Reducing Your Exposure to Endocrine Disruptors

A Detailed Guide for You and Your Family

What Are Endocrine Disruptors?

Endocrine-disrupting chemicals (EDCs) are natural or human-made substances in air, soil, water, food, and consumer products that interfere with your body's hormone (endocrine) system. Hormones act in extremely small amounts to regulate growth, metabolism, fertility, reproduction, sleep, and development — so even small disruptions can have outsized effects. EDCs work in several ways: some mimic natural hormones ("hormone mimics"), some block hormones from doing their job, some change how hormones are made, broken down, or stored, and some alter how sensitive your body is to a given hormone.

You're exposed through the air you breathe, the food and water you consume, and absorption through your skin. EDCs can also cross the placenta during pregnancy and pass to an infant through breast milk — fetuses and young children are more vulnerable to lower exposures than adults, because organs and the nervous system are actively forming.

Health effects linked to EDC exposure include: reduced fertility and altered sperm quality, abnormalities of sex organs, endometriosis, early puberty, neurological and behavioral changes, immune system effects, certain cancers (including breast and prostate), respiratory problems, obesity and metabolic disruption, type 2 diabetes, thyroid dysfunction, cardiovascular problems, and developmental or learning disabilities.

Chemical-by-Chemical Guide

Pesticides & Herbicides (atrazine, chlorpyrifos, DDT, glyphosate, organophosphates)

Found in: non-organic produce; residue on conventionally grown fruits and vegetables; contaminated groundwater near farmland; residues in meat and dairy from treated feed.

Reduce exposure: Buy organic when possible, especially for produce with high pesticide residue; wash and peel conventional produce; use a water filter certified to remove atrazine and other herbicides.

Plastics & Plasticizers (BPA & substitutes, phthalates)

Found in: canned food linings, polycarbonate (#7) and PVC (#3) plastics, reusable water bottles made before 2012, sippy cups/baby bottles made before 2011, thermal receipt paper, vinyl flooring, medical tubing, nail polish, hairspray, fragranced products, children's toys.

Reduce exposure: See the dedicated "Avoiding Plastics" section below; choose fresh over canned food; avoid handling receipts when possible; look for "phthalate-free" and "BPA-free" labeled products.

PFAS ("Forever Chemicals")

Found in: nonstick cookware (traditional Teflon), stain- and water-resistant coatings on carpet/furniture/clothing, some fast-food wrappers and microwave popcorn bags, firefighting foam, and — relevant to menstrual products — some tampon and pad wrappers and period underwear.

Reduce exposure: Replace old nonstick pans with cast iron, stainless steel, or ceramic-coated cookware; avoid stain/water-resistant treatments on textiles; skip microwave popcorn bags.

Heavy Metals (lead, arsenic, cadmium, mercury)

Found in: old paint and plumbing (lead), contaminated well water, some rice and rice-based products (arsenic), certain lipstick/eyeliner/whitening toothpaste, and larger predatory fish like swordfish and king mackerel (mercury).

Reduce exposure: Use a certified water filter; choose wild salmon or farmed trout over high-mercury fish; monitor rice-based baby foods; look for independently tested cosmetics.

Personal Care Chemicals (parabens, oxybenzone, fragrance, triclosan)

Found in: preserved cosmetics and lotions (parabens), chemical sunscreens (oxybenzone), anything listing only "fragrance" as an ingredient, and some antibacterial soaps and toothpaste (triclosan).

Reduce exposure: Read labels for "-paraben" ingredients; choose mineral sunscreens (zinc oxide/titanium dioxide); look for "no synthetic fragrance" or "scented with essential oils only"; avoid "antibacterial" labeled soap.

Flame Retardants & Industrial Byproducts (PBDEs, PCBs, dioxins, perchlorate, glycol ethers)

Found in: furniture foam, carpet padding, older electronics and building materials (PBDEs, PCBs — PCBs banned since 1979 but persist in soil); waste burning and wildfires (dioxins); rocket propellants, fireworks, and contaminated groundwater (perchlorate); some cleaning products (glycol ethers).

Reduce exposure: Use a HEPA-filter vacuum and dust frequently; be cautious replacing old carpet padding or upholstered foam furniture; limit intake of high-fat animal products (dioxins concentrate in fat); ensure adequate dietary iodine and filter water (perchlorate); avoid cleaners listing 2-butoxyethanol (EGBE) or methoxydiglycol (DEGME).

