Prenatal Exposure to Pesticides May Harm Kids' Development

At age 3, children of mothers exposed to highest levels were adversely affected, researchers find

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MONDAY, Feb. 7 (HealthDay News) -- Children whose mothers had higher levels of exposure to a substance found in a commonly used pesticide were more likely to get lower scores on a mental developmental test at 3 years of age than children whose mothers were exposed to lower levels or not at all, new research says.

Megan Horton, a postdoctoral research fellow at Columbia University's Mailman School of Public Health in New York City, and her colleagues followed 348 mothers from low-income areas of New York City whose prenatal exposure to pyrethroid insecticides -- found in pesticide commonly used around the home -- was tracked.

The researchers measured not the common pyrethroid called permethrin but rather piperonyl butoxide (PBO), a chemical added to pesticides that boosts its potency, Horton said. They measured PBO because permethrin is metabolized quickly and difficult to measure, she added.

The study authors measured the mothers' prenatal exposure by taking air samples or blood samples. To get the air samples, mothers' backpacks that collected air from their breathing zone, which was then analyzed.

Children were then put into four groups or "quartiles," depending on the level of their mothers' exposures to PBO during pregnancy.

At age 3, the children were evaluated using standard scales to assess their cognitive and motor development, according to the study published online Feb. 7 in the journal Pediatrics.

"Kids who were in the highest quartile range of exposure to PBO were three times as likely to be in the delayed category, compared to the lowest quartile," Horton said.

Horton's team compensated for factors such as gender, ethnicity, education of the mothers, and toxins such as tobacco smoke in the home. Horton said it's impossible to say what levels of pesticide are safe, partly because many factors come into play, such as the type of pesticide used and the ventilation provided.

She did not have data on the frequency of pesticide use. "I don't know whether the mothers used it five times a week or once a week," she said.

Pyrethroid insecticides have replaced another class of bug killers, known as organophosphorus (OP) insecticides, Horton said. Increases in residential pesticide regulations from the U.S. Environmental Protection Agency have resulted in fewer residential exposures to OP insecticides, she said.

But, pyrethroid insecticides have not been evaluated for long-term effects on the body after low-level exposure, she said.

Jennifer Sass, a senior scientist at the Natural Resources Defense Council, who reviewed the study but was not involved with it, said findings "should convince every parent and want-to-be parent to avoid these pesticides."

Horton suggests that parents turn to so-called integrated pest management, which includes common-sense measures to control pest as eating only in home eating areas, not bedrooms; keeping cracks and crevices in the house repaired to keep out pests; using trash with a lid and liner to contain garbage; and storing food properly.

Efforts by HealthDay to reach the pesticide industry for comment were unsuccessful.
To learn more about integrated pest management, visit the U.S. Environmental Protection Agency.

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