# 5 EASY STEPS

**Step 1: Manage pests safely**
**Step 2: Use non-toxic products- cleaners, body care, home furnishings**
**Step 3: Clean up indoor air**
**Step 4: Shop smart – eat more organic and healthy foods**
**Step 5: Be wise with plastics**

## Step 1: Manage pests safely

Though we often encourage children to "go out and play," exposure to common lawn / garden care and indoor pesticides is identified by the EPA (Environmental Protection Agency) as potentially causing a range of health problems, including asthma, hyperactivity and behavior problems, cancer, learning disabilities, reproductive disorders, and compromised brain development.

Rather than stifling healthy activity in children, you can make healthier choices in pest control!

### What to Do

- Avoid unsafe chemicals indoors and outdoors – only use non-toxic, pesticide-free products. Also, instruct caregivers about the hazards of pesticides and talk to offsite school or daycare centers about pest management practices.
- Prevent pests through good sanitation and food storage habits, and by preventing their entry structurally. See the safety checklist below for prevention techniques.
- Remove shoes and wash hands immediately after playing outside to prevent the estimated 70 percent of dirt (which contains chemicals) that can be tracked indoors.

### Safety Checklist

- Seal all cracks, and apply caulking to outdoor plumbing and electrical outlets
- Install door sweeps
- Use (or fix holed) window screens
- Manage outdoor lights to prevent insects' gathering
- Eliminate moisture problems in walls, ceilings, and around the home's foundation
- Install and maintain vents, vapor barriers, fans, air conditioners, dehumidifiers, piping, and appliances that will keep the home dry
- Properly store all food

### Safe Solutions

Many pesticides are volatile. That means that they volatilize – or become gaseous. This allows the pesticides to drift throughout the application area to eliminate pests. But this also means that they can contaminate all surfaces in a home.

Simple remedies to eliminate pests:

- For ants, you can sprinkle red chili powder, paprika or dried peppermint (or its essential oil) where the ants are entering. For outdoor pets, place their food bowl within a larger bowl of soapy water.
- For fleas, feed your pet brewer's yeast in powder (mixed in food) or tablet form.
- For ants, termites, lice, fleas, spiders or roaches, mop or spray floors with Borax. It's poisonous if ingested, so store and use carefully.
- For ants and fleas, mix 4oz of a natural soap in 1 gallon of water and spray as needed. Or sprinkle powdered soap around your home's foundation.

## More Information

Americans use more than a billion pounds of pesticides each year to combat pests. Keeping pests out will prevent the need to use pesticides. Generally, 90 percent of all insect infestations migrate into the home from the outside. Generally only fleas, pests living in store-bought products, cockroaches, mice, and certain ants are carried into the home.

The EPA emphasizes that children are at a greater risk than adults to be harmed by pesticides because their immune systems are still developing. Furthermore, children are uniquely vulnerable to pesticide exposure due to their behavior. They spend more time playing outdoors on the grass where pesticides are commonly applied, and also playing indoors on carpeting where lawn chemicals may have been tracked in and deposited. They're also more likely to transfer toxins from hand to mouth and are more likely to be exposed to chemicals released in common items like flea collars.

## Research

- In 2004, 71,000 children were involved in common household pesticide related poisonings or exposures according to the American Association of Poison Control Centers.
- Studies have shown that exposure to herbicides (weed killers) before the age of one appears to cause a four-fold increase in the risk of childhood asthma.
- A study sponsored by the National Cancer Institute indicates that use of household and garden pesticides increases the risk of childhood leukemia by a factor of seven.
- A study conducted by the EPA found that the indoor air of households had at least five pesticides present, at concentrations more than ten times that found in outdoor air.

