

Snakebite!

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Snakebite!



Written by Kira Freed

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Special thanks to Jennifer Owings Dewey for allowing her story to be included in this book. Jennifer writes and illustrates children's books about the natural world. Look for these and other books by Jennifer in a bookstore or library:

Rattlesnake Dance
Clem: The Story of a Raven
Spiders Near and Far
Day and Night in the Desert
Wildlife Rescue

Special thanks also to Jude McNally of the Arizona Poison and Drug Information Center and Harry W. Greene of Cornell University's Department of Ecology and Evolutionary Biology for serving as consultants for this book.

Word Wise

Experts often talk about a rattlesnake *strike* rather than a rattlesnake *bite*. This is because rattlesnakes do not close their mouths, or bite, to inject venom. They simply strike, or hit, with their fangs.

Snakebite!
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Pacific rattlesnake



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Introduction

In 1951, nine-year-old Jennifer Owings was riding her horse in the hills near the New



Jennifer at age 9

Mexico ranch where she lived. She got off her horse to explore a possible new path to the top of a sandstone ridge. Climbing up a cliff face, she reached above her and grabbed hold of a ledge. ZAP! Suddenly she

felt a screaming pain on the side of her hand. A rattlesnake had struck Jennifer.

Jennifer was a twenty-minute horseback ride from her house when the rattlesnake struck her. Halfway home, she became dizzy and sick to her stomach. She grew frightened of dying before getting home, but she made it.

The ranch foreman took Jennifer to the nearest emergency room. Doctors told them that the hospital had run out of its medicine to treat rattlesnake strikes. Jennifer was **unconscious** for most of three days and had severe symptoms, but she survived. Today, Jennifer hardly has a scar from her rattlesnake strike. She is one of the lucky ones.

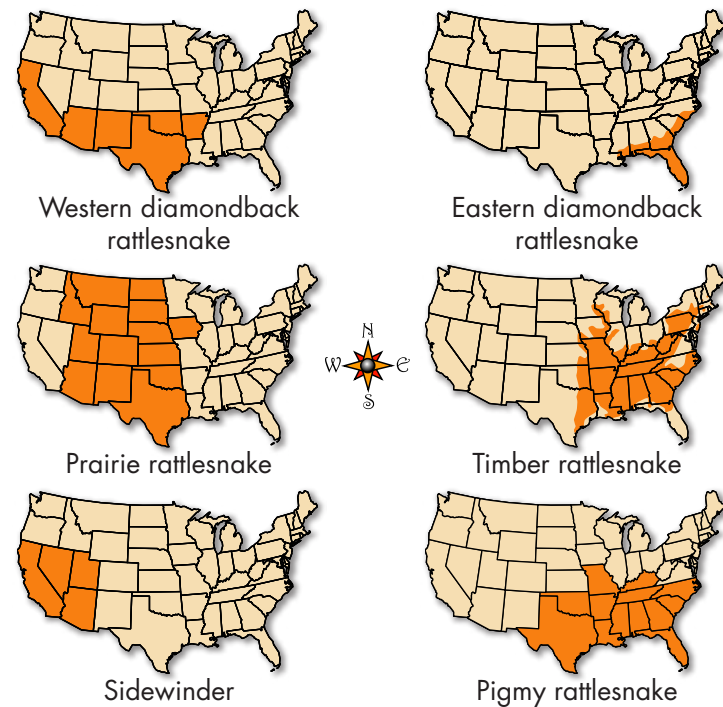
What happens when a rattlesnake strikes a person? What medical treatments do snakebite victims receive? What can you do to avoid being struck? Answer these questions as you learn about rattlesnakes and the deadly strikes they can deliver.



Rattlesnake Basics

Scientists have identified thirty-one **species** of rattlesnakes. Rattlers, as the snakes are commonly known, live in most of the United States, Mexico, and Central and South America. They also live in southern Canada. They can be found in deserts, swamps, forests, prairies, and mountains. Rattlesnakes are most common in dry parts of the southwestern United States and northern Mexico.

Ranges of Six Common U.S. Rattlesnakes



Source: www.herpedia.com



Do You Know?

Rattlesnakes use their jaws to “hear.” With their jaws resting on the ground, they can pick up vibrations made by other animals—including people—nearby.

Rattlesnakes have a bad reputation because of their danger to people. But let’s take a moment to think about rattlers apart from humans. These amazing creatures are among nature’s most efficient hunters. They hunt small animals by surprising them or catching them in their burrows.

Rattlesnakes can find **prey** even in total darkness. They mostly use their sense of smell and sense of heat. Special areas on their face can sense heat. Even if their prey is completely still, a rattlesnake can sense it by the heat its body gives off. Rattlesnakes can also smell prey with their tongue, which sends the smells to a special sense organ in their head.

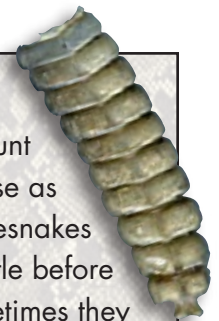
Rattlesnakes are not nasty animals that go out of their way to hurt people. They don’t want to meet up with you any more than you want to meet up with them. But they know how to defend themselves if they think they’re in danger. They shake the rattle on their tail as a warning to people and other animals to stay away. If their warning is not **heeded**, they strike.

