

## **Frequent Consumption of Sugar-Sweetened Beverages Linked to Greater Weight Gain and Type 2 Diabetes in Women**

*From Harvard School of Public Health, Boston - 24 August 2004*

80 percent increased risk of diabetes with more than one sugared soft-drink per day versus one per month

Boston, MA— Researchers from the Harvard School of Public Health (HSPH), Brigham and Women's Hospital and Boston Children's Hospital have found that women who increased their intake or consumed higher amounts of sugar-sweetened beverages had a greater magnitude of weight gain and a higher risk of developing type 2 diabetes compared to women who consumed fewer sugar-sweetened drinks. The findings appear in the August 25, 2004 issue of the Journal of the American Medical Association (JAMA).

More than 91,000 participants who had filled out biennial food frequency questionnaires between 1991 and 1999 were chosen for the study from the Brigham and Women's Hospital-based Nurses' Health Study II. During the eight-year span of the study, 741 new cases of type 2 diabetes were diagnosed. Those who reported drinking sugar-sweetened sodas more than once per day showed an increased risk for type 2 diabetes of more than 80 percent compared to women in the study who drank less than one per month, independent of lifestyle factors such as smoking, alcohol, physical activity, and dietary habits. Those who drank more than one fruit punch per day showed a nearly doubled risk for type 2 diabetes compared to those in the study who reported drinking less than one per month. The researchers also assessed intake of fruit juice (orange, pineapple or apple juice) and found no increased risk for type 2 diabetes.

Women in the study who increased their soft-drink consumption and maintained a high level (one or more per day) for the eight year span gained, on average, more than 17 pounds, while women who decreased their consumption to a low level (one drink or less per week) gained on average approximately six pounds. Women who increased their soft-drink consumption from low to high during the study also increased their daily intake of calories by approximately 360 per day while women who cut back on their consumption from high to low reduced their daily calorie intake by nearly 320 calories per day. Additionally, women with the highest levels of soft-drink consumption tended to be physically less active, smoke more, had higher daily caloric intake and lower intake of protein, alcohol and cereal fiber compared to women in the study who drank sugared soft-drinks at a low level.

"Soft drinks are the leading source of added sugar in the American diet. They provide a large amount of excess calories and no nutritional value," said Matthias Schulze, lead author of the study, who was a research fellow in the Department of Nutrition at HSPH when the study was conducted and is now a researcher at the German Institute of Human Nutrition. "Our results show that increasing one's consumption of sugary soft drinks significantly increases the risk for weight gain and type 2 diabetes."

"This is the first study to show a strong positive association between sugar-sweetened beverages, including regular sodas and fruit punches, and diabetes risk," said Frank Hu, senior author of the study and associate professor of nutrition and epidemiology at the Harvard School of Public Health.

“Our study suggests that limiting consumption of sugar-sweetened beverages, especially soft drinks, is an important public health strategy to curb the epidemic of obesity and type 2 diabetes.”

The research was supported by grants from the National Institutes of Health and by the European Association for the Study of Diabetes/American Diabetes Association Trans-Atlantic Fellowship.

For further information, please contact:

Kevin Myron

Office of Communications

Harvard School of Public Health

677 Huntington Avenue

Boston, MA 02115

Phone: 617-432-3952

Email: [kmyron@hsph.harvard.edu](mailto:kmyron@hsph.harvard.edu)