# Step 2: Use non-toxic products- cleaners, body care, home furnishings

We bring home a wide variety of products that can contribute to making our family and home sick and filled with potentially harmful toxicants. We put them in our grocery bags and they can be found in many home and life-style stores as well. Luckily, there are a number of safe and healthy alternatives to these products, which allow you to make informed and wise choices in your marketplace to seriously reduce the amounts of chemicals you invite in your home. Cleaners, body care items, and home furnishings are the three main categories that can have serious effects on you and your child's health.

### What to Do

#### Cleaners

- **Use** gentle castile soap and water - these have been shown to keep surfaces as free of bacteria as antibacterial soaps do. In fact, antibacterial soaps and disposable wipes have not proven any more effective than regular soap in preventing infections among average consumers, but raise significant concerns about developing resistant bacteria. Also, triclosan commonly used in antibacterial product may be problematic.
- **Buy Safer Cleaning Products** - many local, online, and discount stores carry cleaning and home products that are very effective without harsh chemicals or fumes. Or make your own safer cleaning products with typical household products .
- **Look** for with safer ingredients – cleaning products labeled nontoxic, bio-based, chlorine-free, organic, phosphate-free, natural fragrance, and/or biodegradable. Learn to read a label.
- **Reduce** the need for anti-bacterial soaps by frequently requiring hand washing.

#### Body Care Items

- **Buy** Safer Body / Bath Care – look for products made organic botanical oils, paraben-free, preservative-free, petroleum-free, and vegetable-devired surfactants.
- **Avoid** body care products with toxic synthetic preservatives (parabens), petroleum-based ingredients, sodum lauryl and laureth sulfates -1,4-Dioxane, synthetic fragrances and artificial colors, formaldehyde donors and other proven harmful chemicals. Find safer children's products in the 'Environmental Working Group's Buying Guide' and see their guide for adults as well.

#### Home Furnishings

- **Buy** Safer Home Furnishings – look for products made with natural or organic cotton, natural latex, 100% FSC certified /reclaimed / or recycled wood, hypoallergenic down and feather, non-toxic / water-based paints and stains with zero VOC, water-based adhesives, no formaldehyde, no polyurethane, fabric fibers – abaca, cotton, hemp, visose, jute, muslin, wool, wools, vegetable and low-impact dyes.
- **Clean** floors with a HEPA filter vacuum cleaner that traps fine particles of dust, soot and pollen, and wet mop regularly.
- **Avoid** polybrominated diphenyl ethers (flame retardants) and resins and glues containing carcinogenic formaldehyde and other neurotoxic, VOC (volatile organic compounds) in paints and stains, particleboard.
- *Always* **avoid** using products that say POISON, DANGER, WARNING, or CAUTION.

## Safety Checklist

### Cleaners

- Buy cleaning products that don't contain harsh chemicals or fumes. Or make your own with typical household products.
- Use a HEPA filter vacuum cleaner that traps fine particles of dust, soot and pollen, and wet mop regularly.

### Body Care Items

- Encourage regular hand washings with gentle castile soap, which is derived from natural ingredients like hemp and jojoba. Anti-bacterial soaps have raised concerns of developing resistant bacteria, so only use alcohol-based products.
- Buy safe products made with organic botanical oils and vegetable-derived surfactants that are paraben-, preservative-, and petroleum-free.
- Avoid items with sodium lauryl and laureth sulfates -1,4-Dioxane, synthetic fragrances and artificial colors, formaldehyde donors, and other proven harmful chemicals.

### Home Furnishings

- Look for products made with natural or organic cotton and natural latex that are 100 percent FSC certified with reclaimed, or recycled wood. They should contain hypoallergenic down and feather and use non-toxic, water-based paints and adhesives, and stains with zero volatile organic compounds
- Aim for items with fabric fibers like abaca, cotton, hemp, visose, jute, muslin, wool, and wools with vegetable and low-impact dyes

## Safe Solutions

Creating your own cleaners using five simple ingredients found in most households; baking soda, lemon juice, washing soda, vinegar and Borax.

