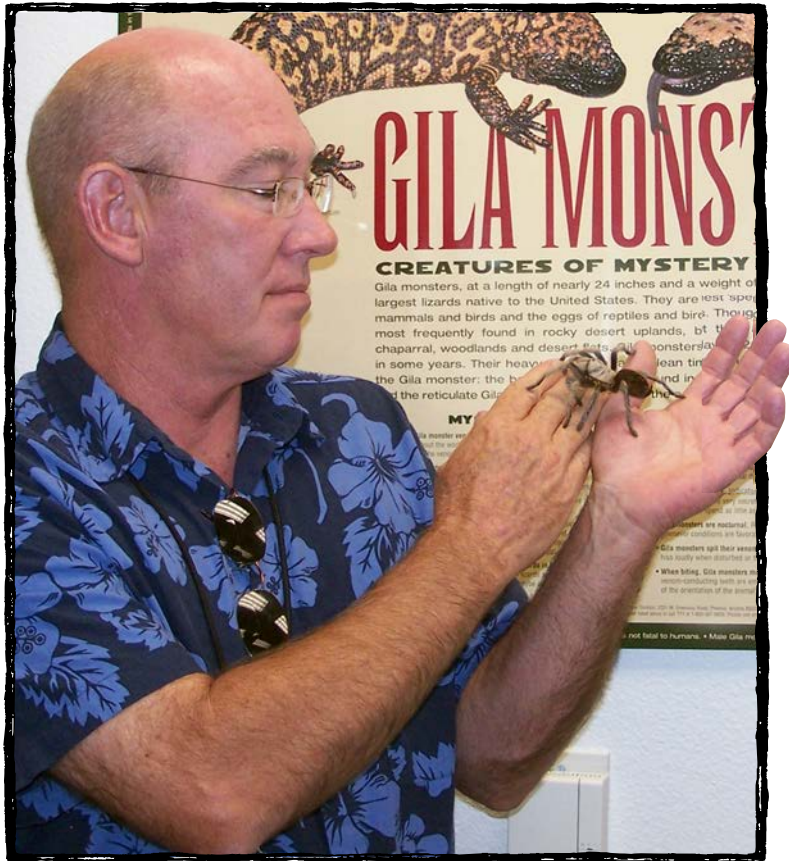


Bites and Stings

A Reading A-Z Level S Leveled Book

Word Count: 1,335



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Bites and Stings



An Interview with
Jude McNally
Conducted by
Kira Freed

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Bites and Stings



Black widow

An Interview with Jude McNally
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Jude McNally uses this tarantula to teach people about spider behavior.

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Introduction

A two-year-old girl is brought to the emergency room with a red mark on her leg. She's too young to explain to anyone what happened to her. Her parents believe some kind of animal bit or stung her. How does an emergency room doctor identify the **culprit** that caused her injury?

Jude McNally is the managing director of the Arizona Poison and Drug Information Center in Tucson, Arizona. He studies things that are poisonous or harmful to our bodies. Let's talk with Jude to learn about bites and stings in the desert.

Life-Threatening Bites and Stings

Interviewer: What happens first when a patient such as this young girl is brought to the emergency room?

Jude: Doctors look for **symptoms** of life-threatening bites and stings. They're looking for symptoms caused by four possible culprits: black widow spiders, scorpions, insects that fly and sting, and rattlesnakes.



Interviewer: What do doctors look for in the case of black widows?



Black widow bites cause muscle cramps.

Jude: Even though *all* spiders produce **venom**, most of them can't get that venom into people. But the black widow spider—especially the female black widow—*can* inject venom when it bites.

Black widows cause a burning, stinging pain at the **site** of the bite. There's not much swelling, and you can't see major **puncture** wounds. Muscle cramping begins, usually in the area of the sting, and it's especially bad in small children. A child will get muscle cramping all over his or her body. Sometimes the belly looks stiff like a board, and sometimes breathing becomes difficult.

Children can also get puffy eyes. We rule out black widow spider bites when there isn't any muscle cramping.



Do You Know?

Black widow spiders are not affected by many insecticides, which are chemicals used to kill insects. Remember—spiders are arachnids, not insects.



The bark scorpion is about two inches long, including its tail.

Interviewer: What symptoms would you see in the case of scorpion stings?

Jude: We have over thirty different kinds of scorpions in Arizona, and only the bark scorpion can be life threatening. A two-year-old child stung by a bark scorpion will be restless and won't be able to sit still. We'll often see muscle twitching, especially around the mouth. Another obvious symptom is roving eye **syndrome**—not being able to focus the eyes. And we'll see movement **disorders**, where a child will look as if he or she is doing a strange dance.

Other scorpion stings cause **local** swelling, but the bark scorpion causes almost no reaction at the site. With a two-year-old child, we do a tap test. We run our fingers up and down the child's body. He or she will scream when we find the site of the sting because it's so painful. If we look carefully, we can sometimes see a single puncture wound. We rule out scorpions when restlessness, twitching, and roving eye syndrome are absent.



Scorpions sometimes find their way into homes and hide in dark places.

Interviewer: What do you look for in the case of flying, stinging insects?

