



## ADDRESSING MOISTURE AND MOULD IN YOUR HOME

Health Canada considers indoor mould growth to be a significant health hazard. The word mould is a common term referring to fungi that can grow on building materials in homes or other buildings. Damp conditions and mould growth in homes increases the risk of respiratory allergy symptoms and exacerbate asthma in mold-sensitive individuals. It is important to know how to identify, address and prevent moisture and mould in your home.

People living in homes with mould and damp conditions are more likely to have:

- eye, nose and throat irritation
- coughing and phlegm build-up
- wheezing and shortness of breath
- worsening of asthma symptoms

The level of concern depends on the extent of mould, how long it has been present and the sensitivity and overall health of the residents. Some people are more susceptible than others. For example, infants, children, the elderly and those with health problems such as breathing difficulties are more at risk from mould and dampness.

Any respiratory health concerns should be discussed with a physician if you suspect that these could be caused by poor indoor air quality. Your physician is best suited to determine if your symptoms may be related to environmental factors or some other underlying cause.

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**HEALTH CANADA RECOMMENDS CONTROLLING DAMPNESS INDOORS AND CLEANING UP ANY MOULD REGARDLESS OF THE TYPE OF MOULD PRESENT<sup>1</sup>.**

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### Identifying mould

Mould growth can be hidden. Mould can grow behind walls or above ceiling tiles, so it is important to check for the presence of mould anywhere that is damp and especially where water damage has occurred. Start with a visual inspection of your home. Look for signs of mould or excessive moisture, such as stains or discolouration on floors, walls, window panes, ceiling tiles, fabrics and carpets. Look for obvious signs of leaks, condensation, flooding, or a musty odour. **Immediate action is important. Mould will begin to grow within 48 hours.** If there is visible mould, it needs to be removed.

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1. Health Canada, Residential Indoor Air Quality Guidelines: Mould (Ottawa: Her Majesty the Queen in Right of Canada, 2007), p. 2.

### Professional assistance

You may wish to seek advice on how you can address moisture and mould problems in your home. A qualified professional with experience dealing with moisture issues and mould could examine the condition of your home and document your concerns. They would identify the moisture problems, find their sources and suggest solutions in a written report. Recommendations should be provided to you in a prioritized action plan consisting of various options on how to address the specific moisture and mould problems in your home.

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### HEALTH CANADA DOES NOT RECOMMEND TESTING THE AIR FOR MOULD.

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Health Canada, in accord with other public health organizations, **does not recommend testing the air for mould**. An air test does not provide information on health and does not address the cause of mould damage in the house. You also do not need to know the type of mould present in order to remove it. Mould is a natural part of the environment and there are always mould spores in air. Simply finding mould spores in an air test does not necessarily mean there is a problem. The best way to reduce your health risk from mould is to identify and remove the moisture source(s) and clean up the mould.

### Moisture: Investigating and solving problems

Mould will grow indoors if moisture is present. Moisture problems in homes may result from:

- daily activities such as showering or bathing, washing clothes or cooking, if exhaust fans are not working properly or are not used;
- infiltration of water from the outside when there are cracks or leaks in the foundation, floor, walls or roof;
- plumbing leaks;
- moisture condensation on cold surfaces;
- flooding due to weather conditions (snow melt, storm surges, prolonged or heavy rainfall);
- inadequate ventilation.

Moisture indoors accumulates when it cannot be vented outside and becomes a problem when building materials become damp or wet.

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### MOISTURE PROBLEMS ARE PREVENTABLE.

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Unless the cause of the moisture problem has been identified and solved, mould will reappear. Once the moisture problem and its causes have been identified, they must be fixed. To prevent future problems, measures should be put in place to control sources of moisture in your home, for example:

- Ensure rain, irrigation water and snowmelt drain away from the house by sloping the grade away from the building.

