

Section 9: Guideline 9.4.1 – Envenomation – First Aid Management of Australian Snake Bite

Summary

Who does this guideline apply to?

This guideline applies to adults, children and infants.

Who is the audience for this guideline?

This guideline is for use by bystanders, first aiders and first aid providers.

Recommendations

If snake bite is suspected:

1. Send for an ambulance.
2. Keep the person immobilised (still), reassured and under constant observation.
3. Apply pressure bandaging with immobilisation.
4. Sudden collapse with cardiac arrest requires immediate CPR.

Guideline

1 Introduction

Many of the snakes found in Australia are capable of lethal bites to humans. These include Taipans, Brown snakes, Tiger snakes, Death Adders, Black snakes, Rough Scaled snakes and many Sea snakes.¹

There are no snakes native to New Zealand, but snake bite may rarely occur in New Zealand for example, in zoos or at ports.

Snakes produce venom in modified salivary glands and the venom is forced out under pressure through paired fangs in the upper jaw. Snake venoms are complex mixtures of many toxic substances which can cause a range of effects in humans.

The greatest threat to life and cause of over half of deaths is early cardiovascular collapse.²

Other significant effects include:

- major bleeding due to inability to clot blood;
- nerve paralysis leading to respiratory muscle paralysis;
- muscle damage;
- kidney failure due to microscopic blood clots.

2 Recognition

The bite may be painless and without visible marks. Other symptoms and signs of a snake bite may include:

- paired fang marks, but often only a single mark or a scratch mark may be present; (localised redness and bruising are uncommon in Australian snake bite)
- headache;
- nausea and vomiting;
- abdominal pain;
- blurred or double vision, or drooping eyelids;
- difficulty in speaking, swallowing or breathing;
- swollen tender glands in the groin or armpit of the **bitten** limb;
- limb weakness or paralysis;
- respiratory weakness or respiratory arrest.

The commonest cause of death from snake bite is collapse with cardiac arrest². This can occur within 10-60 minutes of a bite with envenomation, is most often pre-hospital, and requires immediate CPR.

An occasional feature of a brown snake bite is initial collapse or confusion followed by apparent partial or complete recovery. It often occurs as the only finding after a bite from a brown snake and may be the only evidence of envenomation. This information may be useful when providing handover to the treating health practitioner who is considering administration of antivenom.

3 Management

If the person is unresponsive and not breathing normally, follow the ANZCOR Basic Life Support Flowchart and Guideline 8. If the person is unconscious and breathing normally, follow ANZCOR Guideline 3.

1. Send for an ambulance for any person with a suspected snake bite;
2. Keep the person immobilised (still), reassured and under constant observation;
3. Apply pressure bandaging with immobilisation (Guideline 9.4.8);
4. Commence CPR (ANZCOR Guideline 8) if person is unresponsive and not breathing; normally, there is no risk of transmission of venom to rescuer by providing CPR.

Note:

DO NOT cut or incise the bite

DO NOT use an arterial tourniquet

DO NOT wash or suck the bite

Snake identification

As many of Australia's snakes are protected species, it is not recommended to kill the snake. There is also the danger and risk of further bites. A digital photograph of the snake may be helpful in identification if safe to do so.

Antivenom is available for all venomous Australian snake bites in Australia. Antivenom is not routinely available in New Zealand. For much of Australia, polyvalent anti-venom that covers potential bites from different snakes is used.

Level of Evidence

Level IV

Class of Recommendation

Class A - Recommended

References

1. Sutherland SK, Tibballs J. Australian Animal Toxins. Melbourne: Oxford University Press 2001.
2. Johnston CI, Ryan NM, Page CB, Buckley NA, Brown SG, O'Leary MA, Isbister GK. The Australian Snakebite Project, 2005-2015 (ASP-20). MJA. 2017;207: 119-125.

Further Reading

ANZCOR Guideline 8 Cardiopulmonary Resuscitation
ANZCOR Guideline 3 Recognition and First Aid Management of the Unconscious Person
ANZCOR Guideline 9.4.8 Envenomation - Pressure Immobilisation Technique

Rationale For Pressure Bandaging with Immobilisation

Most snake venom reaches the blood stream via the lymphatic system. Laboratory research has shown that very little venom reaches the circulation, even after several hours, if the pressure bandaging with immobilisation (PIB) is applied immediately and maintained.

About this Guideline

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Primary reviewers:	Natalie Hood
Other consultation	Geoff Isbister
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