



Association pour la santé environnementale du Québec
Environmental Health Association of Québec

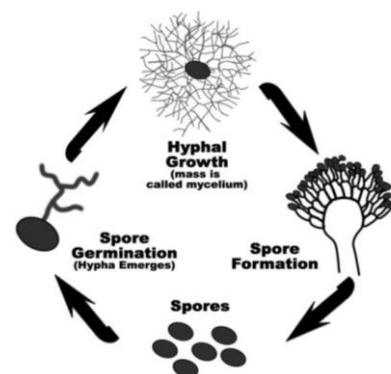
ECO-JOURNAL

November 2021

Bhavini Patel

Is Mold the Source of Your Problems Part I

Mold is a type of fungus that is found virtually everywhere in the environment (Felson, 2021). Essentially, mold is made up of small organisms that can easily grow under certain conditions. Mold can be visible or subtle, and it can show up in many different colors. The problem is that some mold can become toxic when it grows excessively in indoor environments such as your home or office building.



The following article will discuss how mold grows, where it grows, and why it could potentially constitute a threat to your health.

The Life Cycle of Mold

Mold has a relatively simple life cycle. Mature mold produces spores, which are cells that help the organism reproduce (Ryan et al., 2004). These tiny spores are built by nature to resist harsh conditions such as high temperatures and humidity. Their small size also makes it easier for them to disperse both through water and air. To complete the cycle, the spores germinate, grow into a mature mold, and the process repeats.

Mold is a vague term used to describe multiple species. Just like there are poisonous plants and non-poisonous plants, there exists both innocuous molds and toxic molds. In the household, a few types of mold regularly occur (CDC, 2020):

- *Aspergillus*
- *Cladosporium*
- *Penicillium* Mold



514-332-4320



bureau@aseq-ehaq.ca
office@aseq-ehaq.ca



A Perfect Set of Conditions

To grow, mold needs water, a food source, darkness (i.e., away from UV rays), and temperatures between 20 and 48 degrees Celsius (Vanvuren, 2017). Unfortunately, many rooms in the house harbor these exact conditions, which makes them highly susceptible to a mold infestation. These rooms include:

- Kitchen – humid, wet (sink, refrigerator, etc.), perfect temperature for mold growth
- Basements – moist, wet (leaks), poor ventilation, and dark
- Laundry room – damp and wet (leaks)
- Bathrooms – moist, wet, not always well-ventilated, perfect temperature for mold growth
- Bedroom – humid and windows that invite outdoor mold in
- Attic – damp, dark, and poor ventilation
- Garage – wet (leaks), dark, and often poorly-insulated

Potential sources or problem items comprise:

- Plants – overwatered plants can increase the indoor humidity level
- Air conditioning & vent systems – mold can easily accumulate in these
- Fireplaces & chimneys – damp and dark
- Old furniture – if not cleaned regularly, can accumulate dangerous mold colonies
- Walls and ceilings – often neglected when cleaning

Note: These lists are not all-inclusive.

What Is Mold Doing to You?

The effects of mold on your health can vary based on different factors:

- Your overall health – e.g., do you have any medical conditions?
- Your age and gender – certain groups are more at-risk than others
- The amount of mold present in your home and the total duration of exposure
- The type of mold present – not all molds are toxic

In a meta-analysis conducted by Fisk and colleagues (2007), it was found that in damp indoor environments where mold thrives, there was a 30 to 80% increase in respiratory and asthma-related health outcomes. Similarly, another study showed that mold exposure is associated with the worsening of asthma symptoms in both children and adults (Zock



et al., 2002). These two studies prove how airborne spores can be inhaled and create a health risk, especially for those with pre-existing health conditions.

In New Zealand, a team of researchers evaluated 150 children between the ages of 1 and 7 years old (Shorter et al., 2017). Their results found a positive association between asthma-like symptoms (e.g., wheezing) and mold exposure. The findings were also dose-dependent, suggesting that the higher the exposure, the worse the symptoms were. These children had no prior history of respiratory symptoms or allergies; thus, painting mold as the likely culprit for the observed effects.

Mold is also associated with mild-to-severe allergic reactions. When they enter the body, mold spores can push the immune system to trigger an inflammatory response that can increase sensitization to mold, resulting in an allergy (D'Amato et al., 2020). This implies that what may start as a mild reaction could over time become a more serious allergic reaction.

Summary of Mold-Related Health Consequences

- Respiratory difficulties: coughing, wheezing
- Respiratory tract infections
- Allergic reactions
- Rhinitis, sinusitis, headaches
- Chronic inflammation leading to other health outcomes

Overall, there is enough scientific evidence that illustrates just how much mold can affect health, namely respiratory health. Hence, the second part of this article will cover how you can identify mold and combat it in your home.

References

Anonymous. (2020). Basic Facts about Mold and Dampness. *Centers for Disease Control and Prevention*. Retrieved from <https://www.cdc.gov/mold/faqs.htm>.

D'Amato, G., Chong-Neto, H. J., Monge Ortega, O. P., Vitale, C., Ansotegui, I., Rosario, N., ... & Annesi-Maesano, I. (2020). The effects of climate change on respiratory allergy and asthma induced by pollen and mold allergens. *Allergy*, 75(9), 2219-2228.



Felson, S. (2021). Moisture and Mold Problems: Preventing and Solving Them in Your Home. *Web MD*. Retrieved from <https://www.webmd.com/lung/mold-mildew>.

Fisk, W. J., Lei-Gomez, Q., & Mendell, M. J. (2007). Meta-analyses of the associations of respiratory health effects with dampness and mold in homes. *Indoor air*, 17(4), 284-296.

Ryan, K.J., Ray, C.G., eds. (2004). *Sherris Medical Microbiology* (4th ed.). McGraw Hill. pp. 633–8. ISBN 978-0-8385-8529-0.

Shorter, C., Crane, J., Pierse, N., Barnes, P., Kang, J., Wickens, K., ... & Wright, C. (2018). Indoor visible mold and mold odor are associated with new-onset childhood wheeze in a dose-dependent manner. *Indoor air*, 28(1), 6-15.

Vanvuren, C. (2017). 11 Most Common Places to Check for Mold in Your Home. *Molekule Blog*. Retrieved from <https://molekule.science/11-common-places-check-mold-home/>.

Zock, J. P., Jarvis, D., Luczynska, C., Sunyer, J., Burney, P., & European Community Respiratory Health Survey. (2002). Housing characteristics, reported mold exposure, and asthma in the European Community Respiratory Health Survey. *Journal of Allergy and Clinical Immunology*, 110(2), 285-292.