



Take the **toxic nation** Challenge Make Your Home a Healthy Home!



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Living Room

Check	Avoid	Use Instead
<input type="checkbox"/>	Carpets that contain stain repellents and brominated flame retardants	Organic or natural fibre carpets, such as wool, cotton, rattan or jute
<input type="checkbox"/>	Upholstery and furniture that are treated with stain repellents and brominated flame retardants	Furniture without stain repellents or brominated flame retardants
<input type="checkbox"/>	Curtains that are treated with stain repellents and brominated flame retardants	Curtains without stain repellents or brominated flame retardants
<input type="checkbox"/>	PVC-containing mini-blinds from Mexico or Asia (they may contain lead)	Blinds made in Canada
<input type="checkbox"/>	Chemical air fresheners	Pot pourri, baking soda, or just simply open the windows. You can also try homemade air freshening recipes (see below for list of websites).

Another great way to reduce your toxic exposure is to have lots of house plants. House plants clean air by absorbing chemicals and converting them into food and energy. Top air-cleaners include philodendron, Boston fern, peace lily and English ivy. It is recommended that homes have 2-3 houseplants per 100 square feet of room space.

Kitchen

Check	Avoid	Use Instead
<input type="checkbox"/>	Vinyl floors	Wooden, ceramic, marble, cork or bamboo flooring
<input type="checkbox"/>	Tinned food (the cans are lined with an epoxy resin that may leach bisphenol A)	Fresh, frozen or dried food
<input type="checkbox"/>	Plastic food wrap (may contain bisphenol A)	Aluminium foil, wax paper, food-grade reusable containers.
<input type="checkbox"/>	PVC and polycarbonate plastic items (bottles, containers, etc). These plastics are labelled # 3 and 7. (The number is usually found on the bottom of the item inside a recycle symbol)	Glass containers, or plastics # 1, 2, 4 and 5
<input type="checkbox"/>	Microwaving food in plastic wrap, or plastic containers that are not marked microwave safe	Glass, ceramic and plastic containers that are labelled microwave safe.

Kitchen continued...

<input type="checkbox"/>	Produce treated with pesticides	Organic food
<input type="checkbox"/>	Non-stick cookware	Cast iron and stainless steel cookware
<input type="checkbox"/>	Ceramic glazed cookware (may contain cadmium and lead)	Cookware made of glass, cast iron, and terra cotta without lead glaze
<input type="checkbox"/>	Crystal tableware (may contain lead)	Glass tableware.
<input type="checkbox"/>	Cleaning products with harsh chemical ingredients and synthetic fragrances (often strengthened with phthalates)	Fragrance-free and biodegradable products, and homemade all-purpose cleaner. <i>The Guide to Less Toxic Products</i> lists safe products and homemade recipes.
<input type="checkbox"/>	Antibacterial soaps, dishwashing liquids and other cleaners that contain triclosan	Non-antibacterial products

Bedroom

Check	Avoid	Use Instead
<input type="checkbox"/>	Sheets that are wrinkle-resistant (they contain formaldehyde), or made with pesticide-treated cotton.	Sheets that are 100% cotton, hemp, linen or wool, and preferably organic and unbleached.
<input type="checkbox"/>	Moth-proof wool blankets (they contain pesticides)	Wool blankets without a moth-proofing treatment
<input type="checkbox"/>	Mattresses with brominated flame retardants, plastic, or foam.	Mattresses with cotton stuffing or cotton padding around the foam core. You can order a mattress without flame retardants with a letter or prescription from your doctor. If a new mattress is not an option, wrap your mattress in an untreated 100% cotton cloth barrier sheet with a high thread count (250 or more).
<input type="checkbox"/>	Dry clean only clothes (most dry cleaners use PERC)	Machine washable clothes
<input type="checkbox"/>	Clothing with stain repellants, wrinkle-resistant treatments (they contain formaldehyde), brominated flame retardants, pesticide-treated cotton, or plastic labels.	Organic, unbleached clothing made of cotton, hemp, linen or wool.

