

Higher Chocolate Intake May Lower Risk for CV Disease, Stroke in Healthy Adults

Deborah Brauser | June 16, 2015

NEW YORK, NY — Rejoice, chocolate lovers: more findings suggest that regular consumption of the sweet stuff may decrease the risk of CV events and stroke in otherwise-healthy individuals^[1].

Analysis of almost 21,000 adults from the UK's EPIC-Norfolk study showed that those who ate the most chocolate had an 11% lower risk of developing coronary heart disease (CHD) and a 25% lower risk of CV-related death over 12 years of follow-up when compared with those who ate no chocolate. In addition, the highest-consumption group had a 23% lower risk of stroke.

A separate meta-analysis of more than 155,000 participants in studies examining possible links between chocolate and CV outcomes showed similar findings.

The authors, led by Dr Chun Shing Kwok (University of Aberdeen, Scotland), note that although cause and effect could not be shown in these observational studies, cumulative evidence suggests that there is an association at play.

Interestingly, the participants in the cohort study ate more milk chocolate than dark chocolate, which may indicate that "not only flavonoids, but also other compounds, possibly related to milk constituents such as calcium and fatty acids, may provide an explanation for the observed association," write the investigators.

The findings were published online June 15, 2015 in *Heart*.

More Chocolate, Less Risk

For the current analysis, the researchers examined records from 20,951 EPIC-Norfolk participants who filled out the food frequency questionnaire at baseline, which included questions about chocolate consumption. The participants were then divided into five "quintiles" based on their chocolate habits, with the highest group consuming 16 to 99 g/day of chocolate.

After a median of 11.9 years of follow-up, there were 2434 CHD events. Of these events, 13.8% occurred among those who ate the least amount of chocolate and 9.7% occurred among those in the highest quintile of chocolate consumption. There were also 848 strokes overall, including 5.4% and 3.1% of the lowest and highest quintiles, respectively.

Compared with those who didn't eat any chocolate, the adjusted hazard ratio (HR) for the highest-consumption group was 0.89 (95% CI 0.79–1.00, $P=0.02$) for total CVD and 0.75 for CVD mortality (95% CI 0.62–0.92, $P=0.01$). This group also had significantly lower risk of CHD-related hospitalization or mortality in minimally adjusted models, but not in the fully adjusted models.

However, the highest-consumption group did have a significantly lower risk of stroke in both types of models (both HR 0.77, $P<0.05$).

In the systematic review of nine studies and 157,809 participants, the highest quintile of chocolate eaters vs the lowest quintile had significantly lower risk of CHD, stroke, composite CV adverse outcomes, and CV mortality—with pooled risk ratios (RRs) of 0.71, 0.79, 0.75, and 0.55, respectively.

Interestingly, the non-chocolate-eating group had the highest mean body-mass index, the highest percentage of participants with diabetes, and the highest levels of inactivity. On the other hand, "higher chocolate intake was associated with a higher energy intake, with lower contributions from protein and alcohol sources and higher contributions from fat and carbohydrates," write the investigators.

Overall, they reiterate that their analyses do not show causation. However, "within the general context of existing recommendations for behaviors conducive to cardiovascular health, there does not appear to be evidence that chocolate should be avoided."

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References

1. Kwok CS, Boekholdt SM, Lentjes MA, et al. Habitual chocolate consumption and risk of cardiovascular disease among healthy men and women. *Heart* 2015; DOI:10.1136/heartjnl-2014-307050. Article

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