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

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

Illustration of Divided Scales
Found on Underside of Tail in Most Species in Colubrid Snake Family (nonvenomous)

Divided Anal Plate
Black Rat Snake
*Elaphe obsolata obsolleta*
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
Pygmi 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

Scarlet King Snake

Black head

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

- Fang marks without envenomation
- Marked local swelling
- Local skin slough
- Cold injury with snake bite injury
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
- 2½" 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

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

Gets out some
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