



# Questions and Answers About Mold in Your Workplace and Home

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Molds have received a great deal of media attention in the last couple of years, particularly in areas like Eastern North Carolina, where conditions are ideal for their growth. Due to the rising concerns of residents and employees throughout Camp Lejeune, we have compiled a list of common questions and answers regarding molds. The references used in developing this information are the Environmental Protection Agency (EPA), Center for Disease Control (CDC) and Prevention, and American Industrial Hygiene Association (AIHA) and Naval Facilities Engineering Command (NAVFAC).

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## ***What are molds and where are they found?***

Molds are forms of fungi that are found everywhere – both, indoors and outdoors, all year round. Outdoors, molds live in the soil, on plants and on dead or decaying matter. Another common term for mold is *mildew*. Mold growth can often be seen in the form of discoloration, including white, orange, green, brown, and black. Mold spores are very thin and lightweight, which allows them to travel through the air. All of us are exposed to fungal spores daily in the air we breathe, both outside and inside.

***How do molds affect people?*** Most people will not have any reaction at all when exposed to molds. Allergic reactions, similar to common pollen, animal allergies, and tobacco smoke are the most common health effects for individuals sensitive to molds. (i.e., watery/itchy eyes, nose, throat, sneezing, congestion, coughing, etc.). Allergy symptoms from mold are more common in people who already have allergy problems. Molds also aggravate asthma. Small amounts of mold growth are not a major concern, but no mold should be permitted to grow and multiply indoors and should be cleaned when first observed. Certain individuals may react to mold exposure more severely and quickly than others, such as those with weakened immune systems (i.e., persons with HIV infection, chemotherapy patients, organ/bone marrow transplant recipients, and persons with autoimmune disease). Also, children may be more susceptible than adults, because their lungs are still developing. Those with special health concerns should consult their doctor if they are concerned about mold exposure. However, the mere presence of mold does not necessarily mean symptoms of respiratory illness are caused by that mold. Symptoms could very well

be due to other causes such as bacterial or viral infection, or other allergies.

***How does mold get into my house or workplace?*** Most if not all of the molds found indoors, comes from outdoor sources. It needs moisture to grow and becomes a problem only where there is water damage, high humidity, or dampness. Common sources of indoor moisture that can cause mold problems include roof and plumbing leaks, water in drip pans, damp basement or crawl spaces, flooding, or any moisture condensation on cold surfaces (such as around windows). Bathroom showers and steam from cooking can also create problems, if not well ventilated (i.e., use of exhaust fans).

***How can I prevent mold growth in my home or workplace?*** Controlling excess moisture is the key to preventing and stopping indoor mold growth. Keeping susceptible areas in the home clean and dry are very important. There are a few things that you can do to help reduce or prevent the growth of mold in your home which include:

- Acting quickly when water leaks or spills occur. In most cases, if wet or damp materials/areas are dried 24 to 48 hours after a leak/spill happens, mold will not grow. If you live on base, report leaks to Family Housing that appear to be from plumbing, mechanical, or structural sources, as soon as possible.
- Removing unnecessary houseplants or any source of standing water such as aquariums, which can contribute significant moisture to the air.



- Emptying and cleaning the refrigerator drip pan routinely.
- Opening doors between rooms (especially doors to closets which may be colder than the rooms) to increase circulation. Increase air circulation by using fans and by moving furniture from wall corners to promote air and heat circulation.
- Changing HVAC return-air filters at least every 30 days or more frequently and cleaning return air vents. You may want to use high efficiency particulate air (HEPA) filters for your return air vents, instead of regular filters. HEPA filters cost more, but will capture much smaller particles, which aide in reducing many allergens; they are available at various stores that sell air filters.
- Maintaining low indoor humidity below 60% relative humidity (RH). Guidance for reducing humidity in your home is provided in the next question.

