

# Module 2

## Medical Emergencies



**REVIVE2SURVIVE**

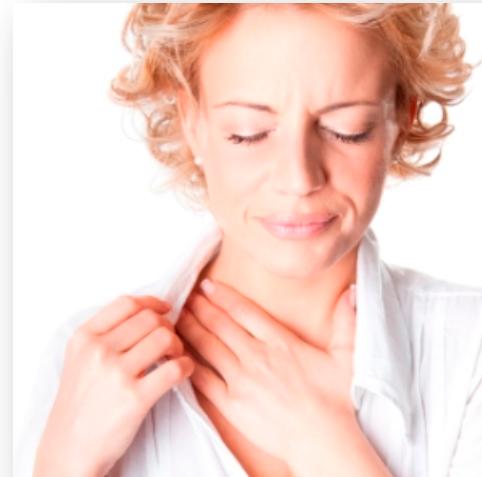
**1300 000 112**

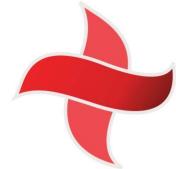
# What is Asthma ?

When sensitive airways are exposed to a trigger the airway narrows, making it hard to breathe.

The inside lining of the airways becomes red and swollen and extra mucous may be produced.

The muscle around the airways tightens.





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1300 000 112

# Asthma

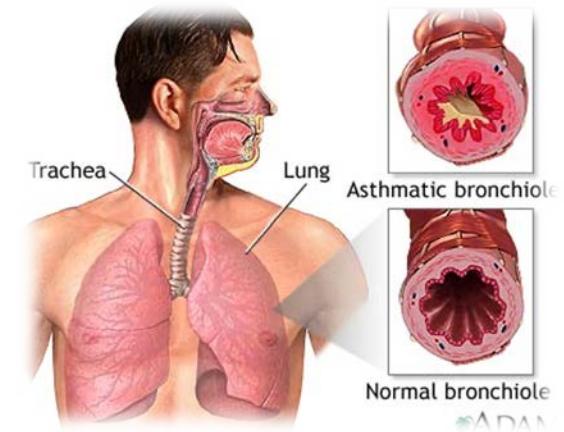
## Who has asthma?

- 1 in 9 people suffer from asthma
- 8 people in Australia die each week..
- In 1989 – **964** deaths in Australia
  - 2013 – 389
  - 2014 – 419
  - 2015 – 421
  - 2016 – 455
  - 2017 – 441 deaths**



## Asthma triggers

- Colds and flu
- Inhaled allergens
- Exercise
- Cigarette smoke
- Changes in temperature and weather
- Chemicals and strong smells



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Symptoms...

Can be mild, moderate or severe

# Thunderstorm Asthma...



## What is it?

- In November 2016, 8 people died as a result of the Melbourne storm.
- Caused by a mix of pollen and weather conditions that can cause severe asthma symptoms.

