

Artificial Sweeteners Not Tied to Lower BMI, May Even Increase It

By Kelly Young

Artificial sweeteners like aspartame are not associated with reduced BMI and may pose some risks, suggests a meta-analysis in the *Canadian Medical Association Journal*.

Researchers identified 37 studies that looked at the effects of artificial sweeteners in 400,000 people over age 12.

In randomized trials with a median 6 months' follow-up, the primary outcome, BMI, was not associated with intake of artificial sweeteners. Three long-term cohort studies suggested a modest increase in BMI over time with increased artificial sweetener consumption. For secondary outcomes like weight, metabolic syndrome, and type 2 diabetes, the observational studies again found higher risk with increased intake.

Dr. Harlan Krumholz, editor-in-chief of *NEJM Journal Watch Cardiology*, comments: "This study raises the concerning possibility that not only have these sweeteners not helped people manage their weight, but may have actually jeopardized their cardiometabolic health. The evidence base is far too weak to make definitive conclusions, but the urgent need for more information about these common ingredients is obvious."

Why We Chose This as Our Top Story:

André Sofair, MD, MPH: Although these data are preliminary, this study suggests that artificial sweeteners are not the panacea for weight gain. This may help us in our dietary counselling of patients trying to lose weight.

William E. Chavey, MD, MS: This study will not answer all of the questions regarding artificial sweeteners and BMI. Nevertheless, it does validate that there may be some risk.

[CMAJ article \(Free abstract\)](#)

Background: *NEJM Journal Watch General Medicine* coverage of artificial sweeteners and glucose intolerance (Free)

CMAJ July 17, 2017 vol. 189 no. 28 doi: 10.1503/cmaj.161390 Research

Nonnutritive sweeteners and cardiometabolic health: a systematic review and meta-analysis of randomized controlled trials and prospective cohort studies

Abstract

BACKGROUND

Nonnutritive sweeteners, such as aspartame, sucralose and stevioside, are widely consumed, yet their long-term health impact is uncertain. We synthesized evidence from prospective studies to determine whether routine consumption of non-nutritive sweeteners was associated with long-term adverse cardiometabolic effects.

METHODS

We searched MEDLINE, Embase and Cochrane Library (inception to January 2016) for randomized controlled trials (RCTs) that evaluated interventions for nonnutritive sweeteners and prospective cohort studies that reported on consumption of non-nutritive sweeteners among adults and adolescents. The primary outcome was body mass index (BMI). Secondary outcomes included weight, obesity and other cardiometabolic end points.

RESULTS

From 11 774 citations, we included 7 trials (1003 participants; median follow-up 6 mo) and 30 cohort studies (405 907 participants; median follow-up 10 yr). In the included RCTs, nonnutritive sweeteners had no significant effect on BMI (mean difference -0.37 kg/m²; 95% confidence interval [CI] -1.10 to 0.36 ; I^2 9%; 242 participants). In the included cohort studies, consumption of nonnutritive sweeteners was associated with a modest increase in BMI (mean correlation 0.05, 95% CI 0.03 to 0.06; I^2 0%; 21 256 participants). Data from RCTs showed no consistent effects of nonnutritive sweeteners on other measures of body composition and reported no further secondary outcomes. In the cohort studies, consumption of nonnutritive sweeteners was associated with increases in weight and waist circumference, and higher incidence of obesity, hypertension, metabolic syndrome, type 2 diabetes and cardiovascular events. Publication bias was indicated for studies with diabetes as an outcome.

INTERPRETATION

Evidence from RCTs does not clearly support the intended benefits of nonnutritive sweeteners for weight management, and observational data suggest that routine intake of nonnutritive sweeteners may be associated with increased BMI and cardiometabolic risk. Further research is needed to fully characterize the long-term risks and benefits of nonnutritive sweeteners. Protocol registration:

PROSPERO-CRD42015019749