

Autistic behaviours linked to banned pesticide

March 21 2014



Quinn, an autistic boy, and the line of toys he made before falling asleep. Repeatedly stacking or lining up objects is a behavior commonly associated with autism. Credit: Wikipedia.

(Medical Xpress)—A new study co-authored by a Simon Fraser University researcher finds the children of pregnant women exposed to high levels of a flame retardant and a banned pesticide are more likely to exhibit autistic-like behaviours.

The flame retardant is PBDE-28. Chlordane is the banned pesticide. It contains the chemical trans-nonachlor, which this study links to autistic-like behaviours.

Previous studies have linked changes in children's [brain development](#) to their mothers' exposure to hormone-disrupting environmental chemicals. But this study is one of only a few to look specifically at whether chemical exposure contributes to autistic behaviours.

Bruce Lanphear, an SFU health scientist involved in this study published online in the journal *Environmental Health Perspectives*, says: "This type of study is critical to screening the myriad chemicals that [pregnant women](#) and children are exposed to, and to identifying the ones that elevate a child's risk of developing autism."

April 2 is World Autism Day. Autism now affects one in 88 children and one in 54 boys, worldwide.

Scientists suspect that hormones may play a role in autism because boys are four times more likely than girls to be diagnosed with the disorder, and sex hormones are known to modify brain development.

In this latest study, researchers tested urine and blood samples from 175 pregnant women in the Cincinnati, Ohio area. On average, the pregnant women had 44 suspected hormone-disrupting chemicals in their blood or urine.

When their children turned four or five, their mothers were asked to rate their behaviours on a scale of social responsiveness, such as how frequently they make eye contact when spoken to or how well they play with others. Higher scores mean more autistic behaviours.

Children whose mothers had the highest levels of PBDE-28 scored an

average of 2.5 points higher on the scale than children whose mothers had the lowest exposures. Children whose mothers had the highest levels of trans-nonachlor scored an average of 4.1 points higher.

The increase in autism-like behaviours linked to the two chemicals was subtle, and the study doesn't prove that they are tied to the autistic behaviours.

Most [children](#) scored between 30 and 90 on the scale, with scores higher than 60 indicating significant deficiencies in social behaviour. Children, on average, scored 51, while 22 kids, about 12 per cent, scored higher than 60.

The researchers did not account for factors such as genetics or other contaminants, such as lead, that harm brain development. Nor did they examine exposures or factors after birth.

But Lanphear and his collaborators in this study acknowledge that more research is necessary to investigate the link between autism and exposure to a now banned pesticide.

More information: Paper: ehp.niehs.nih.gov/1307261/

Provided by Simon Fraser University

Citation: Autistic behaviours linked to banned pesticide (2014, March 21) retrieved 25 April 2024 from <https://medicalxpress.com/news/2014-03-autistic-behaviours-linked-pesticide.html>

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