

Prenatal Pesticide Exposure Linked to Low IQ Later in Life

By age 2, Ali Bergstrom's son Chille had spent half his life in the hospital. Chille was born with a rare birth defect called Goldenhar syndrome. Now 6, he has already endured two open-heart surgeries and could face many more.

Bergstrom, a 34-year-old [New York City-based blogger](#), will never know for certain what caused her son's deformities. But she suspects chemicals that she was [exposed to during pregnancy](#) are to blame.

"Knowing what I know now, in my first trimester I would have stayed inside," said Bergstrom. "I wouldn't have gardened. I wouldn't have allowed fertilizer on my lawn."

In recent years, chemicals in fertilizers and pesticides have been linked to [autism](#), [cancer](#), [Lou Gehrig's disease](#) and other illnesses. Some diseases, researchers say, could be caused by an unlucky mix of pollutants and genetic susceptibility. But conclusive evidence for the health hazards of certain chemicals is hard to find.

The latest research, published today as three independent studies in *Environmental Health Perspectives*, links prenatal pesticide exposure (measured in the urine of mothers-to-be) to a lower IQ in children by age 9. The research teams, from Mount Sinai School of Medicine, Columbia University's Mailman School of Public Health and the school of public health at the University of California, Berkeley, all conclude that pesticide exposure during pregnancy could negatively affect brain development.

But a lack of controlled trials, for obvious reasons, makes it impossible to determine whether there is cause and effect.

"The biggest problem with these studies is they attempt to demonstrate an association when there has not yet been a mechanism identified that would explain how pesticides cause any of the abnormalities," said Dr. Donna Seger, associate professor of medicine at Vanderbilt University Medical Center and director of the Tennessee Poison Center. "Because pesticide exposure and abnormal developmental occur in a specific patient population does not mean that one caused the other."

Association Versus Causation

So-called "association studies" infuriate Bergstrom, who said it's devastating to have a child who is disabled because of something that happened in the womb.

"When these studies come out and they say it's association and not cause and effect, it's very frustrating as a mother because I know something caused this. It infuriates me."

But the three studies, which used different subjects and methods but arrived at similar conclusions, should raise a red flag that widely-used chemicals may have serious health consequences for unborn babies, according to Dr. Rodney Dietert, professor of immunotoxicology at Cornell University in Ithaca, N. Y.

"Taken together, these studies are an alarm that signals we have underestimated the risk from low level prenatal exposures to certain environmental chemicals," Dietert said. "It seems clear that our current methods and applications for identifying environmental risks posed to critical physiological systems of children are inadequate."



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Dietert is pushing for better safety testing to avoid surprises, such as the findings reported today, years down the road.

"By collecting relevant safety data and actually knowing what levels of pesticides are safe for pregnant women and young children, we can then use these chemicals carefully and effectively for public good while protecting the health of our children across their lifetime," Dietert said.

Bergstrom, who feeds Chille organic food only, said she's glad researchers are studying the health effects of everyday chemicals, many of which are difficult to escape in a city like New York. But she said the studies should be conducted before chemicals are used widely.

"Doing studies after the fact, I think, is absolutely ridiculous. Now there are so many chemicals out there that it's going to be very difficult to pinpoint what causes what," she said. "I wish they would do more studies before they let stuff out there instead of saying, 'let's put it out there let's see what happens to our children, our oceans.'"



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