



## Snake Bites: Prevention and Treatment

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Most snakes will try to avoid you or your pets; snakes typically bite only as a last resort. But while you may wisely decide to simply walk away when you encounter a snake, dogs and cats will often harass the sliding invader -- and may get bitten as a result. Snakes help protect your garden and yard plants, because they eat rodents and insects. Most of the snakes you will find are not a problem, and they don't harm property.

While hiking, stay on open paths. Off-trail hiking can stir up snakes. Keep your dog on leash and away from high grass and rocky outcrops in which snakes like to rest. Don't let the dog explore holes or dig under rocks or logs. Remember that rattlers are nocturnal, so daytime hikes are safer. If you hear a rattling noise, keep your dog at your side until you figure out where the snake is, and then move away with your dog. Your best bet is to stay vigilant and keep control of your dog when walking in snake habitats.

If you see a snake that sees you, remember that a snake can strike only a distance of half its body length. Give the snake time to just go away. Snakes are not looking to interact with people or pets, either defensively or aggressively.

Don't let your pet examine "road kill" snakes. Dead pit vipers can have some muscle contractions after death, and thus have been known to "bite" even after they're dead. Those bites can still envenomate. Don't handle a dead or injured snake -- not even a decapitated head.

If your pet is bitten by a snake that you think might be venomous, get medical attention immediately. It's better to go in and be checked out rather than wait and be sorry.



### Repellants and Removal

Most wildlife experts believe there is no such thing as an effective snake repellent, although people have tried mothballs, vapor barriers, ultrasonics, sulfur, poison, etc. What can help is setting up physical barriers (e.g., fences that are set a foot or two into the ground), cutting off the snake's food supply and shelter, mowing closely around the house, storing firewood away from the house, removing junk piles, removing weeds and brush, plugging up holes in the ground, etc. And if you need to have dangerous snakes removed from your property, contact a wildlife control operator to trap and remove the snakes. This is not a job for an inexperienced person.

### Snake Identification: Venomous or Nonvenomous?

Most nonvenomous snakes have a large smooth cap over the top of the head past the eyes, divided scales on the underside of the tail, no pits and no long fangs. Rattlesnakes, copperheads, and cottonmouths are all venomous pit vipers, and have a pit between and slightly below the eye and nostril. Pit vipers also have long movable fangs, a "cat's eye" pupil, undivided scales under the tail, and a large triangular-shaped head with a small shiny cap over the nose.

Melissa Kaplan, author of the [Reptile Series](#), suggests learning about the snakes in your area. "Familiarize yourself with what the local snakes look like by reading through a field guide of reptiles and amphibians for your area. Compare the drawings and photos of the local venomous snakes with the non-venomous species so that you can remember what they look like, in general. A single species of snake may have a wide range of colors and patterns."

Herpetology field guides can be purchased at book stores and science/nature stores, both off- and online. One online field guide is [www.enature.com](http://www.enature.com). When you register (it's free) on the site, you can store your zip code, and access all the species (plants, invertebrates, mammals, lizards, etc.) found in your region or state, if the species is found throughout the state. Each species has a photo, written description, and locale.

Kaplan believes everyone should have a herp field guide if they live where there are venomous snakes and poisonous amphibians because:

- Drought and periods of prolonged dry heat drive prey into residential neighborhoods and irrigated parks from wild/undeveloped/non-irrigated areas; their predators will follow, including venomous and nonvenomous snakes.
- Long-established residential neighborhoods can become inundated with prey and predators when an old house is torn down; ditto for vacant lots undergoing clearing and development.
- Long-established residential neighborhoods and, increasingly, business parks situated in areas where the city/county planners keep or create green belts of parks and nature trails become highways for animals, providing shelter, cover and food for all sorts of species who can then move into the more central areas of town. Squirrels, opossums, raccoons, and rodents of many types will come in, followed by those who dine upon them.

"People with pets or kids need to know what they are looking at and what their pets or kids may be about to poke at or pick up," says Kaplan.

### Preventive Options

Using "snake-bite vaccine" may be useful if you're in a part of the country that has lots of venomous snakes, in addition to training your dog.

A snake bite vaccine has been created by Red Rock Biologics. The vaccine creates protective antibodies, and those antibodies can neutralize venom immediately. Red Rock states that, on average, antibody levels in recently vaccinated dogs are comparable to treatment with three vials of antivenin. So, if the vaccinated animal is bitten by a Western Diamondback, it will need less antivenin than if it had not been vaccinated. The bitten pet will still need to be examined by a veterinarian to determine just how much treatment will be necessary. The vaccination may not help if the animal was bitten by a different venomous snake, since the vaccine is pretty venom-specific. Red Rock Biologics is developing vaccines for other snake venoms. The vaccine is not labeled for use in cats.

