MINIMISING THE IMPACT OF ENDOCRINE DISRUPTING CHEMICALS ON HEALTH AND ENVIRONMENT

A scientific update following the Joint Congress of ESPE and ESE 2025

Legacy Event: 14 May 2025
Press briefing note: Reducing exposure to endocrine-disrupting chemicals (EDCs)

Relevant presentations at event:

- "Keynote address – new cutting-edge EDC research from the ESE/ESPE Congress" - Prof Anne-Simone Parent, University of Liège, Belgium
- "Mixture exposure to endocrine disruptors and neurodevelopment in Swedish children – a case study combining epidemiological and experimental studies to improve mixture risk assessment" – Prof. Joëlle Rüegg, Uppsala University
- "PFAS – challenges for children's health and neurodevelopment" – Tina Kold Jensen, University of Southern Denmark
- "Testimonial: how EDC exposure has affected my life and that of my family and community" – Mr Kenneth Nielsen, Chairman of Korsør Cow Grazing and Nature Conservation Association
- "Empowering Expectant Mothers: Reducing Endocrine Disruptor Exposure for a Healthy Start" – Prof. Aleksandra Buha Djordjevic, University of Belgrade

Issue: Exposure to EDCs

We are exposed to EDCs every day, through food, water, air and through contact with cleaning products, toys, cosmetics and pesticides.

Countless peer-reviewed studies over the past three decades have linked EDC exposure to a wide range of health problems. Over 1500 chemicals of concern contribute to hormone-related cancers, infertility in men and women, osteoporosis, thyroid disease, metabolic disorders such as obesity and diabetes and birth defects. The early life period is especially vulnerable. EDCs can transfer from mother to foetus via the placenta during pregnancy. Exposure during critical stages like foetal development, infancy and adolescence can cause major health problems later in life, such as a higher risk for obesity and neurodevelopmental impacts.

This public health crisis comes with a major economic and societal cost. EDCs are estimated to cost Europe between €157 billion and €270 billion each year in healthcare expenses and lost earning potential.

There is an urgent need to reduce exposure and prevent further harm through stronger, coordinated action.

The "cocktail" effect

EDC exposure is typically invisible, occurring in low doses over time. We are rarely exposed to a single substance in isolation, but encounter mixtures of chemicals that can interact in ways that increase harm, even when individual exposures fall within legal safety limits.

This is known as the "cocktail effect". While the EU has acknowledged the issue, current laws still assess chemicals individually, leaving combined risks largely unaddressed.

Gaps in regulation and testing of EDCs:

- Approximately 100,000 chemicals are available on the market and 70% of these have not been tested for their effects on human health, according to the European Environment Agency.
- Worldwide, 350,000 chemicals are registered for commercial use, yet many remain confidential or poorly understood in terms of exposure, hazards and risks.
- Over 250 chemicals are listed by the European Union (EU) as known or suspected EDCs.
- Different sectors have inconsistent rules, so a substance banned in one area (like toys) might still be used in another (like food packaging or cosmetics), making real-world exposure difficult to manage.
- The current approach often focuses on risk (how much you're exposed to) rather than hazard (how dangerous the substance is), which overlooks the real impact of these chemicals on hormone health.

What can be done to reduce exposure to EDCs?

To create a less toxic environment and protect future generations, urgent action is needed to reduce exposure to EDCs through stronger laws, stricter industry oversight, better public information, coordinated monitoring and increased support for independent research.

EU policies must address EDCs and prevent loopholes

We need policymakers to support legislation and policies that address EDCs in line with scientific developments. Current legislation is fragmented, with different definitions and requirements for identifying EDCs in pesticides, biocides, cosmetics, food packaging and general chemicals. For example, some phthalates are banned in cosmetics but are allowed in food contact materials. Triclosan cannot be used in food contact materials and is banned as a biocide, but is allowed in personal care products. This creates loopholes, allowing harmful chemicals to stay on the market by shifting use categories.

Recent revisions to include new hazard classes for endocrine disruptors under the Classification, Labelling and Packaging (CLP) Regulation are a positive step forwards, but more needs to be done.

2025 is a critical year as the EU engages in several legislative debates that will set the course for EU chemical policies, including:

- Revision of EU Toy Safety Legislation (provisional agreement reached on 10 April)
- Revision of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation (Commission proposal expected on this central piece of chemical legislation in Q4)
- Consideration of restrictions on polyfluoroalkyl substances (PFAS), which are associated with thyroid disease, early puberty, metabolic disease and many other endocrine conditions (expected to be concluded Q4 2025 or Q1 2026).

Find out more about the current status of chemical legislation relating to EDCs.

Better testing and monitoring

There is a clear need for better testing of both endocrine-disrupting properties in chemicals and of human exposure levels, to ensure that risks are properly identified and managed.

