



# Lets talk snakes

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# SNAKES ARE:

- Legless
- Have scales
- Without ears & eyelids
- Carnivorous
- Found everywhere except poles



**They shed their skin periodically & the process is called “shedding / molting”**



**They hunt differently**



**They smell through their tongue**



Which of these are **snakes** ?



## NUMBER:

-Total snakes in India: 300+

## VENOM:

-**Venomous** : cobra, krait, Russell's viper, king cobra, saw-scaled viper & ?

-**Non-venomous**: Rat snake, checkered keelback ?

-**Mildly-venomous**: Vine Snake, Ornate Flying snake ?



## IDENTIFICATION:

### Wrong approach:

Judging solely with color, pattern, size, behavior etc.

### Right approach:

Combination of any two or three rightly observed characters.

Common confusions are:

Boa-Python, Cobra-Keelback, Krait-Wolf....



**COLOR BASED IDENTIFICATION: ARE NOT ALWAYS CORRECT**



**Rat Snake (*P. mucosa*)**



**Common Krait  
(*B. caeruleus*)**

**Barred Wolf Snake  
(*L. striatus*)**

# WRONG AND MISGUIDING MATERIAL:

In India it is not that much easy to differentiate between venomous and non-venomous snake

In reality snakes give random scratch which has no standard pattern.

Examples of snakebites

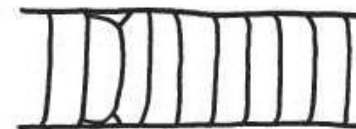
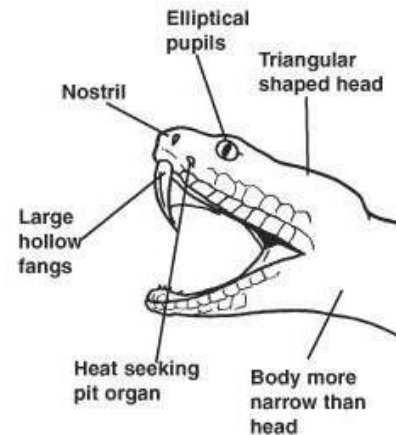
Venomous snake

Nonvenomous snake



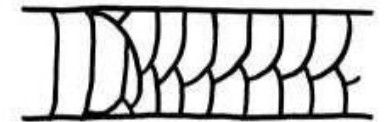
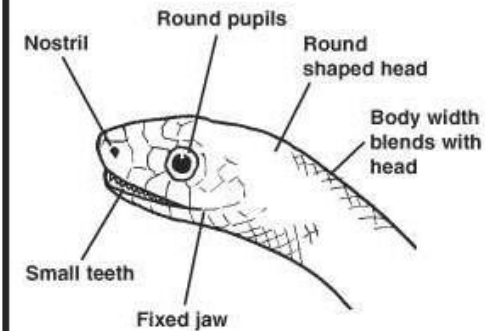
## HOW CAN I TELL THEM APART?

### Venomous



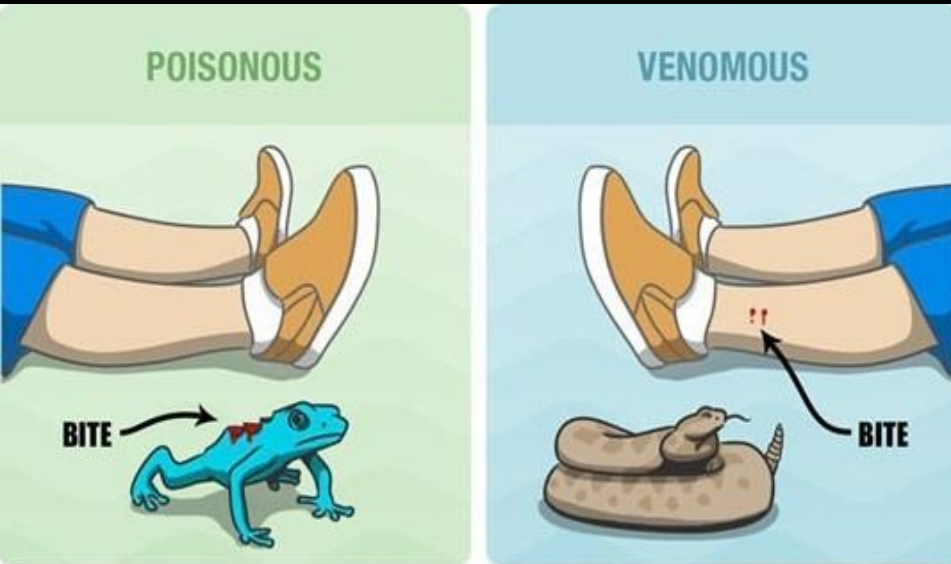
Scales on underside of tail in a single row