Bath Room

Check	Avoid	Use Instead
<input type="checkbox"/>	Cosmetics, toiletries and perfumes with synthetic fragrances (many contain phthalates and other harmful chemicals)	Products from companies that don't use phthalates or toxic chemicals. <i>The Guide to Less Toxic Products</i> provides information on which Canadian products are safe, <i>Skin Deep</i> provides American and European information.
<input type="checkbox"/>	Anti-bacterial toothpaste, toothbrushes and mouthwashes that contain triclosan	Non-antibacterial products
<input type="checkbox"/>	Sanitary products bleached with chlorine, or made of pesticide-treated cotton.	Organic cotton and unbleached sanitary products, and reusable pads and menstrual cups.
<input type="checkbox"/>	Porcelain enamel bathtubs and fixtures (they contain lead)	Acrylic bathtubs, or refinish your porcelain one with a tub refinishing kit (available at hardware stores)
<input type="checkbox"/>	Vinyl shower curtains, and fabric shower curtains with a water-repellant coating	Hemp shower curtains

Just as in the Kitchen, in the bathroom you should avoid using chemical air fresheners or cleaning products that are heavily scented or contain chemical ingredients.

Nursery

Check	Avoid	Use Instead
<input type="checkbox"/>	polycarbonate plastic feeding bottle (identifiable by the #7 marked on the bottom of the bottle inside a recycle symbol)	Breast feeding is best. The next option is bottles made of glass or plastic #1, 2, 4 or 5
<input type="checkbox"/>	Latex rubber nipples	Silicone nipples
<input type="checkbox"/>	PVC-containing toys or soothers.	Non-flexible plastic, wooden, or organic, untreated cotton toys.
<input type="checkbox"/>	Disposable diapers (most contain dyes, fragrances and plastics)	Organic, untreated cotton diapers
<input type="checkbox"/>	Children's clothing with plastic labels or chemical treatments	Organic, untreated cotton or hemp clothing.

Infants are particularly sensitive to toxic chemicals, so play it safe and opt for organic, untreated, toxic-free, natural baby products. Just as in the rest of your house, in the baby's room you should avoid products with synthetic fragrances, anti-bacterial products, disinfectants, and chemical air fresheners. Choose toxic-free upholstery, furniture, carpets and curtains that don't contain brominated flame retardants, stain-repellants or wrinkle-resistant treatments. You may also want to reconsider your redecorating plans—painting and tearing out carpets can fill the baby's room with harmful chemicals, particularly VOCs, which can contaminate pregnant women and infants. If you're stripping paint that is from before 1960 you could also be unleashing dangerous amounts of lead.

Home Office

Check	Avoid	Use Instead
<input type="checkbox"/>	Wood with a toxic finish; and particleboard, fibreboard, and plywood. These woods are used as sub-flooring, wall covering, and in cabinets and furniture for shelving, drawer fronts and furniture tops). Most products made of these wood types contain formaldehyde.	Solid wood with a non-toxic finish, metal, or used furniture (but avoid painted furniture from before 1960, it may contain lead). IKEA has made a commitment to sell products that are free from hazardous substances.
<input type="checkbox"/>	Computers and other electronics with brominated flame retardants.	Electronics from companies that have eliminated PBDEs from their products (i.e. Apple, Dell, Fujitsu Siemens, Hewlett Packard, Hitachi, IBM, Intel, Matsushita/Panasonic (removing all brominated flame retardants from products by March 31, 2006), Motorola, NEC, Philips Semiconductors, Sony and Toshiba)

Just as in the Living room and the rest of your house, in the office you should avoid furniture treated with stain repellants and brominated flame retardants and carpets that emit high levels of VOCs.

