Health Risks: **Dust Mite History**

In the 1930's a German physician proposed that exposure to dust mites was a major cause of asthma in Germany. It wasn't until the 1960's that further studies were done confirming that association. It is now obvious that the inhalation of dust mites in people who are allergic to them, can cause not only wheezing and chest congestion, but also can be the cause of nasal or even sinus problems.

Dust mites are of the family of arthropods and are related to ticks, chiggers and spiders. These tiny 8-legged animals are too small to be seen without a microscope. Even with a microscope, it is sometimes difficult to see them since they have transparent bodies and can often be overlooked. In the home they are found in areas where people reside. Their food principally is skin scales that come off the human body, so they are found in largest numbers in dust samples taken from uncovered mattress surfaces, bedding, upholstered furniture, and carpeting in the home. They may, however, exist on other objects such as stuffed toys, drapes or deep in clothing. Dust mites are much more likely to be found in areas that are humid, such as the mid-Atlantic and south and much less likely to be found in significant numbers in dry areas.

For example, studies that looked at the quantity of dust mites in the home in Denver, Colorado and Los Alamos, New Mexico, found the populations of dust mites to be very low. A similar study was done in Charlottesville, Virginia showing large numbers of dust mites (And Richmond no doubt is worse)!

HOW DUST MITES CAUSE ALLERGIES

A certain proportion (approximately 10-20%) of the American population will become allergic to dust mites. It is assumed that these people who become allergic to dust mites have some kind of genetic potential for this to occur. In general, people become allergic to dust mites during their first fourteen years of life. The sensitization seems to be dependent upon the quantity and time of exposure. Once this sensitization develops, it usually persists into adult life. The allergy to dust mites as noted above can cause both asthma symptoms and nasal or sinus problems. In the mid-Atlantic area of Virginia, dust mites are prevalent. They thrive in our homes and love to live at ambient temperatures between 70° and 80° fahrenheit.

DUST MITE AVOIDANCE AND TREATMENT

Due to the fact that dust mites over the last 35 years have been shown to cause both nasal and asthma symptoms, it is logical that good therapy would suggest that patients try to reduce their levels of dust mite exposure significantly. The following is a list of methods that are currently being used to control dust mite concentrations in the home:

1. Enclosing the mattresses, box springs and pillows with either plastic or vapor permeable fabrics.
2. The washing of sheets and pillow cases in hot water (130ø fahrenheit) approximately every two weeks.
3. Reducing indoor humidity in the summer by the use of air conditioning and in the winter by use of a dehumidifier.
4. Frequent vacuuming and cleaning of the room, particularly near "dust collecting areas" such as behind and around beds and near bookcases.
5. The removal of wall-to-wall carpeting in the bedroom (if possible).
6. Chemical protein denaturing agents such as tannic acid may be sprayed on bedding surfaces to reduce dust mite allergenicity.
7. In most studies, allergy shots against dust mites have been shown to significantly reduce symptoms.
8. THE USE OF AIR FILTRATION SYSTEMS (OR DUCT CLEANING) IS NOT GENERALLY HELPFUL, SINCE DUST MITES CLING TO CARPET OR BEDDING SURFACES AND ARE NOT AIRBORNE FOR THE MOST PART.

CAN HOUSE DUST MITES CAUSE OTHER PROBLEMS?

Recent evidence does seem to suggest that house dust sensitivity may be a significant clinical aggravant of atopic dermatitis (eczema). Many patients with eczema will have allergies. If these patients are allergic and do have a sensitivity to dust mites, then dust mite avoidance measures as noted above may actually reduce eczema lesions.

Fortunately, dust mites are not associated with any known disease; therefore, their existence in the home is not a cause for alarm. In allergic patients, however, especially when the home may contain other allergens such as cats then the combination of allergens may be enough to produce clinical symptoms. Dust mite avoidance measures as noted above should be done initially, but for patients that do not respond to the avoidance measures, a course of allergy immunotherapy may be significantly beneficial at reducing both nasal and asthma symptoms. It is as yet not known if allergy shots may help to reduce eczema in dust mite sensitive patients.<