

A close-up photograph of a wasp with black and yellow stripes on its abdomen and thorax, perched on a vibrant red and yellow flower. The wasp's wings are spread, and its legs are visible as it interacts with the flower. The background is a soft-focus field of similar flowers.

When Insect Bites
Cause Dangerous
Allergic Reactions

Wings and Stings

Up to 5 percent of the American population may have severe allergic reactions (called anaphylaxis) to insect stings, depending on what kind of sting it is. These reactions may affect the lungs and air passages, heart, stomach, skin, and other organs. In some cases, the sting can even cause death.

By Keith Ferrell

Those beautiful summer and early fall days that beckon us outdoors also often expose us to a lot of insects. And that includes stinging insects.

Those stings often cause us brief moments of pain. But for some people, a sting can result in a serious, even deadly allergic reaction — including severe lung and breathing problems. That can be especially dangerous for a child who has asthma or other breathing challenges.

“There are between 50 and 100 deaths a year from anaphylaxis as a result of stinging insects,” says John Kelso, M.D. FAAP, of the division of Allergies, Asthma and Immunology at San Diego’s Scripps Clinic. While this figure is low compared

to the thousands of anaphylaxis deaths from food and drug allergies each year, many of the sting-related deaths could be prevented.

Allergies and Asthma, Insects and Immunity

Bees, wasps, hornets, yellow jackets, and imported fire ants are the prime villains in such cases. But it's the nature of the victim's immune system and sensitivity to the insect's venom that triggers the reaction.

In severe reactions, the child's allergic immune

response to the sting results in the air passages shrinking, making breathing difficult or impossible. Children experiencing anaphylaxis should receive emergency medical treatment immediately. Among the most common emergency treatments is epinephrine (eh-pih-NEH-frin) — another word for adrenalin — which helps open the airways by reducing the tightening of the muscle embedded in the airway.

“The vast majority of people who are stung won't have a serious reaction at all,” Kelso says, “much less an anaphylactic reaction. This is even true of those who have asthma or other lung diseases. And any patient experiencing anaphylaxis can display the symptoms of asthma, whether they actually have asthma or not.”

However, if the person stung is allergic and has asthma or other lung disease, the reaction is potentially more dangerous. (See “Stinging Insects and Asthma” on this page.)

Is Your Child at Risk?

How do you know if you or your children are allergic to insect stings? “A prior exposure to what causes the reaction (the allergen) is necessary in order to be allergic,” Kelso says. “You have to have been stung and had some kind of reaction.”

For patients whose insect-sting allergy has been established, Kelso recommends several courses of action.

“Venom immunotherapy is one approach to dealing with the allergy,” Kelso notes. Patients who receive this treatment are injected with small doses of the allergen — bee venom, for instance — which gradually strengthen their immune system's resistance to the venom's effects. Many professional beekeepers, for example, have been stung so frequently that their immune systems barely react to the venom.

“It's also a good idea for people allergic to insect stings to carry a self-injectable dose of epinephrine in order to be prepared for an anaphylactic emergency,” Kelso says.

Parents of allergic children should make sure that teachers and school staff members, camp counselors, coaches, and other activity supervisors are aware of the child's allergy. Facilities should be equipped with epinephrine and other needed emergency treatments.

The best defense against potentially dangerous insect stings is, of course, not to get stung. “Avoidance is the best treatment for all allergic diseases,” Kelso says. He recommends that people remain alert when outdoors for anthills, bee swarms and nests, as well as areas that attract large populations of mosquitoes and other flying insects.

“If you're allergic, be careful about outdoor strolls and gatherings, such as picnics,” he adds. “Don't pick up empty soda cans or other trash that might attract insects. Don't go barefoot. Don't wear flowery scents. Try to look and smell as little like a flower as possible.” ●

Stinging Insects and Asthma

The vast majority of asthma patients aren't allergic to insect stings and won't experience a severe anaphylactic reaction if stung, notes Dr. John Kelso of Scripps Clinic's division of Allergy, Asthma and Immunology in San Diego.

But what if you do have both asthma and an allergy to insect venom?

“If you superimpose an anaphylactic event on top of asthma,” Kelso says, “your chances of dying are increased.”

As many as two-thirds of the 50 to 100 annual anaphylaxis deaths from stinging insects are in patients who have both asthma and an allergy to stings. Similarly high asthma-patient figures are noted in the far higher number of anaphylactic deaths from non-insect causes, such as allergies to peanuts, penicillin, and other food and drug allergies.

As with non-asthma patients who are allergic to stinging insects, asthma patients need to be prepared and vigilant in situations that could expose them to insect stings. Asthma sufferers should take extra precautions during insect season. It's wise to carry an injectable dose of epinephrine, to manage asthma as effectively as possible, and to avoid locations and events likely to attract stinging insects.

In other words, you don't necessarily have to avoid the outdoors. But you should do everything possible to avoid exposing yourself to the stinging residents you may find there.