

Snake Bite Awareness

PIT VIPERS (RATTLESNAKES-23 SPECIES, COPPERHEADS, COTTONMOUTHS)

Factors Affecting Potency of Venom Injected

- Type of snake; copperheads, cottonmouth, western diamondback, eastern diamondback, eastern coral, Mojave rattlesnake (descending order of potency).
- Age of the snake, amount of venom injected, and time since venom was last released.
- Size of the victim (body mass)—smaller victims have potential for more severe effects.
- Activity of victim after the bite—activity spreads the toxin.
- Location of the bite—areas of poor blood supply and soft tissue may suffer more serious tissue damage.
- Victim's immune system—animals ability to react to the toxin and eliminate it.



How the Venom Works

CONTAINS

multiple fractions:
proteins and polypeptides, enzymes

BREAKS

down tissues and cell connections = spreading factors

INJURES

blood vessels and coagulates blood cells, destroys red blood cells

CAUSES

severe inflammation and tissue death

CONTAINS

substances that are toxic to the nervous system and heart

Signs of a Snake Bite

- Bleeding from the wound or fang marks.
- Pain and swelling at wound site.
- Systemic reactions could include severe sweating, diarrhea, anaphylactic-type signs such as incoordination, rapid heart rate, weak pulse, weakness, shock, congested mucous membrane.
- Horses and dogs are usually bitten on the nose or leg.
- Swelling of the nose may cause respiratory difficulty.
- Bites on the legs may not swell as much initially, but eventually the tissue destruction may produce severe limb swelling, tissue death, and infection . Long-term recovery should be expected in these cases.
- Anaphylactic reactions to the venom can produce shock-like signs and even death.
- Small animals are also more susceptible to suffering systemic illness from the venom with more signs exhibited.
- Progression of signs depends on whether or not detection and acute care are immediate follow-up occurs.

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Snake Bite Therapy

SCENARIO ONE: See it happen and know it was a snake bite.

- Keep the patient calm.
- Call a veterinarian if one is available from nearby, transport to a veterinarian, walk slowly if movement is necessary.
- Acute care: wash wounds with soap and water, apply cold compresses but not ice, and wrap a leg to partially immobilize and control swelling.
- Periodically evaluate breathing rate, heart rate, and general alertness and attitude. Animals bitten on the nose may have enough swelling to impair breathing. **This can become an emergency situation.**
- Anti-inflammatory agents can be beneficial in decreasing edema and swelling from inflammation.
- A veterinarian may also administer antibiotics, and fluids (if needed because of a systemic reaction).
- Anti-venom may need to be administered to dogs and other small animals but is not usually necessary in horses because of their size.
- **Hyperbaric oxygen therapy** is an extremely beneficial treatment for snake bites and other venom produced injuries. It decreases swelling, helps prevent cell death, necrosis and infection.

SCENARIO TWO: Detection of possible bite hours to days later (may or may not identify symptoms as a snake bite).

- Acute phase has passed, but there may still be swelling, infection, tissue necrosis or death.
- Prolonged recovery if tissue destruction infection is severe and/or bone is involved.
- Seek veterinary care — may require long term wound care, antibiotics, anti-inflammatory treatment.
- **Hyperbaric oxygen therapy** is an extremely beneficial treatment for snake bite and other venom produced injuries. It decreases swelling, helps prevent cell death, necrosis and infection.