

ASA: Diet Soda Tied to Vascular Risk, With Caveats

[This report is part of a 12-month Clinical Context series.](#)

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LOS ANGELES -- Drinking diet soda -- but not regular soda -- was associated with a greater risk of stroke, MI, or vascular death in an older, multiethnic cohort, researchers found.

Individuals who reported drinking diet soda every day were 48% more likely to have a vascular event through more than nine years of follow-up (RR 1.48, 95% CI 1.3 to 2.12), according to Hannah Gardener, ScD, of the University of Miami in Florida.

There was no such association for less-frequent consumption of diet soda or for any level of regular soda consumption, she reported at the American Stroke Association's International Stroke Conference here.

In a separate study, Gardener and her research team also found that individuals who had the highest daily sodium consumption had a nearly threefold increased risk of stroke compared with those who met the American Heart Association target of 1,500 mg a day.

Gardener acknowledged some limitations of the diet soda study, including the use of self-reported dietary data at a single time point, and concluded that the findings are "too preliminary to suggest any dietary advice."

"If and only if the results are confirmed can we suggest that diet soda may not be an optimal substitute for sugar-sweetened beverages, which have been shown to have various health consequences," she said.

Doctors contacted by ABC News and *MedPage Today* were also hesitant to declare diet sodas the next great health risk, with many attributing the increased vascular risk to other dietary factors that were not measured in the study, such as the types of foods contributing to the total caloric intake.

"Unfortunately, it may be that individuals with poor dietary habits do resort [to] some kind of calorie balancing and continue to eat high-calorie sweet foods but reduce their 'guilt' by drinking diet soda," Howard Weintraub, MD, clinical director of the NYU Center for the Prevention of Cardiovascular Disease, wrote in an e-mail.

The study "adds to the growing evidence of an association between diet sodas and cardiovascular disease," according to Cam Patterson, MD, a cardiologist at the University of North Carolina at Chapel Hill. But, he added, that, although the association cannot be ignored, it is too early to interpret what it means.

"People need to know about this, but it is important for everyone to realize that no general guidelines should be derived from these types of observational studies," Patterson wrote in an e-mail.

"I'll continue to pack a diet soda with my lunch, but I'll look more carefully at what else is in my lunch box, and I'll pay more attention to what I'm doing while I'm drinking my diet soda."

Gardener and her colleagues analyzed data from the Northern Manhattan Study (NOMAS), which includes individuals older than 40 living in New York City.

The current analysis included 2,564 participants. Their mean age was 69; about half were Hispanic, one-fifth were white, and one-quarter were black.

Based on a food frequency questionnaire completed at baseline, 35% of the cohort did not drink either regular or diet soda. Only 24% reported drinking any amount of diet soda.

Diet soda consumption was associated with white race, diabetes, elevated blood sugar, low HDL cholesterol, elevated waist circumference and body mass index, peripheral vascular disease, and metabolic syndrome ($P < 0.05$ for all).

Through an average follow-up of 9.3 years, there were 559 incident vascular events, including 212 strokes, 149 MIs, and 338 vascular deaths.

After adjustment for demographic and behavioral and vascular risk factors -- including BMI -- there was an increased risk of having a vascular event with daily diet soda consumption, but no other levels of consumption of diet or regular soda.

Commenting on the findings, Christopher Cannon, MD, of Brigham and Women's Hospital in Boston, pointed out, however, that the number of participants who drank diet soda daily was small -- 116 --

and that the lack of an association with regular soda consumption was at odds with previous studies.

"This suggests that the finding may be spurious, and needs confirmation in a much larger group of patients," he wrote in an e-mail.

Gardener agreed that confirmation was needed before drawing any definitive conclusions, with further studies that focus on a younger population with more diet soda consumption and that collect diet information at multiple time points.

She and her colleagues also examined the relationship between dietary sodium intake and stroke in the NOMAS cohort.

Although the American Heart Association recommends consuming less than 1,500 mg a day, only 12% of the participants met that goal.

The average daily consumption at baseline was 3,031 mg, with one-fifth of the cohort ingesting more than 4,000 mg a day.

Over a mean follow-up of 10 years, there were 227 strokes.

After adjustment for demographics and behavioral and vascular risk factors -- including hypertension -- every 500 mg/day increase in sodium intake was associated with an 18% relative increase in stroke risk (RR 1.18, 95% CI 1.08 to 1.27).

Those individuals who consumed the most -- more than 4,000 mg/day -- had a 2.67-fold (95% CI 1.31 to 5.41) increased risk compared with those who met the AHA target.

"The results of our study suggest that the new AHA strategic dietary goals will help promote ideal cardiovascular as well as brain health," Gardener said, "and this evidence can be used in campaigns aimed at reducing cardiovascular disease risk by targeting dietary behavior."

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