### Training Your Dog

Some people try to train their dogs to stay away from snakes. Kathy Diamond Davis, author of the [Canine Behavior Series](#), says that e-collar experts claim you can cure a dog of hunting critters and worrying livestock and other instinctive behaviors through the use of an e-collar. "I don't know how good the chances of that are with any particular dog. Only an expert with the e-collar should be doing this type of training, never a dog owner fiddling around without expertise."

According to Davis, you could teach a dog to automatically look at you or even come to you when spotting a snake, and you could do this using positive methods. The problem would be arranging use of a snake for the training. Davis also points out that a one-time training program would not last the life of the dog. Like any training, it would have to be kept current.

"You could clicker train some cats with very low prey drive to come to you when they saw a critter, if you are present," says Davis. "You could reduce your cat's inclination to hunt by raising the cat with no opportunities to hunt and rewarding the cat (clicker again) for leaving all critters alone. Cats are so highly instinctive that I think the only way to have an effect would be to keep all that prey drive dormant. It's probably not possible with most cats, but some purebreds are not very catlike."

### Treatment

Treatment for pit viper envenomation involves controlling shock, neutralizing the venom, controlling intravascular coagulation, minimizing tissue death, and preventing any secondary infection. Therefore, veterinarians may need to use antivenin, antiinflammatory drugs, antibiotics, fluid therapy, etc.

Antivenin is a commercially produced serum that neutralizes the effects of injected venom. A specific antibody is needed for each type of snake, so knowing what kind of snake bite your pet is critical. Antivenin is extremely expensive, and can have side effects in some individuals.

### Prognosis

A significant factor in the outcome of a venomous snake bite is how much venom was injected, but there is no way to determine that amount. If the bite was dry, the animal will survive even though it was not vaccinated, given antivenin, etc. If the bite injected a large amount of venom, even a vaccinated dog given massive post-trauma treatment may not survive.

However, we do know that quick action on the owner's part improves the prognosis. A venomous snake bite is a life-threatening emergency. Irreversible effects from venom begin immediately after the animal is bitten, so speed of treatment is critical. The size of the snake can sometimes indicate how much venom was injected, and the size of the snake relative to that of the pet is significant; pound for pound, smaller animals are more likely to have more problems, because of the "dose of venom" per pound of their bodyweight.

Your veterinarian's knowledge and experience will help her determine the appropriate treatment for your pet. Snake-bite envenomization treatment is complicated and your pet's well being is best served by taking your bitten pet to your veterinarian as soon as possible.

### A Personal Experience



Maribeth Johnson of Dearing, Georgia, was out in her 7-acre yard when she heard her mixed breed hound dog, Blanche, going after a critter. Johnson did not see the critter, but when Blanche's face swelled immediately afterwards, Johnson ran Blanche to the vet right away. Blanche's vet is experienced with venomous snake bites, as rattlers and copperheads are common in their area.

Blanche had puncture wounds on her face at the site of the swelling. The vet said Blanche would be at the clinic for about three days. Blanche's vet used an aggressive intravenous (IV) fluid protocol she's had good luck with previously for venomous bites.

"They gave Blanche a shot of some type of anti-inflammatory, a shot of pain killer, a shot of antibiotic, and then started her on an IV for fluid

therapy. The drip was set pretty fast at the beginning in order to get it to the kidneys quickly, and then I suppose it was backed off after a time. They kept the fluids going for about 24 hours and then checked her blood work and level of swelling." Blanche was very lucky and the swelling went down; she was even released from the hospital a day early. "Then she was on antibiotics (Baytril) for 10 days and pain killers (Metacam) until I could see that she wasn't in pain and the swelling was totally gone, which happened a few days after coming home." Snake bites are quite painful.

While antivenin is available for veterinary use, it would have cost Johnson in excess of \$800 and the veterinarian has to know what type of snake bit Blanche if the antivenin were to have a chance of doing any good. "You have 72 hours to make the decision about antivenin," says Johnson. "If after a day or so there is no progress with fluid therapy, it might make sense to try the antivenin if you have the money to give it a try." Since Blanche did well with fluid therapy, there was no need for antivenin.

No one knows what type of snake bit Blanche. "It was probably a copperhead based on how common they are in the area," says Johnson, "but my husband saw a baby rattler around our deck this spring."

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