

A Comprehensive Guide to Wilderness & Travel Medicine *New 3rd edition*

by Eric A. Weiss, M.D.



**Adventure
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Kits**

- Preparing For Travel
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VENOMOUS SNAKE BITES

There are two classes of poisonous snakes in the United States:

- Pit Vipers (rattlesnakes, cottonmouths [water moccasins], and copperheads) have a characteristic triangular head, a deep pit (heat receptor organ) between the eye and nostril, and a catlike, elliptical pupil.
- Elapids (coral snakes) are characterized by their color pattern with red, black, and yellow or white bands encircling the body. The fangs are short — these snakes bite by chewing rather than by striking.

All states except Maine, Hawaii, and Alaska have at least one species of venomous snake. The states with the highest incidence of snakebites are North Carolina, Arkansas, Texas, Mississippi, Louisiana, Arizona, and New Mexico. About 90 percent of snake bites occur between April and October, because snakes are more active in warm months of the year. Your chance of dying from a venomous snakebite in the wilderness is extremely remote — about one in 12 million.

Snakes can strike up to one-half their body length and may bite and not inject venom (dry bite). No poisoning occurs in about 20 to 30 percent of rattlesnake bites, and fewer than 40 percent of coral snake bites result in envenomation.

PIT VIPERS

Signs and Symptoms of Envenomation

- One or more fang marks (rattlesnake bites may leave one, two, or even three fang marks).
- Local, burning pain immediately after the bite.
- Swelling at the site of the bite, usually beginning within five to 20 minutes and spreading slowly over a period of six to 12 hours. The faster the swelling progresses up the arm or leg, the worse the degree of envenomation.
- Bruising (black and blue discoloration) and blister formation at the bite site.
- Numbness and tingling of the lips and face, usually 10 to 60 minutes after the bite.

- Twitching of the muscles around the eyes and mouth.
- Rubbery or metallic taste in the mouth.
- After six to 12 hours, bleeding from the gums and nose may develop and denote a serious envenomation.
- Weakness, sweating, nausea, vomiting and faintness may occur.

Treatment

The definitive treatment for snake venom poisoning is the administration of antivenin. The most important aspect of therapy is to get the victim to a medical facility as quickly as possible.

First Aid

- 1) Rinse the area around the bite site with water to remove any venom that might remain on the skin.
- 2) Clean the wound and cover with a sterile dressing.
- 3) Remove any rings or jewelry.
- 4) Immobilize the injured part as you would for a fracture, but splint it just below the level of the heart.
- 5) Transport the victim to the nearest hospital as soon as possible. If you pass by a telephone, stop and notify the hospital that you are bringing in a snakebite victim so they can begin to locate and procure antivenin.
- 6) It is not necessary to kill the snake and transport it with the victim for identification. If the snake is killed, it should not be directly handled, but should be transported in a closed container. Decapitated snake heads can still produce envenomation
- 7) Extractor pumps designed to provide suction over a snakebite wound are sold in many camping stores and endorsed by some as a first aid treatment for snakebites. Based on recent scientific evidence, these devices are no longer recommended. A study published in the *Annals of Emergency Medicine* in 2004 showed that these devices remove an insignificant amount of venom, and may also be harmful to the victim. The best first aid for snakebite is a cell phone (call the hospital that you are going to so that they can procure antivenin) and a car or helicopter to get the victim there as quickly as possible.

Other First-Aid Treatments That May Be Beneficial

Immediately wrapping the entire bitten extremity with a broad elastic bandage (the "Australian Compression and Immobilization Technique") has proven effective in the treatment of elapid and sea snake envenomations only. It is only recommended when the victim appears to have suffered a severe envenomation and is several hours from medical care.

The wrap is started over the bite site and continued upward toward the torso in an even fashion about as tight as one would wrap a sprained ankle

(**Fig. 60**). Monitor the color, pulse and temperature of the hand or foot to make sure that there is adequate circulation. If circulation appears compromised, loosen the wrap. Otherwise the bandage should not be released until after the victim has been brought to a medical facility. The limb should then be immobilized with a well-padded splint.

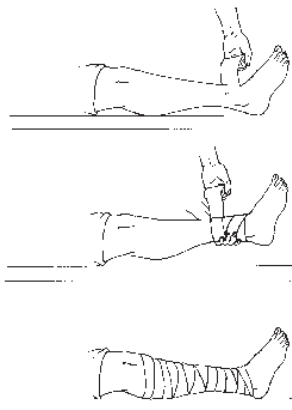


Fig. 60 - Australian wrap for snake envenomation.

THINGS NOT TO DO

- 1) Do not make any incisions in the skin or apply suction with your mouth.
- 2) Do not apply ice or a tourniquet.
- 3) Do not shock the victim with a stun gun or electrical current.

CORAL SNAKE

Signs and Symptoms of Envenomation

- Burning pain at the site of the bite.
- Numbness and/or weakness of a bitten arm or leg develops within 90 minutes.
- Twitching, nervousness, drowsiness, increased salivation, and drooling develop within one to three hours.

- Within five to ten hours, the victim develops slurred speech, double vision, difficulty talking and swallowing, and difficulty breathing. The venom may cause total paralysis.

Symptoms may sometimes be delayed by up to 13 hours after the bite.

First Aid

Treatment is the same as for a pit viper bite. Early use of the pressure immobilization technique is highly recommended because it is both effective and safe (coral snake venom does not produce any local tissue destruction).

VENOMOUS LIZARDS

The Gila monster and Mexican beaded lizard are found only in the Great Sonoran Desert area in southern Arizona and northwestern Mexico. Both possess venom glands and grooved teeth capable of envenomating humans. Not all bites result in envenomation, since the lizard may only nip the victim, or not expel any venom during a bite.

Gila monsters may hang on tenaciously during a bite, and pliers or a sharp knife may be required to loosen the grip of its jaws.

Signs and Symptoms of Envenomation

- 1) Pain and severe burning are felt at the wound site within five minutes and may radiate up the extremity. Intense pain may last from three to five hours and then subside after eight hours.
- 2) Swelling occurs at the wound site, usually within 15 minutes, and progresses slowly up the extremity. Blue discoloration may appear around the wound.

First Aid

- 1) Clean the wound thoroughly as you would for any laceration (See page 87).
- 2) Inspect the wound and remove any shed or broken teeth.
- 3) Immobilize and elevate the extremity.
- 4) Obtain medical care as soon as possible.