Basement

Check	Avoid	Use Instead
<input type="checkbox"/>	Products with toxic chemicals and high-level VOCs. Watch out for paints, varnishes, paint-stripping products, gasoline, glue, adhesives, and solvents	Products that are water-based, plant-oil based, and those that have low-level VOCs. <i>EarthEasy</i> lists non-toxic paints and paint strippers.
<input type="checkbox"/>	Laundry detergents and fabric softeners with synthetic fragrances	Fragrance-free detergent and fabric softeners
<input type="checkbox"/>	Chlorine bleach	Biodegradable, non-chlorine liquid bleach or oxygen bleach powder

Garden

Check	Avoid	Use Instead
<input type="checkbox"/>	CCA pressure treated wood for patios and fences (it has a green tint to it and leaches arsenic)	Non-CCA pressure treated wood, find out more.
<input type="checkbox"/>	Chemical pesticides	Organic gardening methods such as hand-picking weeds, mulching and planting flowers that attract beneficial insects to feast on pest. <i>Toronto's Guide to Natural Lawn and Garden Care</i> and <i>You Grow Girl</i> provide many useful tips.

Links to more information on less-toxic products for your home:

- Homemade Air Freshening Recipes (Michigan State University) <http://web1.msue.msu.edu/msue/imp/mod02/01500631.html>
- Guide to Less Toxic Products (Environmental Health Association of Nova Scotia) <http://www.lesstoxicguide.ca>
- Skin Deep (Environmental Working Group) <http://www.ewg.org/reports/skindeep2/index.php>
- Earth Easy http://eartheasy.com/live_nontoxic_paints.htm
- City of Toronto's Guide to Natural Lawn and Garden Care http://www.toronto.ca/health/pesticides/pdf/natural_lawn_guide.pdf
- You Grow Girl! <http://www.yougrowgirl.com/>

Notes:



ENVIRONMENTAL | DEFENCE

Environmental Defence protects the environment and human health. We research. We educate. We go to court when we have to. All in order to ensure clean air, safe food and thriving ecosystems. Nationwide. Environmental Defence is a national charity.

Environmental Defence
 317 Adelaide Street West, Suite 705
 Toronto, Ontario, M5V 1P9
 Tel: (416) 323-9521
 Fax: (416) 323-9301
 Web: www.environmentaldefence.ca and www.toxicnation.ca

Glossary

Arsenic

Most exposures to the heavy metal arsenic come from wood that is pressure-treated with Chromated Copper Arsenate (CCA), which is found in playgrounds, fences, decks and other constructions. (Manufacturers of CCA wood stopped producing in at the end of 2003, although stores can still sell the wood until the stockpiles are gone). Arsenic is a carcinogen and has been shown to cause lung, skin, bladder, liver, kidney and prostate cancer. Arsenic can also cause blood disorders, cardiovascular diseases, and is a known hormone disruptor that affects metabolism and immune function.

Bioaccumulation

Bioaccumulation is the increase in concentration of a substance in the tissues of a living organism throughout its lifetime. Everyday we are exposed to a mixture of substances through contaminated air, water, food and products. As exposure occurs, certain chemicals that are very slowly metabolized or excreted build up in the tissues of living organisms.

Bisphenol A

Bisphenol A is primarily used to make polycarbonate plastic (recycling # 7) food and beverage containers, plastic food wrap, and epoxy resins that are used to line metal cans for foods, such as cans of soup. Bisphenol A can leach from these products as they age, to be subsequently ingested by people. Recent research has shown that this chemical is an estrogenic hormone disruptor that can cause reproductive damage and birth defects that may lead to prostate and breast cancer in adulthood.

Body burden

Body burden refers to the amount of a chemical, or a number of chemicals, stored in the body at a given time, especially a potential toxin in the body as the result of exposure.

