



## POLLUTANTS IN YOUR HOME

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|---|---|
| 1. Moisture .....Biological                       | 15. Carpet.....Biological (wet)<br>.....Organic (new) |
| 2. Pressed Wood .....Formaldehyde                 | 16. Sub-Floor (pressed wood).....Formaldehyde         |
| 3. Humidifier .....Biological                     | 17. Drapes (durable press) .....Formaldehyde          |
| 4. Moth Repellant.....Organic                     | 18. Fireplace.....Carbon Monoxide                     |
| 5. Dry Cleaning .....Organic                      | 19. Household Chemicals.....Organic                   |
| 6. Dust Mites.....Biological                      | 20. Floor Tile.....Asbestos                           |
| 7. Personal Care Products ...Organic              | 21. Cabinets (pressed wood).....Formaldehyde          |
| 8. Air Freshener .....Organic                     | 22. Unvented Gas Stove.....Nitrogen Dioxide           |
| 9. Stored Fuels .....Organic                      | 23. Pipe Wrap .....Asbestos                           |
| 10. Vehicle Exhaust .....Carbon Monoxide          | 24. Soil Gas .....Radon                               |
| 11. Paint Supplies.....Organic                    | 25. Unvented Clothes Dryer ...Biological (moisture)   |
| 12. Paneling (pressed wood).....Formaldehyde      | 26. Pesticides .....Pesticides                        |
| 13. Wood Stove.....Respirable Particles           | 27. Stored Hobby Products ....Organic                 |
| 14. Tobacco Smoke.....Environmental Tobacco Smoke |   |

## ASBESTOS

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**Sources:** Deteriorating of damaged insulation, fire-proofing, or acoustical materials.

**Health Effects:** No immediate symptoms. Chest and abdominal cancers and lung diseases. Smokers are at higher risk of developing asbestos-induced lung cancer.

### **Steps to Reduce Exposure:**

- Use trained and qualified contractors for control measures that may disturb asbestos and for clean up.
- Follow proper procedures in replacing wood stove door gaskets that may contain asbestos.

## BIOLOGICAL POLLUTANTS

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**Sources:** Wet or moist walls, ceilings, carpets, and furniture; poorly maintained humidifiers, dehumidifiers, and air conditioners; bedding; household pets.

**Health Effects:** A host of illnesses and diseases may occur from biologicals; upper respiratory irritations.

### **Steps to Reduce Exposure:**

- Install and use fans vented to outdoors in kitchens and bathrooms.
- Vent clothes dryer to outdoors.
- Clean cool mist and ultrasonic humidifiers daily and use only distilled water in them.
- Empty water trays in air conditioners, dehumidifiers, and refrigerators frequently.
- Clean and dry, or remove, water damaged carpets.
- Use basements as living areas only if they are leak-proof and have adequate ventilation. Use dehumidifiers, if necessary, to maintain humidity at 35-50 percent.

## CARBON MONOXIDE

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**Sources:** Unvented kerosene and gas heaters; leaking chimneys and furnaces; down-drafting from wood stoves and fireplaces; gas stoves. Automobile exhaust from attached garages. Environmental tobacco smoke.

**Health Effects:** Persistent headaches, nausea, fatigue, blurred vision, rapid heartbeat, loss of muscle control, flu-like symptoms that clear up upon leaving the house.

### **Steps to Reduce Exposure:**

- Keep gas appliances properly adjusted.
- Consider purchasing vented gas space heaters and furnaces.
- Use proper fuel in kerosene space heaters.
- Install and use exhaust fan vented to outdoors over gas stoves.
- Open flues when gas fireplaces are in use.
- Choose properly sized wood stoves that are certified to meet EPA emission standards.
- Make certain that doors on all wood stoves fit tightly.
- Have a trained professional inspect, clean, and tune up central heating system (furnaces, flues, and chimneys) annually. Repair any leaks properly.
- Do not idle car inside garage.

## ENVIRONMENTAL TOBACCO SMOKE

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**Sources:** Cigarette, pipe, and cigar smoking.

**Health Effects:** Eye, nose, and throat irritation; headaches; bronchitis; pneumonia. Increased risk of respiratory and ear infections in children. Can cause lung cancer and may contribute to heart disease.

### **Steps to Reduce Exposure:**

- Stop smoking and discourage others from smoking.
- Do not allow smoking in your home.

## 🏠 FORMALDEHYDE

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**Sources:** Pressed wood products (*hardwood plywood wall paneling, particleboard, fiberboard*) and furniture made with pressed wood products, urea-formaldehyde foam insulation, combustion sources and environmental tobacco smoke, durable press drapes, some textiles, and glues.

**Health Effects:** Eye, nose, and throat irritation; wheezing and coughing; fatigue, skin rash and severe allergic reactions. May cause cancer. May also cause other effects listed under "organic gases."

