

List of the top 10 toxic chemicals suspected to cause autism and learning disabilities

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An editorial published today in the prestigious journal *Environmental Health Perspectives* calls for increased research to identify possible environmental causes of autism and other neurodevelopmental disorders in America's children and presents a list of ten target chemicals including which are considered highly likely to contribute to these conditions.

Philip Landrigan, MD, MSc, a world-renowned leader in children's environmental health and Director of the Children's Environmental Health Center (CEHC) at Mount Sinai School of Medicine, co-authored the editorial, entitled "A Research Strategy to Discover the Environmental Causes of [Autism](#) and Neurodevelopmental Disabilities," along with Luca Lambertini, PhD, MPH, MSc, Assistant Professor of Preventive Medicine at Mount Sinai and Linda Birnbaum, Director of the National Institute OF [Environmental Health Sciences](#).

The editorial was published alongside four other papers — each suggesting a link between toxic chemicals and autism. Both the editorial and the papers originated at a conference hosted by CEHC in December 2010.

The National Academy of Sciences reports that 3 percent of all neurobehavioral disorders in children, such as autism spectrum disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD), are caused by toxic exposures in the environment and that another 25 percent are caused by interactions between environmental factors and

genetics. But the precise environmental causes are not yet known. While genetic research has demonstrated that ASD and certain other neurodevelopmental disorders have a strong hereditary component, many believe that environmental causes may also play a role – and Mount Sinai is leading an effort to understand the role of these toxins in a condition that now affects between 400,000 and 600,000 of the 4 million children born in the United States each year.

"A large number of the chemicals in widest use have not undergone even minimal assessment of potential toxicity and this is of great concern," says Dr. Landrigan. "Knowledge of environmental causes of [neurodevelopmental disorders](#) is critically important because they are potentially preventable."

CEHC developed the list of ten chemicals found in consumer products that are suspected to contribute to autism and learning disabilities to guide a research strategy to discover potentially preventable environmental causes. The top ten chemicals are:

1. Lead
2. Methylmercury
3. PCBs
4. Organophosphate pesticides
5. Organochlorine pesticides
6. Endocrine disruptors
7. Automotive exhaust

8. Polycyclic aromatic hydrocarbons

9. Brominated flame retardants

10. Perfluorinated compounds

In addition to the editorial, the other four papers also call for increased research to identify the possible environmental causes of autism in America's children. The first paper, written by a team at the University of Wisconsin - Milwaukee, found preliminary evidence linking smoking during pregnancy to Asperger's disorder and other forms of high-functioning autism. Two papers, written by researchers at the University of California - Davis, show that PCBs disrupt early brain development. The final paper, also by a team at UC - Davis, suggests further exploring the link between pesticide exposure and [autism](#).

Provided by The Mount Sinai Hospital

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