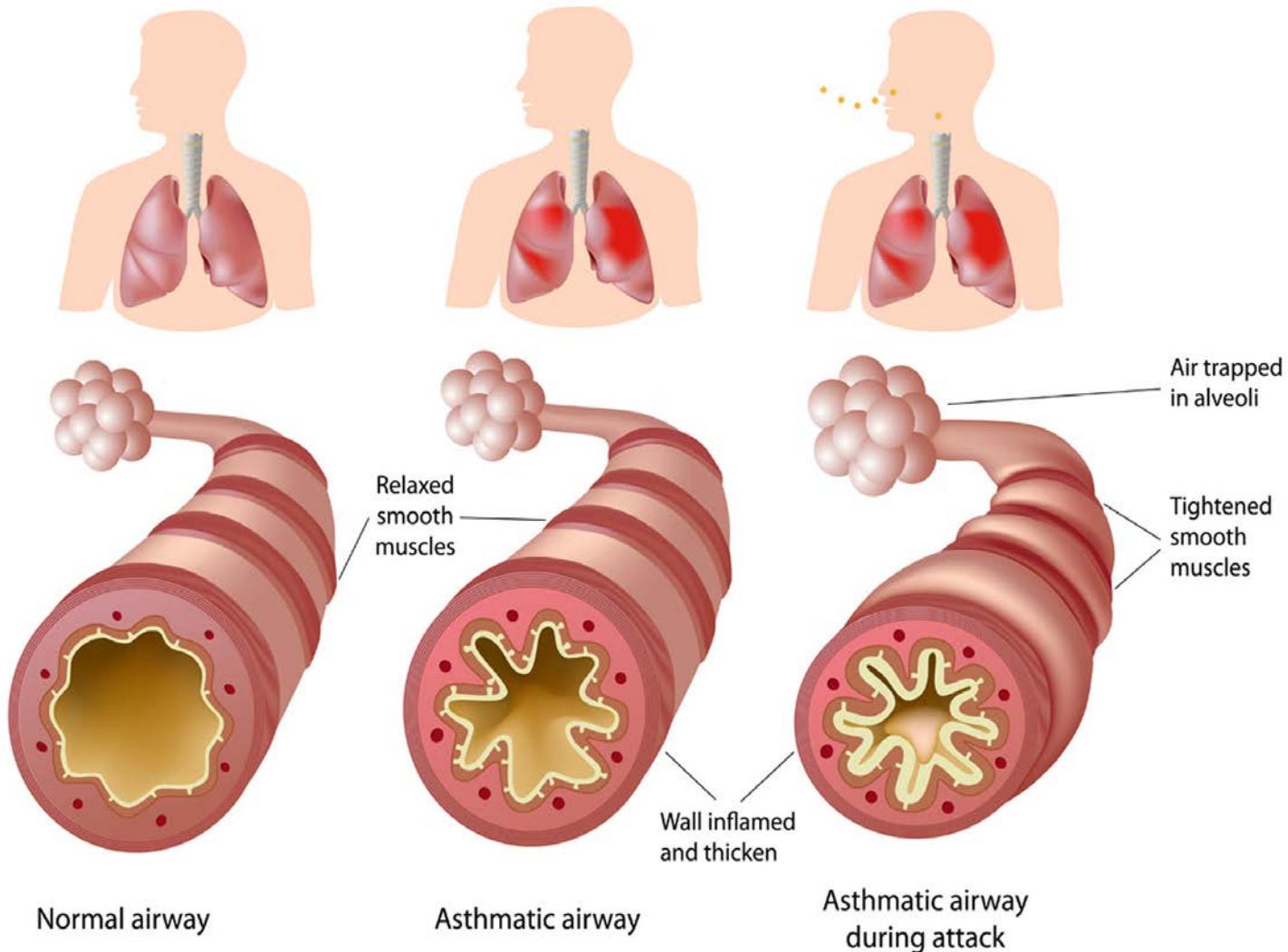
## Who's affected?

Anyone can be affected, even if no history of Asthma.

## Management/Treatment

- Be aware of forecast thunderstorms in the pollen season particularly on days with a HIGH or EXTREME pollen count.
- Where possible, stay indoors with doors and windows closed until the storm front has passed.
- Follow Asthma Action Plan if you have one.
- If at any point you are concerned your asthma is rapidly worsening, please call 000 and say you are having an asthma attack.

# Pathology of Asthma



# Severe asthma attack

- Severe wheezing (both on breathing in and out)
- Coughing that won't stop
- Severe difficulty breathing
- Inability to catch breath
- Inability to fully exhale
- Chest pain or pressure
- Tightened chest and neck muscles
- Difficulty speaking more than single words
- Feeling of anxiety or panic
- May have blue lips or fingertips
- Pale and sweaty skin



