

What doctors want patients to know about treating a bee sting

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Flowers are in bloom. The sun is shining, and the buzz of bees forms a symphony, but an unexpected bee sting can disrupt that serenity. The sudden, painful pinch of a bee sting is often startling and sets off a flurry of questions about what happens next. But it doesn't have to ruin your outdoor activities.

If you have ever felt the sudden jolt of a bee sting, you are not alone. Each year, countless people experience bee stings that are minor, but others may have an allergic reaction. That is why it is important to know what to do if you get stung by a bee.

When bees feel threatened, they use their stinger to defend themselves and protect their hive. A bee can sting if you swat at it or try to catch one. Bee stings are painful because the stinger contains venom that enters your body when stung. The venom has chemicals in it that can affect a person's immune system and skin.

The AMA's What Doctors Want Patients to Know™ series gives physicians a platform to share what they want patients to understand about today's health care headlines.

In this installment, Neil Sudhaker Baman, MD, an allergist and immunologist at [Geisinger](#), discusses what patients need to know about getting stung by a bee and what symptoms to watch for. Geisinger is a member of the [AMA Health System Program](#), which provides enterprise solutions to equip leadership, physicians and care teams with resources to help drive the future of medicine.

Bee stings cause many symptoms

“There could be multiple reactions that you could get to bee stings,” Dr. Baman said. “And when I say bee sting, I’m including honeybee, but also yellow jackets, white-faced paper wasp and other similar stinging insects.

“But the typical reaction that patients get is wherever they get stung, there may be swelling. Usually with a normal reaction it’s less than 5 centimeters in diameter,” he added. The sting is also “localized—doesn’t spread elsewhere for the most part—and there’s no systemic reaction.”

“Other patients, when they get stung, they get large local reactions and that occurs in anywhere from about 10% to 15% of patients out there,” Dr. Baman said. “And by large local reaction, I mean it’s still localized, but it’s much larger and it is greater than 5 centimeters, but could be 10 centimeters, 15 centimeters.”

It depends on where you got stung

“If you get stung on your forehead, on your lip, on the top of your hand, it’s going to look a lot worse.

“And if you get stung on a place that has a little more muscle, a little more fat, that can spread out a little bit easier,” he added. “The more worrisome type of reaction is if someone gets stung in one location, and they have what we say is a systemic reaction.”

“That’s where, oftentimes, they get referred to the allergist and immunologist to determine if we need to worry about a more systemic, anaphylactic type of reaction.” Dr. Baman said, noting “we come in and ask many different questions about what exactly their symptoms were, how it was handled, what was necessary.”

Allergic reactions are a concern

“The most worrisome is if you get stung and have an anaphylactic type of reaction,” Dr. Baman said. For example, if someone gets stung on their hand or arm and has tongue or throat swelling, difficulty talking and breathing, other respiratory symptoms as well as symptoms that affect more than the skin, “that’s where they should definitely be referred to

an allergist and immunologist for further workup, further testing and further management overall.”

“Those types of reactions can actually be fatal and lethal in nature,” he said, noting “there are about 40 deaths or so on an annual basis from stinging insects overall. So that can be easily preventable with the right treatment.”

Most bee stings happen at a young age

The age at which a person may learn they are allergic to bees “depends on if you get stung and depends on the situation,” Dr. Baman said. “Most stings do occur before 20 years old, but it could vary from age to age, and it varies in terms of your exposure.

“If you’re in a more urban population, it’s probably less likely that you’re going to get stung,” he added. “A lot of it depends on your social activities that you partake in.”

For example, “if you’re hiking a lot, if your profession is a landscaper—yes, there’s going to be more risks involved there,” Dr. Baman said.

When to rush to emergency department

“In a patient who doesn’t know that they have a stinging insect allergy, oftentimes they won’t have an EpiPen,” said Dr. Baman. “And if they have a systemic, anaphylactic-type reaction, they should go to the emergency department where they can administer epinephrine, where they could give steroids. They’ll likely give them antihistamines as well.

“Then after that, they will likely be referred to an allergist and immunologist,” he added. “If they meet the indications for testing, they could get testing via skin testing and then possibly bloodwork with that.”

Two treatments help with allergic reactions

“And then from a treatment standpoint, if there is evidence of a systemic reaction, if we feel that there is a true stinging insect allergy, they should carry an EpiPen with them at all times,” Dr. Baman said. “But then there’s also allergen immunotherapy, which are essentially allergy injections for whichever species that they’re allergic to. It helps build up a tolerance overall.”

“If someone has a systemic reaction and if they get stung again by that exact same species, there’s about a 60% chance of having another systemic reaction, which could be more severe. That’s where they carry the EpiPen,” he said. “If they undergo allergy and immunotherapy or allergy injections, if they get stung again by the same species, that risk decreases to about 2% to 3% of another systemic reaction.

“So, it significantly decreases the risk of having another systemic reaction, overall, and that could be lifesaving,” Dr. Baman added.

Get referred to an allergist

“There are interventions out there other than just avoiding honeybees, wasps and yellow jackets, meaning that if you do have a history of a systemic reaction, you should get referred to an allergist and immunologist,” Dr. Baman said, noting “there are treatments out there that you could do to prevent future reactions, which could potentially be life-threatening.”

