Allergies
and your environment

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Respiratory allergy occurs when allergens come into contact with the mucous membranes of the nose, eyes, or bronchial tubes. Allergens may include house dust mites, animal dander, mold spores, feathers, or pollens. In some people these can cause nasal allergy, eye allergy, or bronchial asthma.

Control of inflammation is the key to the control of nasal allergy and bronchial asthma. There are three steps you can take to do this:

1. **Avoiding allergens** is the most important thing you can do to control allergies.
2. **Medicines** such as antihistamines (loratadine, cetirizine, fexofenadine) and corticosteroids are helpful.
3. **Allergy immunotherapy** (allergy shots) may be helpful if avoiding allergens and taking medicines don't work.

What Happens in an Allergic Reaction?

Four processes occur during an allergic reaction:

1. Inflammation.

2. Swelling of the mucous membranes of the airway.

3. Mucus production.

4. In asthma, contraction of the muscle surrounding the bronchial tubes.

Inflammation is the most important component of the reaction. It occurs when white blood cells are attracted to the site of the reaction and release chemicals called enzymes. Another example of inflammation is when a person "skins a knee," it becomes red, swollen, and oozes fluid. Similar inflammation occurs in the nasal and bronchial airways of people with nasal allergy and bronchial asthma. It can result not only from allergy but also infection and exposure to respiratory irritants. The inflamed airway reacts more easily to other allergens and becomes more sensitive to nonspecific triggers, such as smog, tobacco smoke, strong odors and scents, changes in weather, or cold air.

You may have an allergy if…

❶ You react to the following household triggers:

- **Cats**
- **Dogs**
- **Feathers**
- **House dust microbes**
- **Mold**

❷ You react to the following pollens:

- **Trees** — depending on species, **January through May**: acacia, elder, alder, birch, cypress/juniper, ash, walnut, privet, sweet gum, mulberry, sycamore, olive, poplar/cottonwood, oak, pine, and elm.
- **Grasses** — late April through mid-July.
- **Weeds** — July through October.

Most Common Allergic Triggers

Cats and dogs: Pet dander (small particles of shed skin) is the most common cause of allergies to cats and dogs. Dander is easily spread throughout the home. It's distributed to all household surfaces, and most easily collects on carpets, blankets, cushioned furniture, and draperies. Sensitivity to cats and dogs is more common for people with sensitivity to other allergens.

Feathers: Even small birds produce large amounts of feather dust that contaminates house dust. Other sources of feathers may include pillows, quilts, comforters, and furniture cushions. If you react to feathers, all sources of them should be removed from your home and other environments.

House dust microbes: House dust microbes and their by-products are the most important factors in house dust, accounting for 95 percent of house dust sensitivity. The house dust microbe is a microscopic organism that lives on animal, including human, scale (tiny particles of dead skin shed from the body). Dust microbes also live on the scale from feathers and the dander from furry animals. Cattle and horse hair, found in jute and hair rug pads and upholstered antique furniture, also provide food for the house dust microbe. The San Francisco Bay Area climate is ideal for house dust mite growth.

Mold: Mold often forms around window sills, in closets, on walls behind furniture, in bathrooms, and in kitchens. The air is never free of mold (fungus) spores. In fact, the spores from mold can often live on even when the mold that produced it has been eliminated. Dark, damp, and poorly ventilated areas help both mold and house dust microbes grow.

Pollen: Airborne pollen from nonflowering trees, grasses, and weeds is a common cause of seasonal allergies, affecting millions of people in the U.S. each year. Symptoms can range from mild to severe.

Preventing and Managing Allergens in the House

House dust and house dust microbes in the bedroom: The highest concentration of house dust microbes is found in the bedroom, as this is the largest source of human scale. On average, a person spends one-third of their life in the bedroom. This room should be cleaned regularly. If you're allergic to house dust microbes, be sure to wear a mask when cleaning.

Mattress, box springs, and pillows: No matter how it's built, your mattress and box spring collects human scale and house dust microbes. Choose a pillow filled with a synthetic material other than foam. Feathers themselves can cause allergy, and foam can help mold grow. It's important to cover mattresses, box springs, and pillows with a zippered case made of rubberized fabric or plastic.

You can find plastic mattress and box spring covers at many stores, including houseware and department stores. To make them more comfortable, put a washable mattress pad over the plastic cover. Rubberized fabric covers are usually more expensive, but more comfortable and suitable for pillow covers. You can buy rubberized fabric covers from various allergy product companies.

Futons: Try not to use futons because they cannot be covered easily with air tight covers. Foam futons are a source of mold.

