**Home Improvement for Health Improvement**

If you haven’t gotten to that spring cleaning or are working on home improvement projects this summer, now is your chance to clean for your health and that of your family and pets. Toxins can be found in a wide array of household products, furnishings and equipment and contribute to a myriad of health problems including psychological, psychiatric and neuropsychiatric conditions. While there is a lot of information here, please keep the following few things in mind as you read:

1. Any efforts that you make to reduce your body burden of toxins is a step in the right direction; start with what you can manage!
2. Your ability to more effectively deal with toxins in your home and the environment depend upon the strength of your digestion, liver and other eliminatory pathways such as the kidneys and skin.
3. Remember to pay attention to other toxic sources including food and personal care products (see handouts)



Household and environmental toxins can cause a wide range of conditions*: Attention Deficit and Hyperactivity Disorder, Autism, Developmental Disorders and possibly schizophrenia, disturbances in thyroid and reproductive hormone function (thyroid hormones abnormalities can present as depression or mania). In addition a number of household chemicals are irritating to the lungs, affect immune system function, liver function, can cause cancer and are pro-inflammatory.* (This is of concern because inflammation is a contributing factor to several chronic health problems including depression, heart disease, joint pains, skin complaints and cancer.)

**The image depicted above** is a good overview to finding toxins in your home, [click here for a larger view](http://www.epa.gov/iaq/pdfs/careforyourair.pdf). This diagram is by no means exhaustive, so let’s get into some more detail… Some of the key sources of toxins in the home include carpets, furniture, mattresses, kitchen appliances, paint, wallpaper, detergents and cleansers, mold, plastics and chemicals found in water.

**Flame retardants** are one class of chemicals to beware of, they can be found in a number of the above mentioned products and in bedding, mattresses and foam used in furniture. Visit EWG.org to learn how to reduce your exposure to these chemicals which can affect thyroid function, contribute to atherosclerosis and cancer and cause inflammation.

**Phthalates** are used as plasticizers and are ubiquitous in household products. They can be found in children’s toys, vinyl flooring, wallpaper, shower curtains, paint adhesives, flooring materials, polyvinyl chloride (PVC) piping, non-stick cookware and artificial leather. We will return to this class of compounds in future postings, but in the interim, whenever possible, decrease your use of plastics in the home and opt for those without the number 3 or 7 on the bottom.

**Formaldehyde** is known about by some as a chemical used to preserve specimens in biology class, but unfortunately it is also in cigarette smoke, pressed wood products, cabinets, shelving, flooring and can off gas for up to fifteen years. It is also in personal care products- more on this in an upcoming post…

**Lead** is a toxin found in air, water and soil from gasoline, old paint and plumbing. Excess levels of lead in the body can lead to autism, ADHD, developmental disorders, neuropsychiatric symptoms, cancer, reproductive health issues and other conditions. It is particularly problematic for young children, leading to behavioral problems, lower IQ scores and learning difficulties.

**Mercury** may be present in thermometers and fluorescent lights and is a by-product of industrial air pollutants. Excess levels of mercury in the body lead to neurological problems, psychological problems and problems associated with the muscles and skin.

**Radon** is produced by the natural decay of uranium in soil and water. It is the leading cause of cancer in non-smokers. Radon typically enters the home from cracks in the foundation and construction seams. To test your home for radon, pick up a test kit at your local hardware store. To be safe, you will want levels of radon to be ≤4 picocuries/L.

**Carbon monoxide** arises from kerosene and gas space heaters that are not vented properly, gas stoves and leaking furnaces. Good precautionary measures include using a stove vent, fans in rooms with space heaters and installing a home carbon monoxide monitor. In excess, carbon monoxide can lead to reduced delivery of oxygen to the brain, heart, lungs and other organs- interfering with their normal functioning. This chemical is also pro-inflammatory to the heart and lungs.

**Mold** is a problem for many in old and/or water damaged buidings. If your air humidity exceeds 50%, consider using a dehumidifier to mitigate mold growth. Inspect for mold on or in walls, in the bathroom, in the kitchen, around windows and water heaters. In excess, mold can cause asthma, allergies, immune problems, can impair memory and can decrease one’s cognitive function.

**Water** is a major source of contaminants and while the Environmental Protection Agency (EPA) regulates some toxins and microorganisms in the water supply, many are not tested for or detected. Pharmaceuticals and personal care products find their way into the water supply and antidepressants, antimicrobials, anticonvulsants, antibiotics, chemotherapy drugs and other agents can be found at low levels in the water supply. If you are on well water, it is imperative to test annually for contaminants as the EPA will not monitor and control for toxins in well water from pesticides, septic tanks leaching and other sources.

Selecting a good quality ***water filter*** can help to minimize toxins in your water. Here is a resource to help you select a good filter: [Environmental Working Group’s Water Filter Guide](http://www.ewg.org/tap-water/getawaterfilter) . Now that is to filter the water that you drink, but it is also important to filter the water that you bathe in. Shower and bath filters help to reduce your level of

**‘Dust’** is a repository for several toxins in the house and for fine particulate matter- so make sure it doesn’t hang around too long and remove it with a vacuum installed with a High Efficiency Particulate Air (HEPA) filter.

So to clean up your home, follow the tips given above and the following:

* Eliminate slow-burning candles from your home (the wicks contain lead)
* Install fans in the bathroom and kitchen to reduce humidity and mold growth
* Use filters on all water supplies
* Use green detergents and cleansers & chlorine-free bleach. Avoid fabric softeners. Click here for a [National Geographic Green Guide Cleaning Products Video](http://video.nationalgeographic.com/video/environment/going-green-environment/green-home-makeover/green-cleaning-gg/).
* Avoid antimicrobial soaps and sanitizers
* Clean your furnace and change the filters on it and any air conditioners regularly. Clean any chimneys annually and burn only dry firewood.
* Minimize plastics in the home
* Avoid mothballs and air fresheners with solvents or plug-ins (as they are neurotoxic)
* Choose low VOC (Volatile Organic Compounds) paint, carpeting and flooring: use non-treated wood, tile, stone and throw rugs of natural fibers for flooring whenever possible
* Use natural fabrics and materials for bedding, curtains, blinds and furnishings
* Consider installing a HEPA filter in your bedroom and other rooms in which you spend a considerable amount of time
* Don’t store toxins in your home. If you must use certain toxic compounds, keep them in a sealed cabinet in a non-attached garage, shed or shop
* Take off your shoes- this simple step can considerably reduce tracking toxins into your home
* Avoid the use of pesticides and herbicides in your home garden by finding [natural alternatives](http://www.pesticide.org/solutions/home-and-garden-toolbox)
* Get your soil tested for contaminants (especially if you grow your own food) by calling your County Extension Office.

While this all may seem a little overwhelming, remember any change for the better is helpful in making one’s home a haven of health!

**References & Resources:**

* Crinnon, W. (2010). Clean, Green & Lean. Get Rid of the Toxins That Make You Fat. Hoboken, NJ: John Wiley & Sons, Inc.
* University of Arizona Integrative Medicine Continuing Education: <http://integrativemedicine.arizona.edu/education/online_courses/enviro-med.html>
* EPA: <http://environment.nationalgeographic.com/environment/green-guide/>
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