers for Disease Control and Prevention (CDC) report that in 1997, approximately 55 percent of adults, 11 percent of adolescents, and 14 percent of children were overweight, many were further

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classified as obese. The National Heart Lung and Blood Institute (NHLBI) of the National Institutes of Health has developed guidelines to identify overweight and obesity using body mass index (BMI). NHLBI guidelines classify a person with a BMI between 25 and 29.9 as overweight, and one with a BMI > 30 as obese.

Obesity is an important risk factor for diabetes, coronary heart disease, other degenerative diseases and certain types of cancer. According to the FAO/WHO, "there is little scientific support for the commonly held perception that consumption of high amounts of simple sugar contributes to obesity. There is no evidence that simple sugars are used with a different efficiency than complex carbohydrates (other than dietary fiber and resistant oligosaccharides). While there are substantial data suggesting that high levels of dietary fat intake are associated with high levels of obesity, at present, there is no reason to believe that high intake of simple sugar is associated with high levels of obesity". The report emphasizes that excess energy in any form will promote body fat accumulation and may lead to obesity if energy expenditure is not increased.

Diabetes

Sugar does not cause diabetes. Rather, genetic factors predispose individuals to develop diabetes. Also, certain individuals and populations appear to have a strong predisposition to obesity and diabetes when diet and lifestyle changes (i.e., lack of physical activity) lead to positive energy balance. Thus, management of Type II diabetes relies on weight loss by balancing physical activity with eating a healthful diet.

Insulin Resistance

Recently, some diet books have popularized the term insulin resistance, which means that insulin is less able to stimulate uptake of glucose from the blood by muscle and other tissues that require it. Obesity, heredity and a sedentary lifestyle are risk factors for development of insulin resistance. Misleading assertions that insulin resistance leads to obesity have reversed the true association. Moreover, insulin resistance has been identified as a risk factor for heart disease. Individuals with this condition should be counseled to lose (or avoid gaining) weight using a prescribed eating plan tailored to provide an appropriate nutrient profile. They should also be advised to exercise appropriately.

Heart Disease

While some researchers have proposed that sugar intake contributes to risk heart disease, subsequent studies have not substantiated this. The FAO/WHO report finds: "...no evidence for a causal role of sucrose (table sugar) in the etiology of coronary heart disease".

Conclusion

Rising obesity rates are of great concern because of the subsequent serious health problems. But focusing on only one component of the diet is unlikely to solve the problem. For most people, the best advice continues to be, eat a variety of foods in appropriate portion sizes and engage in at least 30 minutes of physical activity every day. Those with nutrition-related health conditions should seek the advice of a nutrition professional.

Source: Nutrition Updates; Spring/Summer 2000.

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