

Clean and Green: Reducing Your Risk of Asthma and Cancer

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Ever read Hints From Heloise? She provided quick, simple, and inexpensive household advice passed down from grandmothers everywhere. The ingredients for cleaning products came from the kitchen cupboard. Baking soda and vinegar were key elements. Guess what? Non-toxic cleaning products are having a comeback. With all the emerging scientific information on the hazards of our synthetic cleaning products, moms and maids are ready to go back to basics.

Recent studies now show that many cleaners and air fresheners contain chemicals which may cause or trigger asthma, have carcinogenic effects, and may be endocrine disruptors with short and long term health implications.

Many of the 100,000 or so synthetic chemicals produced each year for industry, home, and agriculture have little testing for long-term health effects. Some synthetic chemicals are not deliberately added, but are by-products of manufacturing (i.e., carcinogens such as formaldehyde, 1,4 dioxane, and benzene) found in cleaning products.

Asthma in Kids and Adults Is Linked to Cleaning Products

Air “fresheners” used to improve air quality has been shown to pollute indoor air and induce asthma. Common components of air fresheners are carcinogens, such as 1,4 paradichlorobenzene (mothballs and toilet cleaners), as well as volatile organic compounds (VOCs), such as acetone, isobutene, butane (lighter fluid), propane, and ethers, which trigger asthma along with synthetic fragrances which all contain phthalates, a known endocrine disruptor which allows the fragrance to “stick.” Many popular and highly advertised name brands never even list the ingredients, although they may cause adverse health effects. The label highlights the fact there are no CFCs, but doesn’t warn the user of the respiratory dangers. Some boldly state they are VOC-compliant. Most people don’t know that there are only outdoor, not indoor, VOC requirements for these products.

Using Cleaning Sprays Once a Week Can Increase Asthma

A new European study published in the American Journal of Respiratory and Critical Care Medicine, October 2007,¹ showed that those who used cleaning sprays at least once a week were 50% more likely to have increased asthma symptoms, wheeze, or use asthma medications. The author’s study felt that the sprays not only triggered asthma, but in many cases caused new onset of asthma. Of the products researched, air fresheners, glass cleaners, and furniture sprays had the strongest association. Glycol ethers (linked to reduced sperm counts) are also one of the chemicals of concern in glass cleaners.

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Use of Air Fresheners in Pregnancy May Be Hazardous

Research on asthma has demonstrated that early exposure (in pregnancy or early childhood) to cleaning products and air fresheners is associated with persistent wheezing in preschoolers.²

Workplace exposure to cleaning products is ubiquitous. Asthma surveillance studies have shown that 12% of asthma in the workplace is due to cleaning products and 80% of those cases were new onset of asthma. The highest risk were regular users, such as janitors and other housekeeping staff in medical settings, hotels, and schools.³ Some common agents that are suspect are monoethanolamine and disinfectants with quaternary ammonium compounds.

A study in Environmental Health Perspectives 2006 looked at more than 950 adults in the U.S. and showed high blood levels of 1,4-dichlorobenzene, found in air fresheners and deodorizers, were associated with measurable decreases in lung function.⁴

Unfortunately, we are all exposed to asthma triggers when we use many public or business restrooms. Automatic air fresheners squirt our air space with toxic VOCs.

Endocrine Disruptors in Cleaning Products: Gender Bending Cleaning

Many commonly used household cleaners contain synthetic chemicals, which act, like or block hormones. These could effect reproduction or thyroid function. Ethylene glycol butyl ether, 2-Butoxyethanol or EGBE, is on California's list of toxic air contaminants and animal studies show it can cause testicular damage and infertility.

It is difficult to know what chemicals are in your favorite cleaning product, as there is no labeling requirement for manufacturers. Material Safety Data Sheets (MSDS) may contain the information. A Missoula non-profit group looked at MSDS and found that EGBE was found in many all-purpose cleaners, such as Formula 409 and Simple Green, as well as in some carpet cleaners.⁵

Nonylphenol, a breakdown product of synthetic detergents, stimulates the growth of human estrogen-sensitive breast cancer cells.

Surfactants Cut Grease and Alter Fish

Surfactants that reduce the surface tension of water cut grease. Synthetic surfactants are called detergents regardless of the source—animal, vegetable, or mineral. These compounds are synthesized by ethoxylation with petroleum. Soap is also a surfactant, and the term soap is reserved for the old-fashioned product made from fat and lye.

One commonly used synthetic detergent is nonylphenol ethoxylate (NPE). This “biodegrades” into nonylphenol, which mimics estrogen and has been shown in studies to stimulate breast cancer and prostate cancer cells to grow. In wastewater with NPE, they have been shown to cause intersex fish (i.e., male fish with female characteristics). Unfortunately, phenolethoxylates are found in most streams and rivers in the U.S. and in house dust.

Fragrance Free Please

Synthetic “fragrances” are also part of the mix. These fragrances are mixed with phthalates, which allow the scent to stick. We find phthalates in many cleaning products, such as fabric softeners, laundry detergents, and glass cleaners. Phthalates are also frequently used in pesticides to allow adherence to the plant or insect. Phthalate is also a major component of all PVC plastic (#3) and flooring. This chemical has been shown to be an endocrine disruptor linked to reduced sperm counts and also has been associated with asthma. Not all “natural” fragrances are without problems. Lavender and d-Limonene in citrus may be respiratory irritants to sensitive individuals. Fragrance free products are the best solution if an individual has a predisposition to asthma.

It's Easy Being Green: Soap, Vinegar, and Baking Soda

Going back to the basics works well. You can tell your patients to make their own glass cleaner, furniture polish, and other cleaners with only a few items. Add some pure oil of lavender or lemon for a refreshing scent. Recipes can be found in many books now, including the classic "Clean and Green: The Complete Guide to Non-Toxic and Environmentally Safe Housekeeping." Newer books like "Vinegar" and "Baking Soda" provide an entertaining abundance of recipes. I can attest to their usefulness when I ran out of glass cleaner.

May the Precautionary Principle prevail in our daily decision-making. This is sustainable and healthy living for our families, our patients, and our planet.

References:

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- 7) *Vinegar*. Vicki Lansky.
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