

# Formaldehyde Laminate Flooring

## Clinician Fact Sheet

**Exposure to formaldehyde from laminate flooring in the home may cause irritation, cough, or shortness of breath, especially in children and people with asthma or other respiratory problems. Medical therapy should aim to alleviate symptoms and recommend actions to decrease further exposure.**

### What is formaldehyde?

Formaldehyde is a colorless, pungent, irritant gas at room temperature. Formaldehyde is a normal byproduct of our body's metabolism and is also found naturally in our diet.

Formaldehyde is a common indoor air pollutant due to its use in many household products and building materials, especially those containing urea-formaldehyde<sup>1</sup>. The release of formaldehyde into the air is called off-gassing and may occur for weeks to months.

Formaldehyde off-gassing occurs from:

- Household and building materials (e.g., engineered wood flooring, particleboard)
- Furniture (e.g., wood finishes, cabinetry)
- Permanent press fabrics (e.g., curtains, drapes)
- Household products (e.g., glues, paints, caulks, pesticides, cosmetics, and detergents)
- Smoke (e.g., from cigarettes, fireplaces, gas stoves)

### What are the health effects of formaldehyde exposure?

Health effects from exposure to low levels of formaldehyde in air (if any), may include:

- Irritation of the mucus membranes of the eyes, nose, and throat
- Cough
- Shortness of breath
- Bronchospasm and wheezing, especially for sensitized persons including people with asthma

Children, the elderly, and people with asthma and other breathing problems may be more sensitive to the effects of formaldehyde.

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<sup>1</sup> Urea-formaldehyde (UF) is a resin or plastic made from urea and formaldehyde that is used in a number of adhesives and finishing materials.

## **Does formaldehyde from laminate flooring cause cancer?**

Chronic exposure to formaldehyde in occupational settings (like industrial manufacturing and embalming) is associated with rare cancers of the nose and throat. However, these formaldehyde levels are much higher than the levels that may originate from laminate flooring, and the exposure longer. Studies have also shown that formaldehyde levels from new products decrease to baseline within the first two years.

## **What is the risk to pregnant women exposed to formaldehyde from laminate flooring?**

The World Health Organization (WHO) and the International Agency for Research on Cancer (IARC) have both concluded that there is no clear evidence that formaldehyde causes adverse developmental effects during pregnancy. Occupational studies evaluating formaldehyde exposure and spontaneous miscarriages are very limited and the results have been inconclusive.

## **What are the health effects in children living in homes with this laminate flooring?**

Studies have shown that new homes with a variety of new construction materials have higher levels of formaldehyde compared to older homes. Children living and playing in this environment should be monitored for the formaldehyde exposure symptoms. Children may be more susceptible to formaldehyde exposure because of their size, their developing bodies, and their proximity to the floor. Some studies have shown that children may be more likely to develop worsening symptoms of pre-existing respiratory disease (e.g., asthma) than adults after exposure to formaldehyde, even at low levels (ATSDR, 2010).

## **How can I manage patients with health effects related to formaldehyde exposure?**

- There is no specific therapy after formaldehyde exposure. Medical therapy should aim to alleviate the patient's symptoms (supportive care)
  - For example, treat bronchospasm and wheezing with supplemental oxygen and aerosolized bronchodilators
  - Symptoms due to irritation are usually mild and resolve spontaneously after exposure ceases

- Recommend actions to decrease further exposure to formaldehyde by:
  - Making the home smoke free. Tobacco smoke contains formaldehyde and may be the greatest source of formaldehyde in the home.
  - Opening windows and ventilating the area to remove formaldehyde.
  - Buying wood products that are labeled urea-formaldehyde (UF)1 free or meet the ultra-low emitting formaldehyde (ULEF), no added formaldehyde (NAF) requirements, or no VOC/ Low VOC.
  - Maintaining temperature and humidity levels at the lowest comfortable setting to reduce off-gassing of formaldehyde.

### What tests are available for measuring formaldehyde?

- Although there are tests for formaldehyde and its breakdown products in blood or urine, they are used for monitoring workers in occupational settings. These tests are generally not a good measure of exposure and are not useful for clinical management.
- Most homes have some level of formaldehyde and this level can vary from day to day. Although there are home tests available to measure formaldehyde in the air, they do not indicate what product(s) is the source of the formaldehyde.

### More Information

- If you have questions or concerns about the products being used in homes, contact the Consumer Product Safety Commission at 1-800-638-2772.
- You can also contact CDC/ATSDR for updated information on this topic at 1-800-CDC-INFO or [visit our website](#).
- For medical treatment of formaldehyde exposure, you can call your [regional poison control center](#): 1-800-222-1222.
- [CPSC update on formaldehyde](#)
- [EPA Questions and Answers Regarding Laminate Flooring](#)
- For information on formaldehyde and cancer, visit the [National Toxicology Program \(NTP\) Report on Carcinogens, Thirteenth Edition, Formaldehyde](#).