



Major Sources of Chemical Exposure and How to Reduce Your Exposure

Although research studies on these environmental exposures have not found clear effects on human health, concern about these chemicals is growing because they stay in the environment and may act like or interfere with hormones in the body. Hormones influence many bodily functions, including the reproductive system and growth and development in children.

What	Where	How to Reduce Your Exposure
Cotinine <i>(a Nicotine metabolite)</i>	Tobacco smoke exposure, second hand smoke	Commit to a smoke-free home and car. Don't smoke around children and don't allow others to smoke around children. For more information: http://www.cancer.gov/cancertopics/factsheet/Tobacco/ETS http://www.epa.gov/smokefree/healtheffects.html
Flame Retardants (PBDEs) <i>Example:</i> <i>Polybrominated diphenyl ethers (PBDEs)</i>	Household dust (for example from foam in furniture and carpet padding); hard plastics used in electronics and cars; foam in cars, contaminated water and food.	If you can, replace older upholstered and foam furniture that may be breaking down. Use a vacuum with a HEPA filter to reduce dust and look for products that are organic or 100% natural. For more information: http://www.ewg.org/healthyhometips/fireretardants
Parabens <i>Example:</i> <i>Methylparaben and Propylparaben</i>	Cosmetics and personal care products including lotions and shampoos; used as preservative, can be used in common products such as drugs and food.	Look for products labeled Paraben Free or check labels. Reduce the number of cosmetics and personal care products you use. For more information: http://www.cosmeticsdatabase.com/
Perfluorochemicals (PFCs) <i>Example:</i> <i>Perfluorooctanoic acid (PFOA)</i>	Contaminated air and water, industrial sources, used in making non-stick pans and utensils, coating on food packaging especially greasy or fast foods	Avoid non-stick pans and kitchen utensils. Use stainless steel or cast iron instead. Cut back on how much greasy packaged or fast foods you eat. For more information: www.ewg.org/healthyhometips/
Pesticides <i>Example:</i> <i>Dichlorodiphenyldichloroethylene (DDE, a metabolite of DDT)</i>	High-fat foods such as milk products, eggs, meat and some fish.	Although some pesticides were banned in the U.S., and limited in most countries to disease control since 2004, banned ones still remain in our environment. We are exposed to them from foods that have a high fat content such as meat, dairy and some fish. (See about PCBs). To reduce your exposure to currently used pesticides, wash and peel fruits and vegetables, buy organic food more often, buy foods grown with fewer pesticides, support local organic farms, don't use pesticides to grow your own food, try non-toxic pest control methods. For more information: www.ewg.org/healthyhometips/

What	Where	How to Reduce Your Exposure
Phenols <i>Example: Bisphenol A (BPA) and Triclosan</i>	Plastic bottles, food can liners, water pipes, dental sealants, and anti-bacterial soaps	Don't drink out of plastic bottles, eat fewer canned foods, buy BPA-free products, and minimize use of anti-bacterial soaps. For more information: www.ewg.org/healthyhometips/
Phthalates <i>Example: Diethylhexyl phthalate (DEHP)</i>	Plastics, PVC, children's toys, cosmetics such as nail polish, hair spray, and fragrances	Use less plastic, buy fewer plastic toys, use fewer cosmetics with phthalates in them. Don't microwave food in plastic and don't let kids chew on plastics. For more information: www.ewg.org/healthyhometips/
Polychlorinated Biphenyls (PCBs) <i>Example: PCB 99 Dioxin-like chemicals</i>	High-fat foods such as milk products, eggs, meat, and some fish	Limit intake of high-fat foods (such as red meat) and fish you eat that are high in PCBs. Fish high in PCBs include salmon, striped bass, farmed rainbow trout and oysters. For more information: www.edf.org/seafood
Phytoestrogens <i>Example: Isoflavones such as Genistein or Daidzein; Enterolactone (a lignan metabolite)</i>	Soybeans, tofu, miso, chickpeas, alfalfa, peanuts, flax seeds, sesame seeds and other non-processed foods* * Phytoestrogens are natural, estrogen-like compounds found in plants.	Phytoestrogens may delay onset of puberty in adolescents. It is recommended you eat more foods high in phytoestrogens. For more information: http://www.zerobreastcancer.org/research.html#6

For more detailed information about these chemicals, please visit the websites listed below:

- Zero Breast Cancer <http://www.zerobreastcancer.org/research.html#6>
- Centers for Disease Control: National Report on Human Exposure to Environmental Chemicals www.cdc.gov/exposurereport/
- Environmental Working Group <http://www.ewg.org/healthyhometips/>

The Bay Area Breast Cancer and the Environment Research Center (BABCERC) is one of four centers nationwide that studies the environmental causes of breast cancer by focusing on mammary gland development during puberty when the breast may be especially vulnerable to environmental influences. The Center is based at the University of California, San Francisco, under the leadership of Dr. Robert A. Hiatt, Director of Population Sciences, UCSF Helen Diller Comprehensive Cancer Center. The Center includes a basic science project, an epidemiology project, and the community outreach and translation core and is a collaborative project involving University of California, San Francisco, Kaiser Permanente Northern California, California Department of Public Health and Zero Breast Cancer. More information about the BABCERC can be found on its Web site: <http://bayarea.bcerc.org>