Home Sweet Home

A guide to Indoor Air Quality (IAQ)

All homes require fresh air to deal with moisture, CO2 generated by the occupants, common household smells and indoor pollutants. In the past occupants depended on leaky construction and leaky windows to control odours and humidity. Because of the demand for more comfort and energy efficiency, new houses are built to leak less. The use of synthetic materials, household cleaners and personal hygiene products which give off complex chemical compounds has been increasing. Indoor air pollutants affect occupant health so we need to consciously take steps to improve our indoor air quality. This can vary from the very simple to an expensive complex ventilation system. When occupants have lingering colds or flu-like symptoms, numerous headaches or other 'poor' health not explained by a physician, one may need to seriously look at the indoor air quality of one's home.

Let us start in the basement. We should take steps to reduce the following:

- Moisture. Mould, insects and other biological agents thrive in damp dark basement areas. Keep basements dry and clean. Relative humidity should stay below 60 per cent. A good rule of thumb is that for every 10 degrees drop in outside temperature below zero degrees celsius, your relative humidity should drop 10 per cent in your home. Install a dehumidifier if necessary. Bathrooms with showers need exhaust fans with dehumidistats.
- Heating systems should be inspected yearly for leakage of combustion products and fuels. CO can unknowingly keep us sick. An expensive CO detector should either be installed in hallways to bedrooms.
- Chemical products typically stored in a basement (pesticides, fuels, cleaners, paints, etc) can release vapours. These should be stored in outdoor areas or in cabinets that are ventilated to the outside.

The kitchen

- If you have a gas stove with a continuously burning pilot light, make sure the exhaust emissions are continuously vented to the outside. Cheaper still buy a gas stove with an electronic spark ignition.
- Use the range hood fan when cooking to remove moisture and unwanted odours. If your house is very air tight, slightly open a window to keep 'depressurization' from sucking fuel burning contaminants from a fireplace or furnace into your home.
- Keep areas near stoves and counters clean and dry.
- Make sure the drain pan under the fridge does not contain large volumes of water for a period of time--an ideal breeding ground for moulds and the like.
- Don't store chemical cleaners, air freshners, pesticides, or other household products under the kitchen sink. Keep them outdoors or in the garage.

Bathrooms

- Bathrooms tend to have the highest levels of moisture due to showering, bathing, washing and flushing. Thus bathrooms provide warm, moist havens for mould, viruses, bacteria, mites and other biological agents that can cause allergic reactions and chronic health problems. An exhaust fan controlled by a dehumidistat set at 55 per cent is highly recommended in bathrooms with a shower or tub.
- Check for mould growth on bathrooms tiles, walls and ceilings. If necessary clean thoroughly with a solution of warm water and soap with good ventilation.
- When renovating, use paints that are waterproof and resist mould in areas of high moisture. Bathrooms should not have carpet on the floor.

The rest of the house

- Condensation. Older aluminum windows 'sweat'. If water vapour forms on the glass of windows, there is probably too much moisture in the house. This may require a ventilation system in your home as described later.
- Vapours from volatile organic compounds. New carpets, furniture, and fabrics may release vapour for some time to which some people are very sensitive.
- Make sure fireplaces, stoves, heaters are in proper working order, have enough combustion air, and are used with adequate ventilation (eliminate depressurization). Have a good CO detector mounted nearby as well as in hallways to bedrooms.
- Limit smoking to outdoors only. The carcinogenic properties of tobacco smoke are well documented.
- Keep pets out of bedrooms—they carry insects and may produce allergenic dander.

The attached garage

- Make sure the house door to the garage has an operating closer and the weather stripping is in good condition. Open the garage door before starting a car and do not idle for long in the garage.
- If below a bedroom, keep chemicals out of the garage.

Ventilation

Our ideal of using less energy and more comfort has made our homes 'stuffy' unless we provide adequate ventilation. This is especially true in the winter when we spend large amounts of time indoors and keep our windows closed. If we experience 'unexplainable' headaches, fatigue, sore throats, nausea, dizziness, cold or flu-like symptoms we could be living in a 'sick' home. No one test can prove this but a combination of many 'insignificant' pollutants can cause some of us a 'minor' problem. Ventilation may need to be as simple as number 1 or as sophisticated as number 6.

1. Natural ventilation by opening windows.
2. Bathrooms fans on switches and dehumistats along with a good range fan over the kitchen stove. Open windows slightly to allow air movement.
3. A dehumidifier in the basement or crawlspace depending on levels of relative humidity in different locations of the house.
4. A heat recovery ventilator providing clean air to the main living area of the house.
5. A heat recovery ventilator tied into the forced air heating system of the house.
6. A heat recovery ventilator system ducted in and out of all rooms of the house.

In summary, people pollutants will accumulate in any occupied well built home. Furnishings may release volatile organic compounds as well as hang onto people pollutants. Our pollutants may encourage biological growth which in turn alarm our allergies. Therefore we need to exhaust polluted indoor air and supply fresh outdoor air in an effective and efficient manner. Draft proofing and making our homes more energy efficient without adequate ventilation will simply concentrate its occupant's pollutants on the inside. Money spent on adequate ventilation now may be money saved over and over in the future.

May you be healthy in your home!!!

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