THE WATER BALANCE OF HOUSE DUST MITES, *DERMATOPHAGOIDES PTERONYSSINUS*, SUBJECTED TO CHANGING HUMIDITY CONDITIONS

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House dust mites are important producers of allergens. In temperate climatic regions, the number of house dust mites inside houses usually decreases during the winter. This may be a consequence of the lower relative humidity that prevails in winter. The mites are capable of extracting moisture from the surrounding air in order to maintain water balance. This can be accomplished only if the relative humidity (RH) is above a certain threshold level. In reality the RH may be below this level during the day and above it during the night. Especially in winter, when the home is heated during the the day, such conditions must be expected.

We subjected house dust mites to daily fluctuations in the RH. Adult females of *Dermatophagoides pteronyssinus* were first starved for two or three days at 76% RH and 18–19 °C. Subsequently the mites were placed, without food, at a very low RH (approximately 20%) for X hours ($X < 24$) and then returned to 76%. This was repeated every day for the next few days. At the end of the first day mortality was still very low and changes in the average weight of the mites reflected the degree of desiccation. After two or more days mortality increases, depending on X, the length of the daily period at low RH.

The experiments are important for the identification of sites in a home where *D. pteronyssinus* can survive the winter months. This will help to understand the population dynamics of house dust mites and it can also be useful for the practical control of mite allergens.

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