Medical Xpress

Sugar-sweetened drinks linked to increased visceral fat

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Drinking sugar-sweetened beverages every day was associated with an increase in a particular type of body fat that may affect diabetes and heart disease risk, according to new research in the American Heart Association's journal *Circulation*.

Data from the Framingham Heart Study—federally supported, ongoing research that has advanced the understanding of cardiovascular disease—showed that among middle-aged adults, there was a direct correlation between greater sweetened beverage consumption and increased visceral fat.

Visceral fat or "deep" fat wraps around a number of important internal organs such as the liver, pancreas and intestines. Visceral fat affects how

our hormones function and is thought to play a larger role in insulin resistance - which may boost Type 2 diabetes and heart disease risk.

Researchers looked at both sugar-sweetened beverage and diet soda consumption. The researchers did not observe this association with diet soda, which is often promoted as low in calories and sugar.

"There is evidence linking sugar-sweetened beverages with cardiovascular disease and type 2 diabetes," said Caroline S. Fox, M.D., M.P.H, lead study author and a former investigator with the Framingham Heart Study of the National Heart, Lung, and Blood Institute. She is currently a special volunteer with the National Institutes of Health (NIH). "Our message to consumers is to follow the current dietary guidelines and to be mindful of how much sugar-sweetened beverages they drink. To policy makers, this study adds another piece of evidence to the growing body of research suggesting sugar-sweetened beverages may be harmful to our health."

A total of 1,003 study participants, average age 45 and nearly half women, answered food questionnaires and underwent CT scans at the start and the end of the study to measure body fat changes.

They were ranked into four categories: non-drinkers; occasional drinkers (sugar-sweetened beverages once a month or less than once a week); frequent drinkers (once a week or less than once a day); and those who drank at least one sugar sweetened beverage daily.

Over a six-year follow-up period, independent of the participants' age, gender, physical activity, body mass index and other factors, they found visceral fat volume increased by:

658 centimeters cubed for non-drinkers;649 centimeters cubed for occasional drinkers;707 centimeters cubed for frequent drinkers; and852

centimeters cubed for those who drank one beverage daily. While the exact biological mechanism is unknown, Jiantao Ma, M.D., Ph.D., post-doctoral fellow at the NIH and co-leader of the study, said that it's possible that added sugars may contribute to insulin resistance, a hormonal imbalance that increases the risk for Type 2 diabetes and heart disease. Sugar-sweetened beverages are the largest contributor of added sugar intake in the United States. Sucrose or high fructose corn syrup are two of the most common sugars found in these popular drinks, which include caffeinated and de-caffeinated soda, carbonated and non-carbonated drinks with added sugar, fruit juice, and lemonade. Daily consumption of added sugar, such as those found in sugar-sweetened beverages and processed foods, is high; in 2001 to 2004, the usual intake of added sugars for Americans was 22.2 teaspoons per day or an extra 355 calories. Growing evidence revealing the health risks associated with drinking sweetened beverages led the American Heart Association to provide added sugar recommendations in 2009; for most women, no more than 100 calories per day of added sugars, such as those found in sweetened beverages, and for most men, a limit of 150 calories per day. "Our findings are in line with current dietary guidelines that suggest limiting the consumption of sugar-sweetened beverages," Ma said.

More information: Sugar-sweetened beverage consumption is associated with change of visceral adipose tissue over 6 years of follow-up, *Circulation*, 2016.

Provided by American Heart Association