Beyond the Human Eye: Is Safe to Breath at Home?

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The allergens found in the interior of our homes are associated with the development of asthma, with domestic dust being one of the main sources these are found in [1]. Observation through a microscope is eye-catching, given the surprising amount of bodies and structures that exist in domestic dust, which can be inhaled and enter our airways.

Two types of structures can be observed through the microscope (dust mites and wing scales) which appear by two different means: domestic dust (Figure 1A and 1B) and stained sputum smears (Figure 1C and 1D).
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Figure 1: A: House dust mites (female specimens of Dermatophagoides pteronyssinus) (x 100). B: Wing scale of Lepidoptera (x 100). C: House dust mite (Dermatophagoides pteronyssinus) in sputum smear (scale bar = 6 µm. Papanicolaou stain, x 400). D: Wing scale of Lepidoptera in sputum smear (scale bar = 6 µm. Papanicolaou stain, x 400).
Dust mites are very small arthropods, practically invisible to the human eye (0.2 - 0.5 µm in length) and closely linked to allergy illnesses. Their bodies have four pairs of legs and are covered by a ribbed cuticle.

The wing scales of Lepidoptera, amongst which butterflies and moths are found, characterise this order of insects. Although a great diversity of forms exists, they have a similar structure. The body is formed of two layers (superior and inferior), the free edge appears serrated, whilst the on the opposite side the “pedicel” is found, through which the scales are attached to the wings. The scales assist in improving flight efficiency.

In this light, is it safe to breathe at home?

Bibliography