

## Home Humidifiers and Health

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It is a common practice to operate humidifiers in homes that would otherwise be too dry during the heating season. These appliances can provide the moisture needed for comfort and good health. Ideally, this is in the relative humidity range of 35-45 percent.

Humidifiers, however, can cause some health problems. Recent research conducted at the Oak Ridge National Laboratory, and sponsored by the Consumer Product Safety Commission, raises some serious questions about health problems that can be caused by humidifiers. Without proper maintenance, the humidifier becomes a breeding ground for mold and bacteria, and some types of humidifiers can disperse living micro-organisms and their toxins into the air. Some humidifiers expel these materials in aerosol droplets that are readily inhaled deep into the lungs. The worst offenders are ultrasonic and cool mist humidifiers (the latter type has a spinning disk that “slings” tiny droplets of water into the air). Minerals normally present in tap water are deposited as a fine, white dust from these droplets. Distilled water should be used in such units.

What to do? Frequent cleaning of humidifiers is a simple but effective measure. Because some units require special maintenance steps, the best advice is to carefully follow the manufacturer’s cleaning directions. If manufacturer’s directions are not available, the following general rules are helpful. Note

that some ultrasonic units can be harmed by laundry bleach. These units can be sanitized with undiluted (3%) hydrogen peroxide, available at pharmacies.

For safety, unplug before cleaning and filling.

### **For Portable Humidifiers with Capacities Under 5 Gallons:**

#### Clean Daily:

Empty the leftover water, wipe all surfaces dry with a clean, soft towel, and refill with clean water.

#### Sanitize Weekly:

Empty leftover water and fill with a solution of 1 teaspoon of bleach per 1 gallon of water. Let soak for 20 minutes; periodically “swish” it around the sides.

Empty and rinse thoroughly to remove all bleach, prior to further use.

Remove any crusty mineral deposits by scrubbing with a solution of half water/half vinegar, using a soft brush or towel.



## For Humidifiers with Capacities Greater than 5 Gallons:

Sanitize Every 2 Weeks: Follow the preceding directions. Refer to manufacturer's instructions for further information.

## Whole House Humidifiers

Many homes equipped with forced-air heating systems have a whole-house humidifier connected to the duct work, usually near the furnace. These humidifiers should be checked for proper operation—and should NOT run continuously. (In some homes, excess moisture problems have been traced to a continuously running humidifier.) Whole-house humidifiers should be cleaned and sanitized several times each heating season, and more frequently in homes where allergy/asthma problems are present. The electric power supply must be disconnected before cleaning or servicing.

## Summary: Moisture and Mold

Bacteria, mold and other organisms grow wherever standing water is present. Within homes and

other buildings, health problems often occur because of these organisms, especially if they (and their spores or waste products) are introduced into air.

Other places where water may collect, supporting the growth of harmful organisms, include drip trays beneath refrigerators and (whole-house) air conditioning evaporation coils. Water can also collect in portable air conditioning units, and improperly insulated duct work.

## References:

Consumer Federation of America. (1992) *Indoor Air News*. Spring, VIII, p. 3. Washington, DC. Author.

Bales, E. and Rose, W.B. (eds.) (1992) *Bugs, Mold and Rot*. Proceedings of the Moisture Control Workshop. National Institute of Building Sciences. Washington, DC.

Laquatra, J. and Zaslow, S.A. (eds.) (1991) *Indoor Air Quality in Homes: Synthesizing the Issues and Educating Consumers*. Building Research Council—Small Homes Council, Univ. Illinois. Champaign, Ill.



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