

Healthy Homes – Dust Mites

Fact Sheet

Dust Mites

The indications are that house dust mite populations and indoor mould growth have increased over the last century. This is probably because of reduced ventilation levels, increased humidity and warmer indoor temperatures in winter months caused by changes in dwelling design and improvements in thermal efficiency when houses are renovated.

Both house mites and moulds flourish in damp and humid conditions and their growth is also influenced by temperature. Where the relative humidity is within the optimum range, increasing temperatures result in reduction in dust mite populations.

However, where humidity is high, outside the optimum range, increasing temperatures can result in increased mite populations and mould growth. Moulds can grow when the indoor relative humidity persistently exceeds 70%.

Health implications

Allergens associated with house dust mites (found in mite faecal pellets) are the most common triggers of asthma and are also implicated as a causal agent of the illness.

Around 80% of children with allergies who suffer from asthma are sensitised to house dust mites, and about a third of all children, whether asthmatic or not, display some evidence of allergy to them.

Dust mites in the home

The ideal temperature for mites to proliferate is at a temperature of 25°C and a relative humidity of 80%.

Mites live in an atmosphere where no liquid water exists so a high humidity is very important to the survival of these creatures, as most of their water is gained from the atmosphere by osmosis.

Dust mites and moulds

The flakes of skin absorb moisture from the atmosphere and are colonised by a yeast mould, genus *Aspergillus*. The yeast causes the scales of skin to swell, moistening and softening them and reducing the fat content as an aid to dust mite digestion.

This adds further importance to the role of humidity in the lives of the house dust mite, as moulds generally require a relative humidity of 65% or greater to exist.

Under ideal conditions, the life span of a mite is approximately two to three months.

Mite numbers vary seasonally, rising and falling in accordance with the humidity cycle within the house. The highest numbers are experienced in middle to late summer, when ambient relative humidity usually peaks.

Mites produce 60 times their own body weight in faecal pellets.

Controlling dust mites

The allergens produced by the house dust mites do not decay naturally and have been shown to be stable for at least 4 years.

A reservoir of antigens can therefore be established and maintained over a period of time.

Although increasing ventilation may inhibit re-colonisation, dust mite faeces also have to be killed, either by steam cleaning or by the application of a chemical solution acaricide.

Good housekeeping

Soft furnishings

As the main food of mites is human skin, heavily used soft furnishings, especially mattresses and bedding, provide a perfect environment for the development of mite colonies.

Dust control

Controlling dust is very important for people who are allergic to animal dander and mites.

Dust mites thrive in mattresses, sofas, stuffed chairs and bedding. Always wash bedding in hot water (at least 55°C) to kill dust mites.

Keep carpets clean and dry.

Regular vacuuming can keep your carpet relatively clean. If you are planning to renew your vacuum cleaner, consider a model with a HEPA (High Efficiency Particulate Arrestance) filter which removes over 99% of dust from vacuumed surfaces. Central vacuum systems are also highly effective.

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