HOUSE DUST ALLERGY

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Q. What is house dust ?

A. It is the dust produced indoors from break-down of animal and plant material used in the house. Such material includes cotton, wool, jute, hemp, animal hair, feathers, etc. used particularly for stuffing in mattresses, pillows, quilts, upholstered furniture and carpets. Skin scales from humans and a large variety of moulds (fungi) as well as dander and saliva from pets, add to the mixture of house dust.

Q. What is it in the house dust to which people become allergic?

A. It is the tiny mite of the species Dermatophagoides pteronyssinus which grows on the constituents of the house dust. It feeds on the shed-off human scales; that is why it is called dermato (skin), phagoides (eats).

Q. What does the house dust mite look like?

A. The mite has an unsegmented body supported by eight legs. It is less than one millimeter in size, and seen only through a microscope. It is so light in weight that it can float about in the air when the bed room is cleaned. Its diagram is given on the front page.

Q. Where in the house is the mite to be found most often ?

A. It lives primarily in mattresses and also in carpets and upholstered furniture. The food it eats, that is the human scales or the rubbings from the skin, is found abundantly in the mattresses because person spends at least one-third of the 24 hours over there. The temperature of the mattress, when the person is occupying it and giving its own body temperature, is optimum for the growth of the mite.

Q. Does the mite prefer any environment for its growth ?

A. The mite grows best in humid, temperate climate. Houses with dark and humid interior, have more mites in their house dust. On the other hand, high altitudes with a dry and cold climate are not suitable for their growth.

Q. What is it in the mite that the people become allergic to?

A. Excretory waste products produced by these mites, which consist mostly of a protein substance, are the main substance to which allergic people react. Each mite excretes about

20 of these pellets every day. These pellets, minute in size, continue to cause allergic symptoms even after the mite which has produced them, has died. Female mite can lay 25 to 50 eggs, with a new generation produced every three weeks.

Q. Is there a relationship between the number of mites in the house dust and the degree of allergy to them?

A. A direct relationship has been noticed between the number of mites in the house dust, the degree of allergy and the symptoms of asthma.

Q. Are the people allergic to mite, also allergic to the house dust?

A. Tests done with extracts made from the laboratory-cultivated mite (D. Pteronysssinus), showed that all persons who gave positive reactions to the mites, reacted with house dust extract. "We have not yet seen a case in which a patient reacted to house dust and not to this particular species of mite or vice versa," wrote Dr. Voorhorst, the researcher who discovered mite as the cause of house dust allergy.

Q. Do the asthma patients allergic to house dust have any characteristic features so as to become easily recognizable?

A. No. There are no characteristic features of house dust allergy. Patients allergic to house dust are more liable to have perennial symptoms, i.e. the year round, with some aggravation in the rainy season when the humidity and temperature is more congenial for the growth of the mites. But this happens in the case of allergy to many of the fungi also which collectively occur the year round.

Q. Is there any connection between increase of asthma attacks during Diwali season and the house dust?

A. Yes. During the Diwali season, more cases of asthma report with symptoms or in severe attacks. Diwali festival is known for cleaning up of houses and decorating them. Cleaning involves raising lot of dust. When an asthma patient is exposed to this house dust, he gets more symptoms of the disease or a severe attack.

On the day of Diwali, an asthma patient is exposed to polluted air of the burning crackers which acts as another factor aggravating the symptoms.

Q. Some asthma patients who go to the hill

stations report lesser symptoms over there than they have in the same season in the plains. Why?

A. Temperature and humidity is low in the hill stations compared with the plains, in the season when people travel to hills. This low temperature and humidity does not allow the mites in the house dust to grow luxuriously. Less concentration of mites in the hill stations may be the cause of fewer symptoms in asthma patients who are allergic to house dust.

At higher altitudes where the mites don't grow and there is very little vegetation and the pollen concentration in the air is nil or very low such as at Leh, in Ladakh, very few cases of bronchial asthma are seen, even though other chest diseases are seen in abundance.

Q. Students going from homes to hostels, many a time, report lesser symptoms of asthma. Why?

A. They may be allergic to house dust. The house dust in the hostel rooms has been reported to have lesser number of mites because of austere nature of the furniture. Scanty furnishing also allow for better and easier daily cleaning of the hostel rooms.

Q. How is house dust allergy diagnosed ?

A. Taking a careful medical history which includes the nature and timing of symptoms, is very important. A specialist, generally, employs the skin test to detect the allergy. This test involves the injection of a tiny amount of house dust extract (allergen) to form a superficial bleb on the skin surface. The positive test consists of a raised itchy induration at the test site.

Alternatively, an allergy test on the blood is done to identify allergic individuals.

Q. Are people allergic to house dust, allergic to other substances as well ?

A. Yes. Skin tests in asthma patients show that people allergic to house dust are, many a time, allergic also to other asthma triggers such as moulds and pollens.

All or most of the triggers need to be avoided to lessen the frequency and severity of the attacks of asthma. If most of the triggers can be taken care of, the symptoms of asthma can disappear altogether in spite of the tendency to allergy being there.

Q. What is the response of house dust allergic patients to injection treatment (immunotherapy) ?

A. The response is best when the patient is allergic only to house dust. When the allergy is to other triggers also, the response is good but variable.

Q. Does avoiding exposure to house dust help an asthma patient ?

A. Yes Taking steps to minimize dust mite exposure in the bed room, leads to lessening of symptoms. Emphasis is placed on the bedroom because it is the room with the greatest number of dust mites.

Q. How can one reduce exposure to house dust ?

A. The following measures are helpful in this regard.

1. Enclose mattress and pillows in zippered, dust-proof covers.
2. Remove all carpets. If it is not possible, anti-mite spray be applied periodically.
3. Avoid heavy curtains. Dry clean or wash them frequently.
4. Substitute wooden or plastic furniture for upholstered one.
5. Wash blankets in hot water every few weeks. Avoid woollen blankets.

6. Place the contents of the bedroom or at least the mattresses in the hot sun fortnightly.
7. HEPA air cleaners (high efficiency particle arrestors) can remove most of the air-borne dust particles.
8. Use dehumidifier in damp places. Mites grow best at 75-80 percent humidity and cannot live under 50 percent humidity. Use a humidity gauze to maintain humidity at 40-50 percent.
9. Wear a face mask when making the bed and doing house-cleaning.

Q. How does anti-mite spray or powder act ?

A. Two types of anti-mite substances are commonly used. One is a solution of tannic acid; this denatures the pellets excreted by the mites so that they do not act as allergens. Second is benzyl benzoate powder; it kills the mites. Studies have shown that tannic acid spray gives better results than benzyl benzoate powder.

Available Publications

1.	Managing Asthma	Rs. 30.00
2.	Asthma Attack : It Can be Prevented	Rs. 30.00
3.	Asthma : Facts and Fiction	Rs. 20.00
4.	Asthma Triggers: How to Avoid Them	Rs. 20.00
5.	Asthma Attack : Early Signs	Rs. 20.00
6.	Anti-Asthma Drugs : Their Proper Use	Rs. 20.00
7.	Metered-Dose Inhalers : Use in Asthma	Rs. 20.00
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9.	Space Inhalers : Use in Asthma	Rs. 20.00
10.	Peak-Flow Meter : Use in Asthma	Rs. 20.00
11.	House Dust Allergy	Rs. 20.00
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