

Endocrine Disruptors

How to eliminate them?

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Introduction

The past half-century has witnessed the large-scale production, use, and disposal of man-made chemicals into our environment. Most of the synthetic chemicals produced in the U.S. lack adequate testing to determine their long-term health effects in humans. But numerous studies show that human exposure to pesticides, solvents, herbicides, insecticides, certain plastics, and manufacturing byproducts in our environment can cause adverse health effects. Since these products interfere with our internal hormonal balance, we call them hormone-disrupting compounds.

Endocrine disruptors or xeno-hormones are a category of chemicals that alter the normal function of hormones. Normally, our endocrine system releases hormones that signal different tissues telling them what to do. When chemicals from the outside get into our bodies, they have the ability to mimic our natural hormones; blocking or binding hormone receptors. This is particularly detrimental to hormone sensitive organs like the uterus and the breast, the immune and neurological systems, as well as human development.



Here are some endocrine disrupters linked to adverse health effects:

❖ **Dioxins** are byproducts of industrial incineration and combustion. Also produced by the manufacturing of chlorine-containing pesticides, wood preservatives, and paper, dioxins persist in the environment for years and accumulate in the fat of farm animals that eat contaminated feed or water. Recent research has shown that exposure to low levels of dioxin in the womb and early in life can both permanently affect sperm quality and lower the sperm count in men during their prime reproductive years. But that's not all! Dioxins are very long-lived, build up both in the body and in the food chain, are powerful carcinogens and can also affect the immune and reproductive systems.

How to avoid it? That's pretty difficult, since the ongoing industrial release of dioxin has meant that the American food supply is widely contaminated. Products including meat, fish, milk, eggs and butter are most likely to be contaminated, but you can cut down on your exposure by eating fewer animal products.

❖ **Bisphenol A** is a compound in some plastics. It can leach into foods and the environment. Bisphenol A produces estrogen like effects making it a possible contributor to immune suppression, and some cancers. BPA has been linked to everything from breast and others cancers to reproductive problems, obesity, early puberty and heart disease, and according to government tests, 93 percent of Americans have BPA in their bodies!

How to avoid it? Go fresh instead of canned – many food cans are lined with BPA – or research which companies don't use BPA or similar chemicals in their products. Say no to receipts, since thermal paper is often coated with BPA. And avoid plastics marked with a "PC," for polycarbonate, or recycling label #7.

❖ **Phthalates** are added to plastic to make them strong, soft, and flexible. These toxins are also used in carpet backing, paints, glues, insect repellents, hair spray, nail polish, and even in toys, where they make their way into our bodies through ingestion, inhalation, and skin absorption. Phthalates hormone-disrupting effects have been found to suppress ovulation and estradiol production and to contribute to a condition called polycystic ovarian syndrome. Studies have shown that phthalates can trigger what's known as "death-inducing signaling" in testicular cells, making them die earlier than they should. Yep, that's cell death – in your man parts. If that's not enough, studies have linked phthalates to hormone

changes, lower sperm count, less mobile sperm, birth defects in the male reproductive system, obesity, diabetes and thyroid irregularities.

How to avoid it? A good place to start is to avoid plastic food containers, children's toys (some phthalates are already banned in kid's products), and plastic wrap made from PVC, which has the recycling label #3. Some personal care products also contain phthalates, so read the labels and avoid products that simply list added "fragrance," since this catch-all term sometimes means hidden phthalates.

❖ **DDT** is a pesticide and its metabolite DDE have been banned in this country since 1972, but their effects still linger in our environment, accumulating in adipose tissue and in the food chain (fish and animals). Some other country like China still uses DDT. An insecticide used in agriculture and mosquito control, DDT has estrogen effects, linked to pancreatic, liver and breast cancers. In general, most families will be exposed to this dangerous manmade chemical by eating food or drinking liquids contaminated with small amounts of DDT.

How to avoid it? Use organic produce and animal product. Avoid fish and other food from China. A good water filter can also reduce your exposure to DDE in drinking water.

❖ **Formaldehyde** is another toxic compound. Traditionally used as a laboratory preservative, it has made its way into our homes. Formaldehyde is used in some shampoos, conditioners, and cosmetics as well as in construction materials, cleaning supplies, carpeting, drapes, upholstery, paper products, and plastics. Its fumes can cause depression, fatigue, poor memory, headaches, asthma, cough, skin rashes, and other problems. Formaldehyde has also been linked to reduced fertility and spontaneous abortion (miscarriage).