Most people who are struck by a rattlesnake don’t die. However, they suffer terrible pain, and some, like Jennifer, need **skin grafts** or even more extreme medical treatments. Snakebite victims may end up with bad scars or other permanent body damage.



It’s a Fact!

You can’t count on a rattling noise as a warning. Rattlesnakes don’t always rattle before they strike. Sometimes they rattle *after* they strike. In Jennifer’s case, the buzzing noise and the strike seemed to happen at the same time.





Knowing about the habits of rattlesnakes can help keep you safe.

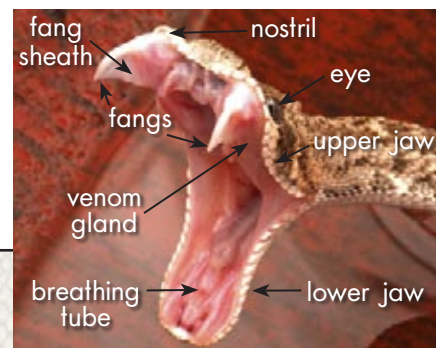
Rattlesnakes, like all reptiles, are cold-blooded—their body temperature rises and falls with the temperature around them. If they are too cold, they move to a sunny spot. If they are too warm, they move under a rock or to an underground den.

If you're outside on a hot day in rattlesnake country, you can bet that rattlers will be resting in the shade under rocks, bushes, or cacti. Or imagine you're climbing a steep trail on a cool morning, and you grab hold of a rock above you to pull yourself up. If you can't see the top of the rock, you might startle a rattlesnake that's warming itself in the sun. Jennifer learned that the hard way.

Fangs and Venom

Rattlesnakes have two long, hollow fangs that they use to inject **venom** into their prey. The venom travels to the fangs from glands in the rattler's head. Muscles squeeze the glands, forcing venom to travel quickly to the fangs and into the victim.

Fangs are folded when a rattlesnake's mouth is closed. A rattler extends its fangs and spreads them before striking. The fangs break the skin of the prey. Then the rattlesnake sinks the fangs into flesh and **injects** venom before quickly pulling back its head. The deeper the fangs sink, the greater the chance that the venom will kill the prey.



Word Wise

Rattlesnakes are correctly called venomous—not poisonous—animals. The word *venom* refers to something harmful that an animal injects into the bloodstream of its victim. The word *poison* usually refers to something that is harmful when swallowed, breathed, or touched.

Rattlesnakes have extra fangs tucked inside their upper jaw. If a fang breaks, a new one drops down. Rattlesnakes also shed their fangs several times each year. Nature has made sure they have extras because rattlers cannot survive without their fangs.

Rattlesnakes are born live, not hatched from eggs like most other snakes. A newborn rattler has no rattle to shake as a warning, but it can still inject venom. Every rattlesnake strike can be deadly, no matter how young or small the snake is.



An adult Eastern diamondback rattlesnake can have fangs up to 27 millimeters (1 in) in length.

Venom causes three types of damage. It travels through the bloodstream, destroying red blood cells and keeping blood from **clotting**. It also **paralyzes** muscles, including the heart and others that control limbs and breathing. Venom also attacks cells directly, breaking down organs and tissues.



If you look closely, you can see the marks from a rattler's fangs on this person's foot.

Symptoms and Treatment

How do you know if a rattlesnake has struck you? Of course, you know if you see it or hear its rattle. But some people never see or hear the snake, and others are too young to tell anyone what happened to them. You might expect that a rattlesnake strike would leave a pair of marks. But a rattler can strike even if it has lost one of its fangs, so it might leave just one mark.

It's not always easy to tell if a wound is from a rattlesnake strike because a person's **symptoms** develop over many hours. Doctors first try to **rule out** other things, such as bee stings and spider bites.

Redness, swelling, and severe pain are common symptoms of a rattlesnake strike. **Bruising** may spread from the area of the strike. People may feel weak or go into **shock**. But not every victim has the same symptoms. Some may have blurry vision and feel sick to their stomach or faint.

Before the late 1990s, only about half of rattlesnake victims were given **antivenin**—the medicine for treating rattlesnake strikes. A person's reaction to the antivenin could be extreme and might put his or her life in danger. Doctors now have a safer type of antivenin, so it can be used more often.

Math Minute

Rattlesnake antivenin (also called antivenom) is very expensive, costing about \$3,000 per vial. People often receive 20 to 30 vials. One 78-year-old person was in the hospital for two days and received 20 vials of antivenin. Along with the other hospital expenses, her bill totaled \$132,000.

How much did she spend on antivenin? How much did the rest of her hospital expenses cost?

With no antivenin, Jennifer was unconscious for most of three days. When she was conscious, she felt a terrible burning pain that wouldn't stop. The side of her body that was struck by the rattlesnake was very swollen and bruised. The skin was so tight from the swelling that she thought it might burst.