BFRs (brominated flame retardants)

Brominated flame retardants (BFRs) are used to slow the spread of fire in upholstered furniture, mattresses, curtains, carpets and electronics. BFRs contain PBDEs (polybrominated diphenyl ethers), a group of chemicals that are highly persistent and bioaccumulative; they are suspected hormone disruptors and can cause cancer reproductive and developmental disorders. PBDEs are suspected of having particularly damaging effects on the thyroid (which controls brain development), and as a result, PBDEs may cause neurodevelopmental disorders such as learning disabilities and behaviour problems. PBDEs leach from products, and have been detected in house dust, human blood and breast milk.

Cadmium

Cadmium is a heavy metal that comes from both natural and man-made sources. Most exposures to cadmium come from pigments and bake ware, as well as electronic equipment, car parts, batteries, phosphate fertilizer, sludge applications in agriculture and contaminated food. This heavy metal is known to cause lung and prostate cancer, and is toxic to the gastrointestinal tract, the kidneys, and the respiratory, cardiovascular and hormonal systems.

Carcinogen

Any substance that can cause or aggravate cancer.

Formaldehyde

For items in the home, formaldehyde is used to make wrinkle-resistant clothing, glues and adhesives and as a preservative in some paints and coating products. Many types of wood found in construction materials, furniture and cabinetry contain formaldehyde, including particleboard, fibreboard and plywood. Formaldehyde emissions generally decrease as products age; when products are new, high indoor temperatures and humidity can increase the amount of formaldehyde that is released. Formaldehyde is known to cause cancer and is a sensitizer that can cause and aggravate severe allergies. This chemical can also irritate and damage the respiratory system and trigger asthma attacks.

Heavy Metals

Please see arsenic, cadmium, lead, manganese and mercury.

Hormone disruptors (a.k.a. Endocrine disruptors)

Hormone or endocrine disruptors are substances that can interfere with the normal functioning of the hormone system of both people and wildlife in a number of ways to produce a wide range of adverse effects including reproductive, developmental and behavioural problems.

Latex

The production of latex involves the use of nitrosamines and their precursors, which are known to be potent cancer-causing substances. These chemicals are added to increase the strength and elasticity of the final product, such as rubber nipples on baby bottles. Unfortunately, wear and tear can cause rubber nipples to release nitrosamines and their precursors as a baby suckles. Studies show that the precursors actually transform into nitrosamines when they are exposed to saliva.

Lead

Lead is a heavy metal that occurs naturally in the environment and is produced from man-made sources. Most exposures to lead come from lead paint and emissions from industrial facilities like metal smelters. Other sources of exposure include crystal tableware, porcelain enamel and contaminated food. Lead is a suspected carcinogen, a known hormone disruptor, and can damage almost every organ and system in the human body, particularly the nervous system. Lead has been indicated as a cause of decreased mental ability, developmental delays, behavioural disorders and reproductive defects.

Manganese

Manganese is a naturally occurring metal that is found in many types of rocks. In addition to natural sources, human-made sources of manganese include the burning of fossil fuels, emissions from the steel industry, and the use of synthetic manganese compounds in pesticides. Although manganese is an essential element necessary for good health, at elevated levels it can become a neurotoxin.

Mercury

Some mercury occurs naturally in the environment, but the major sources of mercury pollution are coal-fired power plant emissions and emissions from mining and manufacturing processes, as well as mercury-containing products, such as thermometers, batteries, and fluorescent light tubes. When inorganic mercury enters the air from these human sources it is then deposited in soil and water, where micro organisms transform inorganic mercury into organic mercury compounds, such as methylmercury. Methylmercury can bioaccumulate in the fatty tissues of living organisms, particularly fish living in polluted waters, and the people who then eat those fish. Mercury is a recognized developmental toxin, and it is also a suspected hormone disruptor, neurotoxin, reproductive toxin and respiratory toxin.

Neurodevelopmental Disorders

Neurodevelopmental disorders are disabilities in the functioning of the brain that affect a child's behaviour, memory, or ability to learn. These effects may result from exposure of the fetus or young child to certain environmental contaminants, though current data do not indicate the extent to which environmental contaminants contribute to overall rates of neurodevelopmental disorders in children. A child's brain and nervous system are vulnerable to adverse impacts from pollutants because they go through a long developmental process beginning shortly after conception and continuing through adolescence.

