

HEART

Regular chocolate consumption may be linked to lower risk of heart flutter (atrial fibrillation)

Associations strongest for 1 serving/week for women and 2-6 servings/week for men, findings show

Regular chocolate consumption may be linked to a lower risk of developing the heart rhythm irregularity atrial fibrillation, also known as heart flutter, finds research published online in the journal **Heart**.

The associations seemed to be strongest for 1 weekly serving for women and between 2 and 6 weekly servings for men, the findings suggest.

Atrial fibrillation affects more than 33 million people worldwide, with one in four adults likely to develop it at some point during the life course. It's not clear exactly what causes it, but there is currently no cure, and no obvious contenders for prevention either.

Given that regular chocolate consumption, particularly of dark chocolate, has been linked to improvements in various indicators of heart health, the researchers wanted to see if it might also be associated with a lower rate of atrial fibrillation.

They drew on 55,502 (26,400 men and 29,100 women) participants, aged between 50 and 64, from the population-based Danish Diet, Cancer and Health Study.

Participants provided information on their usual weekly chocolate consumption, with one serving classified as 1 ounce (30 g). But they were not asked to specify which type of chocolate they ate. Most chocolate eaten in Denmark, however, is milk chocolate (minimum 30 per cent cocoa solids).

Information on heart disease risk factors, diet, and lifestyle—roughly one in three smoked—was obtained when the participants were recruited to the study. Their health was then tracked using national registry data on episodes of hospital treatment and deaths.

Those at the higher end of chocolate consumption tended to consume more daily calories, with a higher proportion of these coming from chocolate, and to be more highly educated than those at the lower end of the scale.

During the monitoring period, which averaged 13.5 years, 3346 new cases of atrial fibrillation were diagnosed. After accounting for other factors related to heart disease, the newly diagnosed atrial fibrillation rate was 10 per cent lower for 1-3 servings of chocolate a month than it was for less than 1 serving a month.

This difference was also apparent at other levels of consumption: 17% lower for 1 weekly serving; 20 per cent lower for 2-6 weekly servings; and 14 per cent lower for 1 or more daily servings.

When the data were analysed by sex, the incidence of atrial fibrillation was lower among women than among men irrespective of intake, but the associations between higher chocolate intake and lower risk of heart flutter remained even after accounting for potentially influential factors.

The strongest association for women seemed to be 1 weekly serving of chocolate (21 per cent lower risk), while for men, it was 2 to 6 weekly servings (23 per cent lower risk).

This is an observational study, so no firm conclusions can be drawn about cause and effect, added to which milk may lower levels of the beneficial compounds in chocolate thought to have a role in the favourable associations found between chocolate and heart health.

And more often than not, chocolate is eaten in high calorie products containing fat and sugar, which are generally not considered good for heart health.

But say the researchers: “Despite the fact that most of the chocolate consumed in our sample probably contained relatively low concentrations of the potentially protective ingredients, we still observed a robust statistically significant association.”

However, a linked editorial sounds a note of caution. Doctors from the Duke Center for Atrial Fibrillation in North Carolina, USA, highlight that the chocolate eaters in the study were healthier and more highly educated—factors associated with better general health—which might have influenced the findings.

Secondly, the researchers were not able to take account of other risk factors for atrial fibrillation, such as kidney disease and breathing problems at night (sleep apnoea). And the study included only diagnosed cases of atrial fibrillation, making it difficult to determine if chocolate is associated with a lower risk of atrial fibrillation or only with obvious symptoms, the editorialists suggest.

Lastly, cocoa solid levels vary in different parts of the world, so the findings might not apply in countries with lower levels, they add.

Nevertheless, Drs Sea Pokorney and Jonathan Piccini say: “Regardless of the limitations of the Danish chocolate study, the findings are interesting and warrant further consideration, especially given the importance of identifying effective prevention strategies for [atrial fibrillation],” which have so far proved elusive.

Notes for editors

Research: Chocolate intake and risk of clinically apparent atrial fibrillation: the Danish Diet, Cancer, and Health Study doi 10.1136/heartjnl-2016-310357

Editorial: Chocolate and prevention of atrial fibrillation: what is bad for the pancreas might be good for the atria?