

Consuming omega-3 fatty acids could prevent asthma

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New research suggests that a higher dietary intake of long chain omega-3 fatty acids in childhood may reduce the risk of developing subsequent asthma, but only in children carrying a common gene variant. The study, led by Queen Mary University of London, is in collaboration with the University of Bristol and University of Southampton, UK, and Karolinska Institutet, Sweden.

In the UK, 1.1 million [children](#) (1 in 11) are currently receiving treatment for asthma and most adult asthma begins in childhood. The NHS spends around £1 billion a year treating and caring for people with asthma.

Senior author, Professor Seif Shaheen from Queen Mary University of London, said: "Asthma is the most common chronic condition in childhood and we currently don't know how to prevent it. It is possible that a [poor diet](#) may increase the risk of developing asthma, but until now most studies have taken 'snap-shots', measuring diet and asthma over a short period of time. Instead, we measured diet and then followed up children over many years to see who developed asthma and who didn't.

"Whilst we cannot say for certain that eating more fish will prevent asthma in children, based on our findings, it would nevertheless be sensible for children in the UK to consume more fish, as few currently achieve recommended intake."

Fish is of particular interest because it is a rich source of the long chain omega-3 fatty acids, [eicosapentaenoic acid](#) (EPA) and [docosahexaenoic acid](#) (DHA), which have anti-inflammatory properties.

The study, published in the *European Respiratory Journal*, used data

from a large UK birth cohort, Children of the 90s, which recruited mothers who were pregnant in the early 1990s and has been following up their offspring ever since. They analysed the association between intake of EPA and DHA from fish at 7 years of age (estimated by food frequency questionnaires) and incidence of new cases of doctor-diagnosed asthma at 11-14 years of age.

Long chain omega-3 intake from fish was not associated with asthma in the cohort as a whole (4,543 people). However, the team looked in more detail at children with a particular genetic make-up. More than half of the children carried a common variant in the fatty acid desaturase (FADS) gene which is associated with lower levels of long chain omega-3 fatty acids in the blood. In these children, a higher dietary intake of long chain omega-3 fatty acids was associated with a lower risk of asthma. The risk was 51 percent lower, comparing those in the top quartile of long chain omega-3 intake with those in the bottom quartile.

Furthermore, this finding was also found in an independent birth cohort study in Sweden (BAMSE).

As they have only found an observational association, the researchers caution that they cannot say for certain that a higher intake of long chain omega-3 fatty acids in childhood can prevent the subsequent development of asthma. The next step is to see if higher intake is also associated with a lower risk of exacerbations in children who already have [asthma](#).

The project was funded by the Rosetrees Trust and The Bloom Foundation. The UK Medical Research Council, Wellcome and the University of Bristol provide core support for Children of the 90s.

More information: 'Intake of n-3 polyunsaturated fatty acids in childhood, FADS genotype, and incident asthma'. Mohammad Talaei,

Emmanouela Sdona, Philip C. Calder, Louise R. Jones, Pauline M. Emmett, Raquel Granell, Anna Bergström, Erik Melén, Seif O. Shaheen. *European Respiratory Journal*. [DOI: 10.1183/13993003.03633-2020](https://doi.org/10.1183/13993003.03633-2020)

Provided by Queen Mary, University of London

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