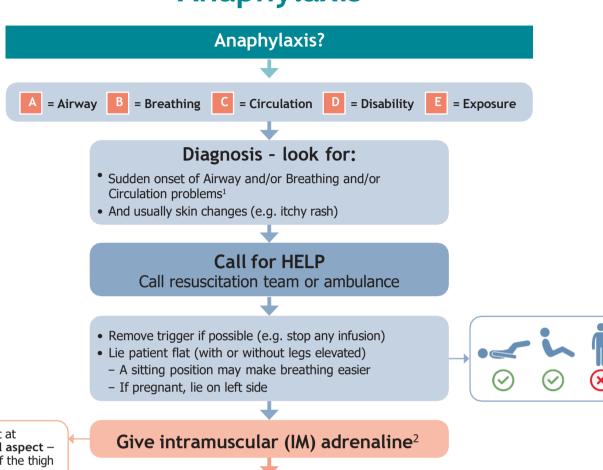
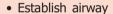


# **Anaphylaxis**



Inject at anterolateral aspect — middle third of the thigh



- Give high flow oxygen
- Apply monitoring: pulse oximetry, ECG, blood pressure

### If no response:

- Repeat IM adrenaline after 5 minutes
- IV fluid bolus<sup>3</sup>

# If no improvement in Breathing or Circulation problems<sup>1</sup> despite TWO doses of IM adrenaline:

- Confirm resuscitation team or ambulance has been called
- Follow REFRACTORY ANAPHYLAXIS ALGORITHM

## 1. Life-threatening problems

#### Airway

Hoarse voice, stridor

#### **Breathing**

↑work of breathing, wheeze, fatigue, cyanosis, SpO₂ <94%

### Circulation

Low blood pressure, signs of shock, confusion, reduced consciousness

#### 2. Intramuscular (IM) adrenaline

Use adrenaline at 1 mg/mL (1:1000) concentration

Adult and child >12 years: 500 micrograms IM (0.5 mL)
Child 6-12 years: 300 micrograms IM (0.3 mL)

Child 6 months to 6 years: 150 micrograms IM (0.15 mL)
Child <6 months: 100–150 micrograms IM (0.1–0.15 mL)

The above doses are for IM injection only. Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.

## 3. IV fluid challenge

Use crystalloid

Adults: 500–1000 mL Children: 10 mL/kg

# Refractory anaphylaxis

No improvement in respiratory or cardiovascular symptoms despite 2 appropriate doses of intramuscular adrenaline

Establish dedicated peripheral IV or IO access

Seek expert<sup>1</sup> help early

Critical care support is essential

Give rapid IV fluid bolus e.g. 0.9% sodium chloride

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Start adrenaline infusion

Adrenaline is essential for treating all aspects of anaphylaxis

#### Give IM\* adrenaline every 5 minutes until adrenaline infusion has been started

\*IV boluses of adrenaline are not recommended, but may be appropriate in some specialist settings (e.g. peri-operative) while an infusion is set up

> Give high flow oxygen Titrate to SpO<sub>2</sub> 94–98%

Monitor HR, BP, pulse oximetry and ECG for cardiac arrhythmia

Take blood sample for mast cell tryptase

# Follow local protocol

#### Peripheral low-dose IV adrenaline infusion:

- 1 mg (1 mL of 1 mg/mL [1:1000]) adrenaline in 100 mL of 0.9% sodium chloride
- Prime and connect with an infusion pump via a dedicated line

DO NOT 'piggy back' on to another infusion line
DO NOT infuse on the same side as a BP cuff as this will
interfere with the infusion and risk extravasation

- In both adults and children, start at 0.5–1.0 mL/kg/hour, and titrate according to clinical response
- Continuous monitoring and observation is mandatory
- ↑↑BP is likely to indicate adrenaline overdose

Continue adrenaline infusion and treat ABC symptoms

Titrate according to clinical response

<sup>1</sup>Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.

#### A = Airway

Partial upper airway obstruction/stridor: Nebulised adrenaline (5mL of 1mg/mL)

Total upper airway obstruction:

Expert help needed, follow difficult airway algorithm

#### B = Breathing

## Oxygenation is more important than intubation If apnoeic:

- Bag mask ventilation
- Consider tracheal intubation

#### Severe/persistent bronchospasm:

- Nebulised salbutamol and ipratropium with oxygen
- Consider IV bolus and/or infusion of salbutamol or aminophylline
- Inhalational anaesthesia

### = Circulation

#### Give further fluid boluses and titrate to response:

Child 10 mL/kg per bolus Adult 500–1000 mL per bolus

 Use glucose-free crystalloid (e.g. Hartmann's Solution, Plasma-

LaLrgyetev®o)lumes may be required (e.g. 3–5 L in adults)

Place arterial cannula for continuous BP monitoring Establish central venous access

#### IF REFRACTORY TO ADRENALINE INFUSION

Consider adding a second vasopressor in addition to adrenaline infusion:

- Noradrenaline, vasopressin or metaraminol
- In patients on beta-blockers, consider glucagon

Consider extracorporeal life support

- Start chest compressions early
- Use IV or IO adrenaline bolus (cardiac arrest protocol)
- Aggressive fluid resuscitation
- Consider prolonged resuscitation/extracorporeal CPR