

RECOGNITION AND TREATMENT OF ANAPHYLAXIS

Signs of anaphylaxis

Anaphylaxis causes respiratory and/or cardiovascular signs or symptoms AND involves other organ systems, such as the skin or gastrointestinal tract, with:

- signs of airway obstruction, such as cough, wheeze, hoarseness, stridor or signs of respiratory distress (e.g. tachypnoea, cyanosis, rib recession)
- upper airway swelling (lip, tongue, throat, uvula or larynx)
- tachycardia, weak/absent carotid pulse
- hypotension that is sustained and with no improvement without specific treatment (*Note:* in infants and young children limpness and pallor are signs of hypotension)
- loss of consciousness with no improvement once supine or in head-down position
- skin signs, such as pruritus (itchiness), generalised erythema (redness), urticaria (weals) or angioedema (localised or general swelling of the deeper layers of the skin or subcutaneous tissue)
- abdominal cramps, diarrhoea, nausea and/or vomiting
- sense of severe anxiety and distress.

Management of anaphylaxis

- If the patient is unconscious, lie him/her on the left side and position to keep the airway clear. If the patient is conscious, lie supine in 'head-down and feet-up' position (unless this results in breathing difficulties).
- Give adrenaline by intramuscular injection (see below for dosage) if there are any signs of anaphylaxis with respiratory and/or cardiovascular symptoms or signs. Although adrenaline is not required for generalised non-anaphylactic reactions (such as skin rash without other signs or symptoms), administration of intramuscular adrenaline is safe.
- Call for assistance. Never leave the patient alone.
- If oxygen is available, administer by facemask at a high flow rate.
- If there is no improvement in the patient's condition within 5 minutes, repeat doses of adrenaline every 5 minutes, until improvement occurs.
- Check breathing; if absent, commence basic life support or appropriate cardiopulmonary resuscitation (CPR) as per the Australian Resuscitation Council guideline (<http://www.resus.org.au/policy/guidelines>).
- Transfer all cases to hospital for further observation and treatment.
- Complete full documentation of the event, including the time and dose(s) of adrenaline given.

Experienced practitioners may choose to use an oral airway, if the appropriate size is available, but its use is not routinely recommended, unless the patient is unconscious.

Antihistamines and/or hydrocortisone are not recommended for the emergency management of anaphylaxis.

Adrenaline dosage

The recommended dose of 1:1000 adrenaline is 0.01 mL/kg body weight (equivalent to 0.01 mg/kg), up to a maximum of 0.5 mL or 0.5 mg, given by deep intramuscular injection into the anterolateral thigh. Adrenaline 1:1000 *must not* be administered intravenously.

The use of 1:1000 adrenaline is recommended because it is universally available. Adrenaline 1:1000 contains 1 mg of adrenaline per mL of solution in a 1 mL glass vial. Use a 1 mL syringe to improve the accuracy of measurement when drawing up small doses.

The following table lists the doses of 1:1000 adrenaline to be used if the exact weight of the person is not known (based on the person's age).

Doses of 1:1000 (one in one thousand) adrenaline:

<1 year (approx. 5–10 kg)	0.05–0.1 mL	7–10 years (approx. 30 kg)	0.3 mL
1–2 years (approx. 10 kg)	0.1 mL	10–12 years (approx. 40 kg)	0.4 mL
2–3 years (approx. 15 kg)	0.15 mL	>12 years and adult (over 50 kg)	0.5 mL
4–6 years (approx. 20 kg)	0.2 mL		

For more detailed information, see 2.3.2 *Adverse events following immunisation*.

* Modified from The Brighton Collaboration Case Definition Criteria for Anaphylaxis, and an insert published in *Australian Prescriber* in August 2011 (available at www.australianprescriber.com/magazine/34/4/article/1210.pdf).

Source: Australian Technical Advisory Group on Immunisation. *The Australian Immunisation Handbook*. 10th ed. Canberra: Australian Government Department of Health and Ageing; 2013. Back cover.