Learning and developmental disabilities (LDDs) appear to be on the rise, affecting at least 17 percent of youth in the United States under the age of 18.\(^1\) Though there is some controversy about how new diagnostic tools may be contributing to these increasing statistics, one in six of our children struggling with these issues is simply too many.

A number of factors—heritage, gene expression, social environment, nutrition, and synthetic chemicals—contribute to brain development in complex ways. Recent research, however, reveals that exposures to certain neurotoxicants, such as lead, mercury, pesticides, polychlorinated biphenyls (PCBs), polybrominated diphenylethers (PBDEs) and some solvents can have a particularly detrimental impact on brain function and in turn lead to the expression of learning and developmental disabilities.\(^2\) These environmental contributors often are the least researched and ultimately the most preventable.

We also know from research that developing fetuses and children are more vulnerable than adults to environmental exposures for a variety of reasons. For example: their biological systems are still developing; they metabolize at a much faster rate; pound per pound, they eat, drink and breathe far more than adults; and their behavior, such as crawling on the ground and putting their hands in their mouths after touching the floor, results in higher exposures to toxins. If they are exposed to even low doses of toxic chemicals at critical windows of development, their ability to achieve their full potential may be impaired for life.\(^3\)
The Learning and Developmental Disabilities Initiative: Preventing Exposures to Neurotoxicants

To date, most learning and developmental disability groups have focused on identifying affected children and getting them the services they need—something that is, of course, very important. However, there is a parallel need for prevention of exposures that lead to these disabilities in the first place. Under the auspices of the Collaborative on Health and the Environment (CHE), the Learning and Developmental Disabilities Initiative (LDDI) was formed in 2002 to engage national and regional learning and developmental disabilities groups interested in looking upstream and focusing on the prevention of exposures to neurotoxicants.

At the first meeting of LDDI in May 2002 in Washington, D.C., the group determined that the national LDD sector, with its hundreds of thousands of members, in collaboration with scientists and key environmental health and justice organizations, could be an effective voice for protecting children from toxic hazards related to altered brain development. Participants adopted LDDI’s mission: to foster collaboration among learning and developmental disability organizations, researchers, health professionals and environmental health and justice groups to address concerns about the impact environmental pollutants may have on neurological development.

LDDI has almost 250 organizational and individual members engaged in research, educational and policy efforts. The Learning Disabilities Association of America (LDA) was the first organization to develop a model program focusing on protecting children from neurotoxicants, having already begun to look at toxic contributors to learning disabilities over the past several years. As an extension of their engagement with LDDI, the LDA has established a new national Healthy Children’s Project, with initial focus in state chapters in California, Maine and New York. Since then, 16 additional state chapters have undertaken environmental health projects.

The American Association on Mental Retardation (AAMR), which published a report more than 20 years ago on environmental links to mental retardation, has reinvigorated its interest in the impact toxic exposures may have on brain development. Working with colleagues in LDDI, AAMR organized a conference on “pollution, toxics and mental retardation” in July 2003. This was the first national meeting to bring together the developmental disabilities and environmental health sectors to discuss national educational and policy-oriented strategies regarding neurotoxicants and developmental disabilities. Since then AAMR has initiated extensive educational and policy efforts nationally among its members.

With LDDI encouragement, the Autism Society of America (ASA) has been the third major national LDD organization to establish an environmental health program. It is clear, given ASA’s respected leadership in regard to autism and autism spectrum disorders, that this action will help transform the attitudes of professionals in the developmental disabilities field regarding the effects of toxins on neurodevelopment.

In addition to these groups, LDDI is working with the Arc of the United States, the National Association for the Dually Diagnosed, SafeMinds, YAI/National Institute for People with Disabilities, and Communities Against Violence Network, as well as many other academic, health professional and advocacy organizations. Among their many efforts, LDDI members have published summaries on neurotoxicants found in human blood and urine samples as reported by the Centers for Disease Control, organized a congressional briefing, drafted letters to the U.S. Environmental Protection Agency about specific neurotoxicants, made presentations at major national professional meetings, and published 11 “Practice Prevention” columns that highlight how lay people can protect their children and themselves at home from neurotoxicants. (www.iceh.org/LDDI.html)

LDDI will hold its second major national meeting for researchers, health professionals, LDD organizations and environmental health advocates at the Morehouse School of Medicine in Atlanta, Ga., May 10-11, 2007. This conference will expand on LDDI’s central focus on neurotoxicants and include other factors, such as nutritional and socioeconomic concerns, in relation to healthy neurological development.

Overall, the organizations involved in LDDI have well over 500,000 members combined—a significant sector of our society with a powerful voice to create positive change. With the increased knowledge about environmental concerns obtained through their association with LDDI, these groups and individuals will have the opportunity not only to make healthier choices personally, but also to press for appropriate policies that protect children from toxic exposures so that they can lead full and healthy lives.

AUTHOR

Elise Miller, M.Ed., is founder and executive director of the Institute for Children’s Environmental Health and the national coordinator for the Collaborative on Health and the Environment’s Learning and Developmental Disabilities Initiative (www.iceh.org/LDDI.html). She also is a member of the ASA Environmental Health Advisory Board to defining gene-nutrient interactions that increase susceptibility to cancer, Down syndrome, birth defects, and most recently, autism. She has published over 100 peer-reviewed papers and recently received the American Society for Nutritional Sciences award for innovative research contributing to the understanding of human nutrition. She is currently funded by a 5 year NIH grant entitled “Metabolic biomarkers of autism: predictive potential and genetic susceptibility.”