



ENDOCRINE DISRUPTERS

**How Environmental
Chemicals Are Threatening
Reproductive Health in
Women and Men**

Hormones are chemical messengers that signal changes in cells. They work by attaching to receptor sites, either on the cell membrane or inside the cell, to regulate growth, metabolism, reproduction and other functions. Endocrine disrupters are chemicals that attach to these receptor sites, interfering with the normal function of the glandular system.

By altering the action of the body's hormones, endocrine disrupters can cause cancer, birth defects, developmental disorders in children and alterations in the normal sexual development of adolescents. Specifically, these chemicals have been linked with learning disabilities in children such as ADHD, and cancers of the breast, prostate, thyroid and other organs. These chemicals can also have feminizing effects on males and masculinizing effects on females. They may cause infertility, early development of breasts in girls and male breast development. They may also play a role in health problems like uterine fibroids and fibrocystic breast disease in women and prostate enlargement (BPH) in men.

Xenoestrogens

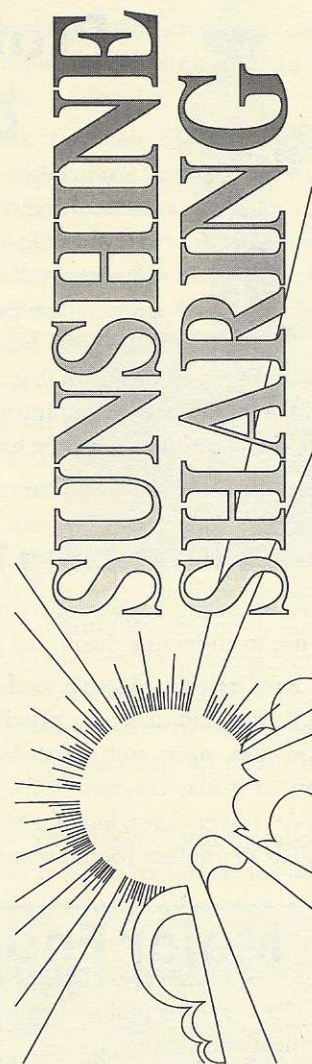
Xenoestrogens are hormone disrupters that mimic the human hormone estrogen. "Xeno" is derived from a Greek word that means "strange" or "foreign," so a xenoestrogen is a foreign (or unnatural) estrogen. There are also compounds in plants that mimic estrogen, known as phytoestrogens. "Phyto" referring to plants.

Tissues in the female breasts, uterus and vagina as well as the male prostate gland contain estrogen receptors. When xenoestrogens bind to these receptors they can overstimulate them, causing abnormal tissue growth. This growth may take the form of fibroids in the breasts or uterus, prostate enlargement, endometriosis or cancers of the breast or prostate.

Medical researchers D. L. Davis, H. L. Bradlow, M. Wolff, T. Woodruff, D. G. Hoel, and H. Anton Culver recently acknowledged the link between increased rates of breast cancer and xenoestrogen exposure. According to the study's abstract:

Changes in documented risk factors for breast cancer and rates of screening cannot account for recent increases in incidence or mortality. Established risk factors for breast cancer, including genetics, account for less than 30% of cases. Most of these risk factors can be linked to total lifetime exposure to bioavailable estrogens. Experimental evidence reveals that compounds such as some chlorinated organics, polycyclic aromatic hydrocarbons (PAHs), triazine herbicides, and pharmaceuticals affect estrogen production and metabolism and thus function as xenoestrogens. Many of these xenoestrogenic compounds also experimentally induce mammary carcinogenesis. ["Medical hypothesis: xenoestrogens as preventable causes of breast cancer," Abstract, Environmental Health Perspectives, Office of the Assistant Secretary for Health, Department of Health and Human Services, Washington, DC.]

In this issue of *Sunshine Sharing*, we'll examine the harmful effects of various xenoestrogens and other endocrine disrupters. We'll also tell you how to reduce your exposure to these chemicals and rid your body of these hormonal imposters.



Your guide to better health the natural way.

