

Snakes and Snake Bites in Florida

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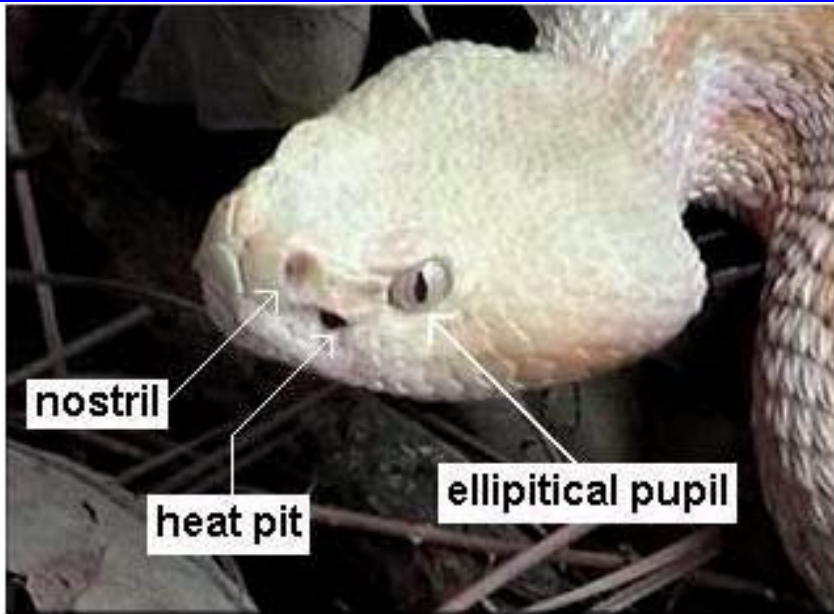
Venomous Snakes Of Florida

- ◆ 45 species of snakes are found in Florida; only 6 are poisonous
- ◆ **Pit vipers (family Crotalidae)**
 - Rattlesnakes, copperheads and cottonmouths (water moccasins)
- ◆ **Coral snakes (family Elapidae)**; related to Asian cobras; found chiefly in the Southern states

ALL Pit Vipers Have Retractable Fangs



Pit Vipers



Timber Rattle Snake
amelanistic
(uncommon)



Triangular Head
Elliptical Pupils
Sensory Pits

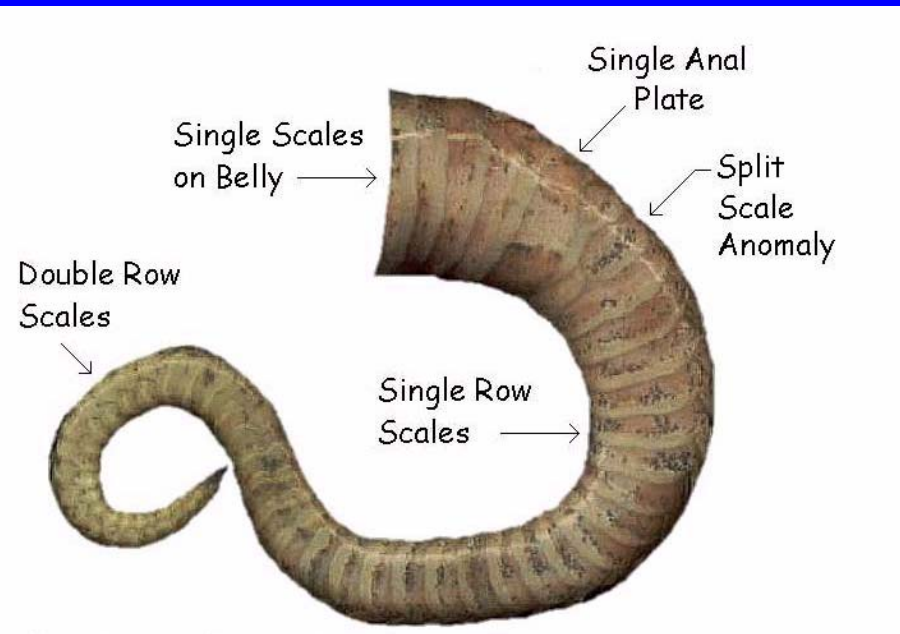
They just look mean!