Phytoestrogens (found naturally in soy foods) are plant compounds with mild estrogen-like activity. Unlike the synthetic chemicals above, these occur naturally in food and are generally considered fine in normal dietary amounts — talk with us if you have specific concerns.

Avoiding Plastics: A Closer Look

Plastics are one of the most common daily sources of endocrine disruptors, primarily through BPA and phthalates leaching into food and drink. The recycling code on the bottom of plastic items is a helpful guide:

Code	Plastic Type	Guidance
#1 (PETE/PET)	Water/soda bottles	OK for single use only — don't reuse or heat
#2 (HDPE)	Milk jugs, detergent bottles	Considered one of the safer plastics
#3 (PVC)	Cling wrap, some flooring, pipes	Avoid — often contains phthalates
#4 (LDPE)	Bread bags, squeezable bottles	Relatively low concern
#5 (PP)	Yogurt tubs, bottle caps	Considered more stable; a better choice
#6 (PS)	Styrofoam, disposable cups/plates	Avoid, especially with hot food/drink
#7 (Other/PC)	Some reusable bottles, food can linings	Avoid — may contain BPA

Additional plastic-avoidance habits:

• Never microwave food in plastic containers	• Don't store hot food/liquid in plastic
• Use glass, porcelain, or stainless steel for storage	• Avoid plastic wrap touching food directly
• Skip plastic water bottles when possible; use stainless steel/glass	• Avoid hand-me-down plastic toys for children
• Choose BPA-free baby bottles, sippy cups, and pacifiers	• Minimize handling of receipts (thermal paper)

A Closer Look: Feminine Care Products

Menstrual products are used against genital skin, which is more permeable than skin elsewhere on the body — and tampons can cause micro-tears in vaginal tissue during use, which may allow chemicals more direct access into the body. Despite this, menstrual products are regulated as medical devices, not cosmetics, and are not currently subject to any federal ingredient-labeling requirement.

- **Dioxin:** Modern chlorine-free bleaching has greatly reduced dioxin in tampons; trace amounts (fractions of a part per trillion) can still appear, including in all-cotton products, from background environmental contamination. Over 90% of typical dioxin exposure comes from food (meat, dairy, fish), not tampons.
- **Heavy metals:** A 2024 UC Berkeley/Columbia study found detectable lead, arsenic, and cadmium in all 30 tampon brands tested. Health significance is still under review, and there are currently no regulatory limits for metals in menstrual products.
- **PFAS:** Studies have found PFAS more often in tampon and pad wrappers than in the products themselves, and in some period underwear and reusable products. No federal PFAS limit exists yet for menstrual products.
- **Toxic Shock Syndrome (TSS):** A rare, serious risk tied mainly to high-absorbency tampon use. Today's rate is very low (~0.07 cases per 100,000 women annually) thanks to 1980s-era labeling standards and material changes.

States are stepping in where federal regulation hasn't:

California, Colorado, Maine, Minnesota, New York, Nevada, Rhode Island, Vermont, and Washington have passed or proposed laws banning intentionally added PFAS and/or requiring ingredient disclosure in menstrual products — Vermont's law additionally covers phthalates, parabens, and heavy metals.

What You Can Do

Practical, high-impact steps:

- Use the lowest tampon absorbency that meets your needs, and change every 4–8 hours
- Look for menstrual products labeled “PFAS-free” or from brands publishing independent lab results
- Consider all-cotton tampons, menstrual cups, or pads — though no option is proven inherently safer
- Avoid fragranced menstrual products
- Buy organic produce when possible, and wash/peel conventional produce
- Choose glass, stainless steel, or ceramic-coated cookware and storage over plastic and nonstick
- Read labels and avoid “fragrance,” parabens, and phthalates in personal care products
- Use a certified water filter to reduce pesticides, lead, arsenic, and perchlorate

Trusted Resources to Learn More

- EWG Skin Deep® — look up personal care products for safer ingredients
- EWG Verified® — eligible personal care product categories
- EWG's “Dirty Dozen” List of Hormone-Disrupting Chemicals
- EWG — States Leading the Way on Menstrual Product Safety
- Endocrine Society — Endocrine-Disrupting Chemicals
- NIEHS — Endocrine Disruptors Overview
- UC Davis Environmental Health Sciences Center — Endocrine Disruptors
- National Center for Health Research — Tampon Safety

You can't eliminate every exposure, and that's okay — the goal is progress, not perfection. Small, informed swaps over time add up meaningfully. If you have questions about any specific product or ingredient, we're always happy to talk it through with you.

Powell Valley Healthcare