Additionally, “there are individuals out there who do have a systemic reaction and they never get referred for unclear reasons or they may be afraid to see the allergist for testing and whatnot,” he said. “That just puts them at increased risk down the line as sometimes your environment is unpredictable. You never know when you might get stung.”

There is still a risk of a systemic reaction

“Even patients who undergo the allergen immunotherapy, and the allergy injections decrease their risk of having a systemic reaction dramatically, there is still a slight risk of having a systemic reaction,” Dr. Baman said. “So, even though they undergo allergy

injections, we still tell them to carry their EpiPen with them at all times.”

Keep these keys in mind with EpiPens

“We do recommend, especially in terms of a stinging insect reaction that requires epinephrine, going to the nearest emergency department,” Dr. Baman said. That is “because there is a chance that you might need a second dose.”

“The other key thing to note about EpiPens or any epinephrine autoinjector is they do expire. We always have our patients routinely check the expiration date,” he said. “The second thing is that they are temperature sensitive, so you want them to be at room temperature.

“You don’t want to leave it in your car on a hot day or a cold day because that can make them less effective or ineffective,” Dr. Baman added.

“Overall, with my patients who have an epinephrine autoinjector for whatever reason—food allergies, bee stings, whichever it may be—I always tell them if you’re ever on the fence of using it or not, it’s better to be safe and it’s better to use it in general,” he said. “Where we hear of poor outcomes is if they don’t have their epinephrine autoinjector with them, or if they wait to use it.”

Additional bloodwork may be needed

“There are a few underlying disorders that, as allergists, we look into if someone’s had a systemic reaction to some sort of stinging insect,” Dr. Baman said. “We want to make sure we’re not missing an underlying disorder that can lead to recurrent anaphylaxis, so there are a couple other screening measures that we do via blood work.”

“The main one is screening for mastocytosis or mast-cell activation syndrome, which can lead to recurrent anaphylaxis,” he said. “Sometimes it’s idiopathic anaphylaxis, but it is one where if you have that you do have an increased risk of having a systemic reaction to stinging insects.”

“So, if someone does have a stinging insect systemic reaction, we’re automatically doing that screening, which is simple bloodwork,” Dr. Baman said.

Bee stings happen in warmer months

For people who are allergic to bees or other stinging insects, prevention “depends on the region of the United States you are in,” Dr. Baman said, noting “most bee stings occur in the fall, overall, but it could happen during any of the warmer seasons in general.”

“If you are in Southern United States, it could also happen in the wintertime too, with it being warmer there,” he said.

Multiple stings can happen

“When we talk about the systemic anaphylactic reactions, if you get stung by one, there could be times where you get stung 10, 15, 20, 25 times,” Dr. Baman said. “And of course you’re going to have a much higher chance of having a major reaction in those types of cases.”

That is because of “all the venom that’s going into your system,” he said. So, be aware of your surroundings, look for any types of nests that may be under overhangs or in the bushes or anything to that extent, and just be aware of where they may or may not be at.”

Watch what you wear

“If someone has a known bee sting allergy or is just concerned about stinging insects in general, there are a few precautions that you could do,” said Dr. Baman. “Wearing long-sleeved clothes is helpful. So, a long-sleeved shirt and pants as opposed to shorts or T-shirts. Sometimes it’s not feasible, of course, depending on the weather.”

“A few other things that you could do is try not to wear perfumes or colognes or strong scents, as stinging insects are attracted to scents like that,” he said. Also, “be careful if you’re eating outdoors because—especially yellow jackets—they’re more attracted to open

cans of soda, food, those types of things.”

“Try not to walk barefoot outside because you can always step on a stinging insect,” Dr. Baman said. And it’s not just the length of clothing that matters, he added.

“Try not to wear floral patterns or bright fluorescent colors as stinging insects are also attracted from that standpoint.”

If not allergic, follow these steps

Beyond following avoidance measures and wearing appropriate clothing, “if you do get stung, what we would recommend is if you get stung on a limb, elevation of the limb can be helpful,” Dr. Baman said. “Cool compresses can also be helpful.”

After a [bee sting](#), people “can also take antihistamines that can help calm down any potential reaction,” he said, noting “over the counter topical steroids can also help in general too.”

Don’t use tweezers to remove stinger

Concern over the bee’s stinger “depends on the species. Most of them don’t get stuck,” Dr. Baman said. “And what that means is that the same yellow jacket or wasp can actually sting you more than once because their stingers don’t get stuck within your skin.”

“Honeybee is the one species where stingers do get stuck,” he said. “That’s where we usually try and get the stinger out by either just using your fingers or fingernails or a credit card or something similar where you slide it against your skin and slide it out that way.”

But put down the tweezers.

“If you use tweezers, you could actually squeeze it to the point where more venom gets into your system,” Dr. Baman said.

Make sure your allergies are known

If you are allergic to bee stings, “it should be listed on your electronic health records or your health care profile,” Dr. Baman said. “It should be in there so they’re aware, including the emergency responders because you may get stung and sometimes you lose consciousness if it’s a severe reaction and if they’re not aware, they may not even think about it.”

“So, if there’s some way that they’re aware of it by keeping something in your wallet or something in your purse indicating that you have this allergy or there are some patients who go out of their way to wear a bracelet or something that indicates stinging insect allergy,” he said.