# Medications

## Reliever Medications



## Preventer Medications

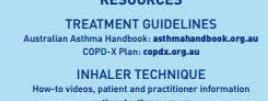


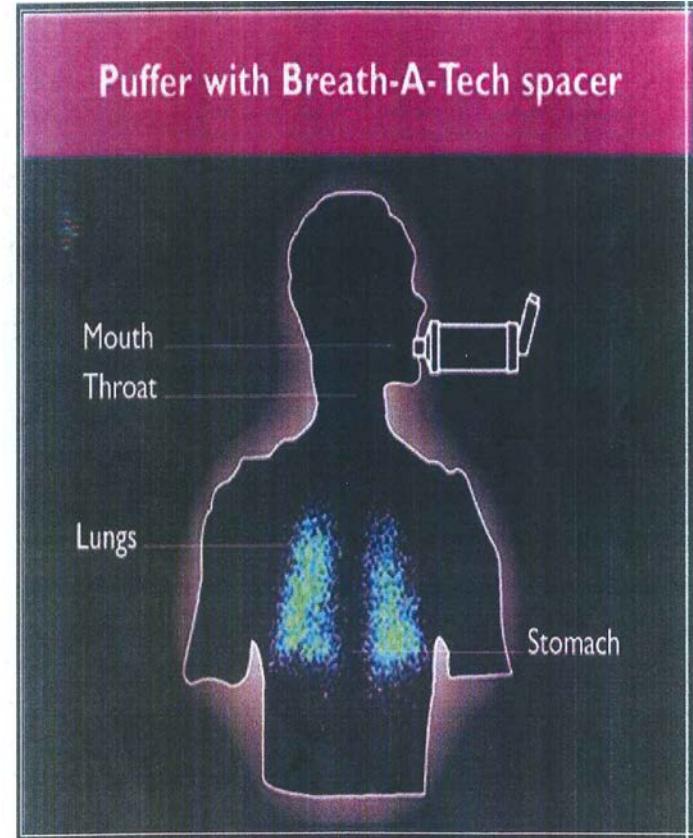
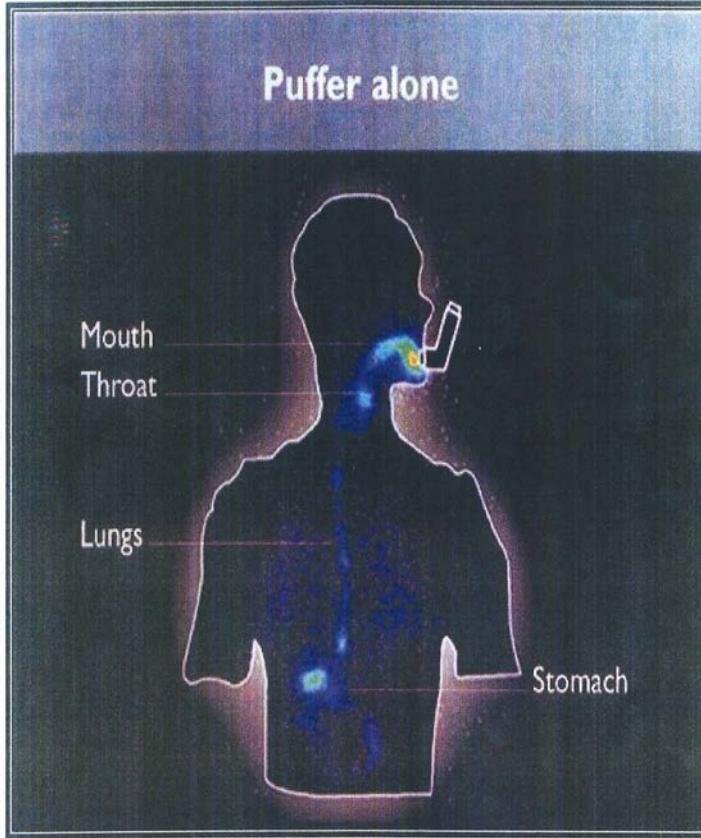
# Asthma

Do you need a script to purchase an inhaler?

If casualty does not have their own reliever / inhaler with them, can they borrow?

