PFAS Chemicals: EDCs Contaminating Our Water and Food Supply

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Per- and polyfluoroalkyl substances (PFAS) are manmade chemicals used as oil and water repellents and coatings for common products including cookware, carpets, and textiles. These endocrine-disrupting chemicals do not break down when they are released into the environment, and they continue to accumulate over time.

PFAS chemicals can contaminate drinking water supplies near facilities where the chemicals are used. PFAS contamination has been detected in water near manufacturing facilities as well as military bases and firefighting training facilities where foam containing PFAS is used. PFAS chemicals also enter the food supply through food packaging materials and contaminated soil. New research also indicates that PFAS are dispersed through the air over long distances. The Centers for Disease Control and Prevention have found widespread exposure to PFAS in the U.S. population. Learn more about sources of exposure, including textiles and clothing, in our **Introduction to Endocrine-Disrupting Chemicals**.

PFAS chemicals can affect our biology by mimicking fatty acids—the building blocks of fat in our bodies as well as the foods we eat. They also act as endocrine-disrupting chemicals (EDCs) due to their ability to interfere with hormone systems. Exposure to PFAS chemicals can cause adverse health effects. **Studies** conducted near Parkersburg, West Virginia found a probable link between perfluorooctanoic acid (PFOA) exposure and six disease categories: diagnosed high cholesterol, thyroid disease, ulcerative colitis, testicular cancer, kidney cancer, and pregnancy-induced hypertension.

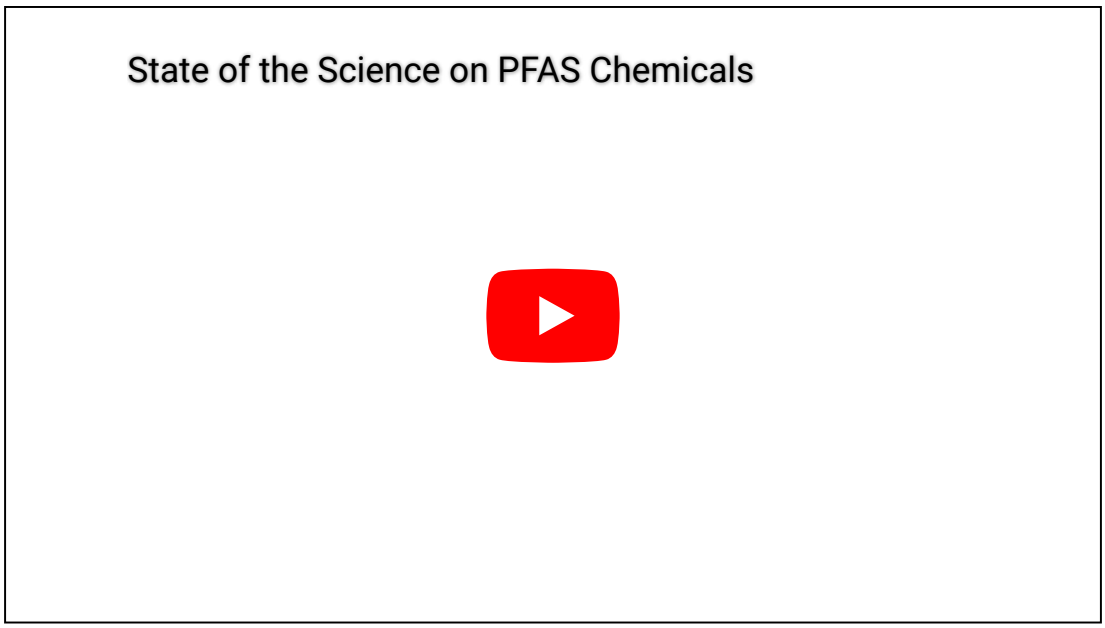
Research indicates PFAS can:

- Alter cholesterol levels
- Disrupt thyroid function
- Harm liver and kidney function
- Alter immune response
- Raise risk of ulcerative colitis
- Harm reproductive health
- Increase the risk of birth defects
- Decrease infant birth weights
- Cause tumors and cancer

Our **second Scientific Statement on Endocrine-Disrupting Chemicals** examines how PFAS chemicals affect pregnancy outcomes, the timing of puberty, and other aspects of reproductive health.

Source: Scott Belcher, PhD

State of the Sciences on PFAS Chemicals



From the Journals:

- **Early Life Exposures to Perfluoroalkyl Substances in Relation to Adipokine Hormone Levels at Birth and During Childhood**
- **Association of Perfluoroalkyl and Polyfluoroalkyl Substances With Premature Ovarian Insufficiency in Chinese Women**
- **Endocrine Disruption of Androgenic Activity by Perfluoroalkyl Substances: Clinical and Experimental Evidence**
- **Adiposity and Glycemic Control in Children Exposed to Perfluorinated Compounds**
- **Association Between Serum Perfluorinated Chemicals and Thyroid Function in U.S. Adults: The National Health and Nutrition Examination Survey 2007–2010**