

UT News

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*****Christmas tree allergies
plague the unwary.

DALLAS--Are your eyes red and itchy and do they burn? How about your nose? Is it runny and all stuffed up? And does this happen to you every winter, especially around Christmas time?

Then, as tragic as this may seem, you may be allergic to your Christmas tree.

According to Dr. Timothy Sullivan, head of the Allergy Unit at The University of Texas Health Science Center at Dallas, there are a number of allergies associated with Christmas trees.

For example, if you get into the pioneer spirit and decide to hike into the woods and chop down your own tree, you may accidentally choose a male mountain cedar tree (Juniper ashei or one of its relatives) that could pollinate right in your living room. It's the mountain cedar pollen that causes allergic reactions and is second only to ragweed as the most common cause of pollen-induced allergies in this part of the country.

If you suspect you're allergic to mountain cedar, the trick is to find a female tree. "You're relatively safe if your tree has blue Juniper berries," says Sullivan.

Male trees have a pollen-producing apparatus that turns from green to brown as the pollen matures. During the time of pollen release, the male trees take on a brown hue. Sullivan points out that for use as Christmas trees, most people are attracted to the female mountain cedar, which is usually greener than the pollinating male and has blue berries. However, it is likely that a person could cut down a male tree while it's still green and therefore the tree will be primed to pollinate in his or her house.

Most people, however, wouldn't even be tempted to cut down their own trees. They prefer those found in Christmas tree lots. Unfortunately, these are often covered with mold spores that more than likely will fly off the tree into the living room, and many people are terribly allergic to mold.

If this is the case, you might opt for an artificial tree.

However, after a couple of years of use, you will probably open up the box containing your artificial tree and notice that it's covered with...you guessed it -- dust. And, as everyone knows, a lot of people are violently allergic to dust.

So, what's the answer now?

Medical science is working on it, says Sullivan.

Sullivan and a team of researchers at the health science center have purified mountain cedar pollen down to a specific molecule that causes the allergic reaction, so that physicians no longer have to use extracts of crude pollen for allergy skin testing and allergy shots for desensitization.

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Now the researchers are tracking down the particular protein within the molecule that the immune system recognizes as the culprit. "We know the protein causing the allergy in considerable chemical detail," Sullivan says. "But by knowing its structure completely, we will be able to synthesize it and administer a drug containing fragments of the material to block the allergic reaction."

Sullivan also expects mountain cedar to become a model to help usher in a new era in allergy treatment -- prevention. "We're going to look at genetic factors -- who is susceptible to mountain cedar allergy and who is not. By identifying the specific gene that makes one predisposed to getting an allergy, we can, for the first time, consider strategies to keep allergies from appearing."

While allergic reactions to mountain cedar are rarely fatal, Sullivan says the discomfort can cause a lot of misery, including sleepless nights, lost days from school or work and enormous doctor bills. There are effective medications on the market today, even antihistamines that don't put the person to sleep, but he says even these may lose their effect as a pollen season progresses.

Sullivan explains that people prone to develop allergies have a "misdirected protective reaction." They begin to manufacture antibodies in the bloodstream to fight off pollen and other allergens as if they were disease-causing bacteria or parasites. Non-allergic people appear to start making these protective antibodies (called IgE antibodies) but somehow manage to suppress them. However, the immune system of the allergy-prone individual does not suppress this response, and it is here that the problem lies.

Inflammation in the eyes, nose and, sometimes, lungs is caused by the activation of the body's histamine-producing mast cells. Occasionally, the release of histamine by mast cells can be explosive enough to be fatal.

The IgE antibodies bind to the surface of the mast cells, and signal the cells to release their histamine and other inflammatory mediators. These antibodies resemble lobsters, with long bodies and claw-like appendages that sit on the surface of the mast cells and grab onto particles the antibodies perceive as invading the body. When more than one antibody recognizes this foreign object and grabs onto it, this multiple attachment to the object (called clumping) signals the mast cell to release histamine.

By making a drug containing fragments of the allergen, the broken-up allergen would occupy the antibodies without causing the release of histamine, and the person would be temporarily free of allergy symptoms, Sullivan says.

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