## ASTHMA & COPD MEDICATIONS

SABA RELIEVERS	ICS PREVENTERS	ICS/LABA COMBINATIONS	LAMA MEDICATIONS
 Bricanyl Turbuhaler † ^ terbutaline 500mcg	 Ventolin Inhaler † ^ salbutamol 100mcg	 Symbicort Turbuhaler ‡ budesonide/formoterol 100/50 - 200/50 - 400/125	 Spiriva Respimat ^ tiotropium 2.5mcg
 Airemiz Autohaler † ^ salbutamol 100mcg	 Flixotide Junior † fluticasone propionate 50mcg * 125mcg * 250mcg	 Symbicort Rapimeter ‡ budesonide/formoterol 50/50 - 100/50 - 200/50	 Spiriva Handihaler ^ tiotropium 16mcg
 Asmol Inhaler † ^ salbutamol 100mcg	 Pulmicort Turbuhaler † budesonide 100mcg * 200mcg * 400mcg	 Seretide MDI ‡ fluticasone propionate/albuterol 50/25 - 125/25 - 250/25	 Bretaris Genuair ^ aclidinium 32mcg
 Singulair Tablet ^ montelukast 4mg * 5mg * 10mg	 QVAR Inhaler † beclometasone 50mcg * 100mcg	 Flutiform Inhaler ‡ fluticasone propionate/formoterol 50/12.5 - 125/25 - 250/50	 Inhere Ellipta ^ umeclidinium 42.5mcg
 Montelukast Tablet ^ montelukast 4mg * 5mg	 QVAR Autohaler ‡ beclometasone 50mcg * 100mcg	 Breo Ellipta ‡ fluticasone propionate/vilanterol 100/25 * 200/25	 Atrovent Metered Aerosol † ^ ipratropium 21mcg
 Intal Inhaler † sodium cromoglycate 1mg * 5mg * 10mg "Intal forte"	 Tilade Inhaler † nedocromil sodium 2mg	 Oxis Turbuhaler ‡ formoterol 6mcg * 12mcg	
<b>NON STEROIDAL PREVENTERS</b>			
 GSK Asthma Handbook	 COPD-X Plan	 Serevent Accuhaler ‡ salmeterol 50mcg	 Spiroli Respirat ^ tiotropium/vilanterol 2.5/2.5
 National Asthma Council Australia Leading the attack against asthma	 TREATMENT GUIDELINES Australian Asthma Handbook: <a href="http://asthmahandbook.org.au">asthmahandbook.org.au</a> COPD-X Plan: <a href="http://copdx.org.au">copdx.org.au</a> INHALER TECHNIQUE <a href="http://nationalasthma.org.au">nationalasthma.org.au</a> Inhalers/MDIs should be used with a compatible spacer	 PBS PREScribers † Asthma unrestricted benefit ‡ Asthma restricted benefit § Asthma authority required benefit ¶ COPD unrestricted benefit # COPD restricted benefit \$ COPD authority required benefit Check TGA and PBS for current age and condition criteria	 Brinaca Generics Brimica Genuair ^ aclidinium/formoterol 340/12
 2016 © National Asthma Council Australia	 ICS, inhaled corticosteroid   LABA, long-acting beta agonist   LAMA, long-acting muscarinic antagonist   SABA, short-acting beta agonist   SAMA, short-acting muscarinic antagonist	 Onbrez Breezhaler ^ indacaterol 150mcg * 300mcg	 Ultibro Breezhaler ^ indacaterol/glycopyrronium 110/50
 Aero Ellipta ^ umeclidinium/vilanterol 62.5/25			
<b>SAMA MEDICATION</b>			
 Atrovent Metered Aerosol † ^ ipratropium 21mcg			
<b>LAMA/LABA COMBINATIONS</b>			
 Aero Ellipta ^ umeclidinium/vilanterol 62.5/25			

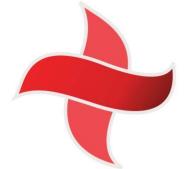


The spacer allows time for the patient to inhale sufficiently down the trachea, not into the oesophagus.

# What can we do... 4 x 4 x 4

- Sit the casualty upright
  - Be calm and reassuring, don't leave the casualty
  - Ensure to *shake* the inhaler well
  - **If no spacer** - Give 4 puffs with 4 breathes from casualty  
(1x1, 1x1, 1x1)
  - Wait 4 minutes
- 
- **If spacer is available** – Give 1 puff at a time with 4 breaths  
after each puff (1x4, 1x4, 1x4)
  - If no improvement after the 4 minutes, give another 4 puffs and call 000
  - Continue administering 4 puffs every 4 minutes until help arrives





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# Anaphylaxis

- Most severe form of allergic reaction
- Generally a rapid onset and quick to progress
- An immune response

## Triggers;

- Food (peanuts, nuts, milk, egg, fruits, etc) Even a minuscule amount of food can cause a severe reaction.
- Insect bites and stings.
- Medications (aspirin, herbal, etc).
- Other: Latex, exercise, anaesthesia.



# SIGNS AND SYMPTOMS

## Mild-Moderate Reaction

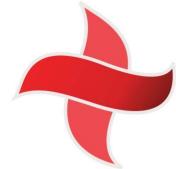
- Swelling lips, face and eyes
- Tingling in mouth
- Abdominal pain, vomiting  
**(Insect allergy - this is a sign of anaphylaxis)**
- Body redness , hives or welts, itching



## Severe Reaction

- Difficult/ noisy breathing
- Swelling of tongue
- Swelling/ tightness in throat
- Difficulty talking and or/ hoarse voice
- Wheezy, persistent cough
- Persistent dizziness or collapse
- Pale and floppy (young children)





