



Scientific highlights from the ATHLETE research project

ATHLETE is an EU-funded research project that aims to better understand how the environment can impact human health from pregnancy to adolescence, by studying the totality of environmental exposures through the Human Exposome approach.

Every day, we are exposed to a number of pollutants via our diet, the products we buy, our lifestyle and the environment we work and live in. The totality of environmental exposures over a lifetime, from conception to adulthood, is called the **Human Exposome**.



ATHLETE follows over 80,000 pairs of mothers and children through 18 cohorts across Europe to measure how the Exposome impacts health in the earliest stages of life.

SCIENTIFIC HIGHLIGHTS ON THE CHEMICAL EXPOSOME AND CHILD HEALTH:



ATHLETE studies have found that:

- + The association between prenatal exposure to persistent environmental pollutants and childhood obesity may vary depending on the **mother's nutritional habits**
- + Prenatal exposure to bisphenol A is linked to a higher risk of **asthma and wheeze** among school-age girls
- + Prenatal exposure to benzophenone 3 (a UV filter commonly found in cosmetics and sunscreens) is associated with a **higher BMI and blood pressure** in pre-adolescents

SCIENTIFIC HIGHLIGHTS ON THE EFFECTIVENESS OF INTERVENTIONS:



ATHLETE conducted two scoping reviews of exposome-related interventions, showing that:

- + Interventions to improve indoor air quality in classrooms, green spaces and safer routes to school can improve children's health
- + Interventions to remove or replace endocrine disrupting chemicals (such as parabens, bisphenols and phthalates) from dietary intake and personal care products may reduce exposure





Reducing chemical exposures from dietary intake and personal care products




Exposures to endocrine disrupting chemicals (EDCs) such as phthalates, synthetic phenols, and glycol ethers can impact human health and disrupt the normal functioning of our bodies' hormone system.

The prevalent use of these chemicals in personal care products, food contact materials and other consumer products people use daily means that we are habitually exposed to them. There are growing public health concerns over our exposure to EDCs, particularly during vulnerable periods like early life.

Researchers from the EU-funded ATHLETE project conducted a scoping review to describe the types of interventions which can alter exposures to phthalates, glycol ethers, and common synthetic phenols including BPA, triclosan, parabens, and UV filters present in the diet, food packaging, and in personal care products.







INTERVENTIONS STUDIED:

-  Providing participants with products that contain EDCs such as body creams, toothpaste, and polycarbonate bottles to see if exposures increase (n=9)
-  Changing participant behaviours through education (n=6) on how to avoid personal care products with EDCs
-  Removing and replacing products with EDCs with EDC-free products (n=11) such as providing organic foods, glass or stainless steel food and beverage containers, or EDC-free personal care products



Removing or replacing products containing EDCs can reduce exposures:

-  Changes in the amount of chemicals present in the body could be seen in as few as 2 days
-  Educational and product removal/replacement interventions reduce exposure, but need participant compliance, motivation, and ability to find suitable replacements
-  Food contamination from packaging and unclear ingredient lists in personal care products make it challenging to reduce individual exposure to EDCs
-  To maximize impact while minimizing burden, policy should target the use of EDCs across various sectors, including processing, manufacturing, and packaging