Non-venomous snakes



Note round head and eyes

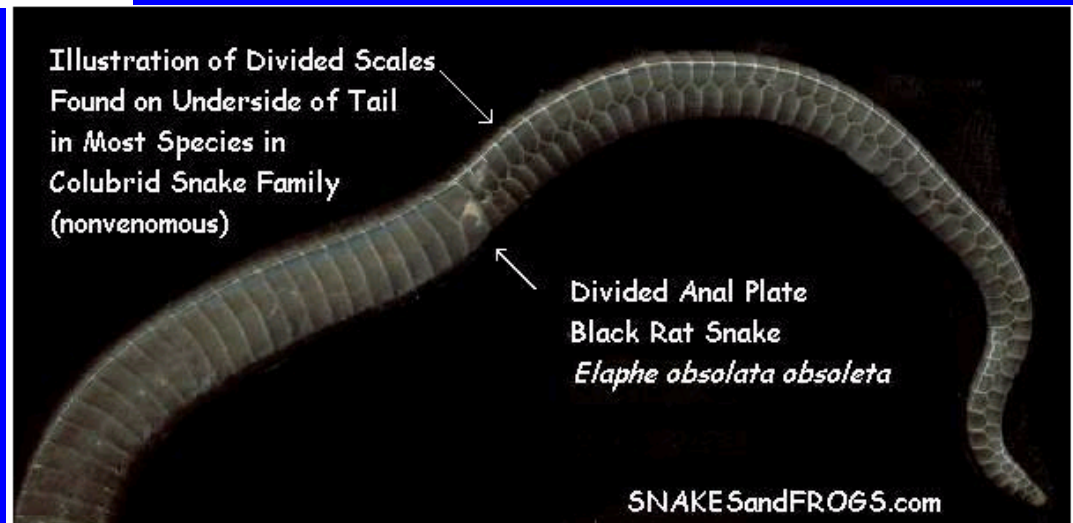
Caudal (tail) Plate Differences



Gently lift their little butts to identify

Non-venomous

Venomous



Copperhead

Agkistrodon contortrix contortrix



Copperhead

- ◆ Found only in panhandle in FLA
- ◆ 22-53 inches long
- ◆ Most common bite in US and FLA
- ◆ Rarely requires treatment for bite

Pygmy Rattler

Sistrurus miliarius barbouri



Pygmi Rattler

- ◆ Found throughout FLA
- ◆ 12-31 inches long
- ◆ Only moderately venomous, but may require treatment

Cottonmouth, Water Moccasin

Agkistrodon piscivorous conanti



Juveniles have patterns similar to copperheads



Water Moccasin

- ◆ Found throughout FLA
- ◆ 20-74.5 inches long
- ◆ Bad attitude, but only moderately venomous
- ◆ Juveniles have patterns similar to copperheads

Timber Rattlesnake (canebrake)

Crotalus horridus

Timber Rattlesnake, Canebrake Rattlesnake.



Timber Rattler

- ◆ Mostly northern FLA
- ◆ 36-74.5 inches long
- ◆ Can inflict severe envenomation
- ◆ Sometimes neglect to rattle and warn victims

Eastern Diamondback Rattlesnake

Crotalus adamanteus



Eastern Diamondback Rattlesnake

- ◆ Throughout FLA
- ◆ 36-96 inches long!
- ◆ Can inflict severe envenomation
- ◆ Also may forget to rattle and warn victims

Eastern Coral Snake

Micrurus fulvius fulvius

Coral Snake



Black head

Scarlet King Snake



Red head

“Red on yellow, kill a fellow; red on black, good for Jack”

Eastern Coral Snake

- ◆ Throughout FLA
- ◆ 20-47.5 inches long
- ◆ Shy, small fangs (not retractable)
- ◆ Neurotoxin vs early local tissue effects

Snake bite statistics

- ◆ About 8,000 people a year receive venomous bites in the United States; nine to 15 victims die
- ◆ Not all “venomous” bites inject (only about 25%; maybe just ate a bunny)
- ◆ 9:1 male / female ratio (wonder why?)
- ◆ Age 18-28
- ◆ 90% of bites from April-October
- ◆ 95% of bites on extremities (>50% to hand)

Strike pose (Western Diamondback)



Most snakes can strike $1/2$ to $2/3$ of their length!

Signs / Symptoms of Envenomation

- ◆ Early and intense pain implies significant envenomation
- ◆ Fang marks or scratches
- ◆ Swelling, ecchymosis (bruising), bullae (blisters)
- ◆ Nausea, syncope (fainting), difficulty swallowing or breathing

Signs / Symptoms of Envenomation (cont.)

- ◆ Hypotension, shock
- ◆ Petechiae (splotches), bleeding (mild to life threatening; get clotting studies, blood types ASAP)
- ◆ Paresthesias (numbness), respiratory distress, difficulty speaking, swallowing, respiratory arrest (in severe pit viper bites and symptomatic coral snake bites)

Estimating Severity of Bite (Pit vipers)

- ◆ **Mild envenomation:** local pain, edema, no signs of systemic toxicity; normal lab values; observe
- ◆ **Moderate envenomation:** severe local pain; edema larger than 12 inches surrounding the wound; systemic toxicity may take 15-30 minutes for onset (nausea, vomiting, and alterations in lab values)
- ◆ **Severe envenomation:** petechiae, ecchymosis, hypotension, coagulation (clotting) abnormalities
- ◆ **Coral snake bite:** may be relatively painless and take hours to develop neurological symptoms

Snake Bites



Snake Bite First Aid

- ◆ One bite is probably enough! **Beware “killing” and retrieving snake!!** We can figure out if poisonous later, if needed
- ◆ Allow bite to bleed freely for 15-30 secs.
- ◆ Cleanse and rapidly disinfect if possible
- ◆ Apply pressure bandage (e.g. Ace or gauze) as in a sprain; don't cut off pulse!