Bedding: Machine washable synthetic or cotton blankets are best. Wash your blankets, sheets, and mattress pads at least every 2 weeks in hot water (130˚F or higher). This will keep house dust microbes from forming.

Floor covering: It's best to remove all rugs from the bedroom because they hold a lot of human scale and house dust microbes. A smooth floor (wood, vinyl, linoleum, or tile) that can be easily mopped is best. Throw rugs may be used, but they should be washed regularly in hot water. If you cannot remove wall-to-wall carpeting in your home for any reason, it's best to steam clean it. Shampooing carpet does not destroy the house dust microbes.

Window coverings: The best window coverings are simple shades or washable curtains. Avoid heavy drapes and Venetian blinds, as these harbor dust and require frequent cleaning.

Heating system: Keep closed bedroom heating vents from a recirculating heating system. Instead, use electric baseboard or other similar heaters that don't burn easily. If you do have a recirculating heater, clean it regularly and change the filters every 6 to 8 weeks.

Books and clutter: Remove books, clutter, toys, and stuffed animals from the bedroom, or store them in a covered box or bookcase.

Targeting Common Allergens

Household mold: There are many ways to minimize the amount of mold and mold spores in the home. It's important to improve air flow by keeping a window partially open and allowing natural light to enter the room.

Remove any visible mold with a weak solution of bleach and water, mold and mildew cleaning spray, trisodium phosphate (available in hardware stores), or other antimold agents. Bathing and cooking produce water vapor (steam) in the house. Close doors to these areas and create airflow if possible using fans or opening windows.

Roofing and plumbing leaks create dampness and must be repaired. Dehumidifiers may be helpful, particularly in bedrooms, where it's difficult to control mold.

If you find mold in closets, empty the closets and clean everything that was inside it. Keeping a 100-watt bulb burning night and day in the closet will often raise the temperature sufficiently to prevent a recurrence of mold growth.

Don't keep houseplants or aquariums in the bedroom. Mold often forms on the dead leaves and soil of potted plants. Keep houseplants clean and free of dead leaves. Replace any wicker or wooden plant containers with plastic or ceramic. Airflow spreads mold spores, so avoid placing plants in drafty areas or near heating and air-conditioning vents. Placing smooth stones on the houseplant soil may prevent the spread of mold spores.

Pet dander: If pet dander is the cause of an allergy, it's best to remove the pet(s) from the environment. Keeping the pet in a garage or yard may not be enough. Those who care for the animal often return to the living area of the house with pet hair and dander on their clothing, so the dander is then distributed with house dust. Ideally, the pet should be relocated to a home where it will be happy and you can occasionally visit. After the pet is relocated, even with frequent cleanings, it takes 6 months or more for the hair and dander to be removed from the home. Don't substitute or replace one furred or feathered pet with another. Sensitivity will often develop to these new pets leading to additional allergy problems.

Pollen: If you're sensitive to pollen, you probably have more difficulty during your allergy season when you're outdoors, especially on windy days or when riding in a car with the windows open. During your pollen allergy season, you may also be more sensitive to household allergens and other nonspecific irritants. At the same time, if allergens in your home environment aren't controlled, this can make you more sensitive to pollens.

Unlike other allergens, pollen cannot be controlled. The best way to manage allergy to pollen is to minimize time spent outdoors when needed. In the car, use the air conditioner instead of opening windows.

Preventing Allergies

Air cleaners and conditioners: Allergic persons living in areas of heavy pollen exposure may find air cleaners or conditioners useful. These also lower the amount of dust in the home. They're most effective when installed into the central heating system. Room style air cleaners or conditioners aren't as effective, but they can help. These take 2 or 3 hours to clear the air in the average room. Small desk type units often cost less, but often don't help. If you're not sure what kind of air cleaner or conditioner will work for you, consider renting one from a medical supply store to test for a short time.

Avoid humidifiers since they increase humidity, which favors house dust microbe and mold growth.

Allergy shots: Controlling your environment is the most important way to manage respiratory allergy. If environmental control and medications don't improve your respiratory allergy, your doctor may suggest allergy shots (immunotherapy). Controlling the allergens in your home also makes allergy shots more effective.

Other Causes of Respiratory Problems

Other factors can cause symptoms that are similar to allergies. Respiratory infections, cold air, and irritants in the air like smog, smoke, strong smells, perfumes, solvents, and hair sprays may cause nasal and bronchial symptoms or trigger previously controlled allergic problems.

Studies have shown that exposure to household tobacco smoke causes chronic asthma and nasal problems in children.

We're here to help

To learn more about managing allergies, visit:

kpdoc.org/allergicrhinitis

kpdoc.org/asthma