The current pressure-immobilisation method of first aid for Australian snakebites was developed by Dr Struan Sutherland at CSL. It relies on the fact that the major toxic components of venom have a high molecular weight and are too large to cross through the capillaries into the bloodstream. Instead venom initially travels around the body via the low-pressure lymphatic system. Venom will eventually enter the bloodstream and move from there to the peripheral nervous system, where it blocks neuromuscular control, causing life threatening clinical effects.

A firm compression bandage prevents lymphatic return from a bitten limb, whilst still allowing arterial and venous blood flow. By also using a splint, movement of the limb is restricted, thus reducing peristaltic pumping of the lymphatic vessels, further minimising lymph and venom movement past the bandage.

Research has shown that this first aid technique acts to retard the initial venom movement and therefore the onset of symptoms, is comfortable for the victim and may be left on for several hours. The rapid application of first aid is vital.

**Pressure Immobilisation First Aid Method for Snakebite**

Use this procedure for the treatment of any snakebite in Australia and Papua New Guinea.

**First Aid for Bites to the Lower Limb**

1. As soon as possible, apply a broad pressure bandage from below the bite site, upward on the affected limb (starting at the fingers or toes, bandaging upward as far as possible). Leave the tips of the fingers or toes unbanded to allow the victim’s circulation to be checked. Do not remove pants or trousers, simply bandage over the top of the clothing.

2. Bandage firmly as for a sprained ankle, but not so tight that circulation is prevented. Continue to bandage upward from the lower portion of the bitten limb.

3. Apply the bandage as far up the limb as possible to compress the lymphatic vessels.

**Tips for Snakebite First Aid**

- Before going into a snake prone area, understand snakebite first aid, carry appropriate compression bandages and plan how to contact the nearest medical assistance, if required. 10–15cm wide elastic or crepe bandages are suitable and readily available.
- Do not attempt to catch or kill the snake. This increases the chances of a repeat bite or another person being bitten.
- Rapid bandage application is VITAL. Do not use a Tourniquet.
- Do not cut, suck or wash the bite site, venom will not be absorbed through the skin. If possible, mark the site with pen and cover with tissue or similar material before bandaging as this may later aid in identifying the venom.
- Do not remove the victim’s clothing, as the movement in doing so may force more venom into the bloodstream.
- If a bandage is unavailable, use strips of clothing or similar material to apply as the pressure bandage. Some additional bandage or clothing strips can be used to bind the splint and may be fashioned into a sling for bites to the arm (if a sling is unavailable).
- Do extend the bandages as high and low as possible on the affected limb.
- Check unbanded fingers or toes for circulation.
- Reassure the victim, keep them calm and still. Either carry the victim to the nearest transport for medical help or bring transport to them if possible.
It is vital to now apply a splint. Bind a stick or suitable rigid item over the initial bandage to splint the limb. Secure the splint to the bandaged limb by using another bandage, (if another bandage is not available, use clothing strips or similar to bind). It is very important to keep the bitten limb still.

Bind the splint firmly, to as much of the limb as possible, to prevent muscle, limb and joint movement. This will help restrict venom movement.

Seek urgent medical assistance now that first aid has been applied.

First Aid for Bites on the Hand or Forearm

1. As soon as possible, apply a broad pressure bandage from the fingers of the affected arm, bandaging upward as far as possible. Bandage the arm with the elbow in a bent position, to ensure the victim is comfortable with their arm in a sling. Leave the tips of the fingers unbandaged to allow the victim’s circulation to be checked.

2. Bind a splint along the forearm.

3. Use a sling to further prevent limb movement.

Additional Notes on Snakebite First Aid

- Maintain vital functions if needed. ABC – Airway, Breathing, Circulation.
- The above procedure is recommended for all Australian and Papua New Guinean venomous snakes (including Sea Snake bites).
- Bites to the trunk require firm pressure over the bitten area. Do not restrict chest movement.
- Bites to the head or neck require urgent transport and medical attention.
- A correctly applied bandage and splint will be comfortable and may be left on for several hours.
- Bandages should not be removed until the victim has reached medical care. The doctor will decide when to remove the bandages.
- In remote areas where transportation may not be readily available, every attempt should be made to bring the most rapid medical attention to the victim, whilst minimising (where possible) victim movement.
- The “Pressure Immobilisation First Aid Method” is also suitable for bites by the Funnel Web Spider, Blue Ringed Octopus and stings by Cone Shells. It is not recommended for bites by the Red Back Spider nor fish stings, including Stonefish.

Snake Venom Detection

CSL Bioplasma – Immunohaematology manufacture the only commercially available Snake Venom Detection Kit (SVDK). The SVDK is used by medical professionals in Australia and Papua New Guinea (PNG) to detect snake venom and determine the venom’s immunotype in victim’s suspected of snakebite. The SVDK allows a clinician to choose and use the correct, efficacious and cost effective monovalent antivenom to effectively neutralise the detected venom for patient treatment. There are 5 immunotypes of medically important snakes in Australia and PNG (Tiger, Brown, Black, Death Adder and Taipan) and it is vital that the correct antivenom is chosen for life saving snake envenomation therapy.

For further information on snake venom detection contact:
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