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Important Notice

The information in *Sunshine Sharing* is for educational purposes only and should not be used to diagnose and treat diseases. If you have a health problem, we recommend you consult a competent health practitioner before embarking on any course of treatment.

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Protecting Yourself from the Harmful Effects of Endocrine Disrupters

Synthetic xenoestrogens and other endocrine disrupters have become part of everyday life. They are found in the food you eat, in the plastics that you use and in personal care products. (See *Major Endocrine Disrupters* below.) They have become so prevalent that it is nearly impossible to avoid them. You can, however, minimize your exposure to them and reduce the harmful effects they have on your body.

Here are some steps you can take.

Minimizing Exposure

The following suggestions can help you minimize your exposure to endocrine disrupting chemicals.

1. Eat Organic. Organic foods have lower levels of agricultural chemicals in them. So, purchase organic foods, especially organic eggs, meat and dairy. Also avoid eating farm-raised salmon, as it may contain PCBs. Eat wild-caught salmon instead. At the very least, look for hormone-free animal products and wash all produce (both organic and non-organic) in water

with a few drops of **Sunshine Concentrate** (or other natural soap) to remove chemicals like pesticides. Rinse thoroughly in pure water after washing. Also avoid packaged foods in favor of fresh foods as modern food packaging often contains endocrine-disrupting chemicals.

2. Minimize Exposure to Chemicals in Plastic.

All plastics have some endocrine disrupting chemicals in them, but the softer the plastic, the greater the problem. Avoid putting hot food in plastic containers as it causes them to leach chemicals. Don't microwave food in plastic containers either for the same reason. Avoid drinking water from plastic bottles, especially if they have been allowed to get hot by being left in the sun or a hot car. Wherever possible use glass or ceramic containers for storing food and water. Also limit the amount of canned foods you use, since most metal cans have a BPA lining (see below).



3. Avoid Pesticides: Avoid using chemical pesticides in your home and yard. If you have pets, avoid using commercial flea

Major Endocrine Disrupters

Here are some major chemicals that appear to act as endocrine disrupters.

Bisphenol A (BPA) is commonly found in plastic bottles, plastic food containers, dental materials, and the linings of metal food and infant formula cans. A known endocrine disrupter, studies have linked BPA with elevated rates of diabetes, cancer of the breast and prostate, decreased sperm counts, early puberty, obesity and neurological problems.

Alkylphenols are used as precursors to the detergents, as additives for fuels and lubricants and as chemical building blocks in making fragrances and fire retardant materials. They are found in tires, adhesives, coatings and rubber products. They are mild xenoestrogens.

DDT was used extensively as a pesticide for many years. Rachel Carlson's book, *Silent Spring*, alerted the general public to the harmful effects DDT was having on the environment in the early 1960s. DDT concentrates as it goes up the food chain, so carnivores have the highest levels. It was making the eggshells of large predatory birds so thin that they would break when the mother sat on the nest. Although it has been banned for use in most countries in the world, it is a persistent organic pollutant, meaning it does not readily break down in the environment. It is one of the chemicals believed responsible for a world-wide decrease in male fertility.

PCBs are a class of chlorinated compounds used as industrial coolants and lubricants. Exposure increases the risk of cancers

of the skin, liver and brain. They have been shown to be toxic to the liver and thyroid and to increase the risk of diabetes and obesity. Like DDT they are persistent organic pollutants that may be causing birth defects and infertility in animals.

PBDEs are found in flame retardants and are structurally similar to PCBs. They have the potential to disrupt thyroid hormones and contribute to neurological problems and learning disabilities. They have been banned in Europe.

Phthalates are found in some soft toys, flooring, medical equipment, cosmetics and air fresheners. They may be causing problems with the male reproductive system.

Perfluorooctanoic acid (PFOA), used in non-stick coatings, alters thyroid hormone function and semen quality. It may also cause early development of breasts and puberty in girls.

