



ABC of First Aid

Asthma & Anaphylaxis



**International
Emergency Numbers**
Latest Guidelines



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World Map 📞

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Emergency Numbers



Unconsciousness is a state of unrousable, unresponsiveness, where the casualty is unaware of their surroundings and no purposeful response can be obtained.

NO RESPONSE → **NO Breathing or Abnormal Breathing** → Follow **Basic Life Support Chart** →

→ **Breathing Normally** → Recovery Position, Call ☎, monitor

Combinations of different causes may be present in an unconscious casualty eg head injury and diabetes.

Causes of an **unresponsive (unconscious), breathing state**:

- A - Alcohol
- E - Epilepsy (pg 25)
- I - Insulin (Diabetes pg 26)
- O - Overdose (Poisons pg 32)
- U - Uraemia (renal failure)
- T - Trauma (head/spinal pg 20,21)
- I - Infections (meningitis)
- P - Pretending
- S - Stroke (pg 27)

NB. The sense of **hearing** is usually the last sense to go, so be careful what you say near an unconscious casualty.

All unconscious casualties must be handled gently and every effort made to avoid any twisting or forward movement of the head and spine.

(An unconscious, breathing woman in advanced pregnancy should be placed on her left side).

The recovery position:

- Maintains a clear airway - allows the tongue to fall forward.
- Facilitates drainage and lessens the risk of inhaling foreign material (eg saliva, blood, food, vomit).
- Permits good observation and access to the airway.
- Avoids pressure on the chest which facilitates breathing.
- Provides a stable position and minimises injury to casualty.



Step 1

- Raise the casualty's furthest arm above the head.
- Place the casualty's nearest arm across the body.
- Bend-up the casualty's nearest leg.
- With one hand on the shoulder and the other on the knee, roll casualty away from you.

Step 2

- Stabilise the casualty by flexing the bent knee to 90° when resting on the ground.
- Tuck the casualty's hand under their armpit.
- Ensure the casualty's head is resting on their outstretched arm.