1. Baking soda or sodium bicarbonate:
    - neutralizes acid
    - deodorizes
    - extinguishes grease fires
    - cleans and polishes aluminum, chrome, jewelry, plasticporcelain, silver, stainless steel and tin
    - softens fabrics
    - removes certain stains
    - effective as underarm deodorant and toothpaste.
2. Lemon juice:
    - cleans glass
    - removes stains from aluminum, clothes and porcelain
    - lightens/ bleaches if used with sunlight.
3. Washing soda (SAL soda, sodium carbonate decahydrate):
    - cuts stubborn grease on grills, broiler pans and ovens.
4. Vinegar:
    - dissolves mineral deposits
    - removes grease, traces of soap or wax buildup
    - polishes some metals
    - deodorizes

5. Borax:
    - deodorizes
    - inhibits mold growth
    - boosts the cleaning power of soap or detergent
    - removes stains
    - kills cockroaches when used with an attractant such as sugar

## More Information

Prior to WWII, most household cleaning tasks were accomplished using relatively safe ingredients like baking soda and vinegar to disinfect and deodorize. Today, American homes contain gallons of toxic substances, most in the form of cleaning products. The average home contains over 1,500 hazardous compounds. Over 150 chemicals found in the average home have been linked to allergies, birth defects, cancer and psychological abnormalities.

- Conventional metal polishes and adhesive removers may contain petroleum distillates, which can cause temporary eye clouding. Long-term exposure can damage the nervous system, skin, kidneys and eyes.
- Conventional disinfectants can contain phenol and cresol. Phenol and cresol are corrosive and can cause diarrhea, fainting, dizziness and kidney and liver damage.
- Conventional furniture and floor polishes can contain nitrobenzene. Nitrobenzene can cause skin discoloration, shallow breathing, vomiting and death, and is associated with cancer and birth defects.

An average American uses about 10–15 personal care products daily. However, the government does not require pre-market safety testing before approving body care products. It approves an average of seven new chemicals every day, and 80 percent are approved in three weeks or less, with or without safety tests. Industrial chemicals are the basic ingredients of personal care products that contain carcinogens, pesticides, reproductive toxins, endocrine disruptors, plasticizers, degreasers, and surfactants. Much of the furniture manufactured in and for the US is made with harmful finishes, fills, and materials that negatively affect human, environmental, and social health. For instance, many piece of furniture have polyurethane and contains cushioning with highly toxic fire retardants also known as PBDE's (polybrominated diphenyl ethers). The retardants get into the air we breathe and are known to cause hormone disruption and inhibit normal brain development.

## Research

- Studies have linked triclosan to health and environmental effects. Health effects include skin irritation and allergy susceptibility. A Swedish study found triclosan present in the breast milk of 3 out of 5 women tested.
- The Environmental Working Group found that more than one-third of all personal care products contain at least one ingredient linked to cancer. They also found that 57 percent of all products contain "penetration enhancer" chemicals that can drive other ingredients faster and deeper into the skin to the blood vessels below. Additionally, they discovered that 79 percent of all products contain ingredients that may contain harmful impurities like known human carcinogens, according to FDA or industry reviews. Impurities are legal and unrestricted for the personal care product industry. We agree with their findings that is not only “cause for concern, not alarm” and that direct consumer action can be taken to avoid known toxic ingredients.
- The U.S. Department of Health and Human Services classifies formaldehyde gas as a probable human carcinogen, and inhaling it for long periods of time can cause flu-like symptoms such as watery eyes, runny nose, throat irritation, headache, fatigue and respiratory problems.

# Step 3: Clean up indoor air

Did you know that people in America spend 90 percent of their time indoors? It might seem safer and cleaner, but indoor air pollution is linked to a host of health effects. Common indoor air pollutants -- which are exacerbated by smoke, mildew, and gas -- include formaldehyde, carbon monoxide, secondhand smoke, asbestos, lead, and volatile and semi-volatile organic compounds.