### Non venomous and Coral Snake



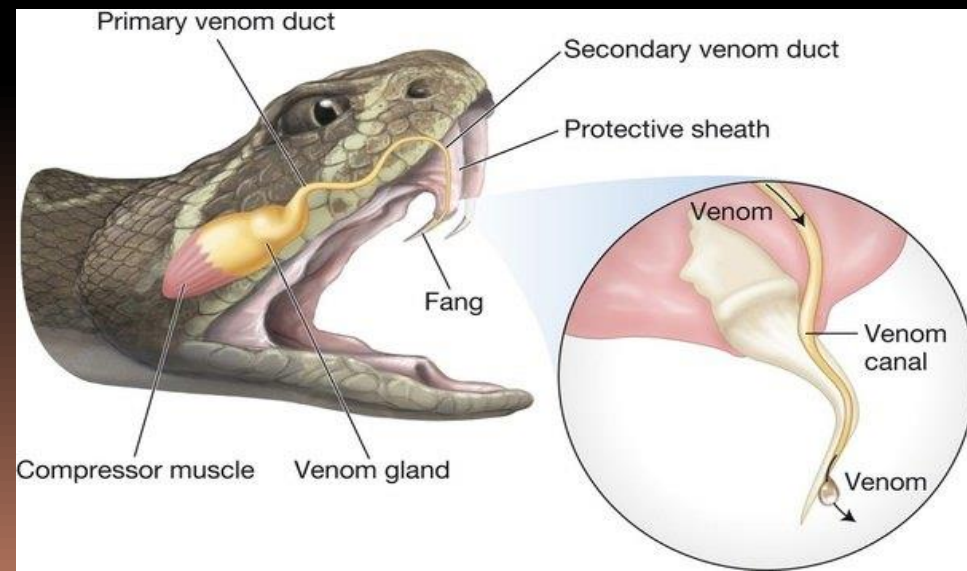
Scales on underside of tail normally in a double row

# RIGHT THINGS TO REMEMBER:



## POISON & VENOM

### VENOMOUS SNAKE'S HEAD



## SIZE:

- Only 12 snakes are above 6ft
- More than half are below 3.18 feet (1 meter)
- Almost all snakes rarely found above 80% of their maximum found lengths.



# FOOD:



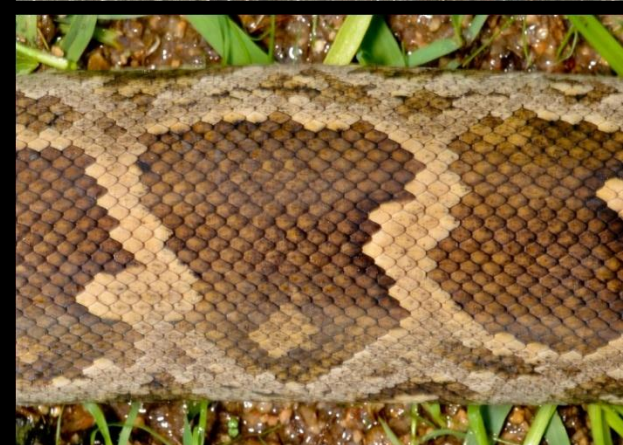
# BEHAVIOR:



# SOME COMMON SNAKES

# BOAS AND PYTHON

- Indian Boas: Viviparous, Heat sensing pits absent, Modified tail, Burrowers
- Pythons: Oviparous, Heat sensing pits present, Simple tail, Terrestrial-arboreal



Common Sand Boa  
(*Eryx conicus*)

Red Sand Boa  
(*Eryx johnii*)

Indian Rock Python  
(*Python molurus*)



# WORM SNAKES

- Burrowers, Egg-larvae feeders



**Brahminy Worm Snake (*Indotyphlops braminus*) &  
Slender Worm Snake (*Indotyphlops porrectus*)**



**Beaked Worm Snake (*Grypotyphlops acutus*)**

# KEELBACKS

- Aquatic or lives around water, feeds mainly on frogs and toads.



