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Cardiac risk factors and prevention Original article

Chocolate intake and risk of clinically apparent atrial fibrillation: the Danish Diet, Cancer, and Health Study

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### Abstract

**Objective** To evaluate the association between chocolate intake and incident clinically apparent atrial fibrillation or flutter (AF).

**Methods** The Danish Diet, Cancer, and Health Study is a large population-based prospective cohort study. The present study is based on 55 502 participants (26 400 men and 29 102 women) aged 50–64 years who had provided information on chocolate intake at baseline. Incident cases of AF were ascertained by linkage with nationwide registries.

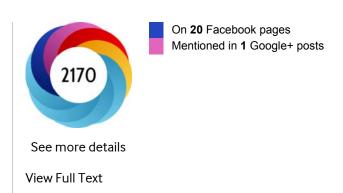
Results During a median of 13.5 years there were 3346 cases of AF. Compared with chocolate intake less than once per month, the rate of AF was lower for people consuming 1–3 servings/month (hazard ratio (HR) 0.90, 95% confidence interval (Cl) 0.82 to 0.98), 1 serving/week (HR 0.83, 95% Cl 0.74 to 0.92), 2–6 servings/week (HR 0.80, 95% Cl 0.71 to 0.91) and ≥1 servings/day (HR 0.84, 95% Cl 0.65 to 1.09; p-linear trend <0.0001), with similar results for men and women.

**Conclusions** Accumulating evidence indicates that moderate chocolate intake may be inversely associated with AF risk, although residual confounding cannot be ruled out.

http://dx.doi.org/10.1136/heartjnl-2016-310357

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### **Footnotes**

**Contributors:** KO is responsible for the overall content

as a guarantor, contributed to the conception and design of the work, acquisition and interpretation of the data, and critical revision of the manuscript for important intellectual content. EM contributed to the conception and design of the work, interpretation of data for the work and drafting of the manuscript. MBJ conducted the analysis and contributed to the interpretation of data and revising the manuscript. AT contributed to the conception or design of the work and the acquisition of data for the work. HSC revised the manuscript. MAM contributed to the conception and design of the work, interpretation of the data and critical revision of the manuscript for important intellectual content. All authors approved the final version to be published and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Funding: This work was conducted with support from grants from the National Heart, Lung, and Blood Institute (HL-115623), the European Research Council (ERC), EU 7th Research Framework Program (281760), a KL2/Catalyst Medical Research Investigator Training award (an appointed KL2 award) from Harvard Catalyst, the Harvard Clinical and Translational Science Center (National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health Award KL2 TR001100) and the Danish Cancer Society and the Danish Council for Strategic Research (Aalborg AF-Study Group). The content is solely the responsibility of the authors and does not necessarily represent the official views of the European Research Council, Harvard Catalyst, Harvard University and its affiliated academic healthcare centres or the National Institutes of Health.

Competing interests: None declared.

**Ethics approval:** The study was approved by the regional Ethical Committees on Human Studies (jr.nr. (KF) 11–037/01 and jr.nr. (KF) 01–045/93) and the Danish Data Protection Agency.

Patient consent: All participants gave verbal and written informed consent.

**Provenance and peer review:** Not commissioned; externally peer reviewed.

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