Eating more oily fish may reduce the risk of cardiovascular disease, says study

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People with close relatives who have suffered from cardiovascular disease may benefit from eating more oily fish. This is according to a new study led by researchers from Karolinska Institutet and published in

the journal *Circulation*.

Oily fish such as salmon, mackerel, herring, and sardines contain the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). These fatty acids are essential for many of the body's functions but cannot be produced by the body and must be obtained from the diet. Numerous studies have shown that it is important for everyone to eat a diet containing omega-3.

Now, a large international study shows that it is likely to be particularly important for people with a family history of cardiovascular disease. The cardiovascular diseases that researchers have looked at are fatal and non-fatal coronary heart disease, such as unstable angina, heart attack and cardiac arrest, and cerebral infarction (stroke).

"Cardiovascular disease is to some extent hereditary, as shown by twin studies, but it has been difficult to identify the controlling genes. A strong hypothesis is, therefore, that it is a combination of genetics and environment," says Karin Leander, senior lecturer and associate professor of epidemiology at the Institute of Environmental Medicine, Unit for Cardiovascular and Nutritional Epidemiology, Karolinska Institutet, and research leader of the study.

Therefore, she and her research colleagues examined the effect of the interaction between family history and dietary intake. In the study, they pooled data from over 40,000 people without cardiovascular disease.

During the follow-up period, nearly 8,000 of these suffered from cardiovascular disease. In their analysis, the researchers were able to show that those who had both cardiovascular disease in a close relative, such as a parent or sibling, and also low levels of the omega-3 fatty acids EPA/DHA, had an increased risk of cardiovascular disease of over 40 percent. The elevated risk for those who 'only' had cardiovascular

disease in the immediate family was 25 percent.

"The study suggests that those with a family history of cardiovascular disease have more to gain from eating more oily fish than others," says Karin Leander.

The levels of EPA/DHA were measured in all study participants. Since these fatty acids cannot be produced in the body, the levels are a reliable measure of the dietary intake of oily fish, according to Karin Leander.

"The fact that the measurements of fatty acids in blood and tissue are objective, as opposed to self-reported data on eating habits, is an important advantage," she says.

So, despite being an observational study in an area where there are already plenty of randomized clinical trials, these findings represent completely new knowledge, according to Karin Leander.

"We are the first to study the effect of the combination of family history and fatty fish intake using fatty acid measurements," she says.

The study was conducted by the Fatty Acids and Outcomes Research Consortium (FORCE), a network of over 100 researchers and experts worldwide. The study includes data from 15 studies conducted in 10 different countries.

More information: F. Laguzzi et al, Role of Polyunsaturated Fat in Modifying Cardiovascular Risk Associated With Family History of Cardiovascular Disease: Pooled De Novo Results From 15 Observational Studies, *Circulation* (2023). DOI: 10.1161/CIRCULATIONAHA.123.065530

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