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# Adrenalin Auto- Injectors

## How does adrenalin/epinephrine work?

- Naturally produced by the adrenal glands in times of stress
- When swelling occurs as an allergic reaction, the soft tissue within the patient's throat can also swell, compromising the airway
- Adrenalin rapidly reverses severe effects of allergic reactions by reducing throat swelling, relaxing and opening airways, and maintaining blood pressure

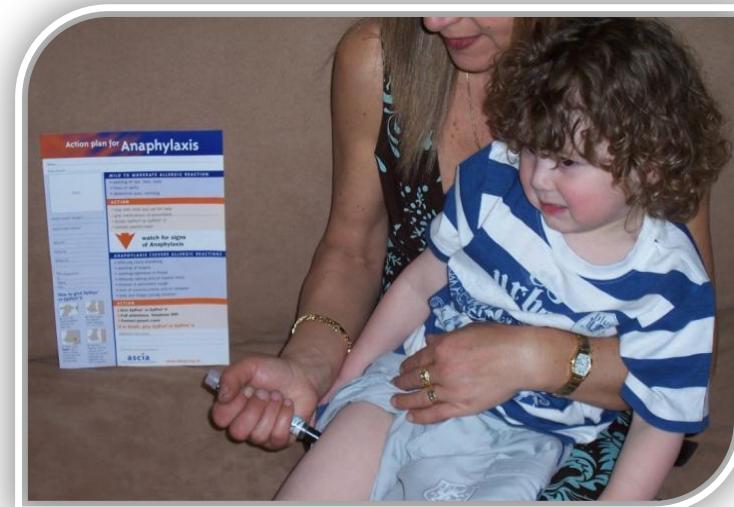


**A prescription is required to purchase an Epipen**

# Children

Junior versions are available, for children approx. between 1-5yrs.

- Adult dose – .3mg
- Junior dose – 0.15mg



If no other option available an adult EpiPen can be given to children weighting over 7.5kg

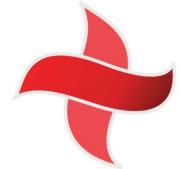
# What do you do if a severe reaction occurs...

- Check Action Plan
- Administer adrenaline auto-injector – note the time!
- Call 000 (and family/carer if a child)
- Lie casualty down – (if hard to breathe, sit more upright)
- If difficulty breathing continues after 5 minutes, administer further doses
- Each injection is single use only

## To administer...

- Remove safety cap and hold against outer aspect of thigh
- Push against thigh until you hear a ‘click’
- Hold in place for 3 seconds before removing
- Repeat every 5 minutes if available until ambulance arrives
- Keep casualty sitting, no walking
- Give used EpiPen to ambulance paramedics

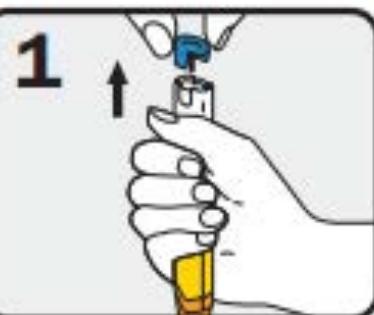




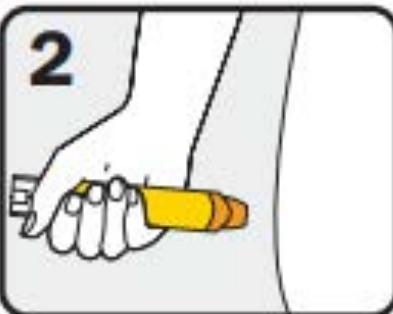
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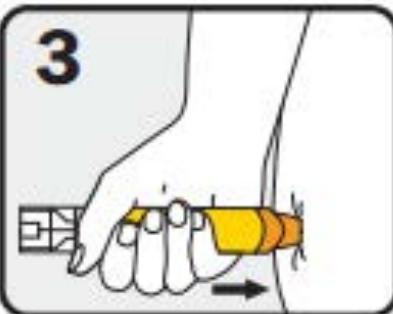
# How to give EpiPen®



Form fist around EpiPen®  
and PULL OFF BLUE  
SAFETY RELEASE



Hold leg still and PLACE  
ORANGE END against  
outer mid-thigh (with or  
without clothing)



PUSH DOWN HARD until  
a click is heard or felt and  
hold in place for 3 seconds  
REMOVE EpiPen®