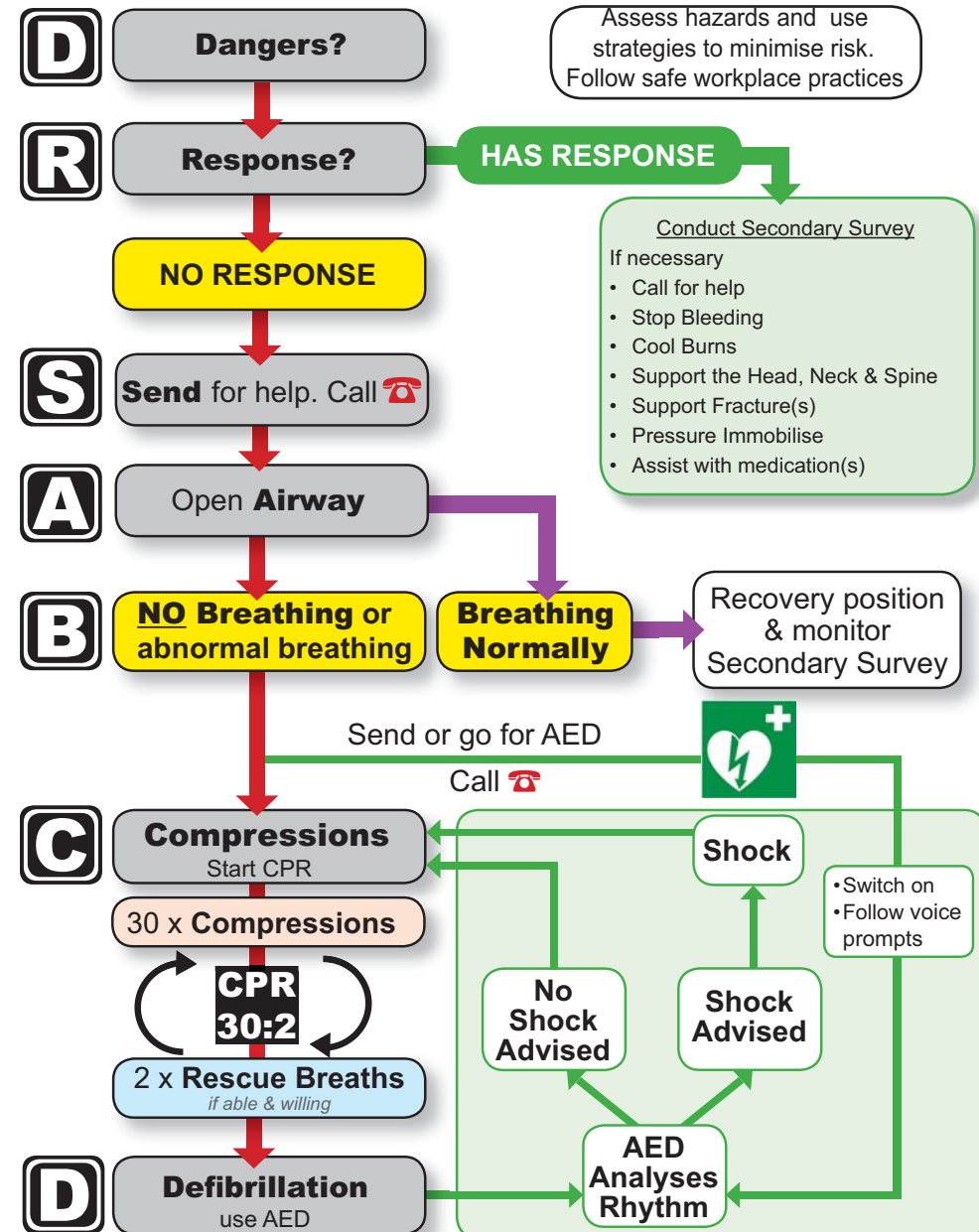


Step 3

- Carefully tilt the head slightly backwards and downwards. This facilitates drainage of saliva and/or stomach contents and reduces the risk of inhalation which may cause pneumonia.

Basic Life Support & AED

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In an **EMERGENCY** CALL ☎ or



CPR

Dangers

- Survey Scene
- Remove or Minimise Hazards



Protect yourself - use antiseptics and barrier protection: gloves, mask, goggles.

Response

- Talk and touch



SPEAK LOUDLY – Don't shout

"Hello, can you hear me?" "Are you all right?" "Open your eyes". "Squeeze my hands".

SQUEEZE SHOULDERS firmly – Don't shake

NB. Approach a collapsed casualty with caution, they could be anxious, irrational or aggressive, so be ready to step back if necessary.

Drowning. Assess victim on the back with head and shoulders at the same level. This decreases the likelihood of regurgitation and vomiting. The casualty should **not** be routinely rolled onto the side to assess airway and breathing.

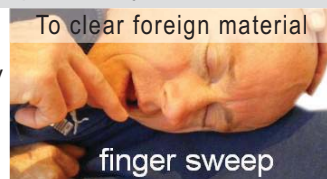
Send for help. Call ☎

Airway

- Check - for foreign material which could be obstructing the airway.
- Open - use chin lift and backward head tilt to open airway.



- Use **pistol grip** to achieve chin lift. Watch that your knuckle doesn't compress neck and obstruct airway and breathing.
- If foreign material is present, roll casualty onto the side and clear using postural drainage and finger sweep method.



Spinal injury and infants (<1yr): Keep head in a neutral position (i.e. minimise backward head tilt)

- The airway takes precedence over any other injury including a possible spinal injury.
- Promptly roll casualty onto the side to clear the airway if it is obstructed with fluid (eg vomit)

Breathing

- Look - for rise and fall of lower chest/ upper abdomen
- Listen - for breath sounds
- Feel - for movement of chest and escape of air from mouth

Take up to 10 seconds to check for breathing



Abnormal or NO Breathing?

