



AUSTRALIAN  
SUPPLEMENT  
TO THE  
FIRST AID BOOK

## **ST. JOHN AMBULANCE ASSOCIATION**

This supplement, which is issued with the authority of the Priory in Australia on the recommendation of its Editorial Committee, is to be taught in conjunction with the First Aid Manual.

It endeavours to bring to notice various matters associated with our Australian conditions.

In its compilation, the St. John authorities in the various States, as well as individuals with special knowledge, have been consulted.

Their assistance is gratefully acknowledged.

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**ST. JOHN AMBULANCE ASSOCIATION**  
**Australian Supplement to the First Aid Book**

**SNAKE-BITE:**

**Identification:**

There are large numbers of snakes in Australia, and many of these belong to highly venomous species. The treatment of snake-bite is much more effective if the species responsible is known, so that the specific anti-venene may be given when medical aid is obtained. Therefore, every effort should be made to identify the snake, and if it has been killed it should be brought for identification.

Nearly all bites are caused by the common venomous species. The smaller non-dangerous snakes seldom bite, and in fact the majority are rarely encountered. It is safer to assume that every bite has been caused by a dangerous snake.

**Appearance of the Bite:**

Most commonly, two puncture marks about half-an-inch apart are present, although a single bite may produce one to four punctures, two being caused by reserve fangs. There may be superficial scratchings from other teeth.

There is usually little or no local reaction, but occasionally swelling, reddening or bruising may be noted, and the punctures may bleed. Bites from non-venomous snakes, such as pythons, produce numerous puncture marks, often from four rows of teeth, and these punctures tend to bleed profusely.

Immediately after a bite, puncture marks may be difficult to discern.

**Symptoms:**

The first symptoms of snake-bite appear from about fifteen minutes to two hours after the bite, but may be delayed for much longer. They consist of headache, nausea, vomiting, sweating, faintness, diarrhoea, double vision, drowsiness and collapse. There may be pain in the chest or abdomen. Shock may develop early or be delayed. Early symptoms may not be pronounced and careful observation should be maintained for any deterioration of the condition. The principal danger to life is asphyxia, which may occur either from paralysis of the muscles of respiration, or from respiratory obstruction due to paralysis of the muscles of the tongue and throat. Paralysis does not usually develop till some time after the bite, and its onset may be gradual.

**Treatment:**

There are two essentials in the treatment of snake-bite:

1. *Immediate* application of a constrictive bandage to prevent the absorption of the venom into the general circulation. Nearly all bites occur on the limbs, and bites on the head, neck and trunk are fortunately very rare, so that in almost every case it is possible to apply an effective constriction.

2. Injection of anti-venene at the earliest possible moment. This should only be done by a doctor because anti-venene must be injected into a vein, and on account of the various possible reactions that may result from it. It is important, therefore, that there should be no delay in obtaining medical aid.

**Principles of First Aid Treatment:**

The victim should arrest blood flow at once and not increase circulation by chasing the snake.

**A. If the bite is on a limb:**

- (i) Immediately grasp the limb above the bite (above the elbow or knee) with the full grip of fingers and thumb to block all blood from the veins reaching the heart. Do not relax grip until a constrictive bandage (belt, strip of cloth, neck-tie, handkerchief or rubber tubing) is tied tightly above your grip. Unsuitable materials are shoelaces, cord, rope, electric-light flex, etc. These should not be used because they cut into the flesh and are likely to cause permanent damage to major blood-vessels which may result in loss of the limb. The bandage is applied between the bite and the heart, and must be tight enough to obstruct completely the main artery to the limb. It is useless if applied below the knee or elbow, because here the blood vessels lie between two bones. Complete stoppage of the circulation of the limb is judged by obliteration of the pulse below the constrictive bandage. A constrictive bandage effectively applied may make the limb swell and become red or blue in colour. It is necessary to release the constrictive bandage after two hours. When this period has expired the bandage **MUST** be released for a few seconds only to allow the limb to flush with fresh blood, after which it should be re-applied a little above or below the original site. The time of application of a constrictive bandage should be prominently marked on the patient's forehead (with lipstick, skin pencil, charcoal, etc.)
- (ii) Wipe or wash the skin clear of venom splashes.
- (iii) Cutting through the puncture marks, or excision of the area surrounding the punctures, should not be done by a first-aid.
- (iv) Immobilize the limb.
- (v) Place the patient at rest and maintain body heat. Exercise will increase the circulatory rate and hasten the absorption of venom.
- (vi) Give warm tea sweetened with sugar, unless there is difficulty in swallowing indicating paralysis of the muscles of the throat.
- (vii) Try to calm the patient.
- (viii) If breathing is failing, apply mouth-to-mouth or mouth-to-nose artificial respiration.
- (ix) Arrange for transport to medical aid as rapidly as possible. The patient should be transported in a lying position, with special attention directed towards the patient's breathing.