**Checkered Keelback**  
(*Xenochrophis piscator*)

**Striped Keelback**  
(*Amphiesma stolatum*)

**Green Keelback**  
(*Macropisthodon plumbicolor*)

# FARMER'S FRIEND SNAKES

- Terrestrial and arboreal, feeds actively on rodents and lizards.



**Rat Snake**  
*(Ptyas mucosa)*

**Banded Racer**  
*(Argyrogena fasciolata)*

**Common Trinket**  
*(Coelognathus helena)*

# BURROW SNAKES

- Semi-burrower, small, nocturnal, lives in loose soil.



**Common Kukri**  
(*Oligodon arnensis*)

**Russell's Kukri**  
(*Oligodon taeniolatus*)

**Dumeril's Black-headed**  
(*Sibynophis subpunctatus*)

# WOLF SNAKES

- Usually arboreal, nocturnal, feeds on geckos, medium in size.



**Common Wolf**  
*(Lycodon aulicus)*

**Barred Wolf**  
*(Lycodon striatus)*

# TREE SNAKES

- Arboreal, diurnal, live in trees, feed mainly on lizards.



**Green Vine Snake**  
(*Ahaetulla nasuta*)

**Common Bronzeback Tree Snake**  
(*Dendrelaphis tristis*)

# CAT SNAKES

- Arboreal, nocturnal, live in forests, feed mainly on lizards.



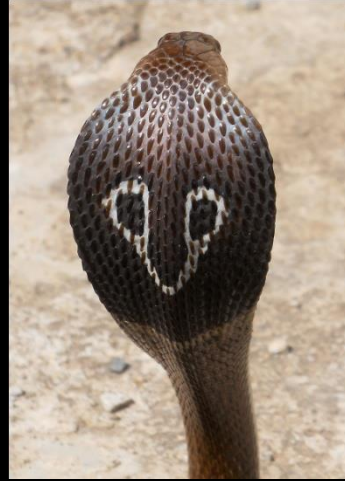
**Common Cat Snake**  
*(Boiga trigonata)*



**Forsten's Cat Snake**  
*(Boiga forsteni)*

# COBRA AND KRAITS:

# NEUROTOXIC



Spectacled Cobra (*Naja naja*)



Common Krait (*Bungarus caeruleus*)



# VIPERS: HEMOTOXIC



Saw-scaled Viper (*Echis carinatus*)



Russell's Viper (*Daboia russelii*)

# SEA SNAKES

# NEUROTOXIC



Hook-Nosed Sea Snake  
(*Hydrophis schistosa*)

Annulated Sea Snake  
(*Hydrophis cyanocincta*)

Yellow-Lipped Sea Krait  
(*Hydrophis fasciatus*)

