Added Dietary Sugar Poses No Prediabetes Risk

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Researchers published the study covered in this summary on medsrxiv.org as a preprint that has not yet been peer reviewed.

Key Takeaways

- Added sugar as a proportion of total energy intake averaged 13.9% for both adults with prediabetes and those with normoglycemia.
- Neither total nor percent-of-diet intake of added sugar was significantly linked with prevalent prediabetes in a nationally representative study of 5306 US adults ≥ 20 years old, with no significant differences in the relationship by race or ethnicity.
- The findings suggest that after controlling for total calorie intake, BMI, pertinent health behaviors, and sociodemographic factors, the amount of total added sugar consumed as part of a usual diet does not significantly increase a person's likelihood of having prediabetes.

Why This Matters

- Most prior studies assessing the direct effects of added sugar on prediabetes have been limited to examining added sugar proxies such as sugar-sweetened beverages, high-fructose corn syrup, and fructose-sweetened beverages, rather than total added sugar from all dietary sources.
- The authors said this is the first study they know of to examine associations between the usual intake of total added sugar and prevalent prediabetes in a large, nationally representative sample of US adults.

Study Design

- Cross-sectional analysis of dietary recall information from three cycles of the National Health and Nutrition Examination Survey (NHANES) run in 2013-2018, including 2154 adults ≥ 20 years old with normoglycemia (41%) and 3152 with prediabetes (59%), defined as an A1c of 5.7%-6.4% or fasting plasma glucose of 100-125 mg/dL.
- The investigators defined added sugars as sugars, syrups, fruit juice concentrates, or caloric sweeteners added during processing, preparation, or prior to food and beverage consumption, and excluded natural sugars present in dairy and fruit. They used estimates for added sugar in the Food Patterns Equivalents Database of the Food and Nutrient Database for Dietary Studies.

Key Results

- The study cohort averaged 47 years old, 51% were women, 66% were non-Hispanic White,15% were Hispanic, 11% were non-Hispanic Black, 37% had obesity, and 55% said they engaged in moderate or vigorous physical activity. The average A1c was 5.4%, and the average fasting plasma glucose was 101 mg/dL.

- The overall sample reported consuming 13.9% of their total daily calories from added sugar, with no significant differences between those with prediabetes and those with normal blood glucose and A1c levels.
- Usual intakes for total calories averaged 2067 kcal/day, and usual intakes of total added sugar were 72 grams (290 kcal/day). Average intake levels for both measures did not differ significantly between the two subgroups.
- Findings from both unadjusted and adjusted models indicated that total added sugar intake did not significantly link with the prevalence of prediabetes. Consumption of different percent intakes of added sugar also didn't significantly link with prediabetes prevalence.
- The association between total and percent intakes of added sugar and prediabetes prevalence didn't vary significantly by race or ethnicity. However, some racial or ethnic groups had higher rates of prediabetes in adjusted models: those who identified as Hispanic, Asian American, or other races, with Asian Americans having the highest rate estimates.

Limitations

- The cross-sectional study design doesn't allow for the assessment of causal relationships.
- Self-reports by participants of their recent intake are subject to under- or over-reporting.
- Various factors can make the measurement of A1c levels in the prediabetes range unreliable.

Disclosures

- The study received no commercial funding.
- None of the authors had disclosures.

This is a summary of a preprint research study "Total added sugar consumption is not significantly associated with risk for prediabetes among US adults: National Health and Nutrition Examination Survey, 2013-2018," by researchers mostly based at the University of Alabama Birmingham on medRxiv provided to you by Medscape. The study has not yet been peer-reviewed. The full text of the study can be found on medrxiv.org.