Methylmercury warning

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Recent studies hint that exposure to the toxic chemicals, such as methylmercury can cause harm at levels previously considered safe. A new analysis of the epidemiological evidence in the *International Journal of Environment and Health,* suggests that we should take a precautionary approach to this and similar compounds to protect unborn children from irreversible brain damage.

Philippe Grandjean of the Department of Environmental Health at Harvard School of Public Health, in Boston, and the University of Southern Denmark in Odense, explains that the causes of suboptimal and abnormal mental development are mostly unknown. However, severe exposure to pollutants during the development of the growing fetus can cause problems that become apparent as brain functions develop - and ultimately decline - in later life. Critically, much smaller doses of chemicals, such as the neurotoxic compound methylmercury, can harm the developing brain to a much greater extent than the adult brain.

Methylmercury is a chemical compound formed in the environment from released mercury. Unfortunately, the methylmercury can be transported quickly around the body and may enter the brain. Serious problems will ensue if important developmental processes are blocked as there will be only one chance for the brain to develop.

The researchers point out that until recently research into the effects of pollutants on the brain has been clouded by the lack of information on actual exposure. Moreover, finding a direct link between specific problems with the brain and exposure relies on statistical, or

epidemiological, analysis rather than case-by-case understanding. The researchers say that neurodevelopmental disorders of possible environmental origin affect between 5% and 10% of babies born worldwide, leading to dyslexia, mental retardation, attention deficit/hyperactivity disorder, cerebral palsy, and autism.

The toxicity of methylmercury is well known, but the researchers believe that the medical world has underestimated the risk of brain damage associated with exposure to this compound as well as numerous others. Professor Grandjean emphasizes that little research has been carried out into the effects of other neurotoxic chemicals.

"Until there is enough evidence to rule out effects of certain chemicals on the developing nervous system, a cautious approach would involve strict regulation of suspected developmental neurotoxicants and prudent counseling of expectant mothers regarding exposures to untested substances," the researchers conclude.

Source: Inderscience Publishers