Snake Bite First Aid (cont.)

- ◆ Apply suction devices; no “cut and suck”!
Incision and suction only minimally effective, even if done immediately
- ◆ Immobilize extremity; keep level or below heart
- ◆ Stay “cool”!
- ◆ Car keys are most important medical equipment!!
- ◆ Get to hospital (avoiding MVA enroute!)
- ◆ Antivenin is the **ONLY** treatment!! May need 10-20+ vials for serious pit viper envenomation

Snake Bite Kits

Features

- Complete compact kit using constrictor/suction method
- 2¼" in length (5.7 cm)
- weight: 1 oz. (28 g)
- includes:
 - Detailed instructions
 - 3 pliable suction cups
 - Easy to use with one hand lymph constrictor
 - Scalpel
 - Antiseptic swab



Not very helpful



Gets out some

May be substituted for “good sense” if keys not available!

Don'ts Of Snake Bite Treatment

- ◆ DO NOT remove pressure dressings, suction devices or ACE bandage until you are at a facility able to administer antivenin
- ◆ Do not apply ice packs!! (frost bite + snake bite = BAD!)
- ◆ Do not engage in strenuous physical activity
- ◆ Do not apply oral (mouth) suction to bite
- ◆ Do not cut into or incise bite marks (**possible exception:** medical professional who lost their car keys)

Don'ts (cont.)

- ◆ Do not eat or drink anything, including alcohol, or use any medication unless okayed by medical sources
- ◆ Do not apply a narrow, constrictive tourniquet ;could cause ischemia (poor circulation) and worsen tissue damage
- ◆ Do not use a stun gun or electric shock (not even on snake -it pisses them off real bad!)

Definitive Medical Treatment

- ◆ ABC'S
- ◆ Evaluate if envenomated / ID snake
- ◆ Lab (esp. clotting studies)
- ◆ IV
- ◆ Determine if allergic to antivenin (intradermal skin test - > 10 mm wheal is positive)
- ◆ Precautions for anaphylaxis if serious envenomation and treatment indicated

Definitive Medical Treatment (cont.)

- ◆ Measure edema
- ◆ Antivenin IV only!! Might need a whole lot of antivenin - be prepared!
- ◆ Set up security perimeter against early “attack” by surgeons! Prompt antivenin use can prevent / minimize compartment syndromes (severe limb threatening swelling), etc. Fasciotomy should only be undertaken in face of “failed” antivenin.
- ◆ Ancillary: tetanus prophylaxis, antibiotics

Antivenin

- ◆ Polyvalent, derived from horse serum , good for all North American pit vipers; different for coral snake
- ◆ Protein content can cause severe allergic reaction; newer product from sheep serum (FAB) has less allergenic risk, but ?? Less efficacy in severe bites
- ◆ May be life saving, but precautions warranted
- ◆ Most effective if given within 4 hours

Antivenin Dosage Estimates (Pit Viper)

- ◆ Mild - none; observe 8-10 hours
- ◆ Moderate - 6-10 initially; may need to “titrate” dose
- ◆ Severe - may require >20 vials initially, then titrate to results
- ◆ Dose controversy: why not give “maximum” dose early?

Coral Snake Envenomation

- ◆ Most authorities recommend antivenin (minimum 6-10 vials) for any documented coral snake bite < 12 hours old (symptoms may be delayed for hours); observe minimum of 24 hours

Hazards of Antivenin

- ◆ Anaphylaxis (life threatening allergic reaction)
- ◆ Serum sickness (like the flu); almost everyone gets 7-10 days post treatment if about 10 vials administered; treat symptomatically; more common if repeat bite and treatment; severity not related to total dose

Avoiding Snakebites

- ◆ Leave snakes alone. Many people are bitten because they try to kill a snake or get a closer look at it
- ◆ Stay out of tall grass unless you wear thick leather boots / snake-proof chaps; remain on hiking paths as much as possible
- ◆ Keep hands and feet out of areas you can't see. Caution when picking up rocks or firewood
- ◆ Be cautious and alert when climbing rocks

Resources

- ◆ Antivenin Resource (for N.A. species: Wyeth-1-610-688-4400)
- ◆ Poison Control: 1-800-282-3171

New Sexually Related Condition Discovered In Asia!

One thing, NEVER TRY THIS ONE AT HOME KIDS!!!



That is a heck of a lot of King Cobra (Ophiophagus