

research snapshot

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Mothers with Chemical Intolerance Associated with having Children with Neurodevelopmental Disorders

What is this research about?

Chemical Intolerance (CI) is a chronic medical condition in which patients report adverse reactions from exposures to a variety of chemical substances at low doses. The condition affects 10-30% of the general population, but is rarely diagnosed and is largely underreported. Specific chemical exposures have been linked to impaired neurodevelopment in the offspring. This study examines the relationship between mother's CI and children having a diagnosis of Autism Spectrum Disorder (ASD), or Attention Deficit Hyperactivity Disorder (ADHD).

What did the researchers do?

The study recruited 282 mothers of children with ASD, 258 mothers of children with ADHD, and 154 control mothers who had children without either condition. CI in the mothers was diagnosed using the Quick Environmental Exposure and Sensitivity Inventory (QEESI), the most widely used screening instrument to diagnose CI. QEESI is a survey with 5 self-rating scales which determine intolerance to specific chemical exposures, the severity of symptoms and a measure of ongoing exposures.

An online questionnaire was administered which included QEESI screening along with questions related to demographics and the child's medical history at the time of collection. Mothers reported on the presence or absence of illnesses such as infections, allergies and asthma in their children,

What you need to know:

Mothers with chemical intolerance are more likely to have children with Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder, and immune issues such as allergies and infections.

along with sensitivity to odors; the trademark symptom of chemical intolerance.

What did the researchers find?

The researchers found that the average CI score was higher in mothers of children with ASD (32/100) and in mothers of children with ADHD (31/100), compared to the control group of mothers (24/100). The researchers also saw that:

- Women with higher CI scores have a greater likelihood of having children with similar intolerances.
- Women with higher CI scores had a 3 times higher rate of reporting children with ASD and a 2.3 times higher rate of reporting children with ADHD.
- Hallmark symptoms of CI were reported at a higher rate in children with ADHD and ASD, 2 and 3.5 times higher respectively.
- Mothers of children with ASD and ADHD were more likely to report illnesses, allergies, and adverse drug reactions in their children compared to mothers with children without ASD or ADHD.



How can you use this research?

This preliminary research warrants further studies to establish clear cause and effect relationships, and to determine specific risk factors. Currently, the American College of Obstetricians and Gynecologists recommends avoiding unnecessary chemical exposures given the link to adverse developmental outcomes. Healthcare providers can provide information to women planning on having children which outline exposure risks and substitutes.

About the Researchers

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Citation

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This research summary was written by Mankerat Singh and Dr. Jonathan Lai for the Chair in Autism Spectrum Disorders Treatment and Care Research. This research summary, along with other summaries, can be found on our [blog](#) and at asdmentalhealth.ca/research-summaries

About the Chair

The Chair in Autism Spectrum Disorders Treatment and Care Research is dedicated to studying ways to improve the mental health and well-being of people with Autism Spectrum Disorders (ASD) and their families in Canada.

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For more information, visit the Chair in Autism Spectrum Disorders Treatment and Care Research website at asdmentalhealth.ca

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