Not to worry, it's easy to reduce the risk. Start by replacing products that contribute to the problem, then try some other simple steps.

### What to Do

Our furnishings are the source of a substantial portion of indoor air pollution. That's why it's essential to use natural products are natural, from upholstery fabric and carpeting, to building material glues and adhesives, to paint and wallpaper.
Likewise, when indoor pollutants do decrease air quality, use non-toxic techniques to scent the house, such as placing orange slices, lemon slices, cloves, or any other herb in boiling water on the stove.
But be careful – the term "non-toxic" is not regulated. Look for specific claims and product ingredients.

### Safety Checklist

- Ventilate the home by opening windows, even for a short time. It's is the second best pollution reduction strategy in your home after prevention.
- Populate your home with indoor plants, which absorb air impurities. Areca palm, lady palm, bamboo palm, rubber plant, and Boston fern are great examples.
- Use air cleaners and purifiers with approved HEPA filters.
- Change the air filter in your air conditioning and heating units as the season change, or at least once a year.
- Change your vacuum bag, and be sure it has a clean filter to prevent the spreading of dust, which can be redistributed into the air.
- Avoid carpets and synthetic flooring. All natural rugs, like jute or wool, or wood flooring (with safe adhesives) are better, chemical-free alternatives.
- Don't use conventional paints, cleaning supplies, pesticides, furniture made from particle board, and "air fresheners" that emit harmful chemicals. Instead, seek non-toxic, naturally derived, and "low or no VOC" alternatives for paints, carpets, and furnishings.
- "Air out" new carpets and home furnishings before indoor use, especially newly painted and newly carpeted rooms. The new carpet smell is most likely unhealthy.
- Use building materials, furniture and other products that are low emissions.

### Safe Solutions

Find safer paints, building materials, furniture, etc.

### More Information

On a typical cleaning day in a typical home, levels of chemicals in the indoor air can be hundreds, even thousands of times higher than the outdoor air in the most polluted of cities. Household cleaning products, personal care products, pesticides, craft product and solvents may all contribute to indoor air pollution.

## Research

- Indoor air pollution is linked to a host of health effects, including chronic respiratory diseases such as asthma, headaches, nausea, fatigue, liver damage, harm to the immune, reproductive, nervous and cardiovascular system, and cancer.
- A recent California Air Resources Board study found that elevated exposures to air pollutants can be expected to occur following the use of common cleaning products and air fresheners. The study also found that some chemicals present in household cleaning products react with ambient ozone, resulting in formation of other potentially hazardous compounds and particulate matter.
- Many household cleaning products also contain hidden cancer-causing ingredients.

# Step 4: Shop smart – eat more organic and healthy foods

Eating organic food reduces the amount of toxic pesticides in our bodies. It's grown without potentially harmful, long-lasting synthetic chemicals and is approved by the FDA after meeting rigorous standards. In conventional grown food, however, synthetic or chemical means may have been used to fertilize soil, control weeds and insects, and prevent livestock disease. These non-organic foods often contain chemical and pesticide residue.
What's the goal? It's simple: Eat organic foods.

### What to Do

Eat USDA certified organic fruits and veggies and avoid those with the highest pesticide residues: apples, cherries, imported grapes, nectarines, peaches, pears, red raspberries, strawberries, bell peppers, carrots, celery, green beans, hot peppers, potatoes and spinach.
The best way to accomplish this is by shopping at Natural Foods Markets and at neighborhood farmers' markets for locally grown foods.

### Safety Checklist

- Wash all fruits and vegetables (even organic) before eating to reduce surface traces of chemical residues, wax, and pesticides on non-organic produce.
- Choose your protein wisely: meat, eggs, milk products, and poultry that are hormone-free, antibiotic-free, free-range and/or fed with vegetarian feed.
- Avoid conventional dairy and meats: these are treated with artificial hormones and antibiotics that interfere can affect human health and development.
- Avoid foods high in sugar, high in fat, processed, and fast foods. Less processed foods are greater nutritional content and are less likely to contain artificial and chemical preservatives.