Other potential disrupters include a number of pesticides, the most common being *organochlorine* insecticides, the herbicide *atrazine* and the fungicide *vinclozolin*.



killers. Many of these chemicals are endocrine disrupters. Today, there are many products you can obtain on the internet that will allow you to safely control pests without these potentially harmful chemicals.

4. Use Natural Household Products. Use cosmetics, toothpastes, soaps, shampoos and other personal care products that are all natural and/or made with certified organic ingredients wherever possible. Also use natural and/or organic household cleaning supplies. Avoid sunscreens that contain parabens or phthalates. Mineral-based sunscreens are a safer choice. Avoid using nail polish and nail polish removers with acetone. Finally, don't spray commercial air fresheners inside your home. Use natural essential oils as air fresheners instead.

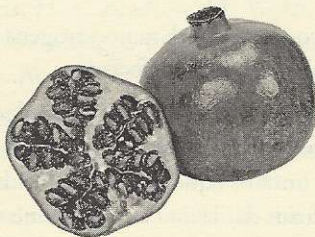
5. Purifier Your Air and Water. Purify your drinking water using **Nature's Spring** or other water treatment appliances. Also invest in a water filter that filters chemicals out of water in your home, or at least in your shower. If you live in an area with a lot of air pollution, consider using a **Boomerang Air and Surface Sanitizer** to remove airborne pollutants as well.

Dietary Protection

Many plants contain compounds that mimic estrogen known as phytoestrogens. Phytoestrogens help balance the body's estrogen levels by binding to the same estrogen receptor sites that xenoestrogens do. When a receptor site is already occupied by a phytoestrogen, xenoestrogens can't attach to it. Because the effects of phytoestrogens are many times weaker than xenoestrogens (or even the body's own estrogens) they block excess estrogenic activity.

Flax is a rich source of secoisolariciresinol diglycoside (SDG), a compound that the body converts into phytoestrogens called lignans. Lignans appear to be especially protective against breast cancer. One study found that women with the highest amount of dietary lignans had a 17 percent lower risk of developing breast cancer. Tasty ways to use flax include sprinkling ground flaxseeds over yogurt, adding them to smoothies, or stirring them into cooked whole grains. You can also take **Flax Seed Oil with Lignans**.

Another food that blocks estrogenic activity is pomegranate. It can help block estrogenic activity by as much as 80 percent,



Additional Help and Information

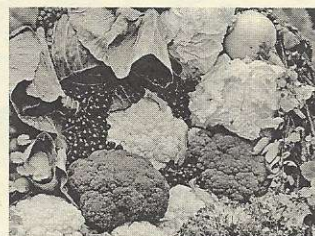
For more information about endocrine disrupting chemicals and how to protect yourself from their harmful effects, contact the person who gave you this newsletter. You can also consult the following sources:

The Comprehensive Guide to Nature's Sunshine Products by Tree of Light
Estrogen Dominance: Hormonal Imbalance of the 21st Century by Dorine Lam and Michael Lam
Man Down by Priaperos Rakehell

while helping to prevent several types of breast cancer cells from multiplying. Another study found that pomegranate had similar effects on prostate cancer cells.

Soybeans are well known for their high phytoestrogen content, which may be too high for the health of the male reproductive system. However, nearly all beans and peas contain phytoestrogens, as do whole grains. Many dark green leafy vegetables also contain phytoestrogens that can reduce the risk of estrogen-dependent cancers and other harmful effects of xenoestrogens.

There are other ways that foods can help protect us from endocrine disrupters like xenoestrogens. Vegetables from the mustard family (Cruciferae), also known as cruciferous vegetables, contain sulphur compounds that help the liver break down excess estrogens and balance hormones. Broccoli, cabbage, kale, brussel sprouts and other cruciferous vegetables are rich in indole-3-carbinol, which the body converts to diindolylmethane (DIM). DIM then induces certain enzymes in the liver to block the production of toxic estrogens and step up production of beneficial natural estrogens.



Indole-3-Carbinol is also available as a nutritional supplement. It is a good supplement to consider for anyone who has had breast cancer or has a family history of breast cancer.