As part of routine maintenance, buildings should be periodically inspected for evidence of plumbing leaks and structural damage. If moisture/water problems are identified, they should be corrected. **If you live aboard Camp Lejeune, Base Family Housing will be involved; if you live off base, either you or your landlord will be responsible. These mold prevention tips include:**

- Making sure the ground slopes away from the building foundation, so that water does not enter or collect around the foundation.
- Performing regular building inspections and HVAC preventive maintenance. Ensuring that HVAC drip pans are clean, flowing properly, and unobstructed.
- Venting appliances, such as dryers to the outside.
- Fixing leaky plumbing.
- Repairing rainwater leaks through walls, at windows, and at roofs, as they are frequently the most significant contributors to moisture.

- Ensuring adequate cross-ventilation in crawl spaces (i.e. adequate number of vents).
- For new construction or in unusually damp crawl spaces, place a 6 mil plastic (vapor barrier) over the dirt to prevent moisture from coming in from the ground.
- Ensuring adequate insulation in the walls and under floors (where feasible).
- Sealing around HVAC ducts, pipes, and electrical conduit.
- Adding mold inhibitors to paints or using paints, which already contain mold inhibitors, before applying to surfaces.

**How can I reduce the humidity in my home or workplace?** Actions that you can take to help reduce humidity levels within your home include:

- Running the bathroom fan when showering. Using exhaust fans whenever cooking or running the dishwasher
- Using air conditioners and /or dehumidifiers when needed. (Note: Change filters and clean dehumidifiers in accordance with the manufacturer's recommendations).
- Ensuring appliances that produce moisture, such as clothes dryers, stoves, and kerosene heaters are vented to the outside where possible.

**If I have mold in my home or workplace, should it be tested?** Generally, it is not necessary to identify the species of mold growing in a building/home, and the Centers for Disease Control (CDC) and Prevention does not recommend sampling for molds. It is not economically practical and there are no mold standards for comparison. If mold is present, it is more important to spend time and resources getting rid of the mold and solving the moisture problem causing the moldy conditions.

**Can molds be toxic?** Some molds produce toxic substances called mycotoxins. Airborne mycotoxins **have not been** shown to cause health problems for occupants in residential or



commercial buildings. Illnesses from high or chronic (long-term) exposures to mycotoxins are associated with grain-based food supplies (feeds), and ingestion (by mouth) is the major source of exposure, typically among those in certain occupations like agricultural work.

**What is “black mold”?** The news media often refer to “black mold” or “toxic black mold”. It has usually been associated with the mold *Stachybotrys chartarum* (*Stachybotrys atra*), a type of slimy, greenish-black mold commonly associated with **heavy** water damage (flooding). Constant moisture is required for its growth. It grows on moisture-laden materials that contain cellulose, such as wood and paper. It does not grow on tile or cement. Exposure does not always present a health problem. The Center for Disease Control (CDC) and Prevention does not recommend taking any different precautions with *Stachybotrys chartarum* than with other molds. NOTE: Not all molds that appear to be black mold are *Stachybotrys*.

***If I have mold, how do I clean it up?***

Wear rubber gloves and eye protection. Though not necessary for small amounts of mold (less than 10 square feet or 3.16 ft x 3.16 ft area), you may choose to wear an N-95 dust mask/respirator (available at local hardware stores). If you have allergies or asthma, you need to have someone else clean the mold.

- For hard surfaces, (1) clean mold with a mild **non-ammonia** detergent and water by damp wiping; (2) rinse by damp wiping with water; (3) additionally, you may damp wipe with a disinfectant solution, such as household bleach and water (1 cup of bleach in 1 gallon of water) or a product specifically designed to remove mold. **Never mix bleach with ammonia, because the fumes are toxic;** and (4) dry the area completely prior to repainting. The use of fans, dehumidifiers and heaters may speed up the drying process.
- For porous (absorbent) materials such as wallboard (Drywall and gypsum board) dry in place, if there is no obvious swelling and the seams are intact. If there is damage to wallboard, the effected portion will need to be removed and replaced. If there is mold growth on carpets or upholstered furniture, steam

cleaning may be an alternative (in case of porous materials, some mold spores will remain in the material, but will not grow if the material is completely dried). Porous materials that have severe water damage or mold may need to be discarded.