# SNAKE EATERS

# NEUROTOXIC



**Common Krait**  
(*Bungarus caeruleus*)

**Banded Krait**  
(*Bungarus fasciatus*)

**King Cobra**  
(*Ophiophagus hannah*)

~~ROCK SNAKE~~ NEUROTOXIC, IN WATER



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Some Common look alikes

# Look-alike 1

mild- venomous



venomous



Common Cat Snake



Saw- Scaled Viper

# Look-alike 2

Non-venomous



Non-venomous



Rat Snake



Common Trinket

# Look-alike 3

Non-venomous



venomous



Banded Racer



Spectacle Cobra



# Look-alike 4

Non-venomous



Common Wolf Snake

venomous



Common Krait

# Look-alike 5

Non-venomous



venomous



Common Sand Boa



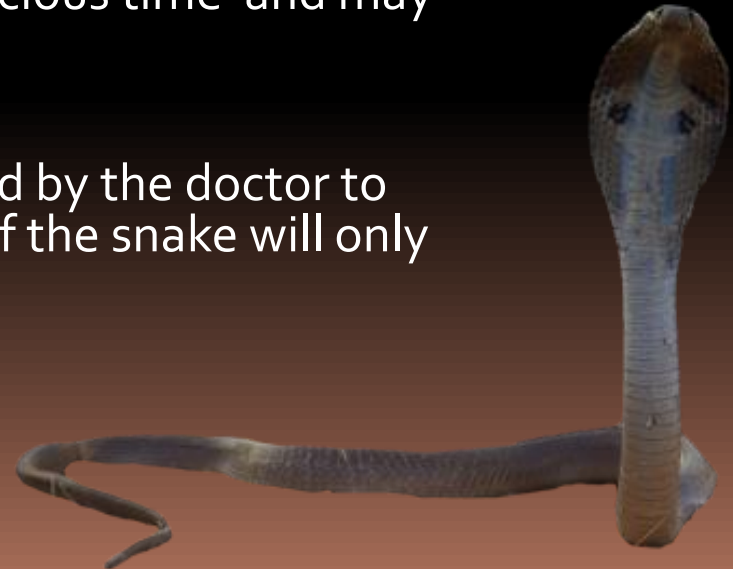
Russell's Viper

# SNAKEBITES

Facts ,First-aid & Prevention

# Few things you need to know about snakebites

1. Less than 10% of total snakebites are potentially lethal.
2. Venomous Snakebites can be SUCCESSFULLY treated in Hospitals ONLY with anti-snake venom / anti-venom (ASV)
3. Proper first-aid can save the life of a snakebite victim in most cases especially in the first hour also known as the golden hour
4. Incorrect first-aid, quacks , tantriks , traditional treatments prescribed by faith healers WASTES precious time and may result the death of the patients
5. Clinical symptoms have to be recognized by the doctor to successfully treat snakebites. Identity of the snake will only assist the doctor .





The trusted snakebite first aid which could save hundreds of snakebite victims across India in the golden hour.



Not always you have a pressure bandage handy, use a clean cloth which is about 4" wide and 1 mtr long.

# The Big Four of India

Common cobra

Common krait

Russell's viper

Saw-scaled viper

- The most common and widely spread venomous snakes of India.
- Together they cause more than 90% of the snakebite deaths in the country and therefore are known as The Big Four.
- Found in human habitations and even in the middle of urban areas.

*There are other venomous snakes including banded krait, black krait, monocellate cobra, pit vipers which equally dangerous to human lives. Their distribution is, however, limited to certain geographic locations of the country.*



# The Big Four of India



Russell's viper (*Daboia russelii*)



Common Krait (*Bungarus caeruleus*)



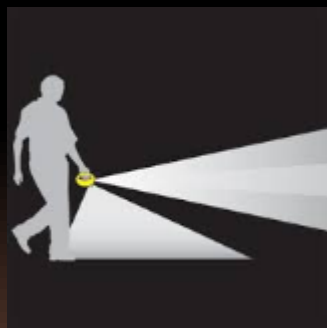
Common Cobra (*Naja naja*)



Saw-scaled viper (*Echis carinatus*)



# How to avoid snakebites ?



- When you walk out in the open, then use protective clothing such as long pants, hiking boots etc..
- When you walk in the evening, please ensure that you carry a flash light with you
- Do not reach out to dark corners, gaps without examining, snakes often hide in such places.
- Piled up wood, bricks or stones are also perfect hiding places for snakes. Be cautious when you try to clean these things.
- Do not sleep on the floor in snake prone areas.
- Lot of snakebites happen to people who work in farms. While working in farms use appropriate caution which could be a combination of all the above.
- If you see a snake, do not disturb it – avoid it and it will not harm you.
- Never try to rescue a snake by imitating TV shows or Social Media !

# Paddy field and Sugar cane field workers -



People who work in paddy & Sugarcane fields get bitten on their left hand is a good example of snakebites in the agricultural fields.

