

Brain development disorders in children linked to common environmental toxin exposures

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Exposures of pregnant women and children to common thyroid-hormone-disrupting toxins may be linked to the increased incidence of brain development disorders, according to a review published in *Endocrine Connections*. The review describes how numerous, common chemicals can interfere with normal thyroid hormone actions, which are essential for normal brain development in foetuses and young children, and suggests a need for greater public health intervention.

Maternal thyroid hormones (TH) are essential for normal brain development of children and previous human studies have indicated that even moderate disruption to TH function in pregnant [women](#) may affect cognitive development and increase the risk of brain developmental disorders in their children. In modern times, an increase in [chemical](#) production has led to widespread environmental chemical contamination that can affect normal hormone function in those exposed, particularly in vulnerable populations, such as children and pregnant women. Many of these identified endocrine-disrupting chemicals (EDCs), which include pesticides and substances used in manufacturing a multitude of products, have been reported to interfere with thyroid hormone function, yet public health policy does not fully address the risks to vulnerable populations.

In this review, Professor Barbara Demeneix and colleagues at the Centre National de la Recherche Scientifique, Université Paris-Sorbonne,

examine published evidence of the wide variety and high number of EDCs, from pesticides to chemicals used in the manufacture of drugs, cosmetics, furniture and plastics, that can all interfere with TH. The authors further highlight that complex mixtures of these thyroid-disrupting chemicals are present in all humans, including children and pregnant women.

Prof Barbara Demeneix comments, "We have reviewed the documented exposures of pregnant women and children to mixtures of thyroid-hormone-disrupting chemicals and propose that the data sets provide a plausible link to the recent increased incidence of neurodevelopmental conditions, including autism spectrum disorders and attention deficit hyperactivity disorders."

These findings indicate that exposures of pregnant women and [children](#) to thyroid-disrupting chemicals in the environment pose real risks for child [development](#) and health, and underline the need for a more targeted public health intervention strategy.

Prof Demeneix continues, "Many experts in the field, consider that the current testing guidelines for thyroid-disrupting chemicals are not sufficiently sensitive, do not take into account recent findings and do not adequately consider risks to vulnerable populations, such as pregnant women."

Provided by Society for Endocrinology

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