Jude: With bees, wasps, and ants, we're concerned about allergic reactions. Most people get some redness, itching, and swelling at the site



Unless the person is allergic, the discomfort from a wasp or bee sting will usually go away in a few days.

of a sting that goes away in a couple of days. But a reaction anywhere *other* than at the site within the first hour is considered a type 1 allergic reaction that can be life threatening. We say this happens within an hour, but usually within 20 to 30 minutes you know if you're allergic.

For example, if someone starts to have breathing difficulties, that's a big concern. Or if you're stung on your back and your hands are itchy, or if you're stung on your leg and you're having trouble swallowing—those are big concerns. All of those mean that your whole body is reacting to the sting. This type 1 reaction needs emergency medical care because the patient can die.

Do You Know?

People who have a problem with a bite or sting should call a poison control center. A regional poison control center knows the kinds of animals in your area that you need to be concerned about.



A doctor tests a girl's blood pressure.

More people die from insect stings than from black widows, scorpions, and rattlesnakes combined. That's how important it is to rule out allergic reactions to flying, stinging insects. We rule out allergic reactions by **assessing** the patient's ability to breathe, as well as by testing his or her **blood pressure**. An allergic reaction causes an extreme drop in blood pressure.

Interviewer: What symptoms do you look for with a rattlesnake bite?

Jude: It's not as easy to rule out a rattlesnake bite right away because the disease happens in stages. It begins with a puncture wound, possibly with some bleeding. Then you start to see swelling and **discoloration** at the site of the bite. Hours later you may see the skin blistering. You can also have tissue destruction, meaning that skin and muscle tissue dies around the site.



Western diamondback rattlesnake

Bruising that travels over the body is definitely a sign of a snakebite. We draw blood, and we measure the parts of blood that are responsible for **clotting**. Snake venom destroys those parts of the blood, so a snakebite patient starts bleeding inside, which makes tissue die. All of this happens over 24 to 36 hours. During this entire time, we give the patient **antivenom** to try to stop the body's reactions to the venom.

Math Minute

Rattlesnake antivenom costs a patient about \$3,000 per vial. One patient was in the hospital for 10 days and received more than 50 vials of antivenom. Along with the other hospital expenses, his bill totaled \$326,000.

How much did he spend on antivenom?

How much did the rest of his hospital expenses cost?



$\div 8 = 3 + 5 + 2 = 10 + 8 + 10 \div 2 = 14 \times 2 - 3$
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Non-Life-Threatening Bites and Stings

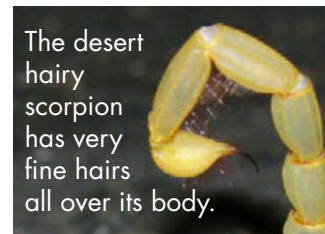
Interviewer: Now let's talk about animal culprits that don't cause life-threatening symptoms. What symptoms would you see with a bite from a Gila (HEE-luh) monster?

Jude: A Gila monster's bite will usually create a little row or circle of teeth marks rather than a single puncture wound. About a third of the time, teeth are **embedded** in the wound. It's a very painful bite because the Gila monster hangs on for a long time after it bites—half a minute or more. We say that most people who are bitten by a Gila monster *deserved* to be bitten. The Gila monster is a very **docile** animal, and most people who get bitten are **harassing** one.

Do You Know?
A Gila monster is a venomous lizard found mostly in Arizona and northern Mexico.

Interviewer: What about scorpions other than the bark scorpion?

Jude: If it's not a bark scorpion, swelling often develops at the site beginning a few minutes after the sting. Patients will feel pain at the site, and there may be some tingling and numbness,



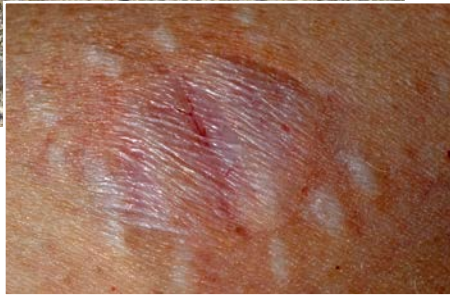
but it usually goes away in hours. The swelling is a clue that it's *not* a bark scorpion sting. With a bark scorpion, no swelling occurs.

Interviewer: What kinds of symptoms do you see with spider bites other than from a black widow?

Jude: When most other spiders bite, their venom produces local **inflammation** but usually no full-body symptoms. The only other spider bites we pay close attention to are from brown recluse spiders. Often you don't feel their bite, but over the next few hours a blister forms at the site. Eventually the blister breaks open, a scab forms, and tissue dies. This can cover a large area, and it can last for weeks or months.



