High sugar consumption increases risk factors for heart disease in teenagers

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Teenagers who consume a lot of added sugars in soft drinks and foods may have poor cholesterol profiles — which may possibly lead to heart disease in adulthood, according to first-of-its-kind research reported in Circulation: Journal of the American Heart Association.

“Added sugars” are any caloric sweeteners added to foods or beverages by the manufacturer during processing or the consumer.

The National Health and Nutrition Survey (NHANES) of 2,157 teenagers (ages 12 to 18) found the average daily consumption of added sugars was 119 grams (28.3 tsp or 476 calories), accounting for 21.4 percent of their total energy.

The American Heart Association recently recommended a specific upper limit for added sugars intake, based on the number of calories an individual needs throughout the day, according to their energy expenditure, sex and age. For example, an appropriate amount for an individual with an energy requirement of 1,800 calories per day (an average teenage girl ages 14-18 might be in this calorie range) would be no more than 100 calories from added sugars. An individual with a requirement of 2200 calories per day should eat or drink no more than 150 calories from added sugars.

Teens consuming the highest levels of added sugars had lower levels of high density lipoprotein levels (HDL), the good cholesterol, and higher levels of triglycerides and low density lipoproteins (LDL), the bad

cholesterol.

“This is the first study to assess the association of added sugars and the indicators of heart disease risk in adolescents,” said Jean Welsh, MPH, PhD, R.N., study author and post-doctoral fellow at Emory University in Atlanta, Ga. “The higher consumers of added sugar have more unfavorable cholesterol levels. The concern is long-term exposure would place them at risk for heart disease later in adulthood.”

Teenagers with the highest levels of added sugar consumption at more than 30 percent of total energy had 49.5 milligrams/deciliter (mg/dL) compared to 54 mg/dL of HDL levels in those with the lowest levels of added sugar consumption — a 9 percent difference.

Previous studies indicate that the largest contributors of added sugars to the diet are sugary beverages such as sodas, fruit drinks, coffees and teas, Welsh said.

“Adolescents are eating 20 percent of their daily calories in sugars that provide few if any other nutrients,” she said. “Sweet things have lost their status as treats.”

The study included dietary recall from one 24-hour period that researchers merged with sugar content data from the U.S. Department of Agriculture My Pyramid Equivalents Databases. Researchers estimated cardiovascular risk by added sugar consumption of less than 10 percent up to more than 30 percent of daily total energy. Two days of dietary data were used among a subsample of 646 adolescents and the key findings remained consistent:

• Those with higher intake of added sugar had higher LDL levels of 94.3 mg/dL compared to 86.7 in those with the lowest levels, a 9 percent difference.

• Triglyceride levels in those with the highest consumption were 79 mg/dL compared to 71.7 mg/dL among the lowest, a 10 percent difference.
• Overweight or obese adolescents with the highest level of added sugar consumption had increased signs of insulin resistance.

“While Americans appear to be working hard to lower their intake of saturated fats, there is not the same awareness when it comes to added sugars,” Welsh said. “The intake of added sugars is positively associated with known cardiovascular risk factors. Added sugars play a significant role in the U.S. diet, contributing substantially to energy intake without contributing important nutrients to the diet.”

Adolescents and adults should “use the labels of the drinks and food they consume to become familiar with the amount of sugar in them,” Welsh said. “Replacing sugar laden drinks with water is one way to substantially reduce sugar and calorie intake.”

Physicians also need to ask adolescents about their sugars intake and guide them to better choices, she said.

Because the researchers used cross-sectional data, they don’t know if added sugars intake caused the differing cholesterol levels, only that they are linked. They also assessed the diet using one 24-hour recall of intake, which may not reflect on a person’s usual intake.

Long-term studies are needed to fully understand the effect that added sugars consumption in adolescence has on cardiovascular disease risk in adulthood, Welsh said.

Provided by American Heart Association