- Keep eavestroughs and downspouts clean of debris and ensure that the outflow runs away from the house and not into neighbouring foundations.
- Repair plumbing leaks promptly.
- Use exhaust fans, ventilation and air conditioning systems to vent moisture outdoors.
- Use moisture tolerant materials in areas likely to get wet (kitchen, bathrooms, laundry areas).

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**RUN A DEHUMIDIFIER IN DAMP AREAS SUCH AS BASEMENTS OR IF YOU OBSERVE THAT MOISTURE IS CONDENSING ON COLD SURFACES SUCH AS WINDOW PANES.**

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### Extent of mould growth

It is important to determine the extent of the mould problem in your home to help you decide on the clean-up procedure. An area of mould is considered **small** if it covers one square metre or less. There should be no more than three patches of mould, with the total area staying within one square metre. Many small patches of mould in one area or throughout your home are a sign of moisture problems that need to be investigated and corrected right away.

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**IF IGNORED, SMALL MOULD AREAS MAY BECOME LARGER OVER TIME, SO IT IS IMPORTANT TO CLEAN THEM UP BEFORE THE PROBLEM GETS BIGGER. A SMALL AMOUNT OF MOULD MAY BE CLEANED UP USING PROPER PROCEDURES AND PROTECTIVE EQUIPMENT.**

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The area of mould is considered **medium** if there are more than three patches of mould (each patch smaller than a square metre), but the total area is less than three square metres. In this case, assessment by a qualified professional is recommended but in most cases a medium amount of mould may be cleaned up using proper procedures and protective equipment (see section on Cleaning up Small and Medium Mould Problems on page 4).

An area of mould is considered **large** if a single patch of mould is larger than three square metres. **Health Canada does not recommend that an unqualified person clean up large areas of mould.** You may need a professional assessment to determine why the mould is there in the first place and how to clean it up.

**TABLE 1: EXTENT OF MOULD - DECISION CHART FOR CLEANUP PURPOSES**

Total Surface Area Affected by Mould		
SMALL	MEDIUM	LARGE
Three or fewer patches and the total area is less than 1 m <sup>2</sup>	If there more than 3 patches or if the patches are greater than 1 m <sup>2</sup> but less than 3 m <sup>2</sup>	If a single patch is larger than 3 m <sup>2</sup>
		
Small mould area: cleanup using proper precautions	Medium mould area: Expert assessment recommended, but may be cleaned up using proper precautions	Large mould area: Expert assessment and cleanup required

**Cleaning Up Small and Medium Mould Problems**

**DO NOT USE BLEACH TO CLEAN UP MOULD.**

You can clean up small areas of mould if you follow the proper procedures and use the right protective equipment. Unless the mould growth is on smooth surfaces such as bathroom tiles, surface cleaning will not eliminate the problem.

In most cases you can clean up medium areas of mould if you follow the proper procedures and use the right protective equipment. Materials damaged by mould must be physically removed and disposed of under safe conditions. However, it is important to seek professional assistance if there is a large mould problem or if mould comes back after cleaning.

Susceptible individuals such as pregnant women, infants, children, the elderly, (or pets) and occupants with asthma, allergies or other health problems should not be in or near the area where the mould is being cleaned up.

**MINIMUM PROTECTIVE GEAR NEEDED:**

- SAFETY GLASSES OR GOGGLES;
- A DISPOSABLE N95 MASK; AND
- HOUSEHOLD DISPOSABLE GLOVES.

You can purchase an N95 mask from a hardware store. Make sure that the label says “N95”. Other masks are designed to provide limited protection against dust and are not suitable for protecting against mould exposure. Make sure that the mask is properly fitted and you can breathe through the mask.

In a flood situation: put your own safety first. **Avoid electrical shock. Wear rubber boots at all times while standing in water. Keep extension cords out of the water.** Shut the power off to the flooded area at the breaker box. Ask your local electrical utility for help if needed (see *Flood Cleanup: Keep in Mind Indoor Air Quality*).

