# ToxTidbits

Maryland Poison Center
UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY

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**The Maryland Poison Center's Monthly Update: News, Advances, Information**


## Venomous Snakes in Maryland

There are two indigenous venomous snakes in Maryland: copperheads (*Agkistrodon contortrix*) and timber rattlesnakes (*Crotalus horridus horridus*). Most bites in Maryland are due to copperheads as they are found throughout the state. Timber rattlesnakes are primarily in Western Maryland. Their venoms are a combination of proteins that include hyaluronidases, metalloproteinases, anticoagulant proteins, procoagulant proteins, vasodilatory proteins, and enzymes. Timber rattlesnakes have a hematoxin in their venom that causes coagulopathy. Copperheads have primarily hyaluronidases and metalloproteinases that cause swelling and local tissue destruction.

Envenomated patients experience nausea, vomiting, diarrhea, metallic taste, diaphoresis, tachycardia, tachypnea, anxiety, hypertension, syncope and pain. Local symptoms include progressive swelling, bleeding and bruising. Timber rattlesnake bites often result in hematologic toxicity (e.g. thrombocytopenia, hypofibrinogenemia), and myokymia, a wave-like motion of muscle fibers, often confused with fasciculations.

No first aid procedures are necessary for snake bites. It is not recommended to perform incision and suction, place a tourniquet or constricting band, or ice the bite *(Ann Emerg Med 2001;37:168-174)*. Remove restrictive items like jewelry or tight clothing, and elevate the limb. The initial triage of the bitten patient includes labs (CBC, fibrinogen, CMP, PT/INR, PTT, CK, urinalysis), assessment of swelling, and management of pain. To assess the extent and progression of edema, measure around and mark the swollen area. Also measure above and below the primary site of swelling and the farthest point of swelling from the bite. Measure every 30-60 minutes until local swelling subsides or slows. If there are no signs and symptoms of envenomation within 8-12 hours and the snake has been verified or strongly suspected as a copperhead, patients can be discharged *(N Engl J Med 2002;347:347-356)*.

FDA approved antivenom in the USA is CroFab® (Crotalidae Polyvalent Immune Fab (ovine). For all envenomations, we recommend consulting with the poison center or a toxicologist prior to giving CroFab®. Unlike old antivenom products that were equine derived whole IgG and associated with a high risk of anaphylactoid reactions, this is an ovine derived Fab product with a much lower risk. Use with caution if the patient is hypersensitive to pineapple (bromelain), papaya, papain, chymopapain or latex. All patients administered antivenom for snakebites should be admitted to an intensive care unit to be monitored for adverse reactions and worsening of snakebite symptoms. Indications for treatment include swelling crossing a major joint (e.g. knee, wrist), high risk bite location (face, neck), hypotension, angioedema, hematologic toxicity, or other severe systemic symptoms. Dosing is 4-6 vials initially and can be repeated with 4 vials PRN to achieve control. There is no role for prophylactic antibiotics. Snakebite swelling can mimic compartment syndrome, but the symptoms respond to antivenom and fasciotomies are not recommended *(Ann Emerg Med 2004;44:99-104)*.

Northern Copperhead

Timber Rattlesnake

## Did you know?

**Most patients can be discharged within 48 hours after a copperhead or timber rattlesnake bite.**

Advise patients to return to the emergency department for worsening swelling, systemic symptoms of toxicity, or new bleeding. Patients should be seen by their primary care practitioner within a week to re-assess swelling and laboratory measurements. Further outpatient follow up is required to assess for the recurrence of late coagulopathy 2 – 14 days after envenomation.


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