**B. If the bite is elsewhere than on a limb:**

This is most uncommon. Wash the skin in the region of the bite, and apply rules (v) to (ix) as above.

**SPIDER-BITE**

Of some 1200 identified species of spider in Australia, two are known to have caused fatalities. These are the red-back spider and the Sydney funnel-web spider.

The red-back spider occurs throughout Australia and bites are fairly common. The male spider is small and harmless. The female is quite characteristic in appearance. The body is the size of a pea, dark brown to jet black in colour, with a red or orange stripe running down the back. It prefers dark and protected areas and is found in corners of out-houses, under benches and toilet seats, and beneath bark in bush areas.

The bite is felt as a sharp and transient sting, but it may pass unnoticed. Localized pain and profuse sweating develop in ten to thirty minutes, and a central weal surrounded by an area of reddening and some swelling appears around the bite. The pain increases in intensity and spreads from the bitten area into the body. It may be associated with muscle spasms. Other symptoms are nausea, vomiting, dizziness, faintness and muscular weakness.

The funnel-web spider is found mainly in the Sydney and north coast areas of New South Wales, but is now known to exist further south. It is a large black or reddish brown spider with a body length of one to one and a half inches, and is very similar in appearance to the more common & non-dangerous trap-door spider. Any bite from a large black or brown spider giving rise to severe symptoms must be assumed to be a funnel-web bite. This spider inhabits rock crevices, burrows, is found in roots and post-holes and may enter houses and lodge in clothing.

The bite, which is fortunately not very common, is painful initially, but there is little or no local reaction. The general symptoms developing later are shock, difficulty in breathing, profuse perspiration, copious salivary and bronchial secretions, numbness, muscular weakness, and in some cases spasm of the larynx.

**Treatment: Red Back and Funnel Web**

- (i) If the bite is on a limb, apply a constrictive bandage as for snake-bite.
- (ii) Wash the bitten area.
- (iii) Apply a cold compress.
- (iv) Immobilize the limb and keep the patient at rest.
- (v) Give plenty of warm sweetened tea, particularly if there is profuse sweating, but give nothing by mouth if breathing is difficult or noisy, or there is muscular weakness.
- (vi) Reassure the patient.
- (vii) Do not delay in obtaining medical aid.

*The spider should be brought in for identification if possible.*

Red-back spider anti-venene is available which relieves symptoms rapidly, and apparently there have been no fatalities since its introduction. No effective anti-venene has yet been produced for the funnel-web.

The bites of spiders, other than the red-back and funnel-web, are not known to be dangerous, though some may give rise to local pain and swelling.

**SCORPION STINGS:**

These are rare. The Australian species are small and the sting causes only localized pain and swelling of a few hours' duration. Treatment is seldom necessary.

**LIZARD BITES:**

The bites of lizards, e.g., goanna or monitor lizard, blue-tongue lizard, bearded dragon skink, etc., are non-venomous. These reptiles are inoffensive but may bite if molested. The treatment is that of any lacerated wound and consists essentially of cleansing and the application of an antiseptic lotion, after detaching the lizard, if necessary, by applying a lighted match or cigarette butt to its mouth. Medical aid should be sought as anti-tetanus treatment may be necessary.

**SHARK-BITE**

Considering the large numbers of sharks in the waters around the Australian coastline, shark attacks on humans are relatively uncommon. Sharks, like all fishes, are cold-blooded and are excited by warmth and quietened by cold. A shark will rarely attack until the temperature of the surrounding water reaches a minimum of 70 degrees F. For this reason, the season for shark attacks along the southern coast is limited, and none seem to have been recorded before December or after March. The further north the longer is the season. Other factors which predispose to shark attack are muddy or discoloured water, and the presence of something to attract their attention, such as, for example, a struggling fish hooked by a spear-fisherman. Doubt has been cast on the widely held view that they are attracted by blood in the water.

