

# Snake Bites Management

## Introduction :

The World Health Organization (WHO) estimates there are up to 1.8 million bites from venomous snakes annually worldwide, causing 20,000-90,000 deaths.[1] The vast majority of venomous snake species are viperids (eg, rattlesnakes, Gaboon vipers) or elapids (eg, cobras, taipans). Although most snakes in the Colubridae family are nonvenomous, some (eg, boomslang) are venomous and responsible for significant morbidity and mortality.



Note difference in fangs between elapids and viperids. A) Elapids have short, fixed, front fangs. B&C) Vipers have much longer and retractable front fangs

Snakebite is a potential medical emergency and must receive high-priority assessment and treatment, even in patients who initially appear well. Patients should be treated in hospitals with onsite laboratory facilities, appropriate antivenom stocks and a clinician capable of treating complications such as anaphylaxis. All patients with suspected snakebite should be admitted to a suitable clinical unit, such as an emergency short-stay unit, for at least 12 hours after the bite. Serial blood testing (activated partial thromboplastin time, international normalized ratio and creatine kinase level) and neurological examinations should be done for all patients.

## What you need to know

- Bites from venomous snakes can result in bleeding, paralysis, long term disability, and death
- Immobilise the bitten limb when transporting the patient to a medical facility; the universal use of pressure immobilisation is controversial, and tourniquets are not recommended
- The 20-minute whole blood clotting test is a simple bedside test to screen for and monitor coagulopathy in resource-limited settings
- Assess vital parameters and initiate resuscitation measures if the patient is clinically unstable with signs of bleeding, shock, paralysis, or respiratory distress
- Intravenous antivenom is recommended in patients with systemic symptoms; the dose and type depend on likely snake species, local guidelines, and availability



## Symptoms

Signs or symptoms of a snake bite may vary depending on the type of snake, but may include:

- Puncture marks at the wound
- Redness, swelling, bruising, bleeding, or blistering around the bite Severe pain and tenderness at the site of the bite
- Nausea, vomiting, or diarrhea
- Labored breathing (in extreme cases, breathing may stop altogether) Rapid heart rate, weak pulse, low blood pressure
- Disturbed vision
- Metallic, mint, or rubber taste in the mouth Increased salivation and sweating
- Numbness or tingling around face and/or limbs Muscle twitching

## First Aid

### Workers should take these steps if a snake bites them:

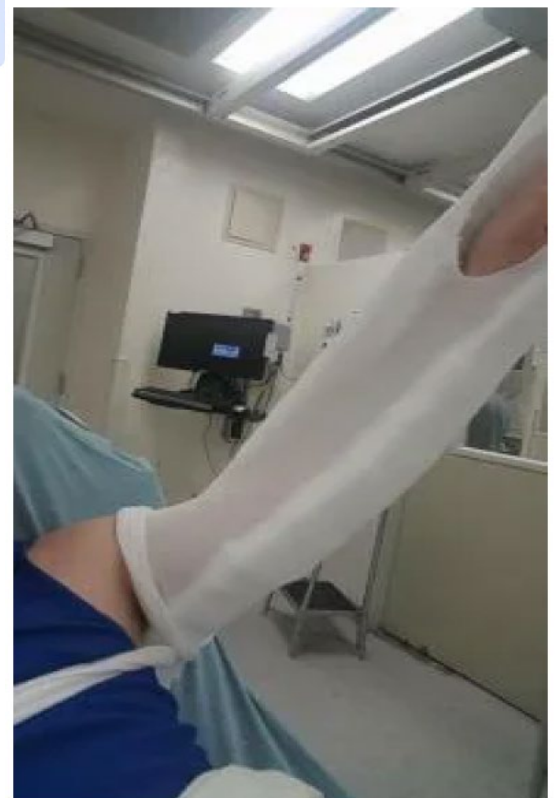
- Seek medical attention as soon as possible
- Antivenom is the treatment for serious snake envenomation. The sooner antivenom can be started, the sooner irreversible damage from venom can be stopped.
- Driving oneself to the hospital is not advised because people with snakebites can become dizzy or pass out.
- Take a photograph of the snake from a safe distance if possible. Identifying the snake can help with treatment of the snakebite.
- Keep calm.
- Inform your supervisor.
- Apply first aid while waiting for EMS staff to get you to the hospital. Lay or sit down with the bite in a neutral position of comfort.
- Remove rings and watches before swelling starts. Wash the bite with soap and water.
- Cover the bite with a clean, dry dressing.
- Mark the leading edge of tenderness/swelling on the skin and write the time alongside it.

### Do NOT do any of the following:

- Do not pick up the snake or try to trap it. NEVER handle a venomous snake, not even a dead one or its decapitated head. Do not wait for symptoms to appear if bitten, get medical help right away.
- Do not apply a tourniquet.
- Do not slash the wound with a knife or cut it in any way. Do not try to suck out the venom.
- Do not apply ice or immerse the wound in water. Do not drink alcohol as a painkiller.
- Do not take pain relievers (such as aspirin, ibuprofen, naproxen).
- Do not apply electric shock or folk therapies.

## Emergency Department Care

- Once the patient has arrived at the hospital, definitively manage any life-threatening airway, breathing, and circulatory issues. Airway patency may be compromised in severe envenomations or in the rare case of anaphylaxis in response to snake venom. Epinephrine should be administered to anyone with anaphylaxis, and intubation should be performed if patients do not respond. Intubation is also necessary for patients who have impaired ventilation secondary to respiratory muscle weakness. Intravenous fluid resuscitation may be needed to restore euvolemia in patients with significant hypovolemia secondary to gastrointestinal losses and/or third-spacing. Excessive fluid administration should be avoided because it can theoretically exacerbate tissue swelling.
- Analgesia is an essential component to snakebite management. Intravenous opioids are preferred initially. NSAIDs are discouraged because of the potential hematologic effects.
- There is consensus that the crotalid-envenomated limb should be elevated once the patient has arrived at the hospital. This prevents the venom from accumulating in the extremity and reduces the hydrostatic pressures that can exacerbate tissue swelling. The authors recommend using plaster to prevent the extremity from bending, but it is important to splint loosely; there should be no constriction and no obstruction to lymphatic flow.



# Snake Bite Management Procedure Flowchart

