

Consumption of sweet beverages and type 2 diabetes incidence in European adults: results from EPIC-InterAct.

The InterAct consortium.

Abstract

AIMS/HYPOTHESIS:

Consumption of sugar-sweetened beverages has been shown, largely in American populations, to increase type 2 diabetes incidence. We aimed to evaluate the association of consumption of sweet beverages (juices and nectars, sugar-sweetened soft drinks and artificially sweetened soft drinks) with type 2 diabetes incidence in European adults.

METHODS:

We established a case-cohort study including 12,403 incident type 2 diabetes cases and a stratified subcohort of 16,154 participants selected from eight European cohorts participating in the European Prospective Investigation into Cancer and Nutrition (EPIC) study. After exclusions, the final sample size included 11,684 incident cases and a subcohort of 15,374 participants. Cox proportional hazards regression models (modified for the case-cohort design) and random-effects meta-analyses were used to estimate the association between sweet beverage consumption (obtained from validated dietary questionnaires) and type 2 diabetes incidence.

RESULTS:

In adjusted models, one 336 g (12 oz) daily increment in sugar-sweetened and artificially sweetened soft drink consumption was associated with HRs for type 2 diabetes of 1.22 (95% CI 1.09, 1.38) and 1.52 (95% CI 1.26, 1.83), respectively. After further adjustment for energy intake and BMI, the association of sugar-sweetened soft drinks with type 2 diabetes persisted (HR 1.18, 95% CI 1.06, 1.32), but the association of artificially sweetened soft drinks became statistically not significant (HR 1.11, 95% CI 0.95, 1.31). Juice and nectar consumption was not associated with type 2 diabetes incidence.

CONCLUSIONS/INTERPRETATION:

This study corroborates the association between increased incidence of type 2 diabetes and high consumption of sugar-sweetened soft drinks in European adults.