How to avoid it? The best way to reduce your exposure is to avoid products that contain formaldehyde, and to not allow cigarette smoking in your home. Increase ventilation. Open your windows for 5-10 minutes once or twice a day to purge chemicals and freshen the air. Run the exhaust fan above your stove when you are cooking to increase outgassing from gas combustion and reduce formaldehyde.

❖ **Atrazine** is an herbicide. Researchers have found that exposure to even low levels of atrazine can turn male frogs into females that produce completely viable eggs. Atrazine is widely used on the majority of corn crops in the United States, and consequently it's a pervasive drinking water contaminant. Atrazine has been linked to breast tumors, delayed

puberty and prostate inflammation in animals, and some research has linked it to prostate cancer in people.

How to avoid it? Buy organic produce and get a drinking water filter certified to remove atrazine.

❖ **Perchlorate** is a naturally occurring and manmade chemical. It is manufactured and used as an industrial chemical and can be found in rocket propellant, explosives, fireworks and road flares. It has been found in some public drinking water systems and in food. Who needs food tainted with rocket fuel?! When perchlorate gets into your body it competes with the nutrient iodine, which the thyroid gland needs to make thyroid hormones. Basically, this means that if you ingest too much of it you can end up altering your thyroid hormone balance. This is important because it's these hormones that regulate metabolism in adults and are critical for proper brain and organ development in infants and young children.

How to avoid it? You can reduce perchlorate in your drinking water by installing a reverse osmosis filter. As for food, it's pretty much impossible to avoid perchlorate, but you can reduce its potential effects on you by making sure you are getting enough iodine in your diet. Eating iodized salt is one good way.

❖ **Fire retardants.** In 1999, some Swedish scientists studying women's breast milk discovered something totally unexpected: The milk contained an endocrine-disrupting chemical found in fire retardants, and the levels had been doubling every five years since 1972! These incredibly persistent chemicals, known as Polychlorinated biphenyls (PCB's) and Polybrominated biphenyls (PBB's) or polybrominated diphenyl (PBDE) used in coolant, lubricants, and insulation for electrical equipment as well as in paints, dyes, and rubber. PCB's accumulate in human fat-and in the food chain. Found in rivers and lakes, these toxins weaken the immune system, damage neurological development, and behave like estrogen in the body. These chemicals can imitate thyroid hormones in our bodies and disrupt their activity. That can lead to lower IQ, among other significant health effects. While several kinds of PBDEs have now been phased out, this doesn't mean that toxic fire retardants have gone away. PBDEs are incredibly persistent, so they're going to be contaminating people and wildlife for decades to come.

How to avoid it? It's virtually impossible, but passing better toxic chemical laws that require chemicals to be tested before they go on the market would help reduce our exposure. A few things that can you can do in the meantime include: use a vacuum cleaner with a HEPA filter, which can cut down on toxic-laden house dust; avoid

reupholstering foam furniture; take care when replacing old carpet (the padding underneath may contain PBDEs).

❖ **Lead.** It's well known that lead is toxic, especially to children. Lead harms almost every organ system in the body and has been linked to a staggering array of health effects, including permanent brain damage, lowered IQ, hearing loss, miscarriage, premature birth, increased blood pressure, kidney damage and nervous system problems. But few people realize that one other way that lead may affect your body is by disrupting your hormones. In animals, lead has been found to lower sex hormone levels. Research has also shown that lead can disrupt the hormone signaling that regulates the body's major stress system (called the HPA axis). You probably have more stress in your life than you want, so the last thing you need is something making it harder for your body to deal with it – especially when this stress system is implicated in high blood pressure, diabetes, anxiety and depression.

How to avoid it? Keep your home clean and well maintained. Crumbling old paint is a major source of lead exposure, so get rid of it carefully. A good water filter can also reduce your exposure to lead in drinking water. And if you need another reason to eat better, studies have also shown that children with healthy diets absorb less lead.

❖ **Arsenic** isn't just for murder mysteries anymore. In fact, this toxin is lurking in your food and drinking water. If you eat enough of it, arsenic will kill you outright. In smaller amounts, arsenic can cause skin, bladder and lung cancer. Basically, bad news. Less well known: Arsenic messes with your hormones! Specifically, it can interfere with normal hormone functioning in the glucocorticoid system that regulates how our bodies process sugars and carbohydrates. What does that mean for you? Well, disrupting the glucocorticoid system has been linked to weight gain/loss, protein wasting, immunosuppression, insulin resistance (which can lead to diabetes), osteoporosis, growth retardation and high blood pressure.

How to avoid it? Reduce your exposure by using a water filter that lowers arsenic levels. For help finding a good water filter.