Helpful Supplements

There are other supplements, besides Indole-3-Carbinol, that can help protect us from the endocrine disrupters that are so prevalent in today's society. Since it's your liver's job to break down chemicals you are exposed to, including xenoestrogens and other endocrine disrupters, supplements that support liver detoxification can be very beneficial.

Milk Thistle Combination is a great formula to take if you are exposed to any kind of environmental toxin on a regular basis. It contains a standardized extract of milk thistle, which has been shown to protect the liver from damage due to chemical toxins. It also contains other nutrients like N-acetyl cysteine and vitamin C, which enhance liver detoxification pathways that rid the body of chemicals.

Enviro-Detox is another formula that helps the liver deal with chemicals. It contains many herbs used traditionally to "purify the blood" which stimulate liver detoxification and help remove chemicals from the body.

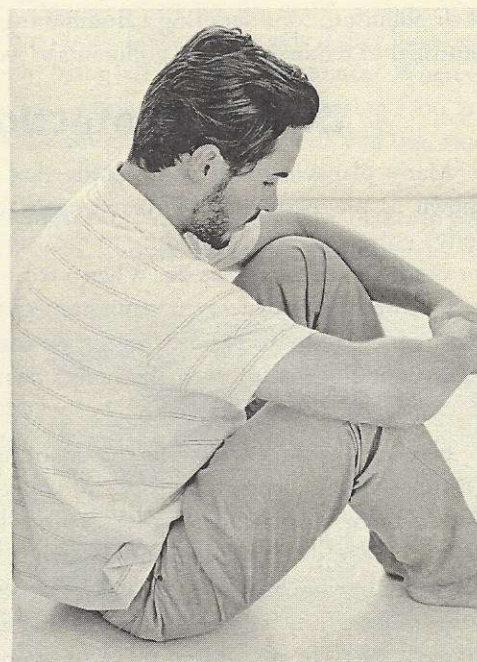
Given the number of chemicals most people are exposed to, a periodic cleanse is a good idea. Many people find their health improves when they do a two week cleansing program once or twice a year. One of the best cleanses for assisting the liver in getting rid of chemicals is the **Tiao He Cleanse**. When doing the cleanse it also helps to stay away from all refined and pro-

Continued on next page

Endocrine Disrupters

Xenoestrogens and other chemicals that interfere with hormones are causing reproductive and general health problems in both men and women

Learn how to protect yourself in this issue of Sunshine Sharing



Continued from page three

cessed foods and eat mostly fresh fruits and vegetables. It's also important to drink plenty of water anytime you do a cleanse.

A supplement that can help protect women who are concerned about breast cancer is **Breast Assured**. This supplement contains flax and pomegranate (mentioned earlier), which block xenoestrogens from overstimulating breast tissue. It also contains nutrients that boost the immune system and inhibit the formation of substances that encourage the growth of cancer.

Xenoestrogens contribute to a problem called estrogen dominance in women. Too much estrogen in relationship to progesterone can make women cranky, irritable and moody before periods. It can also cause heavy menstrual bleeding and menstrual cramps. Using **Pro-G-Yam cream** to increase progesterone levels can help to balance out a woman's hormones, health and mood. Progesterone, like phytoestrogens,

competes with xenoestrogens for receptor sites, which reduces their harmful effects.

Another promising supplement in helping reduce the harmful effects of xenoestrogens is **Equol**. This supplement contains equol, which is produced by bacteria in the intestines from daidzein, an isoflavone with phytoestrogenic properties. Equol may have beneficial effects for men with prostate problems, menopausal symptoms in women and may help reduce the risk of estrogen-dependent cancers.*

In men, equol has the ability to bind to DHT (dihydrotestosterone), a metabolite of testosterone that stimulates prostate growth. As men age, DHT can cause the prostate to enlarge, a condition known as benign prostatic hyperplasia (BPH). Equol also has some ability to block xenoestrogens and preliminary research suggests it can reduce the risk of estrogen-dependent cancers in both men and women.