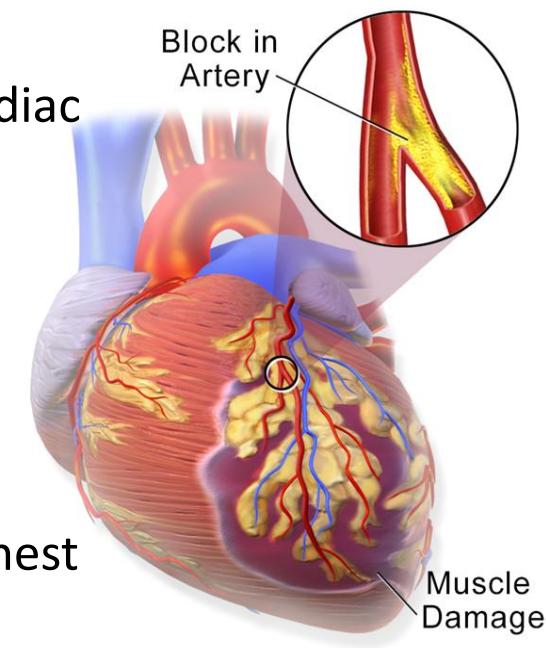
# Heart Attack

A heart attack when there is a sudden partial or complete blockage of one of the coronary arteries that supply the heart muscle.

A heart attack is different from, but may lead to, cardiac arrest. Cardiac arrest is cessation of heart action.

## Management

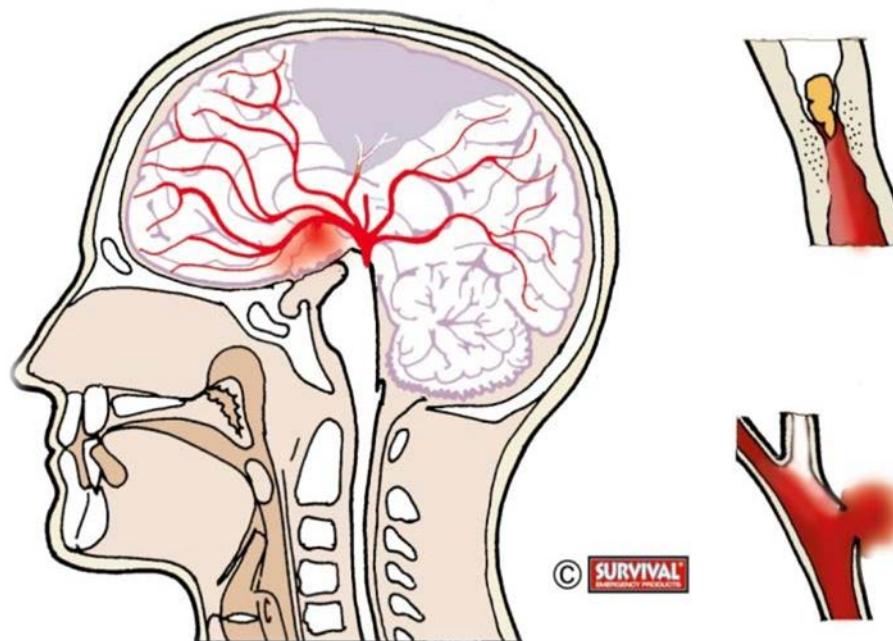
- Rest and reassurance – do not move around
- Send for urgent help – Call 000
- Do not leave them alone
- Loosen and constricting clothing around neck, chest and waist
- Give 300mg aspirin if directed by either a doctor or emergency medical team
- Be prepared for possible sudden unconsciousness and to commence CPR



**Heart Attack**

# Stroke

A stroke occurs when a **blood vessel** in the **brain bursts** (aneurysm) or becomes **blocked** (thrombus or embolism), not allowing the brain tissue to receive necessary **oxygen**.



# Recognition

## **FACE drooping**

Can they smile?

Has their mouth drooped?

## **Arm weakness**

Can they raise both arms?

## **Speech Difficulty**

Can they speak clearly and understand what they are saying?