***If I suffer from severe allergies, should I get my ducts cleaned?*** Duct cleaning is not recommended, unless there is distinct visible mold growth inside the hard surface (i.e., sheet metal) ducts or on other components of the heating and cooling system. Ensure that HVAC drip pans are clean, flowing properly, and unobstructed.

***What are some other sources that could be contributing to allergy-like symptom?***

There are many things that can produce allergy-like symptoms or cause sensitivities/irritations. Some common sources include:

- Cleaning products such as those containing ammonia (window cleaners), limonene (furniture and floor polishes), and citrus ingredients (various cleaners); Pouring these types of products on a cloth or paper towel when cleaning surfaces, versus spraying them, may cause less of a reaction to sensitive individuals. Aerosolizing such products can produce allergy-like symptoms. Discontinuation or substitution of such products may be necessary in severe situations.
- Detergents, soaps, talcum powders, colognes and perfumes. This is usually evident within a short time after new products are introduced or used. Sometimes, it is difficult to ascertain which products might be causing problems, however.
- Polyurethane paints and varnish often contain chemicals referred to as isocyanates, which act as a sensitizer to a small percentage of people (a sensitizer is a chemical that can cause an allergic reaction (watery/burning eyes, coughing, wheezing, shortness of breath) and with each successive exposure becomes progressively worse. When products containing isocyanates aggravate an individual, it usually occurs during the application process (i.e. painting). The



individual has no reaction to the product after the painted surface has dried (cured).

- Off-gas chemicals or Volatile Organic Compounds (VOCs), are in many products within the home or office environment. These may be in hair sprays, scents, rug and oven cleaners, dry cleaning fluids, office equipment (i.e., copiers and printers), graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. All of these produces can produce symptoms. Many modern furnishings (compressed woods, particle board, veneers) emit chemicals such as formaldehyde, which is an irritant. Adhesives, carpeting, upholstery, and manufactured wood products are other sources that can be irritating. It is new products (i.e. furniture, carpeting, upholstery, etc.) that usually produce off-gassing.
- Pesticides sold for household use, (i.e., sprays, foggers or “bombs”) may cause reactions. It is best to remain out of the house for a few hours after spraying has been conducted.
- Animal dander and dust mites exacerbate asthma, allergies, chest tightness, coughing, and conjunctiva inflammation. To reduce these allergens conduct frequent vacuuming with a HEPA vacuum and changing of air filters and/or use of HEPA filters.
- Tobacco smoke is one of the most common contributors to asthma onset, allergies, and frequent respiratory and middle ear infections among young children.

In conclusion, there are many things that contribute to indoor air quality, which, inadvertently, produce environmentally associated symptoms. Sometimes, it can be difficult to pinpoint the source that is aggravating or causing the signs and symptoms.

Regarding mold, it is the responsibility of the homeowner or a concerted effort between the resident and landlord to implement control measures to eliminate it. Base Family Housing

is investigating all alleged mold complaints and making every attempt to identify and correct any sources, which might be contributing to mold growth. Your consideration and patience is appreciated regarding this issue.

There are many sources that provide detailed information regarding indoor air quality and mold, some of which are listed below:

<http://www.cdc.gov/health/default.htm>

<https://www.aiha.org/publications-and-resources/TopicsofInterest/Hazards/Pages/Mold.aspx>

<https://www.cdc.gov/healthywater/emergency/extreme-weather/floods-standingwater.html>

<http://www.epa.gov/> search for mold

<http://www.osha.gov/SLTC/molds>

[https://www.med.navy.mil/sites/nmcphc/Documents/industrial-hygiene/IHFOM\\_CH13-3.pdf](https://www.med.navy.mil/sites/nmcphc/Documents/industrial-hygiene/IHFOM_CH13-3.pdf)