### Safe Solutions

Whenever possible, choose Certified Organic beverages and foods. Certified Organic foods and beverages have met the following FDA standards:

*For fruits, vegetables and grains:*

- Safe soil, free of sewage sludge, lead salts and potassium chloride, among many other substances, for at least three years prior to the first organic harvest;
- No modification: genetically modified organisms, irradiation and additives are prohibited;
- Separate storage: handlers, food processors and food manufacturers must separate organic products from non-organic products and take steps to ensure that organic foods don't come into contact with forbidden chemicals or substances.

*For meat, milk, eggs and other animal products:*

- Timing: animals must be raised organically from the last third of gestation (for livestock) or no later than the second day of life (for poultry).
- Organic feed: livestock feed products must be 100 percent organically grown.
- Hormone- and antibiotic-free: sick animals must be treated—but if an animal has been treated with a prohibited medication, it can't be labeled and sold as organic.
- Outdoor access, including pasture land for animals that graze. Each animal must have shade, shelter, fresh air, direct sunlight and room to exercise appropriate for its species.
- No commingling. Organic animal products must be separated from non-organic products. Organic animal products must not come into contact with prohibited chemicals or substances.

## More Information

The term “natural” is not a regulated term. It does not mean Certified Organic. Commonly seen food labels "all natural", "free-range" or "hormone-free" signify that the food has been raised or grown humanely, only the "USDA Organic" label indicates that a food is certified organic.
Conventional agriculture includes the use of pesticides. Foods derived from these crops contain pesticide residues. We are exposed to pesticides when we consume these foods. Most of us have a body burden of pesticides. Of particular concern is that the exposure to multiple pesticides has not been thoroughly studied. Most risk analysis focus on a particular pesticide or class of pesticides, but do not evaluate the health effects caused by low level exposures to several pesticides.
While HCHW recommends choosing Certified Organic beverages and foods, switching to an all organic diet may not be possible. A good choice may be picking Certified Organic versions of the products typically found to have the highest pesticide residues. Vegetables and fruits generally found to have the highest pesticide residues include apples, cherries, imported grapes, nectarines, peaches, pears, red raspberries, strawberries, bell peppers, carrots, celery, green beans, hop peppers, potatoes, and spinach.

Strawberries are typically the most pesticide laden of all fruits and vegetables according most testing.

## Research

- After extensive research, the EPA considers 60% of all herbicides, 90% of all fungicides and 30% of all insecticides as potential health risks.
- A 1993 National Research Council report states that children’s exposure to pesticides is primarily though their diet. Children are particularly susceptible to pesticide exposure because they consume more food on a per weight basis than adults do and because their bodies are still developing and maturing.
- One study published by University of California researchers found that newborn infants are as much as 65 to 164 times more vulnerable than adults to a pair of common agricultural pesticides.
- One study of Seattle school children showed that children fed an organic diet had one-sixth the levels of pesticide in their urine compared to children fed a non-organic diet. This study suggests that an organic diet may significantly reduce exposure to pesticides.
- A study by the Centers for Disease Control found that more than 90% of those tested carried a mixture of pesticides in their bodies. More significantly, some pesticides were found at higher levels in children.
- FDA testing of 2,464 apple samples between 1984 and 1991 identified the fungicide captan and the insecticide chlorpyrifos as two of the forty-eight pesticides most frequently found. However, many farms since that FDA’s testing have implemented less toxic pest management programs.
- The presence of chlorpyrifos is particularly troubling in apples because children eat so many apples during their childhood and because a study published by University of California researchers found that newborns were 131 to 164 more sensitive to chlorpyrifos than adults.

