

# The House Dust Mite

## *Dermatophagoides pteronyssinus*

We live surrounded in filth. Sorry, but it's a fact. All humans shed about 5-10 grams of dead skin each week. About 80% of the material seen floating in a sunbeam is actually flakes of skin.

House dust mites are nearly universal in occurrence - a typical bed mattress may have contain anything from 100,000 to 10 million mites. Ten percent of the weight of a two year old pillow may be composed of dead mites and their droppings. Carpets and household upholstery also support high mite populations. What do house dust mites eat? Human and animal skin flakes (*Dermatophagoides* - "skin eater"). So in some ways house dust mites are a good thing - they help stop us drowning in our own filth.

House dust mites are 0.2-0.3 mm long and translucent. Because of this, they are essentially invisible to the unaided eye. A dust mite's tough, translucent cuticle has deep striations that can be seen from both the dorsal and ventral views, with long setae (hairs) extending from the outer margins of the body and shorter setae on the rest of the body. There have eight legs, no eyes, no antennae and mouthparts in front of their bodies (resembling a head):



- [The housedust mite, \*Dermatophagoides pteronyssinus\*](#) (2.8Mb QuickTime web quality sample: [download FREE QuickTime Player](#))
- You can get a longer, better quality version of this video on the [Microbiology Video Library CD](#).
- Broadcast quality (520 line) digital video: 10 minutes duration, no soundtrack. Supplied on PAL format miniDV tape plus accompanying notes.
- If you are interested in obtaining this video, [please contact us](#).

## So why are we interested in dust mites?

House dust is a strongly allergenic material because it is usually heavily contaminated with the faecal pellets and skins of *Dermatophagoides*. Some estimates are that dust mite allergens may be a factor in 50-80% of asthmatics, as well as in eczema, hay fever and other allergic conditions. Exposure of the skin or respiratory tract to proteinases is frequently associated with allergic sensitization. The wheeze-inducing proteins are digestive juices from the mite gut which are quite potent. The proteolytic activity of **Der p I**, the group I allergen of *Dermatophagoides pteronyssinus*, may influence the allergenicity of mites. The mites in this video aren't just any old mongrels, oh no! They are pedigree mites lovingly bred on a diet of baker's yeast and beard shavings for research purposes.

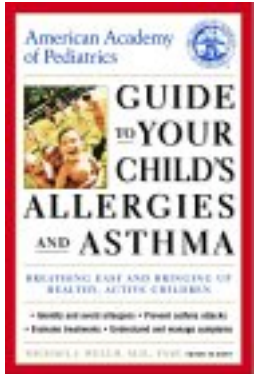
Exposure to the mites in the first, crucial year of life can trigger a lifelong allergy. There is no cure, only prevention - controlling house dust mite populations - focusing on dust control, to reduce the concentration of dust-borne allergens in the living environment by controlling both allergen production and the dust which transports it:

- No pesticides are currently approved for control of house dust mites.
- Replace feather and down pillows with synthetic fillings.
- Enclose the mattress top and sides with a plastic cover, thoroughly vacuuming mattress pillows and the base of the bed. Dampen and wipe the plastic mattress cover daily.
- Change and wash pillowcases, sheets, and under blankets, and vacuum the bed base and around the covered mattress weekly.
- Use nylon blankets rather than woolen or cotton ones.
- Frequently wash all bedding (blankets, mattress pads and comforters) in hot water (60°C weekly). Also wash curtains.
- Replace carpets with wood, tile, linoleum or vinyl floor coverings. (If you have carpets, vacuum every day.)
- Frequent vacuuming as a dust control measure is more likely to aggravate allergic asthmatic conditions because conventional vacuums are inefficient - dust collection by conventional vacuums results in a significant increase in air borne dust concentrations. Vacuuming is best accomplished by cleaners that trap dust in a liquid medium such as water rather than a dust bag.

However, to be effective, measures may need to reduce the house dust mite pollution 10 to

100-fold, not easily achieved in practical terms. It's important not to become so obsessed with mites, germs and dirt that normal life is impossible.

**If you or a member of your family has asthma or any other allergy, consult your Doctor.**



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[Michael J. Welch M.D. \(Ed\).](#)

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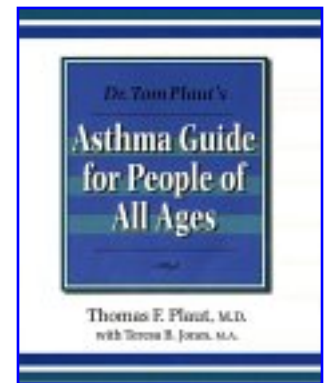
minimize triggers and avoid allergens, understand medications and choose them wisely, explain allergies to young children, help children of all ages manage symptoms.

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Thanks to Dr Colin Hewitt for help with this video.

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