

Improve Health by Removing Indoor Air Pollutants

Even as someone who practices environmental medicine I still don't want to believe that indoor air is more polluted than outdoor air. Barbara Spark, indoor air program coordinator for the U.S. Environmental Protection Agency says "the level of pollution can be two to five times higher indoors. Depending on what's going on, it can be as much as 1,000 times higher." The air in your home can concentrate pollutants to levels many times higher than the air found in a bustling metropolitan city. If your reaction is "so what" to this fact, consider that these pollutants include solvents from paints and glues, styrenes from plastic products, foam rubber and insulation, benzene from dry cleaning and tobacco smoke and trihalomethanes from the chlorination of municipal water...just to name a few. Next consider that you spend more time in your home or workplace than outdoors. In fact, studies show we on average spend only five percent of our time outdoors. No wonder that the U.S. General Accounting Office called indoor air pollution "**one of the most serious environmental risks to human health.**"

Health Effects of Indoor Chemicals

A Mount Sinai School of Medicine Study looked for 200 industrial chemicals in 2,500 people. They found an average of 91 chemicals per person with 53 of the 91 chemicals having previously been linked to cancer and problems of the nervous, cardiovascular and hormonal systems. A study of 120 Cape Cod homes found 90 chemicals in the air and dust. Of these chemicals, many have previously been proven to disrupt the endocrine system, cause cancer and birth defects. Chemicals found in the study included DEHP, a phthalate used to soften plastic, which is linked to cancer. PBDEs, a class of flame retardants were found at levels 20 times higher inside than outside in another study and are linked to toxicity of the nervous system.

How to Lower Indoor Air Pollution in Your Home

Chloroform

There fortunately are several measures we can take to limit indoor air pollution and our exposure to these chemicals. We all love a hot shower or bath but seldom think about the chlorination of municipal water. Chloroform, a cancer causing chemical or carcinogen, is one of a handful of chemicals found in chlorinated water. It is vaporized into the air, inhaled and absorbed through the skin. A shower filter can be purchased from a home supply store and some health stores. Charcoal filters or reverse osmosis filters are available for removing dangerous chemicals before use for drinking and cooking use.

Formaldehyde

Compressed furniture products like particle board, plywood and similar products are held together by glues made of solvents. These inexpensive wood by-products also contain formaldehyde, a type of hydrocarbon and potential carcinogen. Use of solid

wood, metal or other natural materials will spare you the exposure of these air borne toxins. By the way, that “new car smell” contains over ten different toxins including polyvinyl chloride and formaldehyde. Until the fumes have off gassed, keep your windows rolled down when in your car.

Tetrachloroethylene

Dry cleaning of clothes exposes us to tetrachloroethylene. In fact, according to an EPA study, just visiting a dry cleaner was ranked as one of the top ten common activities that expose us to dangerous chemicals. For clothes that must be dry cleaned, instead of hanging them in your car as you drive, lay them flat in the trunk. It takes about 48 hours for newly dry cleaned clothes to off-gas, so don't bring them into your bedroom immediately. Instead, hang them up outside under the patio to safely off gas before bringing them in.

Pesticides

Pesticide are some of our most ubiquitous and toxic chemicals. Their residues contaminate indoor air, counters, tables and flooring; attaching themselves to dust where babies, toddlers and even our pets move around. Spraying pesticides in the home can be avoided by putting food in sealed containers and by identifying and sealing routes where pests may enter the home. Spraying ants with soapy water works well to kill them.



Air fresheners & fragrances

Home air fresheners like sprays and plug-ins are better termed “home air polluters” as they contain a slurry of volatile organic compounds like toluene, terpenes, aldehydes and several others. Some of these chemicals combine with ozone in the air to form a chemical similar to formaldehyde. Some electronic home air purifiers generate ozone and should be avoided. Many soaps, fragrances and perfumes are laden with ominous chemicals like benzenes, styrenes, acetone, methyl chloride and others. They have long been shown to cause wheezing and decrease pulmonary function in asthmatics. Avoiding scented dryer sheets and other strong fragrances in the house will provide for cleaner indoor air. Instead of using strong cleaning supplies opt for the use of natural ingredients like lemon and vinegar or other non-toxic options now widely available.

Polyvinyl chloride & phthalates

Polyvinyl chloride is a carcinogen used in children's toys, shower curtains, siding, linoleum flooring, and wall covering. Phthalates are used as softeners in children's toys, various plastic products and even in fragrances and cosmetics and have been linked to birth defects. Fortunately products free of polyvinyl chloride and phthalates are now available. Polyvinyl-free alternatives such as ceramic tile flooring and shower curtains made of natural fibers are also available.

Teflon cookware

Teflon used in non-stick cookware and stain resistant products contains the cancer causing chemical perfluorooctanoic acid. The chemical is inhaled during cooking and can be absorbed through the skin. Use of non-coated stainless steel or other non-aluminum metals for cooking are preferable.

Air circulation & filtration

Many of us live in energy-efficient homes which limit air exchange between the indoors and outdoors. When weather and smog levels permit, open windows and doors, and turn on fans to circulate and bring in outdoor air. Also, and especially if you or your children are asthmatic, vacuum carpet with a HEPA filter and use an air filter for your heating and air conditioning unit with a rating of MERV 7 or better. Making some of these simple changes will do a great deal to lower the concentration of in-home air pollution while greatly decreasing the risk of acute and long term illnesses related to exposure.