Injuries may be inflicted by sharks in the following ways:

- (i) By biting. The jaws are extremely powerful and can bite through human bones, even the thigh bone, with ease. Large masses of flesh may be torn away, and treatment is therefore required for amputated limbs and very large lacerated wounds with profuse arterial haemorrhage.
- (ii) By impact. The shark can strike with great force with its body, and the rough, extremely hard skin produces long, deep, grazing wounds.
- (iii) By cutting with its fins.
- (iv) By the powerful kick of its tail.

## TREATMENT

The first aid treatment is immediate and effective control of haemorrhage. This should be attempted in the water by pressure on the nearest pressure point or, if possible, by applying any form of constrictive bandage tightly around the limb above the bleeding. Pressing hard right into or just above the spurting point with the fingers of one hand may control or partially control the haemorrhage.

As soon as the patient is brought to the shore he should be laid, with head down, on the beach, and the wound packed with any available clothing, such as towels, shirt, frock, etc. Pack more material over this, overlapping the edges of the wound, and keep pressure on this packing until a tight bandage can be applied. If haemorrhage cannot be controlled by packing and bandaging, apply pressure to the appropriate pressure point or use a constrictive bandage.

In the meantime, obtain immediate medical aid, blood transfusion services and ambulance.

The patient should be handled with great care to avoid aggravating shock. It is important not to move the patient until shock control is established, normally on a doctor's instruction, and it may be that a blood transfusion will be necessary before transportation is effected.

## TICKS

Ticks occur from northern Queensland to eastern Victoria and Western Australia. The unengorged tick is bluish-black in colour, oval, flat and about three-sixteenths of an inch in length. When engorged it is globular and about a quarter of an inch in diameter. It usually secretes itself in body crevices or the ear.

The venom of the salivary glands may cause paralysis, especially in small children. The paralysis affects first the lower limbs, then the upper limbs, and may involve the muscles of respiration or may be localized to the facial muscles.

The first-aider should not attempt to remove the tick as pulling it away forcibly may result in venom being squeezed from its salivary glands into the tissues. Apply kerosene or turpentine liberally over the tick to kill it and seek medical aid for its removal and the injection of specific tick anti-serum if required. A dressing may be applied over the wound to minimize infection. If the tick is in the ear, apply oil, not kerosene or turpentine.

## MOSQUITO AND SANDFLY BITES

- (i) Alkalies, such as ammonia or bicarbonate of soda, applied to the bites in weak solution, may give relief.
- (ii) Hot water should be avoided, as it normally aggravates the itch.
- (iii) Calamine lotion or zinc cream is recommended.

## STINGS CAUSED BY MARINE AND FRESH-WATER CREATURES

### A. MARINE STINGS

Marine creatures may inflict their stings either by:

- (a) injection of venom from spines and other structures, which cause obvious puncture wounds; or
- (b) contact with tentacles bearing numerous microscopic stinging cells.

The range of effects varies from acute discomfort to rapid collapse and death.

#### (a) Marine Creatures causing obvious puncture wounds

The most common are:

**Cat Fish:** Widely distributed; active swimmers.

**Fortescue:** Weedy areas; camouflaged; sluggish.

**Butterfly Cod:** Coral reefs and rocky reefs; conspicuous.

**Stingray:** Sandy areas; often lying on sand.

**Butter Fish:** Widely distributed; active swimmers.

**Stone Fish:** Rubble associated with sand or mud; camouflaged; sluggish.

**Cone Shell:** Coral reef.

**Small Blue-ringed Octopus:** Rubble areas.

**Large Starfish:** Coral reef.

**Sea Urchin:** Reef areas or sandy areas containing rocks.

Punctures from poisonous spines or hard mouth parts can be caused either to the leg or foot, and sometimes to the hand from fish caught on lines or in nets. As the venoms remain potent for some time after death of the fish which carry them, injuries are possible by handling or stepping on the spines after the fish have been killed or discarded.

