

Allergy & Asthma

House Dust Mites

House dust can be a significant source of year-round allergic symptoms and asthma. Dust is composed of material fibers, human skin particles, animal dander, dust mites, and tiny particles from the deterioration of household articles.

Microscopic dust mites are an important cause of allergic reaction to house dust. There are high concentrations of dust mites in mattresses, pillows, upholstered furniture, bed linens, stuffed toys, and carpeting. Forced-air heat may increase airborne dust, making it more difficult to control dust in the winter.



House Dust Mite Control

House dust mite control has focused on separating the allergic patient from mite allergens in the bedroom by covering mattresses and washing bedding. Studies have shown the effectiveness of these measures in reducing mite allergen levels and improving allergic symptoms. However, another significant source of dust mite allergen, upholstered furniture and carpeting, is much more difficult to deal with.

Encase House Bed Mite Control Measures

1. **Impermeable dust proof encasements** should be used to encase the mattress and box springs. Cotton or fabric-backed vinyl covers on the mattress are very comfortable to sleep on. Such encasings should be wiped down each week with a damp cloth. Water beds are encased in vinyl or plastic and do not need the above encasings. New, unencased mattresses become highly contaminated with house dust mites within 4 months of use. If there is more than one bed in a room, all should be encased.
2. **Encase foam pillows** in impermeable dust proof encasement covers and replace on a periodic basis. Polyester pillows do not require covers, but should be washed in hot water weekly. Feather pillows should be removed from bedding, as they are "magnets" for house dust mite contamination.
3. **Wash bed coverings**, sheets and pillow covers in hot water (greater than 130 degrees F) or with an oil emulsion. This will kill mites and remove their fecal matter. However, washing at any temperature is somewhat effective, as it will wash out fecal matter. It is controversial whether detergents and bleach are effective in dust mite control.
4. **Blankets** should be encased or washed in water greater than 130 degrees F.
5. **Remove carpeting**, particularly that of the bedroom. Houses with carpeting contain more house dust mite allergen than those without. The best floor covering is tile or wood parquet, but linoleum or vinyl is acceptable. A smooth floor does not harbor dust mites and can be easily rendered free of allergen by damp wiping once per week.
6. **If carpeting cannot be removed**, low fiber shape, low-pile height and high-denier fiber carpets do not retain dust mites as much as others. Loose carpeting can be placed in the sun, which kills dust mites. Carpet can also be treated with 3% tannic acid (ALLERSEARCH spray), which breaks down mite allergen. However, tannic acid must be applied every 1 to 2 months and it is unclear of the beneficial effect of it on allergy symptoms. Certainly, carpet removal is much more effective than the regular application of tannic acid in reducing house dust mite allergen.



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Possibly Effective House Dust Mite Control Measures

- ❑ Frequent vacuuming and dusting do not reduce house dust mite numbers, their fecal matter or mite allergen; it can worsen mite-induced symptoms. Do not vacuum or dust more than 1 time per week. Vacuuming and dusting make dust mites and their waste particles airborne only for up to 30 minutes before they settle to the ground. Have someone else vacuum and dust, and stay out of the room for 30 minutes afterwards. If an allergic individual must vacuum, dust or empty a vacuum bag, he/she should wear a mask and open the windows (if practical).
- ❑ Use as powerful a vacuum cleaner as possible. The ideal vacuum is a central cleaning system with the collection container outside the house. Vacuum cleaners with double-thickness bags or a HEPA (high-efficiency particulate arresting) filter probably decrease the amount of dust mite allergen made airborne. A water filtration vacuum cleaner may better remove house dust mite waste particles from carpet by washing it out. Steam cleaning of carpets kills house dust mites, but the effect is short-lived.
- ❑ Special electrostatic filters can be added to central air conditioning and heating systems. These may be of value, especially in homes with carpet. While the cleaning of heating/cooling ducts is not effective in reducing mite allergen, the covering of duct vents with filters (or closing the vents) may be beneficial. Air cleaners with HEPA filters in the bedroom are ineffective.
- ❑ Limit the number of stuffed animals in the bedroom to 2 or 3. Wash these animals weekly in hot water or place them in a freezer for 24 to 48 hours every 2 weeks.
- ❑ Substitute wooden, vinyl or leather furniture for upholstered. Avoid sleeping on such furniture. Cleaning upholstered furniture with chemicals is ineffective in reducing house dust mite allergen.
- ❑ House dust mites grow best at 75 to 80% relative humidity and cannot live under 50% relative humidity. The ideal relative humidity is 40 to 50%, which can be measured with a humidity gauge. The use of air conditioning (whether central or a window unit) set below 70 degrees and/or a portable dehumidifier in the bedroom is probably effective in reducing house dust mites and their allergen. Central dehumidifiers are not effective. Avoid over-humidification in the winter.

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