

# Fatty acids found in fish linked to lower risk of breast cancer

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The results show that each 0.1 g per day or 0.1% energy per day increment of intake of n-3 polyunsaturated fatty acid (n-3 PUFA) derived from fish was associated with a 5% reduction in risk. To achieve this risk reduction, intake of oily fish such as salmon, tuna or sardines should be 1-2 portions per person per week.

Breast cancer is one of the most common cancers, accounting for 23% of total cancer cases and 14% of cancer deaths in 2008. Studies suggest that a healthy diet and lifestyle is crucial for the prevention of [breast cancer](#), and dietary fat is one of the most intensively studied dietary factors closely related with risk.

The n-3 PUFAs include ALA, EPA, DPA and DHA. They are involved in chemical messaging in the brain, helping to regulate blood vessel activity and areas of the immune system. The main dietary sources of EPA, DPA and DHA come from [oily fish](#), while ALA is found mainly in nuts, seeds, and [leafy green vegetables](#).

Although n-3 PUFAs are the most promising types of fat to reduce [cancer risk](#), results from human studies are inconsistent.

So a team of researchers based in China set out to investigate the association between fish and n-3 PUFA intake and the risk of breast cancer. Levels were measured from both dietary sources and blood tests.

They reviewed and analysed the results of 26 studies from the United

States, Europe and Asia involving over 800,000 participants and over 20,000 cases of breast cancer.

Marine n-3 PUFA was associated with a 14% reduction of breast cancer between the highest and lowest category of marine n-3 PUFA intake. The risk was lowest in Asian populations, probably because fish intake is much higher in Asia than in western countries, say the authors.

Further analysis indicated a dose response: each 0.1 g per day or 0.1% energy per day increment of intake was associated with a 5% reduction in risk. However, no significant protective association was found for ALA - the plant based n-3 PUFA.

The authors say their analysis, together with previous publications, "supports a protective role of marine n-3 PUFA on the incidence of breast cancer."

They conclude: "Our present study provides solid and robust evidence that marine n-3 PUFA are inversely associated with risk of breast cancer. The protective effect of fish or individual n-3 PUFA warrants further investigation of prospective studies."

**More information:** [www.bmj.com/cgi/doi/10.1136/bmj.f3706](http://www.bmj.com/cgi/doi/10.1136/bmj.f3706)

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