AAAS: Kids Do Okay After Pregnant Moms Eat Mercury-Laden Fish

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MedPage Today Action Points

- Remind pregnant women that the FDA advisory suggests that the consumption of 12 ounces of fish per week is safe.
- Note that the FDA suggests avoiding large fish such as shark, swordfish, king mackerel and tilefish.
- Explain to patients that the study does not give a clean bill of health to fish, because of possible mercury-related sequelae.
- This study was published as an abstract and presented at a conference either as an oral or poster presentation. These data and conclusions should be considered to be preliminary as they have not yet been reviewed and published in a peer-reviewed publication.

Review

ST. LOUIS, Feb. 20 - Investigators seeking to measure the deleterious effects of prenatal mercury exposure were surprised to find that the children, years afterward, seemed perfectly normal.

They expected at the minimum to find developmental damage in the children of women who, when pregnant, ate fish with the highest mercury levels. But when they looked at the children years later there were almost no differences between kids whose moms had a lot of mercury in their bodies and those who moms had almost none.

"We saw no effect of prenatal mercury intake on the overall endpoint in the children," reported Philip Davidson, Ph.D., a professor of pediatrics at the University of Rochester (N.Y.), at the American Association for the Advancement of Science meeting here.

"From all the reports we had seen about mercury and its impact on development, we thought we would be able to show how bad it was for children," Dr. Davidson said, "But we didn't find it at all."

Dr. Davidson and colleagues recruited 779 mother-infant pairs from the Indian Ocean island nation of Seychelles where people consume an average of 11 fish-containing meals per week.

"The waters around the Seychelles were ideal for this experiment," Dr. Davidson said in a press briefing, "because there are no other pollutants or contaminants in the waters that might confound the impact of mercury."

During the 15 years of the Seychelles Child Development Study, in which mothers and their offspring have been scrutinized carefully, researchers took hair samples from the mothers to test for levels of methylmercury, a known neurotoxicant. They then compared children whose mothers had levels of mercury up to 27 parts per million and compared them with children whose mothers had barely a trace of mercury in their hair samples.

"Basically we had a flat-line," Dr. Davidson said. Whether the moms were in a high-mercury or a low-mercury group their kids showed no overall differences in neurodevelopment.

"We looked at more than 60 primary endpoints," he said, "and when you look at that many factors you are bound to find something that stands out. In fact, we found that the kids with moms who had the highest mercury levels were less adept, at nine years of age, of performing a peg board motor skills test." The difference in performing the test was significant, achieving a $p<.05$ value, he said.

"On the other hand," he added, "children whose mothers had the highest levels of mercury, did significantly better than children whose moms had low mercury levels in language capabilities and in drawing and copying motor skills ($p<.05$ for both tests). That would suggest that mercury was 'beneficial.'"

Because late-onset neurotoxicity due to mercury could still occur, Dr. Davidson said the kids from moms with high mercury values are not out of the woods yet. But, he said, "I don't think there is a problem with pregnant women eating fish. I think that what we may be seeing is that the micronutrients in fish such as selenium may be exerting a protective effect against mercury."

"Personally I eat fish," said Susan Carlson, Ph.D., a professor of nutrition at the Kansas University Medical Center in Kansas City. "I make no caveats about it. If I were a pregnant woman I would listen to the Food and Drug Administration advisory about eating fish and be aware of local advisories that may involve certain fish at certain times of the year."

Dr. Carlson said warning stories about eating fish may have caused overreactions among Americans women, "most of whom don't eat enough fish as it is." Dr. Carlson was not a participant in the Seychelles study.

While the Seychelles test did not compare those children with neurological development of children elsewhere in the world, Dr. Carlson noted that other studies have associated increased fish and fish oil consumption with improvements in intelligence quotient scores in children in the United States and Scandinavia.

"The Seychelles experiment results fit with all the data that indicate that omega-3 fatty acids, found in fish, is associated with good outcomes," she said. "As fish represent the highest potential source of the omega-3 fatty acid, docosahexanoic acid, for pregnant women and children, it is obvious that we need to maintain fish as a food source for these populations."

In March 2004, the FDA issued an advisory cautioning pregnant women to avoid eating more than 12 ounces of fish per week, and, in particular, to avoid fish such as shark, swordfish, tilefish, and king mackerel because of high levels of mercury in those fish.

Primary source: American Association for the Advancement of Science annual meeting