Paddy fields attract rodents and these attract snakes who live in the fields  
Proper care should be taken by paddy field workers to avoid snakebites

# Common locations of snakebites

These images of actual bite marks by venomous snakes show that marks may or may not be clearly visible.

Bite marks dependent on the type and size of snake in question.



# Signs and symptoms of a venomous snakebite

## Common envenomation signs and symptoms

The following are few of the most common symptoms of envenomation due to a snakebite. Symptoms may occur soon after the bite or take hours to appear. A minimum of twenty-four hour observation of the patient is suggested.

- Puncture mark or scratches on suspected bite area. At times marks could not be visible
- Bleeding at bite site, unusual pain around the bitten area and limb, swelling
- Nausea, headache, vomiting, stomach ache, difficulty in swallowing or drinking
- Double or blurred vision
- Drooping eyelids
- Difficulty in talking
- Bleeding gums
- Dark or brownish urine bloody urine
- Giddiness

# Signs and symptoms of a venomous snakebite



**Drooping eyelids**



**Swelling in the limb**



**Change in color of tissue around the bite area**



**Blisters in the bite area**

# Initial Management

## The Golden Hour

Do it **R.I.G.H.T**

# Do's and Don'ts in the case of a snakebite



1. Remember that **only 15 out of 290+ known species of snakes** can cause a serious health problem.
2. Not all of them are common and found across the county. **So your chances of getting bitten by a venomous snake are very low.**
3. In case of a snake bite, **ensure that the patient remains clam**, and take control of the situation at the earliest. A patient who is calm has much higher chances of surviving a venomous snakebite.
4. Even if you know that the snake in question is a venomous snake, you should not announce that to the patient. **Provide the proper first-aid and move the patient to the hospital at the earliest**, preferably within the 'golden hour'. Reassure him and say that you are just taking him to the hospital for observation.

## Do it **R I G H T**

**R** = Reassure

**I** = Immobilize

**G & H** = Go to Hospital

**T** = Tell the Doctor.

# DO NOT

- Cut the wound open and drain blood
- Attempt to suck venom out from the bitten area
- Give alcohol, coffee, tea, etc. If the patient is thirsty, give some water
- Walk or run if you are the patient. The lesser the body movement, the better it is
- Apply traditional remedies or go to local faith healer
- Attempt to find the snake which bit the patient





1. **Remove rings, bangles etc.** from the bitten limb. There may be swelling later and it may force ornaments to act as a tight tourniquet.
2. **Remove dirt** from the bite location (if there is any visible dirt).
3. **DO NOT wash and clean the wound!** Massaging during the wash or cleaning the bitten area will help the venom to spread faster through circulatory system.



## DO's

- Use the pressure bandage and start wrapping the finger from the bite location.
- If you don't have a pressure bandage handy, use a clean cloth which is about 4 inches wide and minimum a meter in length.



# DO NOT

**Tie the bandage too tight or too loose**

We are NOT trying to cut off the blood circulation.

We are slowing the blood circulation down, by immobilising the limb and also choking the lymphatic vessels to slowdown lymph fluid too.





**Keep the bitten portion / limb below the heart level**

# Frequently Asked Questions

1. **Some people suggest that Pressure bandage is NOT a good option as a first aid to snakebites ?**

Applying pressure band or cloth in the right way will reduce the spread of venom to the vital organs of the body. **It is very effective in case of neurotoxic snakes such as krait & Cobra . If the bitten snake is a viper then the prolonged pressure bandage application may cause severe local tissue damage.**

2. **Do we need to catch the snake to help the treatment ?**

**NO** - There is no need to identify the snake to decide the treatment. A doctor will look at the clinical symptoms to verify whether the snakebite caused envenomation or not. Once the envenomation is confirmed, then the doctor will start medication.

3. **So, If you have a dead snake / photo of the snake then is it helpful ?**

If there is a photo of the dead snake / live snake then share it with the experts who could help you in identification of the snake in question.

# Safe Handling of Snakes

# BEFORE HANDLING SNAKES

There are a few basic points that wildlife enthusiasts must keep in mind before starting to rescue snakes.

