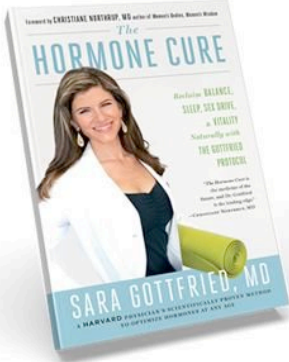


A HARVARD PHYSICIAN'S SCIENTIFICALLY PROVEN METHOD TO OPTIMIZE HORMONES AT ANY AGE



## The HORMONE CURE

Reclaim BALANCE, SLEEP, SEX DRIVE & VITALITY  
Naturally with THE GOTTFRIED PROTOCOL

SARA GOTTFRIED, MD



### Endocrine Disruptors

Xenoestrogens are chemicals that can mimic estrogen. (*Xeno* means “foreign.”) These are synthetic chemicals that have an estrogen-like reaction in the body. They come from artificial chemicals that you get exposed to in your daily life, such as plastics in the environment. Think of them as uninvited guests at a costume party. They act like all the other guests, drinking and chatting convivially, but they are really party crashers who will disrupt the whole affair when they take off their masks.

Yet the problem is not only that they are crashing your endocrine party. Xenoestrogens are stored in fat tissue for decades, and your greatest concentration of fat is usually your breasts. When xenoestrogens bind to your estrogen receptors, they can activate some, such as those in the breast, and block others, such as those in the bone. Recall that receptors are like the locks on a cell’s nucleus. When estrogen passes from the blood into the cells, it attaches to one of two types of estrogen receptors to trigger a particular task, such as stimulating breast-cell growth or slowing bone loss.

Lengthened exposure to estrogen creates a significant risk factor for breast cancer. Recently, flame retardants such as polybrominated biphenyls have been linked to estrogen disruption and a higher rate of abnormal Pap smears.<sup>i</sup> (footnote 14)

Xenoestrogens are known endocrine disruptors. They interrupt the action of natural, endogenous hormones, with reproductive and developmental consequences. Just living our normal lives, we are exposed to more than 700 of these creepy chemicals; they can be found in toothpaste, deodorant, sunscreen, food preservatives, the lining of cans that hold food, and many kinds of plastic.

Be wary of your cosmetics: One report describes a woman who developed both breast and endometrial cancer, after using the same estrogen-containing cosmetic cream for 75 years.<sup>ii</sup> The same researchers tested 16 other commercially available facial moisturizers and found that six of them contained estrogens. Your quest for youthful looks may have the opposite effect, causing excess estrogen to enter your body through your moisturizer.

Since the 1990s, menarche (onset of menstruation), has been occurring in the United States at younger and younger ages. Researchers have spent many years and many dollars trying to figure out why. You guessed it: xenoestrogens have been clearly implicated in the early onset of menstruation and puberty.<sup>iii</sup>

Xenoestrogens are not just disrupting women's hormonal balance, they are also wreaking havoc on men's sperm count and prostate cancer rates. Moobs (man boobs)? Yes, estrogen dominance in men—estrogen out of balance with testosterone—leads to less muscularity and more fat deposits, including at the breasts and love handles.

This is not some conspiracy theory. Study after study shows that xenoestrogens can cause high estrogen.

Estrogen pollution doesn't affect only humans; animals exposed to estrogens also suffer the consequences. Scientists have noted profound changes from the rising load of xenoestrogens in our oceans from man-made waste.<sup>iv</sup> There are documented cases of polar bears with hermaphrodite offspring; seals with increased uterine fibroids, or benign growths of the uterine muscle; male fish and turtles with female characteristics and genital confusion.

As Carl Pope, former executive director of the Sierra Club, remarked, *“One of the most disturbing facts I've heard in the last few years is the new scientific evidence showing that Arctic people who rely on traditional diets—fish and marine mammals—are experiencing a world without baby boys. Well, not quite—but twice as many girls are being born, because male fetuses are weaker, and baby boys cannot survive the level of PCBs, mercury, and other toxins that find their final home in the Arctic.”*

Just to maintain perspective, normally in the United States, slightly more baby boys than girls are born, and we are not yet seeing an impact on gender beyond the Arctic. However, we are beginning to face an environmental crisis with our biochemistry and neuroendocrine balance.

If you discovered from the questionnaire that you have high estrogen, don't panic. You can learn what the most common xenoestrogens are and find ways to avoid them. Among the hundreds of xenoestrogens lurking in the environment, two of the most common—and the most damaging—are bisphenol-A and phthalates.

