

Abstract

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Prenatal Fish Oil Supplementation and Allergy: 6-Year Follow-up of a Randomized Controlled Trial.

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Abstract

BACKGROUND AND OBJECTIVE: Evidence from randomized controlled trials in early infancy suggest that prenatal supplementation with Ω -3 (n-3) long-chain polyunsaturated fatty acids (LCPUFA) reduces the incidence of **allergic** disease characterized by an immunoglobulin E (IgE) response. We aimed to determine whether protective effects were evident in the 6-year-old offspring of women supplemented with n-3 rich fish oil during pregnancy.

METHODS: Six-year follow-up of children (n = 706) with a family history of **allergic** disease from the Docosahexaenoic Acid to Optimize Mother Infant Outcome (DOMInO) trial. Women were randomly allocated to receive n-3 LCPUFA-rich fish oil capsules (800 mg/d docosahexaenoic acid DHA and 100mg/d eicosapentaenoic acid) or vegetable oil capsules (without n-3 LCPUFA). **Allergic** disease symptoms including eczema, wheeze, **rhinitis**, and rhino-conjunctivitis, were assessed using the International Study of Asthma and Allergies in Childhood questionnaire and sensitization to allergens was measured by skin prick test.

RESULTS: There was no difference in the percentage of children with any IgE-associated **allergic** disease between the n-3 LCPUFA and control groups (116/367 [31.5%] vs 106/336 [31.5%]; adjusted relative risk, 1.04; 95% confidence interval, 0.82-1.33; P = .73). There was a reduction in the percentage of children sensitized to house dust mite *Dermatophagoides farinae* (49/367 [13.4%] vs 68/336 [20.3%]; adjusted relative risk, 0.67, 95% confidence interval, 0.44-

1.00; P = .0495).

CONCLUSIONS: Prenatal n-3 LCPUFA supplementation did not reduce IgE-associated **allergic** disease at 6 years of age. Secondary outcomes were suggestive of a protective effect of the intervention on the incidence of *D. farinae* sensitization.

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