### Symptoms

Severe burning or throbbing pain at site of puncture, followed by pain in the regional lymph glands (i.e., in groin or armpit).

### Signs

- (i) The stinging spine may be seen broken off in the wound.
- (ii) Change of colour of the skin, which may become pale, then blue, then red.
- (iii) The limb becomes swollen.
- (iv) Profuse bleeding may occur from the wound.
- (v) Sweating followed by shock is common.
- (vi) With injuries inflicted by *Stone Fish*, *Cone Shell* and the *Blue-ringed Octopus*, failure of respiration and paralysis of muscles should be anticipated.

- (vii) The *Large Starfish* may produce vomiting, which is a characteristic effect produced by the venom of this species.

### Treatment

- (i) Clean the wound, but *do not incise*.
- (ii) Remove any foreign bodies such as pieces of fish spine.
- (iii) Immerse the injured part in hot water to relieve pain, but *be careful not to burn the patient*. It is suggested the temperature of the water be tested by the patient by immersing the uninjured limb.
- (iv) Treat for shock
- (v) For victims of *Stone Fish* stings, apply constrictive bandage to prevent spread of venom. Use mouth-to-mouth or mouth-to-nose artificial respiration, if breathing fails. *Stone Fish* anti-venene is available for use by the medical profession and may be life-saving.
- (vi) Seek medical aid as soon as possible.

### Octopus and Cone Shell

Bites from these commonly occurring marine creatures have caused varying degrees of paralysis. Deaths have occurred from paralysis of the muscles of respiration.

### Treatment

Maintain adequate respiration by mouth-to-mouth or mouth-to-nose artificial respiration. This may have to be continued for long periods.

- (b) Marine Creatures stinging by tentacles (e.g., many species of Jellyfish)

### Sting Characteristics

- (i) These may occur on any part of the body and pieces of tentacles may be seen adhering to the skin.
- (ii) The area of stinging may resemble whip marks, a localized area of goose pimples or single lines of weals.
- (iii) Severity of pain varies from mild burning to intense pain.
- (iv) After very extensive and severe stings in which numerous tentacles are seen to be adherent, respiratory and cardiac arrest may develop within a few minutes. On the other hand, some apparently minor stings may be followed after an interval of 10 to 40 minutes by general symptoms such as backache, pain in chest and abdomen, vomiting, pain and inco-ordination in limbs, and difficulty in breathing. Stings characterized by late onset of general symptoms do not threaten life.

### Treatment

- (i) *Pour methylated spirits over the area of the sting*. This is most important as it will destroy any undischarged venom cells. If methylated spirits is not available, other forms of alcoholic spirit should be used.
- (ii) If no alcohol is available, spread dry sand over the sting and then gently scrape off the remaining tentacles.
- (iii) *Do not rub the area* as this will increase blood supply and cause more venom to be absorbed. Soothing lotion or cream may be used.
- (iv) For severe stings, keep the patient at rest, treat for shock, be prepared to carry out artificial respiration by mouth-to-mouth or mouth-to-nose methods. Send for medical aid as soon as possible.

**Note:** External cardiac massage may have to be used with artificial respiration if the heartbeat disappears.

In areas of Northern Australia where fatalities may occur from *Sea Wasp* stings, treatment should be carried out with the same urgency as for snake-bite. For severe stings on the limbs, apply a constrictive bandage to prevent spread of venom. Special injections may be required to relieve pain.

The sting of the *Irukandji* causes particularly alarming symptoms but no fatalities have yet been recorded. Special pain-killing injections are frequently required to relieve pain which may appear later.

When severe reactions to stinging are seen, an attempt should be made to collect the jelly fish for identification. Great care should be exercised when handling these specimens to avoid further stinging.

### B. FRESH-WATER STINGS

These are most likely to be caused by:

**Bull Rout:** usually in weed or areas surrounding sunken logs, brambles, etc.; well-camouflaged; sluggish.

**Cat Fish (The Cobbler):** Widely distributed; active swimmers.

The injuries are in the form of extremely painful puncture wounds, mainly to the hand, when caught by anglers, but injuries to the foot can be caused by Bull Rout, owing to its sluggish nature and habitat.

### Symptoms, Signs, Treatment:

As for Marine Creatures causing puncture wounds: See A (a).

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