



The detrimental impact of Per- and polyfluoroalkyl substances on children

ESPE Statement

Existing peer-reviewed studies provide ample evidence for the association between child exposure to Endocrine Disrupting Chemicals (EDCs) and the onset of numerous illnesses including endocrine cancer, obesity, disturbed timing of puberty, impaired fertility, neurodevelopment alterations and numerous rare diseases. Exposure is unavoidable as these synthetic chemicals are present everywhere in our daily life. Children are particularly exposed through the placenta, breast milk, toys, plastic bottles, clothes as well as the floors babies crawl on.

Per- and polyfluoroalkyl substances (PFAS) are a group of over 10,000 manmade chemicals used as oil and water repellents and coatings for common products including cookware, carpets, and textiles. These EDCs do not breakdown or very slowly over many years when they are released into the environment and into our bodies, and they continue to accumulate over time.¹

PFAS are "forever chemicals", chemicals that are very persistent in the environment and in the human body. They are transgenerational and can migrate via the placenta from mother to child during the prenatal period.²⁻⁴ Postnatally PFAS will be taken up via breastmilk⁵ and later in life via inhalation of dust or by ingestion of PFAS in drinking water, soil, non-stick coating in pans, food packaging products and food, particularly from fish, fruit and eggs.⁶ New research also indicates that PFAS are dispersed through the air over long distances.⁷

As is the case for all EDCs in our environment, children are most vulnerable to the exposure to PFAS. This is because of breathing space closer to the floor, lower body weight, differences in water and food intake, developing organ systems and longer lifespans during which toxic effects might manifest.⁸ Especially infants are extremely vulnerable as the first months of life are known to be a critical window for the programming of later adiposity and endocrine regulation, neurodevelopment and growth.⁸⁻¹⁴ Higher serum PFAS levels in infants have also been associated with a lower vaccination response^{15,16} Prenatal exposure has for example been associated with the timing of puberty in girls.¹⁷ A recent study showed that nearly 60% of children's textiles labelled "waterproof", "stain-resistant", or "environmentally friendly" contained toxic PFAS substances.¹⁸

While decision makers including at the EU level have become more aware of the risks that PFAS pose for population health, ESPE has great concerns that current policies and legislation do not accurately address the specific impact PFAS and other endocrine disruptors have on children even before they are born. More should for example be done to avoid early exposure by focusing on the elimination of PFAS in all food, and other products including cookware, food contact material, cosmetics, clothing, toys, food packaging and floors. ESPE considers the PFAS restriction proposal recently submitted to the European Chemical Agency by authorities from the Netherlands, Norway, Germany, Sweden and Denmark¹⁹ is an important first step in the right direction.

The concept of "essential use" is at the core of the debate on restriction procedures. As outlined in the restriction proposal as well as the EU Chemicals Strategy for Sustainability, PFAS should be limited to essential use only. Essential for ESPE means that PFAS should only be employed in those uses that are critical for the functioning of society and where no alternatives are available.²⁰



Moreover, in principle only those chemicals should be used that have a relatively short half-life, meaning that the chemical leaves the human body relatively quickly after exposure. PFOA and PFOS, for example, do not meet this criterion.

Within the next 5 years all PFAS in the EU should be phased out entirely to stop further human exposure and the continuous contamination of our environment.

In addition to better policies and more stringent regulations, more research is needed to investigate the immediate and long-term effects of PFAS and other EDCs on the development of children from foetus to young adulthood, particularly the impact on the endocrine system. This is essential to better protect and, where possible, mitigate current and future adverse health effects with lifelong impact.

Better tailored policy making, and an improved understanding of the risks posed by PFAS in children are crucial to establish a safer environment for our children and society in general.

END

About ESPE

The European Society for Paediatric Endocrinology (ESPE) is an international society registered in Europe that promotes the highest levels of clinical care for infants, children and adolescents with endocrine problems throughout the world, including in less advantaged areas. At the EU level it works together with the EU and partner organisations to create a more healthy environment for children and adults.

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