# Step 5: Be wise with plastics

Plastic provides a good amount of affordable convenience. Only recently have we discovered that the hidden cost may be our health. Plastics, which are used in much of our food storage and cooking, have the potential to negatively affect health in certain applications. Some petroleum-based plastics leach harmful chemical into foods and drinks, especially when plastic comes in contact with oily or fatty foods, during heating and microwaving, as a result of harsh cleaners, and when exposed to excessive moisture.

Luckily, we can all make safe choices.

### What to Do

Choose smart plastics (see icons below) and avoid putting them in the microwave (where they can release dangerous chemicals when heated) or the dishwasher (where they can degrade in the heat and excessive moisture).

Safer Choices:
Select safe plastics that use polyethylene (#1, #2, and #4) and polypropylene (#5), which require the use of less toxic additives. They also are non-chlorinated.

Avoid:
Avoid choosing products that use polyvinyl chloride (#3), polystyrene (#6), and polycarbonate (#7) which often are found in baby bottles or sippy cups.

### Safety Checklist

- Be aware of plastic products in your child's surroundings – squeeze toys, rattles, bath toys, cribs, teethers, pacifiers, high chairs, sippy cups, and baby bottles
- Avoid PVC products, like vinyl chew toys, which are identified with a "V" or "3." If you can't eliminate them all, then make sure they are cleaned regularly.
- Opt for toys and books made with natural wood, paper, cloth, or metal.
- Opt for plastic alternatives – glass, ceramic that's lead-free, and stainless steel -- whenever possible.
- Use glass or ceramic containers to microwave food and beverages.
- Be cautious of cling wraps, especially for microwave use. Wrap foods in butcher paper, waxed paper, or paper towels. Or store food in glass or ceramic.
- Avoid using plastics that aren't identified on the packaging.
- Look for products that state "no phthalates" or "no bisphenol A (BPA)."
- Wash plastic containers by hand with a mild soap.

## Safe Solutions

Find BPA-free bottles and other safer products.

## More Information

Bisphenol A (BPA) is present in polycarbonate plastic. BPA leaches from polycarbonate plastic under certain conditions. Exposure to BPA may cause negative health effects. BPA leaching is greater in polycarbonate that is scratched, cloudy or exhibits other signs of wear. BPA leaching is also accelerated by heat. Hot and fatty foods or liquids may dissolve traces of BPA.

Exposure to polyvinyl chloride (PVC) plastics may result in exposure to lead. Lead is used to stabilize PVC. The lead breaks down with exposure to heat and light, and migrates to the surface of the PVC product. Under certain conditions, lead may be present on the surface of PVC products, which can be transferred by hand to mouth behaviors or distributed to surfaces as dust. PVC forms hydrochloric acid when it degrades, which causes a chain reaction that proceeds rapidly to a complete loss of strength. Stabilizers are added to prevent this from occurring. Stabilizers used in PVC are generally metal salts, often lead.

Use of certain plastics may also result in exposure to phthalates. For example, diethylhexyl phthalate (DEHP) may migrate from foodwraps during storage. It is classified as a probable human carcinogen and also causes chronic health problems, including liver and kidney abnormalities. Breathing dust contaminated by phthalates that have escaped from vinyl products used in the home may be a significant exposure for children. Children spend up to 90 percent of their time indoors breathing close to the floor, and many children's toys are made out of phthalate-softened vinyl.

## Research

- Plastics have been linked to endocrine disruption in babies, cancers, birth defects, and poor brain/nervous system development.
- Recent studies suggest that BPA exposure can impair brain function, leading to learning disabilities and age-related neurodegenerative disease. BPA has been shown to be an endocrine disruptor and to simulate the action of estrogen. Doses of BPA lower than current EPA limits in female rats inhibited estrogen-induction of synaptic connections in the hippocampus, an area of the brain involved with the expression of sexually differentiated behaviors.
- Another study found that exposure to BPA before birth permanently changed DNA signaling in rats, predisposing them to developing cancer much later. However, this study injected BPA directly into the subject animals' blood, whereas most human exposure is via ingestion.