Eating fish while pregnant, longer breastfeeding, lead to better infant development

September 9 2008

Both higher fish consumption and longer breastfeeding are linked to better physical and cognitive development in infants, according to a study of mothers and infants from Denmark. Maternal fish consumption and longer breastfeeding were independently beneficial.

"These results, together with findings from other studies of women in the U.S. and the United Kingdom, provide additional evidence that moderate maternal fish intake during pregnancy does not harm child development and may on balance be beneficial," said Assistant Professor Emily Oken, lead author of the study.

The study, which appeared in the September issue of the *American Journal of Clinical Nutrition,* was conducted by researchers from the Department of Ambulatory Care and Prevention of Harvard Medical School and Harvard Pilgrim Health Care and the Maternal Nutrition Group from the Department of Epidemiology at Statens Serum Institut in Copenhagen, Denmark. These findings provide further evidence that the omega-3 fatty acids found in fish and compounds in breast milk are beneficial to infant development.

The study team looked at 25,446 children born to mothers participating in the Danish Birth Cohort, a study that includes pregnant women enrolled from 1997-2002. Mothers were interviewed about child development markers at 6 and 18 months postpartum and asked about

their breastfeeding at 6 months postpartum. Prenatal diet, including amounts and types of fish consumed weekly, was assessed by a detailed food frequency questionnaire administered when they were six months pregnant.

During the interviews mothers were asked about specific physical and cognitive developmental milestones such as whether the child at six months could hold up his/her head, sit with a straight back, sit unsupported, respond to sound or voices, imitate sounds, or crawl. At 18 months, they were asked about more advanced milestones such as whether the child could climb stairs, remove his/her socks, drink from a cup, write or draw, use word-like sounds and put words together, and whether they could walk unassisted.

The children whose mothers ate the most fish during pregnancy were more likely to have better motor and cognitive skills. For example, among mothers who ate the least fish, 5.7% of their children had the lowest developmental scores at 18 months, compared with only 3.7% of children whose mothers had the highest fish intake. Compared with women who ate the least fish, women with the highest fish intake (about 60 grams - 2 ounces - per day on average) had children 25% more likely to have higher developmental scores at 6 months and almost 30% more likely to have higher scores at 18 months.

Longer duration of breastfeeding was also associated with better infant development, especially at 18 months. Breastmilk also contains omega-3 fatty acids. The benefit of fish consumption was similar among infants breastfed for shorter or longer durations.

Women in the U.S. have been advised to limit their fish intake to two servings a week because some fish contains high traces of mercury, which has demonstrated toxic effects. Information regarding mercury levels was not available in this population, but most women consumed

cod, plaice, salmon, herring, and mackerel, fish types that tend to have low mercury content. In this study, consumption of three or more weekly servings of fish was associated with higher development scores, so in this case the nutrient benefits of prenatal fish appeared to outweigh toxicant harm.

"In previous work in a population of U.S. women, we similarly found that higher prenatal fish consumption was associated with an overall benefit for child cognitive development, but that higher mercury levels attenuated this benefit," says Dr. Oken. "Therefore, women should continue to eat fish - especially during pregnancy - but should choose fish types likely to be lower in mercury."

Information on mercury levels in commonly consumed fish is available at the U.S. Food and Drug Administration website (http://www.cfsan.fda.gov/~frf/sea-mehg.html.).

Source: Harvard Medical School

Citation: Eating fish while pregnant, longer breastfeeding, lead to better infant development (2008, September 9) retrieved 25 April 2024 from https://medicalxpress.com/news/2008-09-fish-pregnant-longer-breastfeeding-infant.html

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