## **Time to act fast**

See urgent medical help, call 000

*How do you know if someone's having a stroke? Think...*

**F. A. S. T.**

## Signs & Symptoms of Stroke

- Severe headache
- Nausea, vomiting
- Absent or slurred speech
- Incontinence
- Weakness or paralysis



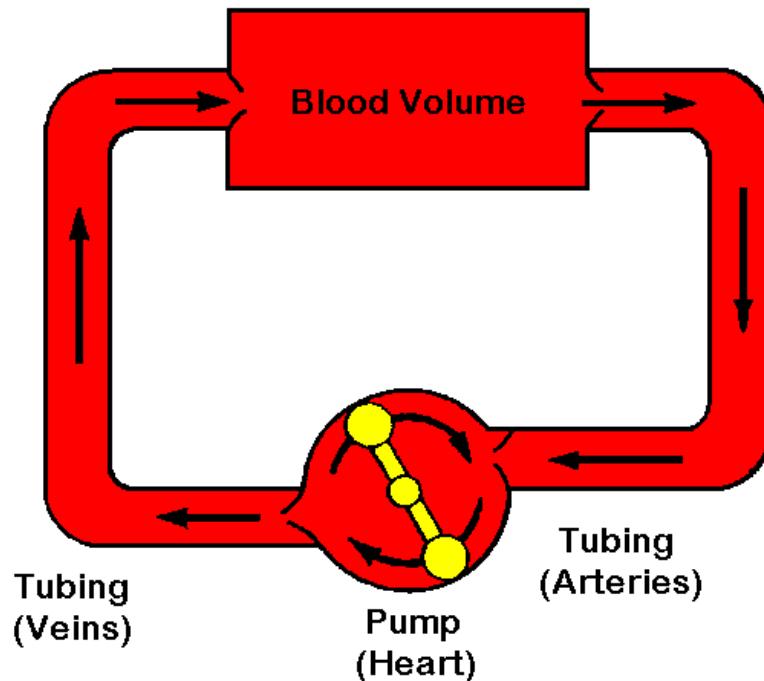
## Stroke Management

- Call 000
- Comfortable position (support head and shoulders on pillow)
- Nil by mouth
- Reassure and monitor



# Shock

Shock is a condition resulting from an **inadequate oxygen** supply to the body's major organs. It is caused by a **lack** of circulating **blood volume** throughout the body.



# Signs & Symptoms

- Rapid, weak pulse
- Rapid, shallow breathing
- Pale, cold, clammy skin
- Excessive thirst
- Dizziness
- Nausea, vomiting
- Restless, drowsy, collapse
- Unresponsive
- Heart failure



# Management

- Treat the cause
- Lay the casualty down
- Maintain temperature
- Rest, reassure
- Nil by mouth
- Seek medical aid



# Seizures and Epilepsy

A seizure is caused by a disturbance of the electrical activity within the brain. Epilepsy is a disorder in which a person has repeated seizures over time.

## Signs and Symptoms

- Person may feel an onset of a seizure
- Shallow breathing
- Saliva (or blood)
- May have loss of bladder control

## Management

- Protect from injury and time seizure – remove any dangers
- Manage airway when safe
- Cover casualty
- Rest and reassure
- Call 000
- Time the seizure



# Diabetes

For our bodies to work properly, we need to convert glucose (sugar) from food into energy. A hormone called **insulin** is essential for the conversion of glucose into energy. In people with diabetes the body does not produce insulin, or does not produce sufficient amounts of insulin.

**Hypoglycaemia** is when your blood glucose level has dropped too low.

- It is important to treat a ‘hypo’ immediately to stop your blood glucose level from dropping lower.

**Hyperglycaemia** means high blood sugar level. This can develop over many hours or days.

- It is possible to be unaware that your blood sugar level is high.
- Many people do not experience the symptoms of hyperglycaemia until their blood sugar levels are extremely high.

## Hypoglycaemia (Low)

- Weak, light-headed or dizzy
- Confused, disoriented
- Irrational, aggressive
- Pale & sweaty skin
- Altered responsiveness

## Hyperglycaemia (High)

- Hot dry skin
- Confusion, fatigue
- Thirsty
- Increased urine output
- Smelly breath - fruity/acetone



# Diabetes Management

**If responsive, give the patient some sugar.**

- If the casualty is still fully responsive and able to swallow, give a sweetened drink, chocolate or glucose sweets to suck – an improvement usually occurs within minutes.
- When the casualty is more alert, offer a more substantial carbohydrate meal of a sandwich or several sweet biscuits.

**If unresponsive...**

- It is common for these casualties to be unresponsive. If so, support the casualty on their side and call 000.
- In this situation, DO NOT give the casualty anything to eat or drink.
- Give frequent reassurance during recovery because the casualty may be confused until fully recovered.