**Bisphenol-A (BPA).** You might have seen someone in your yoga class carrying a water bottle with a sticker claiming that it is “BPA free.” She isn't being holier than thou. BPA is a synthetic molecule used to make hard, polycarbonate plastics and some epoxy resins. Among the many places BPA occurs are water bottles and some medical devices. Although manufacturers have stopped using it in baby bottles, the FDA outlawed BPA in baby bottles and children's drinking cups only in July 2012.

Perhaps most insidiously, it is used to coat the inside of food cans. A few years ago, the Environmental Working Group (EWG.org) published a pivotal study demonstrating that BPA leaked from canned-food linings into *more than half* the canned foods and drinks randomly purchased at supermarkets in the United States. For some reason, the worst offenders were chicken soup and canned ravioli.<sup>v</sup> Not a very comforting fact about your favorite comfort foods.

BPA exposure is ubiquitous. In one study, BPA was documented in 93 percent of Americans older than six years of age.<sup>vi</sup> Despite the mounting and incredibly convincing evidence, some people still argue that there's no connection between environmental toxins and our health, and that it's all environmentalist hysteria. Extensive research has shown that high BPA levels in the blood have been associated with cardiovascular disease and diabetes, as well as with abnormal elevation of liver enzymes.<sup>vii</sup> Elevated BPA has been linked to higher cytomegalovirus antibody levels, meaning that the immune system is less able to battle chronic infections.<sup>viii</sup>

Furthermore, BPA disrupts your natural hormones, including production of estradiol in the ovary.<sup>ix</sup> By interfering with estradiol's protective effect against colon-cancer growth—the estradiol-induced activation of the apoptotic cascade, or programmed cell death—BPA exposure has been linked to an increased risk of colon cancer.<sup>x</sup>

BPA has been known to disrupt estrogen receptors since the 1930s. In Canada, the European Union, and now the United States, BPA is banned from baby bottles.

**Phthalates.** Like BPA, phthalates are industrial chemicals. Used in soft, flexible plastics and in polyvinyl chloride (PVC) products, they are everywhere in modern life. They're found in nail polish, shampoos, shower curtains, baby toys, vinyl flooring, car interiors, and medical devices, such as IV bags.

Studies on phthalates show a detrimental effect on men, women, and children, including an increased risk of diabetes.<sup>xi</sup> In children, the chemicals influence thyroid-hormone signaling in the developing brain.<sup>xii</sup> Phthalates can affect male reproductive development and thyroid function.<sup>xiii</sup> In women, they can affect the level of reproductive hormones, such as free testosterone, and sex-hormone-binding globulin. One type of phthalate called DEHP blocks estradiol production in the ovary. This causes anovulation, or lack of egg production in the ovaries, which in turn leads to estrogen dominance.<sup>xiv</sup> This can lead to other problems, such as buildup of the uterine lining, with subsequent excessive bleeding and infertility.

**[Sidebar:] Precautionary Principles.** Enough of the doom and gloom. What can we do to reduce our exposure to these frightening chemicals? Here are my top recommendations:

- Reduce your canned food. Make your own fresh beans and soup. It's easier than you think! I use my Crock-Pot almost exclusively for beans and soups. Do your homework. Some companies are introducing BPA-free cans.
- Eat from glass, stainless steel and ceramic containers. Don't drink or eat from plastic containers containing PVC. Find containers labeled "BPA free" and use them when glass or other, safer options aren't available.
- If you must use food from a plastic container or covered in plastic wrap, don't microwave. Use glass or microwave-safe ceramic for microwaving.
- Look for natural alternatives to the cosmetics, nail products, hair products, deodorants, and lotions rife with endocrine disruptors and estrogens. Consult

the Environmental Working Group database, called Skin Deep (<http://www.ewg.org/skindeep/>), for safe cosmetics. Avoid sodium lauryl sulfates, parabens, formaldehyde, fragrance, and hydroquinone.

- When you walk into your home, remove your shoes. This is not some generic Zen advice. After walking on lawns and public gardens, you will carry pesticides and other endocrine disruptors into your home.
- Buy shoes made from natural materials. When you wear plastic shoes, such as flip-flops and clogs, the chemicals can be absorbed into sweaty feet.
- Wear organic-cotton clothing to prevent exposure to the pesticides and insecticides used in growing cotton. Dichlorodiphenyltrichloroethane (DDT), a xenoestrogen banned in the United States in 1972, has been detected in cotton imported from other countries. Unlike the European Union, the United States does not regulate the quality and safety of imported fabrics. *Buyer beware.*
- Swap your pesticide-ridden sheets and mattresses for organic. As Dr. Alejandro Junger, MD, has said about sleeping on conventional mattresses covered with conventional sheets, “Sleep in a cloud of formaldehyde, and insomnia, not to mention headaches, asthma, and skin rashes, can likely result.”<sup>xv</sup>

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