- Laws of the land. WLPA 1972 forbids capture of wild animals without prior authorization from the Forest Department.
- The need for rescue. Is there a point in catching and moving snakes at all?
- Basic skills essential – Snakebite First Aid knowledge and equipment and Hospital Locations/Transport plan should always be in place prior to starting rescues.

# Evolution Of Methodology





# Evolution Of Methodology

The handler needs to be swifter than the snake EACH TIME, the snake needs to be swifter than the handler JUST ONCE.

Needless Showboating



# Evolution Of Methodology



Wrong equipment always harm a snake  
Wrong approach of handling makes the snake aggressive



Fasciotomy following two fang envenoming by *Daboia russelii* (Sri Lanka, 2011)  
Results of a single fanged, mild envenoming From *Naja naja* (Chennai, 2015)  
Results of a multiple bite envenoming From *Naja naja* (Calicut, 2013)  
Necrosis & blistering following a Monocled cobra bite.

# Evolution Of Methodology

## Focal Points of Effective Rescues

- Assessing need for rescue
- Maximizing safety for the Handler – Effective use of equipment / tools. NO UNNECESSARY CONTACT WITH THE ANIMAL.
- A Major Chunk of Rescue time should be devoted to Outreach/Education for communities instead of pointless displays of the snakes

# Snake Handling Equipment



# Snake Handling



Snake Hook

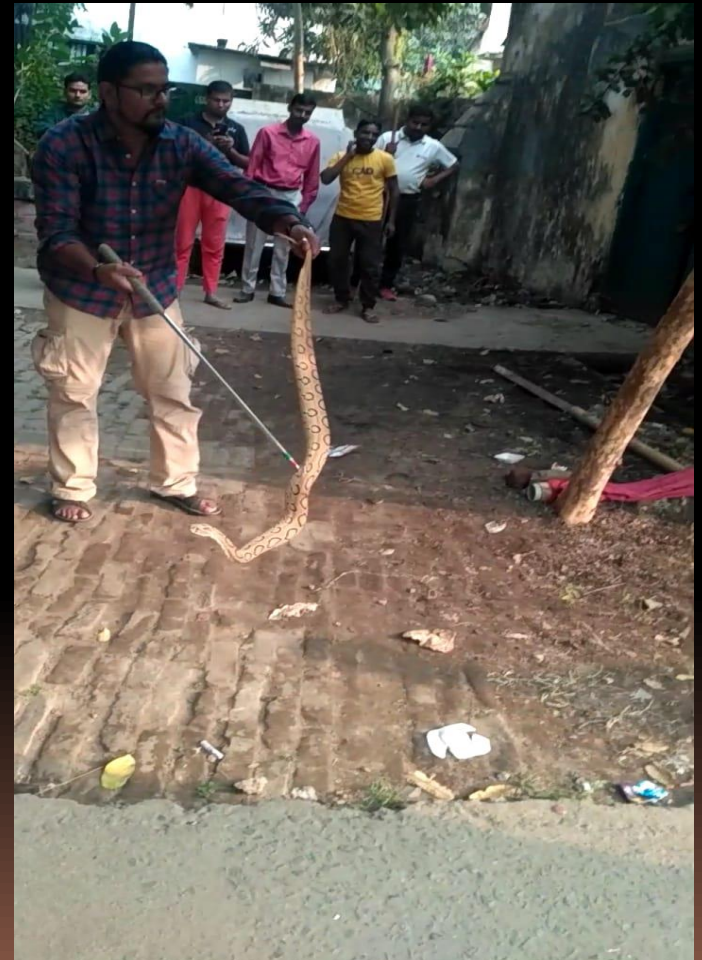


Snake Tong

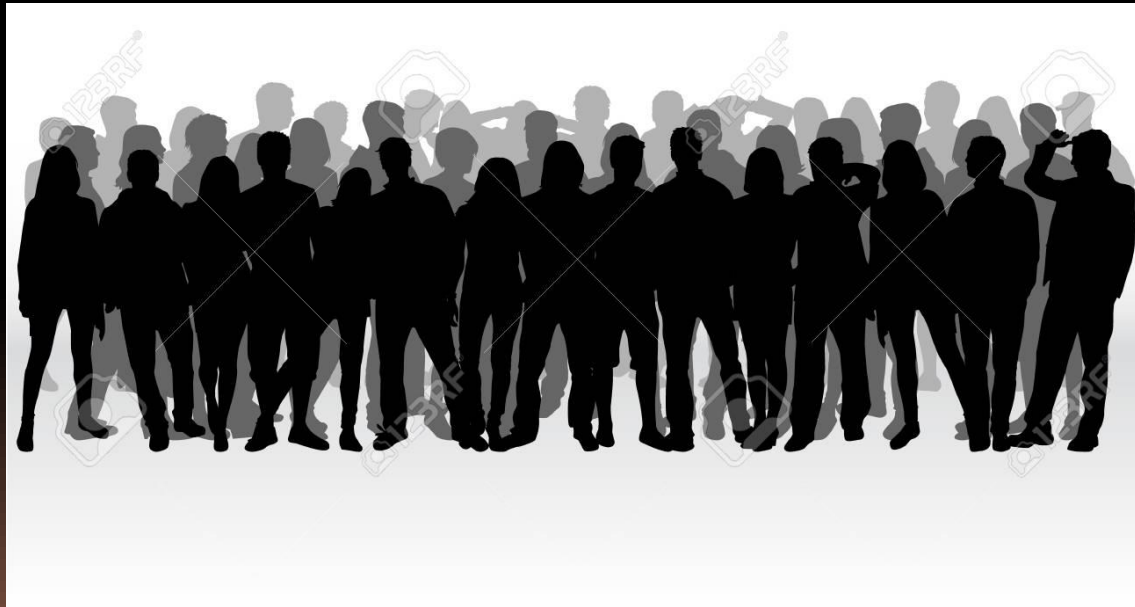


Bag to Rescue and Transportation

The best way to handle a Snake is with a Snake hook



# Assessing Situation at Rescue site





## Tailing Snakes



GOOD Grip – This is an appropriate method of tailing and is less  
BAD Grip – This is very uncomfortable for the snake and may cause  
uncomfortable/stressful for the snake.  
agitated behaviour.



## Head / Neck Restraint



# Transport & Health Assessment

- Once bagged, it is good protocol to keep the bag inside another container. This adds another layer of security and can prevent escapes. It also removes the need to touch the bag directly, reducing chances of getting bitten through the bag.