Neurotoxins

Exposure to chemical substances can cause adverse effects on the nervous system (neurotoxicity). Chemicals toxic to the central nervous system can induce confusion, fatigue, irritability, and other behavioural changes. Exposure to methyl mercury and lead cause central nervous system toxicity, and can also cause degenerative diseases of the brain (encephalopathy). Chemicals toxic to the peripheral nervous system affect how nerves carry sensory information and motor impulses from the brain to the rest of the body.

PERC (perchloroethylene)

The most common form of dry cleaning uses a chemical called perchloroethylene (or "PERC"). Ninety percent of the industry uses PERC, and dry cleaning accounts for between one-third and one-half of all the PERC used in Canada. Typewriter correction fluid and shoe polish are among the consumer products that contain PERC. PERC has been designated under the Canadian Environmental Protection Act as a persistent, bio-accumulative chemical that is toxic to the environment. Short term exposure to PERC can cause adverse health effects on the nervous system. Contact with PERC in its liquid or vapour form can irritate the skin, eyes, nose and throat. Long term exposure to PERC can cause liver and kidney damage. PERC has been shown to cause cancer in laboratory animals that repeatedly breathed PERC in air.

Perfluorinated chemicals

Perfluorinated chemicals are widely used for their resistance to environmental breakdown in a range of consumer products. PFOS (perfluorooctane sulfonate) is used as a stain repellent on clothing and other fabric products, such as carpets. This chemical is also used in food packaging, particularly for fast food and microwave popcorn bags. Another perfluorinated chemical of concern is PFOA (perfluorooctanoic acid), which is used to make Gore-tex and Teflon products, such as non-stick cookware. Although much more research is needed on these chemicals, existing studies have shown that perfluorinated chemicals are extremely persistent. Studies also suggest that these chemicals can cause cancer and disrupt hormones.

Persistent

Compounds that are not easily broken down in the environment and therefore stay in the environment for a very long time are known as 'persistent'.

Pesticides

There are many different types of pesticides, insecticides, fungicides and other chemical treatments used in agriculture, lawn care and for the treatment of pests such as mosquitoes and moths. Organochlorine pesticides (OPs) are mainly used on agricultural crops—meaning on the fruits and vegetables we all eat. These chemicals are highly toxic and persistent in the environment, and as a group of chemicals have been shown to cause cancer, skeletal abnormalities and reproductive, neurological and immune system damage. Organophosphate insecticides, like parathion, diazinon, malathion, and chlorpyrifos, have a variety of applications for lawns, agricultural crops, mosquito and pest control. These chemicals are known neurotoxins, and have serious adverse effects on the development of the brain. Chronic exposure causes damage to the reproductive system resulting in reduced fertility.

Phthalates

Phthalates are a group of man-made chemicals that are widely used as plasticizing additives in a broad range of consumer products, including cosmetic and personal care products, PVC consumer products and construction materials. These chemicals are also used in synthetic fragrances to extend the scents' staying power. Phthalates are relatively persistent in the environment and have been found in drinking water, soil, household dust, wildlife, fatty foods (meat and dairy products) and in the blood and breast milk of people. Scientific research has shown that phthalates disrupt hormones, and can cause birth defects of male reproductive organs.

PBDEs (polybrominated diphenyl ethers)

See brominated flame retardants.

Polycarbonate plastic (recycling # 7)

Polycarbonate plastic is made with a toxic chlorine gas derivative and cancer-causing solvents, and throughout its use, in the form of refillable drinking bottles for example, it may leach the hormone disrupting chemical bisphenol A.

