

Autism linked to higher smog levels, study says

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But no mechanism explains the link so far, and one expert expressed skepticism

(HealthDay)—Air pollution exposure may be linked to a child's risk of autism, a recent study suggests.

The controversial findings echo similar results from a study last winter that found an increased risk of autism among children of women exposed to more smog late in [pregnancy](#).

This new study—which does not establish a direct connection between dirty air and autism—did not find a statistically significant increased risk for autism related to [air pollution](#) exposure at any specific time during pregnancy.

Instead, the authors found a child's odds of autism were 1.5 times greater when air pollution exposure was greater across the entire span of time from pre-pregnancy until the child was 2 years old.

"These findings are striking because they suggest that cumulative exposures over the course of the pregnancy may be important, as opposed to any individual period during the pregnancy," said study author Evelyn Talbott, a professor of epidemiology at the University of Pittsburgh. But more research would be necessary to understand how pollution might affect autism risk, she said.

Autism spectrum disorder—a group of developmental disabilities that can cause significant communication and social challenges—affects 1 in 68 children in the United States, according to the U.S. Centers for Disease Control and Prevention.

The research involved 443 children living in six counties in southwestern Pennsylvania, about half of whom had autism. Researchers compared air [pollution exposure](#)—based on all addresses where the mothers reported living—before and during their mothers' pregnancy and in the children's first two years of life.

The researchers adjusted their calculations to account for each mother's age, education and race, and whether she smoked.

The type of pollution measured was fine-particle air pollution, included in smog. It's composed of small particles from car exhaust or other forms of burning wood, coal and other fossil fuels that can be inhaled deep into the lungs, according to the U.S. Environmental Protection Agency. The American Lung Association ranks southwestern Pennsylvania among the nation's worst regions for this type of pollution.

The children's odds of having autism were 45 percent greater if they were exposed to the highest levels at age 2, the study found. Their odds were 51 percent greater if the highest exposure occurred from three months before pregnancy through the child's second year.

The findings were published in the July issue of the journal *Environmental Research*.

It is not clear, however, how significant the findings are overall, since the study cannot show cause and effect between air pollution and autism, said Dr. Alyson Gutman, an attending physician in developmental and behavioral pediatrics at Cohen Children's Medical Center in New Hyde Park, N.Y.

"We know that there are several interacting factors that likely contribute to the cause of [autism spectrum disorders](#)," Gutman said. Those factors include genetics, [environmental risk factors](#) and medical risk factors, such as a history of prematurity, she said.

"Exposure to pollutants may be a contributing factor," she said.

"However, it is difficult to determine the significance of this risk factor."

Dr. Glen Elliott, chief psychiatrist and medical director of Children's Health Council in Palo Alto, Calif., where he specializes in [autism](#), expressed skepticism about the study's conclusions.

"I am stunned that the editors permitted the authors to make the claims they did," he said. He noted that the only single point in time when the data was statistically significant was when the children were 2 years old.

"The authors offer no theoretical basis for how particulate matter that the mother breathes might affect the child's development," Elliott said. "They also did not add the much-needed caution that correlation does not equal causation, even if their data were much stronger than it is."

If parents are concerned about their possible exposure to air pollution, they should discuss their concerns with their doctors, Gutman said.

People can also check on their local air quality on various websites and purchase air filters that target smaller particles and pollutants within the home, said Talbott.

"They can also write to lawmakers to put pressure on them to make policies that reduce air pollution and harmful emissions," Talbott said.

"More work needs to be conducted both in other geographic areas of the United States as well as in other countries to further our understanding of this association."

More information: For more about autism, visit the [U.S. Centers for Disease Control and Prevention](#).

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