What's in this patient handout?

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An overview of mould

Mould is a type of fungi that lives on plant and animal matter. It grows best in damp and poorly ventilated conditions and reproduces by making spores, which can be a health hazard for humans and pets. Airborne mould spores are commonly found in both indoor and outdoor environments.

There are many different types of mould, and they all have the potential to cause health problems. Asthma, allergies, respiratory complaints, and chronic fatigue are some health concerns which are associated with mould.

Mould can affect the health of anyone; however, people with asthma, allergies, pre-existing respiratory conditions, weakened immune systems or certain genetic factors may be at greater health risk from mould exposure.

The key to controlling indoor mould growth is locating and controlling the moisture source. In addition, the home must have good ventilation and humidity levels below 70% to minimise internal moisture and prevent mould growth.

Signs you may have a mould problem

Odour:	• Musty odour
Signs of water damage:	• Staining, discolouration or smudging of walls, ceilings, timber, carpet, or furnishings. Note: mould can appear as a 'fuzz' and range in colour which can change depending on age and life-stage of mould. • Bubbling or cracking paint, wallpaper, or floor coverings. • Corroding/rusty metal. • Pest infestations (e.g. cockroaches, termites).
Unexplained health conditions:	• Asthma or allergies that worsen. • Symptoms with unidentified causes including fatigue, brain fog, gut disturbances, muscle pain, mood and sleep disturbances and trouble regulating body temperature.

What causes mould growth?

Mould only grows when there is sufficient moisture on a surface or humidity in the air. Common causes include:

- Plumbing, gutter, or roof issues
- Inadequate ventilation, insulation, and waterproofing
- Inadequate drainage beneath buildings or landscaping issues
- Condensation from showering, cooking, clothes drying
- Climate (humidity regularly above 70% is ideal for mould growth)
- Faulty appliances such as unflued gas heaters or air conditioners
- Indoor spas, fish tanks or water features

Preventing mould

- **Open windows** and doors and keep fans on wherever possible for adequate ventilation and airflow.

- Use **exhaust fans or open the windows** in the bathroom and kitchen when showering, cooking, or using the dishwasher to reduce condensation.

- Maintain ideal humidity levels with **air conditioning and/or a de-humidifier.**

- **Wipe up excess water** caused by condensation, such as on single glazed windows and shower glazing.

- Reduce the use of humidifiers and the number of indoor plants and fish tanks.

- **Dry water spills entirely** and quickly and remove any damaged products which cannot be dried within 48 hours.

- **Wipe down tiles** to clean off soap scum that mould feeds on.

- **Dry clothes** and shoes before putting them away.

- Air out wardrobes and cupboards regularly.

- **Turn mattresses frequently** and air bedding, rugs, and other fabrics in the sun.

- Move furniture away from the walls to **increase air circulation**.

- **Vent clothes dryers** to the outside and clean lint filters according to the manufacturer's instructions. If not vented, open the windows and doors in the room when in use.

- Vacuum, dust, and clean kitchens and bathrooms regularly to eliminates mould food sources.

- **Use waterproofing** and damp course to prevent outside walls becoming a source of dampness due to rising ground damp.

- Ensure vegetation, including gardens, are not planted alongside external walls.

- Allow a buffer to adequately drain any watering away from the building.

- **Fix leaky plumbing** and roofs and other building faults.

- Ensure gutters are cleared and maintained.

Removing mould

- The best way to remove mould is a "HEPA sandwich", which involves vacuuming the affected surface with a vacuum cleaner fitted with a HEPA filter, then wiping with a damp microfibre cloth and then vacuuming.

- The microfibre cloth should be soaked in water with an added squirt of dishwashing liquid. Use two buckets to avoid cross-contamination when cleaning the mould (one for the solution and one for rinsing). Discard the microfibre cloths and HEPA filters after cleaning the mould.

- A combination of 80% vinegar and 20% water can also eliminate mould if cleaning with detergent does not work.

- Never use bleach – it is ineffective in killing fungi, and while it appears to remove the stain, it promotes further mould growth.

- Clove oil is not necessary to clean mould. It effectively kills fungi; however, most mould spores are dead already but can still cause health issues when inhaled. Furthermore, clove oil may also cause damage to certain building surfaces and can be toxic to children and people with allergies or chemical sensitivities.

- Never dry brush a mouldy area or item of clothing as this can release spores into the air that spread the mould further and cause an allergic reaction in some people.

- Protective gear should always be worn when cleaning the mould. This includes a P2 face mask and respirator, eye protection and rubber gloves. Ensure the room is well ventilated.

- Mould removal should not be performed by people who are immune compromised, those suffering lung disease, asthmatics, allergy sufferers, or pregnant women.

Addressing water damaged and mould affected materials

Drying	• **Heating** the air to 27° C lifts moisture off surfaces. Temperature above 27° C do not seem to make a difference.

	• **Dehumidifying** pulls moisture out of the air. It is critical to heat and dehumidify at the same time to prevent secondary damage from moisture. There are three ways to do this:
	  - Refrigerated or split system air conditioner
	  - Portable dehumidifier
	  - Fan (speeds up evaporation).

	Filtrating air is important; after 48 hours microbial growth and germinating spores will need to be removed.

Remediating water damaged materials

Non-porous materials	• Non-porous materials such as metal, porcelain, ceramic, sealed timber, laminate, and glass do not absorb moisture or easily support fungal growth. • A HEPA sandwich can be used to remediate these items.
Semi-porous materials	• Semi-porous materials include cement, bricks, grout, hard tiles, vinyl, plywood, leather, masonry, and unsealed timber.
Porous materials	• Porous materials include carpet and underlay, soft furnishings, clothing, insulation, particle board, leather, and paper (including books). These items should be discarded if they do not dry out in 48 hours. • Clothing not affected by visible mould may be remediated by a specialist laundromat or washed in hot water at 60° C and dried in the sun. • Porous materials wet for less than 48 hours can be cleaned with an alcoholic solution (30% water to 70% alcohol).

Testing for and remediating mould in the home

If you can see or smell mould, you need to clean and remove the mould immediately. However, not all mould is visible or has an odour, and contamination can occur in wall cavities or the ceiling. If mould is suspected but not located, or steps have been taken to prevent mould growth and it is still occurring, or you are experiencing mould-related health symptoms, seek help from a Building Biologist (Australian Society of Building Biologists) or Institute of Inspection, Cleaning and Restoration Certification (IICRC) accredited mould remediator to investigate.

Remediation may require a team of specialists including mould remediators, hydrologists, engineers, licensed plumbers, specialist drying technicians and heating, ventilation, and air conditioning (HVAC) specialists.

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Seek Medical Care

Contact your healthcare provider if you are experiencing new or unexplained symptoms discussed above, or if allergies and asthma are worsening with no known cause.

Mould illness requires specialist diagnosis and treatment. The key to recovery is to address the cause of moisture and remove the trigger (mould).