



Dust Mites: Feather vs. Synthetic Pillows

Individuals with allergies or asthma have had a long-standing bias against the use of chicken, goose and duck feather pillows, comforters, quilts, and mattresses. This opinion has resulted from a perceived concern that feather-based products are breeding sites for dust mites and traps for mold, pet dander, and other indoor allergens. To date, there has been no systematic study examining the hypotheses that dust-mite allergen is present in unprocessed feathers and that standard manufacturing process (e.g., washing, drying, and sanitizing) eliminate mite allergen contamination from the feathers before their insertion into finished products. In this study, it shows that unprocessed feathers contain dust-mite allergen that is removed by washing. It further shows that feather pillows, whether covered or not, do not internally accumulate dust-mite allergen when used in mite-infested bedrooms over a 3-month period.

Method

Feathers were obtained from six feather companies. All feather samples were coded, cleaned, checked for lack of mites, stuffed in pillows and placed in test bedrooms for 90 days.

Results

Recommended avoidance of feather-filled products by allergy and asthma patients is long-standing but it has recently faltered under scientific scrutiny. Three earlier studies have observed that synthetic pillows accumulate dust-mite allergen at a rate faster than feather pillows and that synthetic materials contain a higher concentration of dust-mite allergen after a given period of use. All three studies suggest that the tightly woven feather-proof encasing may be more dust-mite allergen-proof than more loosely woven covers used on synthetic pillows.

In contrast to previous studies, this study examined un-encased feather samples, before processing, preuse and postuse rather than vacuum dust samples taken from intact pillows. Although raw, unprocessed feathers can contain modest levels of dust-mite allergen, feather-processing techniques that involve washing and drying remove all detectable dust-mite allergen. Contrary to the observations of past studies, this study found that at zero months, feathers from pillows did not contain detectable dust-mite allergen. Similar to the other studies, this study observed that after 90 days, whether encased with a dust cover or not, feathers from pillows used in a limited number of bedrooms with dust-mite allergen levels $>2,000$ ng/g did not become contaminated with dust-mite allergen. The duration of this pilot study was limited to 90 days and future studies should examine the possibility of contamination longitudinally. This data suggests that the long-accepted medical advice of feather pillow avoidance by dust-mite allergic children be reconsidered.

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*Dryer AL, Chandler MJ, Hamilton RG. Dust-mite allergen removal from feathers by commercial processing. *Annals of Allergy, Asthma & Immunology* 2002;88;576-577