PCBs (polychlorinated biphenyls)

PCBs have been banned in Canada since 1977, yet they continue to be released into the environment from sources in other countries, and from PCB-containing industrial equipment that is still in use here at home. PCBs are highly toxic and persistent chemicals that have been building up in wildlife and people through the process of bioaccumulation. PCBs cause many types of cancer and damages the nervous, immune and cardiovascular systems, leading to birth defects, brain damage and decreased immune function.

Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs come from both natural and human-made sources, and are formed during the incomplete burning of coal, oil, gas, garbage, or other organic substances; some PAHs are manufactured. Forest fires are the largest natural source of PAHs in Canada. The greatest human-made sources of PAHs are aluminum smelters, coking plants, creosote-treated products, spills of petroleum products and transportation. PAHs have been identified as probably cancer-causing, and are suspected reproductive and respiratory toxins.

PVC (Polyvinyl chloride), a.k.a Vinyl (recycling # 3)

PVC is a harmful plastic that emits toxic chemicals from manufacturing to disposal. PVC is used to make construction materials (such as pipes, flooring, and wiring), and a range of consumer products (plastic bottles and containers, baby bottles, toys, records and clothes). The manufacture of PVC involves the use and emission of dioxin, but more importantly for the health of humans, PVC products can leach toxic additives, like phthalates, throughout their use. Phthalates are added to PVC products to make them softer and more flexible, but these chemicals are known to disrupt hormones, leading to birth defects of male reproductive organs.

Reproductive/Developmental Toxicants

Reproductive toxicants can affect sexual behaviour, onset of puberty, sperm count, fertility, gestation time, pregnancy outcome, lactation and premature menopause. Developmental toxicants, a sub-group of reproductive toxicants, can cause adverse effects for the developing child, such as birth defects.

Respiratory Toxicants

Respiratory toxicants cause adverse effects to the structure or functioning of the respiratory system (nasal passages, pharynx, trachea, bronchi, and lungs), and produce a variety of acute and chronic pulmonary conditions, including local irritation, bronchitis, pulmonary edema, emphysema, and cancer.

Respiratory toxicants include categories of substances like toxic gases, vapors from solvents, aerosols, and particulate matter. Ozone and fine particles are known to pose a significant threat to respiratory health. Ground-level

ozone, the main component in smog, causes breathing problems, aggravates asthma, and increases the severity and incidence of respiratory infections.

Stain repellants

See perfluorinated chemicals.

Synthetic fragrances

See phthalates.

Teflon

See perfluorinated chemicals.

Toxic

Materials that cause death, disease, or birth defects in organisms that ingest or absorb them. The quantities and exposures necessary to cause these effects can vary widely.

Triclosan

The chemical triclosan is a synthetic antimicrobial/antibacterial agent whose use has become widespread in toothpastes and mouthwashes, deodorants, cosmetics, fabrics, plastics and other products. No data has demonstrated that antibacterials provide any additional benefits over using ordinary soaps and water when it comes to protecting against viral infectious diseases. Research has rather shown that triclosan may have several negative health effects; it can cause allergies and asthma by weakening the immune system; it disrupts the hormonal system; it can bioaccumulate; and, it belongs to a class of chemicals that are suspected of causing cancer in humans. Studies have also shown that when triclosan is exposed to sunlight in water it may convert into the potent toxic chemical dioxin.

Virtual Elimination

Under the *Canadian Environmental Protection Act*, virtual elimination is the reduction of releases to the environment of the most dangerous toxic substances to a level below which these releases cannot be accurately measured.

VOCs (Volatile and Semi-volatile organic compounds)

VOCs, such as the chemicals xylene, benzene, and toluene, are found in many household products, including paints, varnishes, paint stripping products, and adhesives. VOCs are air borne particles that contribute to poor air quality indoors and out. In fact, VOCs are one of the building blocks of smog. VOCs are toxic to the nervous system and some are cancer-causing. The health effects of different VOCs range from damage to the reproductive, neurological and respiratory systems, birth defects, and impaired kidney and liver function.