

NSS PROGRAMME ON SNAKE BITE AND AWARENESS

JOINTLY ORGANISED BY

UNIVERSITY B.T. & EVENING COLLEGE AND HUMAN &  
ENVIRONMENT ALLIANCE LEAGUE



# BEYOND THE BITE



**One Step towards Snake Bite Awareness and  
Safeguarding Environment**

A Special talk  
by

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Assistant Secretary of HEAL (Human & Environment Alliance League)

Organised by-  
NSS Unit - I,  
University B.T. and Evening College

Date : 02.04.2026  
Time : 2.00pm  
Room : NSS Room

BEYOND THE BITE



## INAUGURATION OF THE PROGRAMME BY OUR PRINCIPAL DR. ANKITA MUKHERJEE

### Snake Identification Training

Participants of University B.T. & Evening College, NSS unit cooch Behar organized an awareness program on **snake identification, snake bite and first aid**. Mr. Arhendu Banik, Assistant Secretary of Human & Environment Alliance League (HEAL) delivered lecture on the topic and Roky Sutradhar and Hritaban Ghosh helps our volunteers to take a hand on training on snake awareness. Our NSS volunteers learn to distinguishing venomous from non-venomous snakes requires observing specific physical traits, though no single rule is universal. Caution is always advised, as some harmless species mimic the appearance of deadly ones, based on characteristics like head shape, eye pupils, and fang marks to assist in medical treatment. The training emphasized capturing a photo for identification rather than risking a second bite by catching the snake. Volunteers enjoyed the program by Power Point Presentation. Besides the presentation NSS volunteers also got a hand on training on first aid of snake bite. Snake identification and the management of bites represent a critical intersection of wildlife biology and emergency medicine. Globally, snakebite envenomation is a neglected tropical disease, yet many fatalities are preventable with accurate identification and proper first aid. This report outlines how to distinguish venomous species, the physiological impact of their toxins, and modern, evidence-based first-aid protocols. The awareness program focused on the following

**Head Shape:** Many venomous snakes, particularly vipers, possess triangular or wedge-shaped heads that are wider at the base due to large venom glands. Non-venomous snakes typically have more rounded or oval-shaped heads.

**Pupil Shape:** Venomous species often have elliptical or slit-like "cat-eye" pupils. In contrast, non-venomous snakes usually have round pupils.

**Scale Patterns:** Taxonomically, venomous snakes often have small scales on their heads (vipers) or specific large shields (elapids like cobras). For example, the presence of a "loreal pit" (a heat-sensing organ) between the eye and nostril is a definitive marker for pit vipers.

**Tail Features:** Land-dwelling venomous snakes often have a single row of scales after the anal plate, whereas non-venomous snakes may have a double row. Rattlesnakes are uniquely identified by their keratinous rattle.

**Region Common Venomous Species:** Key Features

**India:** Spectacled Cobra, Common Krait, Russell's Viper, Saw-Scaled Viper. Kraits have hexagonal spinal scales; Cobras have a distinct hood.

**North America:** Eastern Diamondback Rattlesnake, Copperhead, Cottonmouth, Coral Snake. Copperheads have "Hershey kiss" patterns; Coral snakes have red/yellow/black banding.

**Australia:** Eastern Brown Snake, Coastal Taipan, Red-bellied Black Snake. Extremely toxic neurotoxic venom; often shy but highly defensive.

**Understanding Venom:** Types and Symptoms

Venom is a complex cocktail of enzymes and proteins that target specific biological systems.

**Neurotoxic (Elapids like Cobras, Kraits):** These toxins attack the nervous system, blocking nerve signals to muscles.

**Symptoms:** Drooping eyelids (ptosis), slurred speech, muscle weakness, and eventual respiratory failure. Bites may be virtually painless initially.

**Hemotoxic (Vipers like Russell's Viper):** These disrupt blood clotting and destroy blood vessels.

**Symptoms:** Severe local pain, massive swelling, spontaneous bleeding from gums or the nose, and internal organ failure.

**Cytotoxic:** These toxins cause direct tissue destruction at the bite site.

**Symptoms:** Blistering, bruising, and skin death (necrosis) that can lead to amputation if untreated.

**Myotoxic:** Found primarily in sea snakes, these break down muscle tissue.

**Symptoms:** Intense muscle pain and dark-coloured urine (myoglobinuria).





## Evidence-Based First Aid: The Do's and Don'ts

Modern first aid focuses on delaying venom absorption and ensuring rapid transport to a hospital.

### **Immediate Actions (Do's)**

**Stay Calm and Move Away:** Move to a safe distance to prevent a second strike.

**Immobilize the Victim:** Keep the person completely still. Physical movement speeds up the spread of venom.

**Position the Limb:** Keep the bitten limb at or slightly below heart level to slow venom flow toward the core.

**Remove Constrictions:** Take off rings, watches, or tight clothing near the bite, as swelling can occur rapidly.

**Clean and Cover:** Gently wash the bite with soap and water (unless in Australia, where venom is tested at the site) and cover it loosely with a dry bandage.

**Identify the Snake (Safely):** If possible, take a photo from a safe distance or remember its appearance to help doctors choose the correct antivenom.

## Dangerous Practices (Don'ts)

**NO Tourniquets:** Tying off a limb can cut off all circulation, leading to gangrene and permanent limb loss.

**NO Cutting or Sucking:** "Sucking out" venom is ineffective and can introduce bacteria into the wound.

**NO Ice or Heat:** These can worsen local tissue damage.

**NO Alcohol or Caffeine:** These increase heart rate and circulation, spreading venom faster.

**NO Medications:** Avoid aspirin or ibuprofen, which can thin the blood and worsen bleeding.

## **Definitive Medical Treatment**

The only true cure for envenomation is antivenom, which is administered intravenously in a hospital. Hospitals also provide supportive care such as mechanical ventilation for respiratory failure, dialysis for kidney injury, and tetanus updates. Delaying medical care in favour of traditional "magic" remedies is a leading cause of avoidable death

## **Conclusion**

The training emphasized that Anti-Snake Venom (ASV) is the only definitive treatment, necessitating immediate transport to a medical facility. The primary objective of first aid is to stabilize the patient until professional medical care can be provided. At the end all the NSS volunteers of our college enjoyed the program and get awareness about snake identification, bite and first aid.

