

Consensus statement: Environmental toxins hurt brain development, action needed

July 1 2016

An unprecedented alliance of leading scientists, medical experts, and children's health advocates argue that today's scientific evidence supports a link between exposures to toxic chemicals in air, food, and everyday products and children's risks for neurodevelopmental disorders. The alliance, known as Project TENDR, which stands for "Targeting Environmental Neuro-Developmental Risks," is calling for immediate action to significantly reduce exposures to toxic chemicals to protect brain development.

Among the signatories to the TENDR statement published online in *Environmental Health Perspectives* are Frederica Perera, professor and director of the Columbia Center for Children's Environmental Health, and Virginia Rauh, professor of Population and Family Health, both faculty at Columbia University's Mailman School of Public Health.

"There is overwhelming scientific evidence that early-life exposure to neurotoxic chemicals is contributing to a host of developmental problems in children," says Perera, a professor of Environmental Health Sciences. "Exposure to these chemicals is pervasive, warranting action now to reduce their production and use."

Neurodevelopmental disorders linked to certain environmental exposures include intellectual disability, autism spectrum disorder, attention deficits, hyperactivity, and learning disabilities.

Prime examples of the chemicals and pollutants that are contributing to

children's learning, intellectual and behavioral impairment include:

- Organophosphate (OP) pesticides
- Polybrominated diphenyl ether (PBDE) flame retardants
- Combustion-related air pollutants, which generally include polycyclic aromatic hydrocarbons (PAHs), nitrogen dioxide and particulate matter
- Lead
- Mercury
- Polychlorinated Biphenyls (PCBs)

TENDR signatories call on government to remove these toxic chemicals from food and consumer products so that pregnant women and children are not exposed. In addition, they call on regulators to follow scientific guidance for assessing how chemicals affect brain development, such as taking into account the special vulnerabilities of the developing fetus and children, all sources of exposure to neurotoxic chemicals, and the lack of a safety threshold for many of these chemicals. Among action items, they call on businesses to eliminate chemicals harmful to brain development from their supply chains and products.

Project TENDR, which stands for "Targeting Environmental Neuro-Developmental Risks," is an alliance of 48 of the nation's top scientists, [health](#) professionals and health advocates. TENDR participants have come together across many disciplines and sectors, including epidemiology, toxicology, exposure science, pediatrics, obstetrics and gynecology, nursing, public health, and federal and state [chemical](#) policy. Medical and scientific societies that have signed on in support include American Congress of Obstetricians and Gynecologists, Endocrine Society, National Medical Association, National Hispanic Medical Association and the National Council of Asian Pacific Island Physicians. TENDR's long-term mission is to lower the incidence of neurodevelopmental disorders by reducing exposure levels to chemicals

and pollutants that can contribute to these conditions, especially during fetal development and early childhood. Project TENDR is a joint endeavor of the Learning Disabilities Association of America (LDA) and the University of California Davis MIND Institute (Medical Investigations of Neurodevelopmental Disorders).

Provided by Columbia University's Mailman School of Public Health

Citation: Consensus statement: Environmental toxins hurt brain development, action needed (2016, July 1) retrieved 3 May 2024 from <https://medicalxpress.com/news/2016-07-consensus-statement-environmental-toxins-brain.html>

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