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Consumption of artificially and sugar-sweetened beverages and incident type 2 diabetes in the Etude Epidemiologique aupres des femmes de la Mutuelle Generale de l'Education Nationale-European Prospective Investigation into Cancer and Nutrition cohort.

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Abstract

BACKGROUND:

It has been extensively shown, mainly in US populations, that sugar-sweetened beverages (SSBs) are associated with increased risk of type 2 diabetes (T2D), but less is known about the effects of artificially sweetened beverages (ASBs).

OBJECTIVE:

We evaluated the association between self-reported SSB, ASB, and 100% fruit juice consumption and T2D risk over 14 y of follow-up in the French prospective Etude Epidémiologique auprès des femmes de la Mutuelle Générale de l'Education Nationale-European Prospective Investigation into Cancer and Nutrition cohort.

DESIGN:

A total of 66,118 women were followed from 1993, and 1369 incident cases of T2D were diagnosed during the follow-up. Cox regression models were used to estimate HRs and 95% CIs for T2D risk.

RESULTS:

The average consumption of sweetened beverages in consumers was 328 and 568 mL/wk for SSBs and ASBs, respectively. Compared with nonconsumers, women in the highest quartiles of SSB and ASB consumers were at increased risk of T2D with HRs (95% CIs) of 1.34 (1.05, 1.71) and 2.21 (1.56, 3.14) for women who consumed >359 and >603 mL/wk of SSBs and ASBs, respectively. Strong positive trends in T2D risk were also observed across quartiles of consumption for both types of beverage ($P = 0.0088$ and $P < 0.0001$, respectively). In sensitivity analyses, associations were partly mediated by BMI, although there was still a strong significant independent effect. No association was observed for 100% fruit juice consumption.

CONCLUSIONS:

Both SSB consumption and ASB consumption were associated with increased T2D risk. We cannot rule out that factors other than ASB consumption that we did not control for are responsible for the association with diabetes, and randomized trials are required to prove a causal link between ASB consumption and T2D.

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