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# Chocolate consumption is inversely associated with calcified atherosclerotic plaque in the coronary arteries: The NHLBI Family Heart Study.

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### Abstract

**BACKGROUND & AIMS:** While a diet rich in anti-oxidant has been favorably associated with coronary disease and hypertension, limited data have evaluated the influence of such diet on subclinical disease. Thus, we sought to examine whether chocolate consumption is associated with calcified atherosclerotic plaque in the coronary arteries (CAC). **METHODS:** In a cross-sectional design, we studied 2217 participants of the NHLBI Family Heart Study. Chocolate consumption was assessed by a semi-quantitative food frequency questionnaire and CAC was measured by cardiac CT. We defined prevalent CAC using an Agatston score of at least 100 and fitted generalized estimating equations to calculate prevalence odds ratios of CAC. **RESULTS:** There was an inverse association between frequency of chocolate consumption and prevalent CAC. Odds ratios (95% CI) for CAC were 1.0 (reference), 0.94 (0.66-1.35), 0.78 (0.53-1.13), and 0.68 (0.48-0.97) for chocolate consumption of 0, 1-3 times per month, once per week, and 2+ times per week, respectively ( $p$  for trend 0.022), adjusting for age, sex, energy intake, waist-hip ratio, education, smoking, alcohol consumption, ratio of total-to-HDL-cholesterol, non-chocolate candy, and diabetes mellitus. Controlling for additional confounders did not alter the findings. Exclusion of subjects with coronary heart disease or diabetes mellitus did not materially change the odds ratio estimates but did modestly decrease the overall significance ( $p = 0.07$ ). **CONCLUSIONS:** These data suggest that chocolate consumption might be inversely associated with prevalent CAC. Copyright © 2010. Published by Elsevier Ltd.

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