Thousands of chemicals in commercial use across the EU have not been assessed for their endocrine-disrupting properties. Industry is not required to provide independent, peer-reviewed data to demonstrate safety and chemical testing requirements vary. Stronger regulatory pressure would encourage greater accountability and innovation in the safer use of chemicals in consumer products.

There is also no coordinated EU-wide system to monitor human or environmental exposure to EDCs. This makes it difficult to track exposure levels, assess population risk or evaluate the effectiveness of policies. Denmark's Environmental Protection Agency has been proactive on this front, setting up screening tests and maintaining an evidence-based list of potential EDCs. The EU needs a coordinated biomonitoring strategy to inform policy, guide research and help the public understand where and how they may be exposed.

Raising awareness of the dangers of EDCs and ways to reduce exposure

From a public health perspective, policymakers, the medical community and the public remain insufficiently aware of the regulatory gaps in chemical safety and the resulting risks of exposure to EDCs.

A 2024 Eurobarometer study of citizens' views on the environment suggests that the public have a general awareness that chemicals in everyday products have an impact on health and environment, but would benefit from more information about specific chemicals and how to reduce their exposure:

- 84% of Europeans are worried about the health impact of harmful chemicals present in everyday products
- 72% say they take account of the chemical safety of products when making purchases
- Only 29% of respondents had heard the term PFAS (also known as "forever chemicals"), while 71% had not.

World Hormone Day (24 April), led by ESE and the ESE Foundation, brings together the global endocrine community to close this gap and raise awareness of the importance of good hormone health. In 2025, the campaign highlighted 10 Recommendations for Good Hormone Health, three of which focus specifically on reducing exposure to EDCs:

(Graphics in multiple languages can be downloaded here.)

Coordinated investment in EDC research

While numerous studies have already proven the many hazards of EDCs and the need to implement a strict regulatory framework, more research is needed to better understand the long-term health impact of EDCs on different populations.

A coordinated funding effort is needed to stimulate independent research in this area and support targeted prevention, especially as the chemical industry grows and exposure increases. More independent, peer-reviewed basic research is needed to better understand the long-term and cumulative effects of increasing exposure to EDCs over generations. Future research should pay particular attention to groups that are more sensitive to EDC exposure, including children, pregnant women and those living nearby contamination sites.

The EndoCompass Research Roadmap, led by ESE and ESPE, is a major new initiative to address these issues and improve hormone health in Europe by shaping the future of endocrine research. Developed by 228 experts from across Europe, and covering all major endocrine fields, the roadmap identifies research priorities in endocrinology with the greatest potential to improve health in Europe. It aims to improve the visibility, coordination and impact of endocrine research.

While there is already enough data publicly available on EDCs for policymakers to take further legislative action, the latest data presented at the Joint Congress underlines the importance of an ambitious REACH revision and other legislative measures. Two poster abstracts published at the Joint Congress are particularly relevant here:

- *Higher PFAS exposure associated with lower 24h urine aldosterone in pregnant women (Odense Child Cohort)* – Richard Christian Jensen, Denmark.
- *Impact of early-life exposure to phthalates on anogenital distances in a cohort of healthy children and their mothers, from birth to three years of age* – Laura Lucaccioni, Italy.

(Searchable abstracts will be available on the Endocrine Abstracts platform from 9 May. Press may access abstracts from 5 May if they are registered for the Joint Congress.)

Denmark leads the way with strong research infrastructures, yet the link between the environmental impact and health consequences of ECD exposure still needs to be established further.

Key studies or publications

Aurisano, N. et al (2021). *Enabling a circular economy for chemicals in plastics*

Reincke, M. et al. (2024). *Endocrine disrupting chemicals are a threat to hormone health: a commentary on behalf of the ESE*

Trasande, L. et al. (2015). "Estimating burden and disease costs of exposure to endocrine disrupting chemicals in the European Union." *Journal of Clinical Endocrinology and Metabolism* (published online March 5, 2015).

"Endocrine Disruptors: From Scientific Evidence to Human Health Protection" – a 2019 study by the European Parliament Petitions Committee.

Alsen, M. et al. (2021). Endocrine Disrupting Chemicals and Thyroid Cancer: An Overview

Useful links

- EDC media kit
- More information about World Hormone Day ESE's World Hormone Day media kit
- Information about ESE's advocacy work on EDCs, including the EDC Working Group
- Information and recording of *"Shaping an ambitious legislative framework for endocrine disruptors,"* a high-level panel discussion on the gaps between science and legislation, focusing on the REACH revision, held at the European Parliament in June 2023
- More information about the EndoCompass Research Roadmap
- European Union Eurobarometer 2024 report on *"Attitudes of Europeans towards the environment"*
- Update on REACH proposals by European Chemicals Agency (ECHA)
- Information on proposal to reduce emissions from polyfluoroalkyl substances (PFAS)
- List of substances identified as EDCs at EU level
- FREIA Project Health Promotion Strategy