### Washable surfaces

Examples of washable surfaces are window sills, wood, hard surfaces and tiles.

- Scrub surface using a cloth with an unscented soap solution.
- Sponge with a clean wet cloth and dry quickly.

### Walls

- Clean the surface of the wall with a damp cloth using baking soda or a small amount of unscented soap solution. Do not allow the drywall to get too wet. Cleaning with too much water adds moisture to the paper and can damage the surface.
- If the mould is underneath the paint, the drywall will need to be removed and replaced with new drywall.
- Painting over a mouldy surface does not kill mould and does not stop it from growing back. Painting only temporarily hides the problem.

### Concrete surfaces

- Scrub surface using a brush with an unscented soap mixed with warm water; then
- Sponge with a clean, damp cloth and dry quickly.
- Remove any carpets or cardboard boxes that have been placed directly on the concrete floor as these may have become damp and allowed mould to grow.

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**MOULD THAT COMES BACK AFTER CLEANING IS USUALLY AN INDICATION THAT THE SOURCE OF MOISTURE HAS NOT BEEN REMOVED. SEEK PROFESSIONAL ASSISTANCE.**

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### Before mould clean-up work begins

Any mould growing indoors has to be removed. The underlying water or moisture problem that led to mould growth has to be fixed in order to prevent mould from coming back. For example, the building envelope (i.e., roof, walls, windows, doors, foundation) has to be repaired if moisture or water is entering your home from the outside. Before mould clean-up work begins you may want to follow these steps:

#### Step 1—Discard mouldy or damaged materials

- Use protective equipment
- Where possible open windows and doors to provide fresh air.
- Place and seal all mouldy items in a plastic bag.
- Take the sealed bags outside using the closest exit and dispose.

### *Soft furnishings, mattresses, bedding and plush toys*

Check non-washable furnishings for mould. Moisture and mould can get into soft or upholstered furnishings. Cleaning the surface may not be effective. Because many hours are spent in bed, it is important to make sure that mattresses, pillows, blankets and stuffed toys are mould-free. Stuffed toys should be considered as bedding because they are often used as pillows or held close to children's faces. Mould can grow in mattresses and bedding that have been damp or wet. It is not possible to clean a mouldy mattress.

- Throw away carpets, sofas, cushions, mattresses, pillows, stuffed toys or bedding that have gotten wet, have been exposed to damp conditions or that have been stored in a wet environment. Furnishings that have been in very moist conditions for several weeks can become mouldy.
- Do not hang onto mouldy items after the house has been cleaned.
- Clean dry mattresses in good condition with a HEPA vacuum or externally exhausted vacuum.

### *Paper and cardboard*

Mouldy paper is one of the most difficult materials to clean.

- Throw away any books, paper, cardboard, puzzles, or other paper products that show signs of mould.

### Step 2—Vacuum

Do not use a regular vacuum for homes with a mould problem. Instead, use a vacuum cleaner with a HEPA filter or a central vacuum system that is exhausted outside.

- Vacuum all surfaces in the house slowly and carefully.
- Vacuum all non-washable furnishings (sofas, chairs, mattresses, etc.) slowly and carefully.
- Vacuuming the surface of furnishings may not be effective if they have been wet or exposed to dampness over a long period.
- Clean and/or replace the vacuum filters often according to manufacturer's recommendations.

### Step 3—Clear wet areas

- Pull carpets and furnishings away from walls that are wet.
- Carpets and underpads that are mouldy should be cut out and discarded.

### Step 4—Dry

- Dry areas that are wet.
- Use a portable dehumidifier, if you observe condensation on cold surfaces. Ensure that the drain pan of the dehumidifier is emptied regularly or that the dehumidifier drains directly into a drain.

Step 5—Isolate, if necessary

- If the mould is limited to one area, isolate the area if possible to limit your exposure.
- Cover the affected surfaces with plastic sheeting secured at the edges with duct tape.
- Note that this is only a temporary measure to minimize your exposure while waiting for the cleanup work to begin.

