

# ECPCP Statement on endocrine disrupting chemicals

## ECPCP Vaccination and Prevention Working Group

### Preamble

There is an increasing awareness of environmental threats to human and child health. WHO has estimated that globally about 25% of human disease and disorders are attributable to environmental factors. Areas of concern include air quality, water and sanitation, chemical safety, climate change and more, particularly with respect to children's daily environments. Children are among the most vulnerable and thus we strongly believe that our role as paediatricians is to increase awareness and alert to environmental risks.

One major alarming threat that has been an increasing concern in the last 30 years are endocrine disrupting chemicals (EDCs), substances and mixtures of substances that can interfere with the endocrine system. Endocrine disrupting chemicals are ubiquitous and can be found in consumer products, foods, beverages, personal care products, and household cleaning products. There have been recognised more than 1000 potential endocrine disruptors (TEDX list) out of which the more common and widely studied EDCs include bisphenol A, phthalates, triclosan, DDT and other pesticides, poly-brominated ethers, and parabens. Humans can be exposed through ingestion, inhalation, or dermal absorption.

Endocrine disrupting chemicals (EDCs) interact with the endocrine system which is a complex messaging system regulating key vital functions and behaviours throughout life. We cannot assume that there is a safe threshold of exposure and mixtures are particularly worrisome. Fetal development, early childhood and puberty are critical periods of exposure and events early in life set the stage for how the body responds to the environment throughout life and through epigenetic changes may even affect multiple generations. This concept of windows of vulnerability is often referred to as the « Developmental origins of health and disease » (DOHAD). Testing for EDCs now shows the presence of a variety of problematic chemicals in all individuals worldwide. More alarmingly these substances may be persistent and bio-accumulative. EDCs are increasing the risk of developing serious and potentially lethal diseases and health disorders as highlighted by the World Health Organization, scientists from Endocrine Societies and other experts. Endocrine disrupting chemicals have been linked to reproductive and fertility problems as well as hormone dependent cancers, to neurodevelopmental problems via prenatal thyroid and steroid disturbance and metabolic changes including obesity and diabetes. The incidence of male reproductive problems (cryptorchidism, hypospadias, testicular cancer), premature thelarche, early female puberty, leukaemia, brain cancer, and neurodevelopmental disorders have all risen rapidly over the past decades.

## Steps to be taken :

- Raise awareness about developmental and reproductive consequences of exposure to endocrine disrupting chemicals.
  - Demand that environmental risks and particularly EDCs be part of the training of future paediatricians and continuous medical education.
  - Make information available for the general public, speak to decision makers and NGOs
  - Specifically target pregnant women and parents of young children but also school-kids, adolescents and early childhood professionals.
- Inform about common sources of exposure and counsel families on prevention strategies to minimise exposures.
- Promote environmental risk assessment for exposure through questionnaires.
- Demand regulations concerning exposure to endocrine disrupting chemicals in maternity wards, nurseries, hospitals, kindergartens, playgrounds and schools.
- Demand better training of key professional branches (agricultural workers, veterinaries, chemical industrie workers, early childhood professionals).
- Increase safety of food for children, pregnant and breastfeeding women by analysing products for EDCs and adequate labelling.
- Use of early childhood equipment committed to limiting environmental toxicity in children hospitals, nurseries, kindergartens, playgrounds and schools.
- Inform on the necessity of frequent ventilation of indoor areas to improve air quality (with regards to solvents, flame retardants, cleaning products fragrances etc) and encourage measures and monitoring of air quality.
- Ask for analysing EDCs in water and monitor estrogenic activity of drinking water.
- Demand better regulation of recycling to avoid contamination by dangerous substances and increase regulations for replacement substances.
- Enhance research efforts on effects and consequences of exposure to EDCs on humans and environment. Biomonitoring studies have proven to be a useful tool that can be implemented to evaluate exposure and its link to health consequences.

Preventing Disease through Healthy Environments [http://www.who.int/quantifying\\_ehimpacts/publications/preventingdisease.pdf](http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf).

State of the science of endocrine disrupting chemicals - 2012; An assessment of the state of the science of endocrine disruptors prepared by a group of experts for the United Nations Environment Programme (UNEP) and WHO 2012 Edited by Åke Bergman Jerrold J. Heindel et al <http://apps.who.int/iris/handle/10665/78101>

The Endocrine Exchange, <https://endocrinedisruption.org/interactive-tools/tedx-list-of-potential-endocrine-disruptors/search-the-tedx-list>

Endocrine Society: <https://www.endocrine.org/topics/edc>, IPEN, <https://ipen.org/documents/introduction-endocrine-disrupting-chemicals-edcs>

UN List of Identified Endocrine Disrupting Chemicals 2018: [https://www.chemsafetypro.com/Topics/Restriction/UN\\_list\\_identified\\_endocrine\\_disrupting\\_chemicals\\_EDCs.html](https://www.chemsafetypro.com/Topics/Restriction/UN_list_identified_endocrine_disrupting_chemicals_EDCs.html)

A-S.Parent et al. Endocrine disrupting Chemicals and Human Growth and Maturation: A Focus on Early Critical Windows of Exposure, Vitamines and Hormones (2014), vol.94