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A PRECAUTIONARY APPROACH SHOULD BE TAKEN TO PROTECT PREGNANT WOMEN AND CHILDREN AGAINST INDUSTRIAL CHEMICALS

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Exposure limits for chemicals should be set at values that recognise the unique sensitivity of pregnant women and young children, and they should aim to protect brain development, according to an **Online/Review** this week.

Neurodevelopmental disorders such as autism, attention deficit disorder, and cerebral palsy are common, costly and can cause lifelong disability. One in every six children has a developmental disability and in most cases these disabilities affect the nervous system. The two main obstacles to preventing neurodevelopmental disabilities caused by chemicals are the great gaps in testing chemicals for developmental neurotoxicity and the high level of proof required for regulation.

A few industrial chemicals such as lead are recognised causes of neurodevelopmental disorders. Exposure to these chemicals during early fetal development can cause brain injury at doses much lower than those affecting adults. Recognition of these risks has given rise to evidence-based programmes of prevention, such as elimination of lead additives in petrol. Although, these campaigns are highly successful, most were initiated only after substantial delays, state Dr Philippe Grandjean (Department of Environmental Medicine, University of Southern Denmark, Odense, Denmark) and Dr. Philip Landrigan (Department of Community Medicine, Mount Sinai School of Medicine, New York, NY, USA).

In the EU, 100 000 chemicals were registered for commercial use in 1981 and in the USA 80 000 are registered. Of the chemicals most commonly used in commerce, fewer than half have been subjected to even token laboratory testing. The few substances proven to be toxic to human neurodevelopment should therefore be viewed as the tip of a very large iceberg.

Dr Grandjean concludes: "The vulnerability of the human nervous system and its special susceptibility during early development suggest that protection of the developing brain should be a paramount goal of public health protection . . . A precautionary approach, which is now beginning to be used in the EU, would mean that early indications of a potential for a serious toxic effect, such as developmental neurotoxicity, should lead to strict regulation, which could be relaxed, should subsequent documentation show less harm than anticipated."

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