

Vacuum cleaning ineffective in allergy avoidance

New research has shown vacuum cleaning to be largely ineffective at removing dust mite allergen.

Conducted by the Woolcock Institute of Medical Research the research found that vacuum cleaning was an ineffective allergy avoidance measure because it removed dust mite allergen from carpets in an inconsistent and incomplete manner.

This is particularly true of worn carpets where the study results indicate vacuum cleaning may in fact change the distribution of dust mite allergen within the carpet, rather than removing allergen from all depths equally.

Woolcock Researcher Jason Sercombe said that given that carpets are a major reservoir of dust mite allergen and vacuum cleaning is the most common method of allergen control, the results are particularly relevant to professionals interested in limiting people's exposure to common allergens.

"The results also help to explain why many trials aimed at reducing people's exposure to indoor allergens – some even going so far as to install new furniture – have had limited success.

"Although soft furnishings such as beds contain more concentrated sources of allergy-causing protein produced by house dust mites (known as Der p 1), the large size of carpet means it is likely to contain a larger total amount of allergen than other items in a home," said Mr Sercombe.

"Allergen avoidance measures that rely solely on vacuum cleaning are likely to be of limited success unless more rigorous cleaning than standard home vacuuming is performed."

The Woolcock study also showed the type of vacuum cleaners with rotating brushes in the head removed more dirt and allergen from the carpets than those without. However, rotating brushes may serve to kick dust up into the air if the suction component of the cleaner is not operating properly.

For the first time, the study demonstrated that carpets after several years of use in domestic conditions not only contain large amounts of Der p 1 allergen but that this allergen occurs throughout the depth of carpets with no consistent pattern.

The Woolcock Institute conducted the study in an attempt to better understand how allergen avoidance measures can be applied to carpets. It examined the vertical distribution of the allergy-causing protein produced by house dust mites present in several used carpets before and after a standardised vacuuming procedure using either of two styles of dry vacuum cleaner.

"Overseas studies have found that vacuum cleaners with two or three layer bags performed better than those with a single layer bag, and the maintenance of the cleaner and integrity of seals and gaskets were important factors in effective cleaning," Mr Sercombe said.

"There are many vacuum cleaners on the market that claim to be suited to allergy sufferers. The most important aspect to look for is HEPA (high efficiency particulate air filter) filtration which is finding its way into some very affordable models."

Dust mite allergen exposure can be reduced by:

- Washing bedding items weekly in hot water (55 degrees C or more, special anti-mite additives provide little additional benefit over hot water with normal detergent)
- Avoiding non-washable items such as sheepskins
- Regularly washing pillows and doonas and/or purchasing mite-resistant covers
- Washing any stuffed toys

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