



RESEARCH NEWS

High dose fish oil supplements in late pregnancy reduce asthma in offspring, finds study

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Taking supplements containing high doses of n-3 long chain polyunsaturated fatty acids derived from fish oil in the last three months of pregnancy reduced the risk of persistent wheeze or asthma and infections of the lower respiratory tract in offspring by nearly a third in the first five years of life, a randomised study has found.¹

A diet deficient in n-3 long chain polyunsaturated fatty acids during pregnancy has previously been suggested to be associated with an increased risk of asthma and wheeze in children, but results from randomised trials looking at use of supplements in pregnancy have been ambiguous.

Danish researchers randomised 736 pregnant women at 24 weeks of gestation to take 2.4 g of n-3 long chain polyunsaturated fatty acids from fish oils each day or to placebo (olive oil). They then followed up 695 of the offspring for three years, when investigators and parents were blinded to treatment assignments, and a further two years when the investigators remained unaware.

The results, reported in the *New England Journal of Medicine*, showed that the risk of persistent wheeze or asthma in children born to women who took fish oil supplements in late pregnancy was 31% lower than in those born to women in the placebo group (16.9% v 23.7%; hazard ratio 0.69 (95% confidence interval 0.49 to 0.97); P=0.035).

A pre-specified subgroup analysis indicated that the reduction in wheeze and asthma was greatest in children born to women whose blood concentrations of the two major n-3 long-chain polyunsaturated fatty acids in the fish oil supplements (eicosapentaenoic acid and docosahexaenoic acid) were in the lowest third of the trial population at randomisation (17.5% v 34.1%; hazard ratio 0.46 (0.25 to 0.83); P=0.011).

“These findings show that n-3 long chain polyunsaturated fatty acid supplementation during pregnancy was associated with a significantly diminished burden of wheezing and asthma in

children in this Danish birth cohort,” said the researchers, led by Hans Bisgaard, from the University of Copenhagen.

In a commentary, Christopher Ramsden, from the National Institute on Aging in Baltimore, Maryland, described the results as “highly promising” but cautioned that the dose of fatty acids used in the trial was around 15-20 times higher than the average US intake from foods.² He said, “It is imperative to ensure that this dose had no adverse effects on behaviour, cognition or other long-term outcomes,” but added that further work should determine whether lower doses were effective.

Secondary endpoints in the Danish study showed that taking fish oil supplements in late pregnancy was associated with a reduced risk of lower respiratory tract infections in offspring (31.7% v 39.1%; hazard ratio 0.75 (0.58 to 0.98); P=0.033) but not with a statistically significant reduction in asthma exacerbations, eczema, or allergic sensitisation.



- 1 Bisgaard H, Stokholm J, Chawes BL, et al. Fish oil-derived fatty acids in pregnancy and wheeze and asthma in offspring. *N Engl J Med* 2016;375:2530-9. doi:10.1056/NEJMoa1503734. pmid:28029926.
- 2 Ramsden CE. Breathing easier with fish oil: a new approach to preventing asthma? *N Engl J Med* 2016;375:2596-8. doi:10.1056/NEJMe1611723. pmid:28029914.

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