❖ **Mercury.** Caution: That sushi you are eating could be hazardous to your health. Mercury, a naturally occurring but toxic metal, gets into the air and the oceans primarily through burning coal. Eventually, it can end up on your plate in the form of mercury-contaminated seafood. Pregnant women are the most at risk from the toxic effects of

mercury, since the metal is known to concentrate in the fetal brain and can interfere with brain development. Mercury is also known to bind directly to one particular hormone that regulates women's menstrual cycle and ovulation, interfering with normal signaling pathways. In other words, hormones don't work so well when they've got mercury stuck to them! The metal may also play a role in diabetes, since mercury has been shown to damage cells in the pancreas that produce insulin, which is critical for the body's ability to metabolize sugar.

How to avoid it? For people who still want to eat (sustainable) seafood with lots of healthy fats but without a side of toxic mercury, wild salmon and farmed trout are good choices.

❖ **The perfluorinated chemicals (PFCs)** used to make non-stick cookware can stick to you. Perfluorochemicals are so widespread and extraordinarily persistent that 99 percent of Americans have these chemicals in their bodies. One particularly notorious compound called PFOA has been shown to be "completely resistant to biodegradation." In other words, PFOA doesn't break down in the environment – ever. That means that even though the chemical was banned after decades of use, it will be showing up in people's bodies for countless generations to come. This is worrisome, since PFOA exposure has been linked to decreased sperm quality, low birth weight, kidney disease, thyroid disease and high cholesterol, among other health issues. Scientists are still figuring out how PFOA affects the human body, but animal studies have found that it can affect thyroid and sex hormone levels.

How to avoid it? Skip non-stick pans as well as stain and water-resistant coatings on clothing, furniture and carpets.

❖ **Organophosphate pesticides.** Neurotoxic organophosphate compounds that the Nazis produced in huge quantities for chemical warfare during World War II were luckily never used. After the war ended, American scientists used the same chemistry to develop a long line of pesticides that target the nervous systems of insects. Despite many studies linking organophosphate exposure to effects on brain development, behavior and fertility, they are still among the more common pesticides in use today. A few of the many ways that organophosphates can affect the human body include interfering with the way testosterone communicates with cells, lowering testosterone and altering thyroid hormone levels.

How to avoid it? Buy organic produce that have the fewest pesticide residues. Use "[dirty dozen, clean fifteen](#)" guide.

❖ **Glycol Ethers.** Shrunken testicles: Do we have your full attention now? This is one thing that can happen to rats exposed to chemicals called glycol ethers, which are common solvents in paints, cleaning products, brake fluid and cosmetics. Worried? You should be. The European Union says that some of these chemicals “may damage fertility or the unborn child.” Studies of painters have linked exposure to certain glycol ethers to blood abnormalities and lower sperm counts. And children who were exposed to glycol ethers from paint in their bedrooms had substantially more asthma and allergies.

How to avoid it? Start using clean household and personal care products. Avoid products with ingredients such as 2-butoxyethanol (EGBE) and methoxydiglycol (DEGME).

Take Action

It's easy to become overly anxious about the amount of toxins to which we are exposed to every day. But who wants to live in a bubble? While it's nearly impossible to completely eliminate these toxic compounds from our lives, we can educate ourselves in ways to minimize our exposure to these compounds and how to support the body in metabolizing and eliminating toxins. Avoiding hormone-disrupting compounds begins simply with the choices we make at home and the store, increasing the demand for safer alternatives.

Normally, our bodies are equipped to metabolize and eliminate toxins through the process of detoxification. But when we are daily bombarded with so many chemicals from so many sources, our bodies can become overburdened. Luckily, we can use diet and supplements to assist our bodies in breaking down toxins and supporting natural hormone balance. Let's detox.

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About Author



Larisa Sharipova is a Medical Doctor, Certified Holistic Health Practitioner, Public Speaker and Author "Listen to Your Body and Regain Your Health".

Dr. Sharipova is a leading expert in natural hormone balancing, stress management, detox and anti-aging. She offers life and virtual private or group health and lifestyle coaching to women. She leads workshops, retreats and cooking classes around the world.

After healing herself and enhancing her own wellbeing, Larisa is very excited to share her knowledge with women who want to achieve their happiness and health goals through nutrition and lifestyle modification. She guides her clients to the best natural ways of building a healthy mind and healthy body that will lead them to a successful and fulfilled personal and professional life. She helps them to create a completely personalized “roadmap to optimal wellbeing” that suits their unique body type and lifestyle, according to their preferences, and goals.

When Larisa is not coaching a client, speaking, making a new healthy dish or creating chocolate, you can find her doing yoga, reading a book or enjoying the time with her family.

Larisa's mission is to support and empower one million women to transform their lives. By doing so, to change the world to a better place where love, health and happiness are priorities.

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