Maternal fish intake during pregnancy and atopy and asthma in infancy.

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Background There is growing evidence that n-3 fatty acids have anti-inflammatory properties and may modulate immune response. Dietary intake of these nutrients during pregnancy could play a role in the risk of asthma and atopy in the offspring. Methods Using data from a cohort of women (n=462) enrolled during pregnancy and whose offspring were followed up to 6 years, we evaluated the impact of fish consumption during pregnancy on the incidence of atopy and asthma. Dietary intake was assessed by food frequency questionnaire (42 items) applied by an interviewer. Results Thirty-four percent of infants had a medical diagnosis of eczema at age 1 year, 14.3% of the children were atopic [based on skin prick test (SPT) at 6 years], and 5.7% had atopic wheeze at age 6 years. After adjusting for potential confounding factors, fish intake during pregnancy was protective against the risk of eczema at age 1 year, a positive SPT for house dust mite at age 6 years and atopic wheeze at age 6 years [odds ratio (OR)=0.73 95% confidence interval (CI) 0.55-0.98, OR=0.68, 95% CI 0.46-1.01 and OR=0.55, 95% CI 0.31-0.96, respectively]. For an increase in fish intake from once per week to 2.5 times per week, the risk of eczema at age 1 year decreased by 37%, and the risk of positive SPT at age 6 years by 35%. Stratification by breastfeeding showed that fish intake was significantly related to a decrease risk in persistent wheeze among non-breastfed children (P for interaction <0.05). No protective effect was observed among breastfed children. Conclusion Our data suggest a protective effect of fish intake during pregnancy on the risk of atopy-related outcomes.