SNAKEBITE FIRST AID

In the northern hemisphere, most snakebites occur between the months of April and October. With the warm climate and increase in outdoor activity during the summer months in Tennessee, the management of snakebites becomes a concern at this time for local physicians. Although many bites involve non-poisonous snakes, numerous cases of bites due to poisonous snakes occur in Tennessee each year. Therefore, each snakebite should be handled as a medical emergency until it has been determined that the snake is non-poisonous, or that envenomation has not occurred. About 12 to 15 people die each year in the United States out of 8,000 to 10,000 bites from venomous snakes. Snakebite victims are usually males between the ages of 5 and 25 years who are attempting to handle a poisonous snake.

There are two families and 26 species of venomous snakes found in the United States. The two families, Elapidae (coral snakes) and Crotalidae (pit vipers) have a widespread distribution in the southeastern United States. Snakes in the family Crotalidae are found in every state except Maine, Alaska, and Hawaii, and are responsible for 98% of all venomous snakebites. There are four venomous snakes found in Tennessee. These are the rattlesnake, copperhead, cottonmouth (all pit vipers), and very rarely the eastern coral snake. In addition, collectors in this country have imported many species of exotic snakes, which form a special problem to those involved in the management of snakebites.

Snake venom is one of the most complex substances known. It contains protein and non-protein compounds including metals, amino acids, peptides, lipids, biogenic amines, enzymes, and polypeptides. The venom is produced in two glands (analogous to the salivary glands of humans) and is transported via venom ducts to the large maxillary teeth or fangs. Pit viper fangs are retractable and remain folded while the mouth is closed, but rotate outward when the snake strikes. The fangs are hollow and the venom is injected through an opening at the end of the fang. This process is similar to how one receives an injection by a hypodermic needle. By contrast, the Elapidae have tiny, immobile

FIRST-AID MEASURES FOR SNAKEBITE

1. Remove the victim from the vicinity of the snake. This will prevent multiple bites.
2. Remove any rings, watches, or bracelets if bitten on an upper extremity.
3. Have the victim lie down and/or remain calm.
4. Try to identify or secure the snake IF this can be done safely and quickly. Do not handle the snake. Even a dead snake can be dangerous since any venom remaining on the fangs could be injected if the skin is scratched.
5. Immobilize the extremity.
6. Do not give the victim anything to eat or drink, especially alcohol.
7. First-aid measures at the time of the envenomation have included a variety of techniques now considered dangerous and/or obsolete. For example, tourniquets, incision and suction, cautery, electrical shock, cryotherapy, and administration of antivenin in the field are all considered either ineffective or dangerous therapies.
8. Transport the victim to a hospital monitoring the pulse, blood pressure, and respiration. Do not apply ice or immerse in ice water under any circumstances; this markedly increases the risk of sloughing and necrosis and may be more dangerous than the bite itself.
9. Do not administer snake antivenin without seeking the assistance/advice of a physician who is familiar with antivenin use.
fangs that are grooved to allow the venom to flow down the fang surface and trickle into the wound. The victim may receive all, a portion, or none of the venom when the snake strikes. Up to 50% of all venomous bites are reported to be “dry bites,” i.e., no envenomation occurs even when the victim is fanged.

The symptoms arising from a venomous snakebite differ from one person to another because of snake and human variables. Snake-related variables include the size of the snake, species, state of health, condition of the fangs, and the amount and relative toxicity of venom injected whereas the human ones include the age, size, and previous health of the patient, as well as location of the bite. Because of these multiple factors, individual clinical assessment is the only way to judge the severity of snakebite.

Since snakebite is a medical emergency, anyone bitten by a venomous or suspected venomous snake should be transported to a hospital as soon as possible. The first six to eight hours are the critical period for treating the life-threatening problems associated with snakebite. The first-aid treatment for snakebites depends on the distance to a hospital and the time elapsed since the bite occurred. If the victim is only ten minutes from a hospital, simply transporting the person to the hospital is adequate. For long distances, first-aid measures should be instituted as stated.

Whenever envenomation occurs as a result of snakebite, a physician familiar with the management of snakebites should be consulted. Advice can be obtained 24 hours a day throughout the year from the Tennessee Poison Center.

Poison Center Hotlines

Greater Nashville Area Hotline
615-936-2034

National Hotline
1-800-222-1222

Web Site

Tennessee Poison Center
www.PoisonLifeline.org

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Nashville, TN 37232-4632
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