For some people, the swelling gets so bad that they have to have surgery to reduce the pressure. About one-fourth of people need other surgery to clean out dead tissue that was destroyed by the venom.



Skin can look shiny when a great deal of swelling is present.



This scar is the result of thirteen surgeries after a rattlesnake strike.

Jennifer rested for months when she was finally able to go home. Three weeks after her rattlesnake strike, most of her symptoms had become less severe. Her hand and arm were still swollen and had dark, peeling skin. After she healed more, she had three skin grafts to close the wound.

Some snakebite victims also need other surgeries to get blood flowing again in the area of the strike. About one-quarter never regain the full use of the damaged body part. Sadly, sometimes tissue damage is so bad that a body part must be removed.

Rattlesnake First Aid

DO:

- Get away from the rattlesnake.
- Call 9-1-1.
- Remove rings, bracelets, boots, or anything else that might become tight when the affected area swells.
- Keep the snakebite victim as calm as possible to keep the venom from circulating to the rest of the body.
- Have the victim lie down with the affected body part lower than the heart.
- Wash the wound with soap and water, if possible.
- If the victim must walk to get help, have him or her sit for 20–30 minutes first. Then proceed calmly and slowly in order to keep the venom from traveling through the body too much.
- Get the victim to a hospital as quickly as possible.

DON'T:

- Don't cut the wound.
- Don't try to suck out the venom with your mouth. It hardly ever helps, and if you have a sore in your mouth, venom can get in your bloodstream.
- Don't put ice or anything else cold on the wound. It will make the injury worse.

Conclusion

Rattlesnakes are part of the web of life and an important link in many food chains. Without rattlesnakes, the numbers of mice and other small animals would become too large, and nature's balance would be upset. Like all other living things, rattlesnakes have a right to live.

Although they can be frightening, rattlesnakes are only a danger to people who startle or threaten them. When you are in rattlesnake country, respect the creatures that live there. It's not much different from respecting the rules when you visit a friend's home. Keep your eyes open for rattlesnakes, think about their habits, and you will be safe.



Rattlesnake Safety Tips

To avoid rattlesnakes . . .

- Keep your eyes open for rattlesnakes if you are outside where they live. Rattlesnakes blend into their environment, so be careful. Look around you in all directions. Rattlesnakes can strike at least half the length of their body and can grow to be 1.8 meters (6 ft) long.
- Rattlesnakes can be active at any time of the day or night. Be alert at all times.
- Never reach into a dark place where a rattlesnake might be hiding.
- Never place a hand or foot on a rock or other surface you can't see.
- Wear thick shoes or, if possible, high leather boots in rattlesnake country. Stay out of tall grass if you can.
- Don't run ahead of family members or friends on trails. If you are with a younger child, be sure he or she stays close to an adult.
- Avoid ditches by the side of the road. Rattlesnakes like to hunt there.
- Never get closer to a snake to find out if it's a rattler.

If you see a rattlesnake . . .



- If you suddenly see a rattlesnake close to you, FREEZE. Then walk backward very, very slowly. A rattler might think it's in danger if you move suddenly. (Be sure not to back into another snake!)
- Don't surprise a rattler, and don't make one feel cornered or trapped. If you do, it might strike in self-defense.
- If you see a rattlesnake trying to get away from you, let it go. Going after it to get a closer look might cause it to get excited and turn on you.
- Never touch a snake that you think is dead. It might just be playing dead.

Think About It

Some people are accidentally struck by rattlers, but most people who get struck made bad choices. They thought it would be "cool" to get close to a rattlesnake or see it excited and rattling. Some even thought that picking up a rattlesnake would be a test of courage. These people ended up with severe pain, permanent scars, and huge hospital bills.

Glossary

antivenin (<i>n.</i>)	a kind of medicine used to stop the damage from a venom (p. 13)
bruising (<i>n.</i>)	the condition of having black-and-blue areas on the body (p. 13)
clotting (<i>n.</i>)	the condition of sticking together to stop bleeding (p. 11)
heeded (<i>v.</i>)	paid attention to (p. 8)
injects (<i>v.</i>)	forces something into an animal's body with a needle or fangs (p. 10)
paralyzes (<i>v.</i>)	causes a body part to become unable to move (p. 11)
prey (<i>n.</i>)	animals that other animals eat as food (p. 7)
rule out (<i>v.</i>)	to get rid of as a possibility (p. 12)
shock (<i>n.</i>)	a medical condition that may result from severe injury (p. 13)
skin grafts (<i>n.</i>)	transfers of skin patches from one body part to another (p. 8)
species (<i>n.</i>)	groups of related living things with traits that distinguish them from other groups of living things; members of the same species can breed with each other (p. 6)
symptoms (<i>n.</i>)	specific signs of illness or injury (p. 12)
unconscious (<i>adj.</i>)	not aware; not mentally awake (p. 5)
venom (<i>n.</i>)	poison that some animals inject to kill prey and defend themselves (p. 10)