Brown recluse



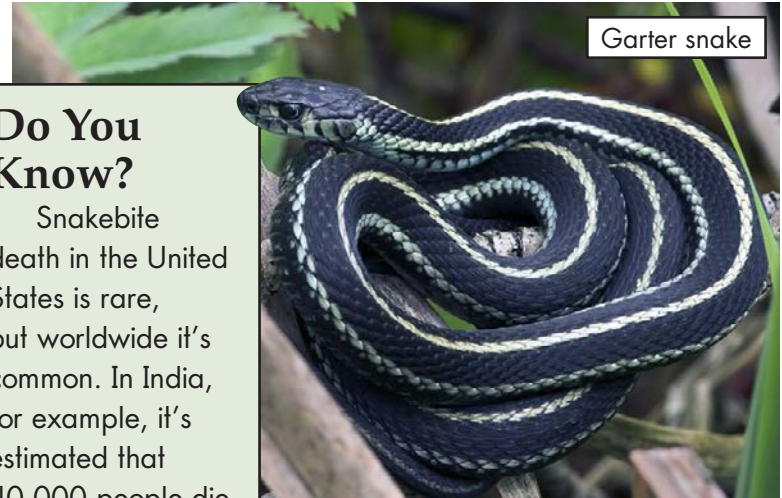
A bite from a brown recluse spider may take months to fully heal.

Brown recluse spider bites usually aren't part of a **diagnosis** in the emergency room because the symptoms take time to develop. Aside from a black widow or a brown recluse spider, other spider bites won't cause any serious problems unless the bite gets infected.

Most spiders are harmless to humans. Some will eat common pests such as houseflies and mosquitos.



A common garden spider



Garter snake

Do You Know?

Snakebite death in the United States is rare, but worldwide it's common. In India, for example, it's estimated that 40,000 people die from snakebites each year. This is due to more deadly kinds of snakes as well as less access to health care.

Interviewer: And what about other snakes?

Jude: There are many more nonvenomous than venomous

snakes. A lot of snakes we call nonvenomous actually have venom, but a bite isn't a serious health risk. It can make us feel sore, and once in a while blisters and swelling develop at the site, but nothing serious. It's estimated that in the United States there are over 35,000 snakebites each year, and 6,000 to 8,000 of them are venomous.

Bullsnake



Conclusion

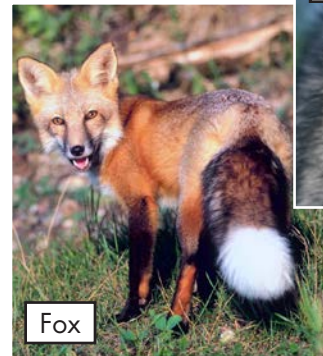
Interviewer: Do you have any advice for readers?

Jude: Besides rattlesnakes, almost all bites and stings we deal with happen in and around people's homes. Spiders and scorpions are active at night; they seek a dark crack or crevice during the day. You're more likely to come across them at night when they're active, so turning on lights at night will reduce your risk.



Turning on a light at night is a good safety measure.

If you see something dangerous and take one step back, you usually remove yourself from the range of danger. And if you leave the animal alone, you lower your risk. More than half the people we treat for a rattlesnake bite saw the snake, recognized the danger, and put themselves at greater risk. If you make smart choices, you're much more likely to stay safe.



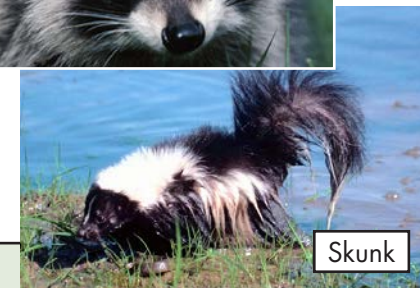
Fox



Raccoon



Bat



Skunk

Rabies

Cold-blooded animals can't carry rabies, and neither can many smaller mammals. But skunks, bats, raccoons, foxes, and coyotes all can carry rabies. If you've seen bats in your house or if you've been around any of these animals, you need to talk with a county health official. If there's any risk, you need to receive a series of vaccines. Only one known person has ever survived a full-blown case of rabies.

Glossary

antivenom (<i>n.</i>)	a kind of medicine used to stop the damage from a venom (p. 12)
assessing (<i>v.</i>)	evaluating or measuring (p. 10)
blood pressure (<i>n.</i>)	a measure of how well the heart is pumping blood (p. 10)
clotting (<i>v.</i>)	sticking together to stop bleeding (p. 12)
culprit (<i>n.</i>)	a person or other animal responsible for an injury or crime (p. 4)
diagnosis (<i>n.</i>)	identification of an illness or injury (p. 15)
discoloration (<i>n.</i>)	a change in color (p. 11)
disorders (<i>n.</i>)	abnormal functioning (p. 7)
docile (<i>adj.</i>)	peaceful; not aggressive (p. 13)
embedded (<i>v.</i>)	firmly fixed (p. 13)
harassing (<i>v.</i>)	bothering or tormenting (p. 13)
inflammation (<i>n.</i>)	painful redness and swelling (p. 14)
local (<i>adj.</i>)	limited to a particular part of the body (p. 8)

puncture (<i>n.</i>)	a small hole in the skin (p. 6)
site (<i>n.</i>)	location (p. 6)
symptoms (<i>n.</i>)	signs of an illness or injury (p. 5)
syndrome (<i>n.</i>)	a group of symptoms that show up together (p. 7)
venom (<i>n.</i>)	poisonous liquid from an animal, such as a snake, spider, or insect (p. 6)

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