### Steps to Reduce Exposure:

- Use "exterior grade" pressed wood products (*lower-emitting because they contain phenol resins, not urea resins*).
- Use air conditioning and dehumidifiers to maintain moderate temperature and reduce humidity levels.
- Increase ventilation, particularly after bringing new sources of formaldehyde into the home.
- Insist on a carpet or carpet pad with little or no formaldehyde content.

## 🏠 LEAD

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**Sources:** Automobile exhaust, sanding or open-flame burning of lead-based paint, deterioration of lead-based paint, and any activities using lead solder.

**Health Effects:** Impaired mental and physical development in both fetuses and young children. Decreased coordination and mental abilities; damage to kidneys, nervous system, and red blood cells. May increase high blood pressure.

### Steps to Reduce Exposure:

- If you suspect the paint you are removing may contain lead, have it tested.
- Leave lead-based paint undisturbed. Do not sand or burn off.
- Cover lead-based paint with wallpaper or other building material. Replace moldings and other woodwork or have them removed and chemically treated off-site.
- Use well-ventilated areas for hobbies and house maintenance involving lead. Consider using "no-lead" solder.
- If lead exposure is suspected, consult your health department about appropriate removal and clean-up procedures and have your blood lead levels tested.
- Have your drinking water tested for lead.

## 🏠 NITROGEN DIOXIDE

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**Sources:** Kerosene heaters, unvented gas stoves and heaters. Environmental tobacco smoke.

**Health Effects:** Eye, nose, and throat irritation; may cause impaired lung function and increased respiratory infection in young children.

**Steps to Reduce Exposure:** See steps under Carbon Monoxide.

## 🏠 ORGANIC POLLUTANTS

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**Sources:** Household products including paints, paint strippers and other solvents; wood preservatives; aerosol sprays; cleansers and disinfectants; moth repellents and air fresheners; stored fuels and automotive products; hobby supplies and dry cleaned clothing.

**Health Effects:** Eye, nose, and throat irritation; headaches, loss of coordination, nausea; damage to liver, kidneys, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans.

### Steps to Reduce Exposure:

- Use household products according to manufacturer's directions.
- Use outdoors or in well-ventilated places.
- Throw away unused or little-used containers safely; buy in quantities that you will use soon.
- Use nontoxic alternatives.

## PESTICIDES

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**Sources:** Products used to kill household pests (*insecticides and termiticides*). Also, products used on lawns and gardens that drift or are tracked inside the house.

**Health Effects:** Irritation to eye, nose, and throat; damage to central nervous system and kidneys; cancer.

### Steps to Reduce Exposure:

- Use strictly according to manufacturer's directions.
- Mix or dilute outdoors.
- Apply only in recommended quantities.
- Take plants or pets outside, where possible. Increase ventilation when using indoors.
- Use non-chemical methods of pest control where possible.
- If you use a pest control company, select it carefully.
- Do not store unneeded pesticides inside home; dispose of unvented containers safely.
- Store clothes with moth repellents in separately ventilated areas, if possible.
- Keep indoor spaces clean and well-ventilated in order to eliminate or minimize use of air fresheners.

## RADON

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**Sources:** Earth, uranium and rock beneath home; well water.

**Health Effects:** No immediate symptoms. Estimated to cause about 10% of lung cancer deaths. Smokers are at higher risk of developing radon-induced lung cancer.

### Steps to Reduce Exposure:

- Test your home for radon. Easy-to-administer home test kits, that include lab analysis, are sold at most hardware stores and often can be obtained through local departments of health.
- Get professional advice before planning and carrying out radon reduction measures.
- Seal cracks and other openings in basement floor.
- Ventilate crawl space.
- Install active sub-slab depressurization system. A heat recovery ventilator (*air-to-air heat exchanger*) can also help.
- Treat radon-contaminated well water by aerating or filtering through granulate-activated charcoal.

## RESPIRABLE PARTICLES

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**Sources:** Fireplaces, wood stoves, kerosene heaters, and environmental tobacco smoke.

**Health Effects:** Eye, nose, and throat irritation; respiratory infections and bronchitis; lung cancer.

### Steps to Reduce Exposure:

- Keep gas appliances properly adjusted.
- Consider purchasing vented gas space heaters and furnaces.
- Use proper fuel in kerosene space heaters.
- Install and use exhaust fan vented to outdoors over gas stoves.
- Open flues when gas fireplaces are in use.
- Choose properly sized wood stoves that are certified to meet EPA emission standards.
- Make certain that doors on all wood stoves fit tightly.
- Have a trained professional inspect, clean, and tune up central heating system (*furnaces, flues, and chimneys*) annually. Repair any leaks properly.
- Do not idle car inside garage.