Step 6—Seek professional assistance

- Consider seeking professional assistance to identify the right corrective action to be taken inside your home.
- To remove large amounts of mould, the services of a mould cleanup contractor are required.

### Prevention Checklist

The key to mould prevention is to remove excessive moisture build-up and control relative humidity through proper home maintenance and by following these steps:

#### Bathroom

- Remove the moisture by using an exhaust fan when you shower or take a bath.
- If you don't have an exhaust fan, get one installed in each bathroom.
- Check exhaust fans to make sure there is adequate air movement and that they are vented to the outside and not into the attic.
- Keep the fan running for at least 30 minutes after your shower.
- Keep surfaces clean and dry. Squeegee and dry the walls around the bathtub and shower after showering or bathing.
- Remove any mould by scrubbing with unscented dishwashing detergent and water.
- Clean often to prevent small patches of mould from getting larger.
- Repair or replace open, cracked or damaged tile, grout and caulking around showers and tubs.
- Repair plumbing leaks promptly.

#### Kitchen

- Remove the moisture by using a kitchen range hood every time you cook.
- Check the range hood to make sure there is adequate air movement and it vents to the outside.
- Cover pots with a lid while cooking.

#### Laundry Room

##### *Clothes dryer*

- Check that your clothes dryer vents to the outside.
- Seal the joints in the dryer duct with foil tape.
- Clean the lint tray every time you use the dryer.
- Occasionally inspect the outside vent hood and remove any built-up lint.
- Make sure nothing is placed in front of the vent outside and that the vent is kept clear.

### *Washing machine*

- Leave the washing machine door open when not in use so that any water left behind can dry. This will prevent mould and bacteria from growing inside the washing machine.
- Make sure that water from the washing machine flows directly into the laundry sink or drain without dripping or splashing outside of the laundry sink. Use pipe extensions to reduce any splashing.
- Check hoses and connections for leaks.
- Hanging wet laundry indoors increases indoor humidity.

### Condensation on windows, window frames and sills

- Promptly repair any leaks.
- Lower the indoor moisture levels.
- Use exhaust bathroom fans and a kitchen range hood.
- Keep window coverings open to move the warm air over the windows (heavy curtains or blinds can trap the cold and moisture and cause condensation on your windows).
- Keep baseboards or heating vents clear of furniture to make sure the heat flows.
- Dry your window frames and sills daily to keep water from dripping and causing mould to grow.
- Leave interior doors open for good air and heat flow.
- Unplug and remove humidifiers.

### Basement

- Run a dehumidifier in your basement to help reduce dampness year round (if necessary). Make sure the windows are closed when the dehumidifier is running.
- Check plumbing pipes for condensation, dry pipes and insulate them with foam insulation.
- Keep areas and storage spaces free and clear of clutter, especially if near an outside wall.
- If you use the basement for storing items, use plastic bins with lids instead of cardboard.
- Never place cardboard boxes directly on the basement floor.
- Store firewood in the garage or shed, not inside the house.
- Remove any carpets from the basement floor.

### General considerations

- Have family and friends take off their shoes at the door before entering your home.
- Keep beds, bedding and furniture away from outside walls for good airflow.
- Keep closets and storage spaces free and clear of clutter, especially if near an outside wall.
- Install a central vacuum vented outdoors or use a HEPA vacuum. Vacuum often. Clean hard floors with a damp mop.

NOTE: If you rent a house or an apartment unit speak to your landlord about any moisture or mould problems. Information on landlord/tenant issues, rights and responsibilities is available from your provincial/territorial government. If the moisture problem is a result of a fault in a common element in the building, it may be the responsibility of the owner/landlord to address the problem.

If you own a condominium unit or workspace, be sure to consult with the Condominium Board before taking corrective action.