

## Controlling Allergens in Your Home

[music] Anne Johnson: Welcome to Environmental Health Chat, a podcast about how the environment affects our health, from the National Institute of Environmental Health Sciences Division of Extramural Research and Training. I'm your host, Anne Johnson.

When I say the word "allergies" [sneezing], springtime tree pollen might be the first thing that comes to mind. But, many of the most common allergens occur year-round and are as close as the dog sleeping at your feet. Today, we're talking about the allergens found in your home.

Our guest is Dr. Elizabeth Matsui. She's a pediatric allergist and associate professor of pediatrics, epidemiology, and environmental health sciences at the Johns Hopkins Children's Center. She said an allergen is anything that is benign to most people but that provokes an immune response in someone who is allergic to it.

Elizabeth Matsui: The major indoor allergens are dust mites, cockroaches, mice, furry animals, and then mold. And what someone might become allergic to is a function of both whether they have a genetic tendency to become allergic to things but then also the community where they live.

Anne Johnson: So if you're a person who is naturally predisposed to allergies and you live in one of the more humid areas, where dust mites are common, you're more likely to become allergic to dust. If you live instead in, say, the arid Southwest but have a cat, that allergy might manifest itself as an allergy to cats.

Allergies like these generally show up at some point during childhood and stay with you for life, causing a variety of annoying symptoms.

Elizabeth Matsui: Sneezing; watery, runny nose; nasal congestion; itchy nose; itchy, watery red eyes. Those types of symptoms have effects on quality of life that are not trivial; they can affect sleep and the quality of sleep. As a result of that, they can affect school performance and learning for children, and all of those things apply in adults, as well.

Anne Johnson: The other important public health aspect of allergies is their role in asthma. Asthma and allergies often go together, and in these people, an allergic response can trigger asthma symptoms like wheezing, coughing, and breathing problems. With funding from NIEHS, Elizabeth is studying how reducing indoor allergens can help to manage asthma.

Elizabeth Matsui: Asthma is the most common chronic illness in childhood, and it affects as much as 10 percent of children in the U.S. It is a major cause of school absenteeism and also affects quality of sleep, and, of course, because you're missing school or the child may be going to school while having symptoms, it also can affect school performance.

Anne Johnson: It also can occasionally send you to the emergency room. In recent studies, Elizabeth and her colleagues found that indoor allergens are often a factor in severe asthma attacks and that this can have disproportionate effects in minority and low-income communities.

Elizabeth Matsui: We have learned recently that mouse allergen is a major contributor in low-income, minority populations. And so, in urban areas, there is a lot of mouse infestation, and in low-income communities, the housing is not well cared-for oftentimes by landlords, and there's infestation and high levels of allergens, and we see more than half of the children who show up in the emergency room with an asthma flare are allergic to mice. And in some communities, almost all of those children have mice in their home.

Anne Johnson: Everyone is at risk for allergies, including people of all races, ethnicities, and socioeconomic status. It's not always easy to know whether you have an allergy to mice or other indoor allergens. With food allergies or outdoor allergens like tree pollen, it's easier to pinpoint what triggers the allergic reaction. If you're experiencing year-round symptoms that impede your quality of life, it's a good idea to see a doctor, who may recommend a skin or blood test. If taking allergy medication improves your symptoms, then that's another confirmation that allergies are the culprit.

But, of course, the bigger solution is to eliminate the source of the allergen in your home, and I'm afraid Elizabeth has bad news for people who are allergic to their pets.

Elizabeth Matsui: The best thing to do—and the only thing that really seems to work in studies—is to find the animal a new home, and that's very difficult to do because the animal is usually like another family member. And, an important thing to note is sometimes patients want to have the pet visit a relative or neighbor for a few days to see whether their symptoms get better, and that is not a good test because it takes about four to six months after removing the pet from the home for the allergen levels to drop enough to make a difference in symptoms, so I think that's an important caveat. There are secondary measures that people can try to take—keeping the pet in a separate area, keeping the bedroom as a “safe place” where the door is always closed, washing all of your bedding frequently—those sorts of things people have tried. They are either not effective or very, very minimally effective.

Anne Johnson: Part of what makes animal allergens so difficult to get rid of is that they float around on airborne particles that are extremely lightweight, which means they can stay in the air a long time, as opposed to heavier allergens like dust mites. Those are much easier to fight with frequent vacuuming and mopping, washing your bedding in hot water, or using air filters.

For pests like mice and cockroaches, Elizabeth recommends using a professional pest-management company that will not only set traps but also seal the areas around your house where pests are likely to come in. For mold, she recommends a similar approach. Clean any mold that accumulates in your bathroom or basement but also be sure to eliminate the source of the mold—moisture—to keep it from coming back.

Thanks to Elizabeth Matsui of the Johns Hopkins Children's Center for those tips. We hope they'll help you breathe a little easier.

You've been listening to Environmental Health Chat. I'm your host, Anne Johnson, and our podcast is brought to you by the Division of Extramural Research and Training at NIEHS, part of the National Institutes of Health, an agency of the U.S. Department of Health and Human Services.

You can find more tips on reducing allergens in your home at our website, [niehs.nih.gov/podcasts](https://niehs.nih.gov/podcasts).  
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