- Like all reptiles, snakes are poikilothermic and cannot stand excessive heat. While spraying the bag with water seems like a good idea, an wet bag may lead to a suffocated snake, and this should be avoided.
- As mentioned earlier, rescuers should not maintain specimens in captivity for prolonged periods . All rescued animals should be ideally released as soon as possible after rescue, always as close to the rescue site as possible, translocation is known to be detrimental to their survival.
- Keeping the bags/containers as still as possible is another way of reducing stress on the reptile. The presence of some leaf litter and twigs in the snake bag often makes arboreal species more comfortable.

# Transport & Health Assessment

- Some general points that can be used to assess the health of the specimen-
  - Alertness/Reactivity to stimulus/tongue-flicking
  - Unhindered movement
  - No visible vertebrae/ribs. Well rounded body shape, good muscle tone
  - Skin Condition (Dull or Glossy, presence of folds)
  - Presence of scar tissue/Old injuries
  - Presence of Ticks
  - Discharge from eyes, mouth & nostrils

# Transport & Health Assessment

- Often, rescuers reach situations where the snake has suffered some physical trauma, either at the hands of machinery, weights or humans.
- These animals should be referred to a veterinarian with experience in reptile medicine as soon as possible with the consent of the Forest Department. Snakes often suffer worse internal damage than their external condition suggests and serious injuries **SHOULD ONLY BE TREATED BY A QUALIFIED VET.**
- Rescuers should handle these injured specimens minimally and should avoid attempting to treat the animal ad-hoc. Well meaning but unsuitable treatment may cause a lot more pain to the snake.



# Any Questions?

have a wonderful Herping .....

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