- If casualty is unresponsive and not breathing normally after the airway has been cleared and opened, the rescuer must immediately commence chest compressions then rescue breathing (CPR).
- If unwilling or unable to perform rescue breathing, continue with compression only CPR.

NB. In the first few minutes of a casualty's cardiac arrest, sounds of gurgling, sighing or coughing may be present, but this is ineffective breathing and CPR should be commenced.

HAZARDS!

- **Biohazards** – blood, body fluids
- **Chemicals** – spills, fumes, fuel
- **Electricity** – power-lines
- **On coming traffic**
- **Fire, explosion**
- **Unstable structures**
- **Slippery surfaces**
- **Broken glass**
- **Sharp metal edges**
- **Needle stick**
- **Aggressive behaviour**

Compressions

30 Chest Compressions : 2 Rescue Breaths = CPR

30 Compressions

- Depth = 1/3 of chest wall (~ 5 cms)
- Rate = 100 per min (almost 2 compressions per sec)



- Place heel of one hand in centre of casualty's chest (which is the lower half of the sternum)
- Place other hand on top, arms straight and press down on sternum at least 5 cm in adults
- Allow complete recoil of chest after each compression
- Keep compressions rhythmical at a rate of 100 per min
- Use 1 or 2 hands in children (use 2 fingers for infants)



2 Rescue Breaths (RB)

- 2 breaths over 2 secs



- **Take a breath.**
- **Close casualty's nostrils** (pinch with fingers).
- **Mouth to mouth** (good seal).
- **Blow** to inflate lungs.



- Turn head after each RB.
- **Listen and feel** for air exhaled from mouth.
- Avoid inhaling re-expired air.

- Inflate until chest starts to rise.
- Over-inflation can force air into the stomach causing regurgitation.
- **Infants** – perform mouth to mouth/nose RB and inflate with puff of air from cheeks.
- Use resuscitation mask or barrier protection if possible
- If unwilling or unable to give RB, do chest compressions only.

CPR 30:2

- Cardio Pulmonary Resuscitation
- Rate = 5 cycles every 2 mins
- Combines 30 Compressions with 2 Rescue Breaths (30:2) = 1 cycle

Same ratio for infant, child, adult

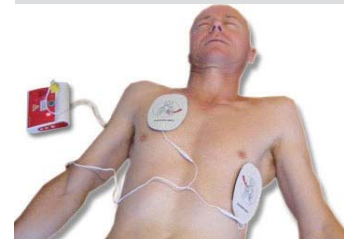
- Change rescuers every 2 mins to reduce fatigue.
- Do compression-only CPR, if unwilling or unable to give rescue breaths (RB).
- Continue CPR until responsiveness or normal breathing returns.

Stop CPR when:

- Casualty responds or begins breathing normally
- Exhaustion – you can't continue.
- Health professional arrives and takes over.
- Health professional directs that CPR be ceased

Defibrillation

An AED (Automated External Defibrillator) delivers electric shock to reverse abnormal heart rhythms. Not all heart rhythms are reversible



For first aid purposes:

- An infant is under 12 months old
- A child is 1-8 years
- An adult is over 8 years

- Use AED when casualty is unconscious, not breathing normally.
- When there are 2 rescuers, continue CPR while one rescuer organises and attaches AED pads:
- Switch on AED & follow voice prompts of the AED.
- Place pads on bare, dry chest - remove clothing, jewellery, medication patches, wipe chest dry, avoid piercings and pace-makers, remove chest hair with razor or scissors.
- **Do not use an AED on infants** (< 12 months)
- **No contact.** DO NOT touch casualty during analysis or shock.
- **No conduction.** DO NOT have casualty in contact with conductive material eg metal floor, puddles of water.
- **No explosion.** DO NOT use in explosive environment.

Children **under 8**, use with child pads *if available*, otherwise use adult pads. If pads touch each other, position one pad on the front and the other pad on the back of the chest. Check manufacturers instructions. Choose appropriate AEDs for child care. (pg 46)

NB. No harm to rescuers has occurred while using an AED in the wet

Chain of survival: is the key to improving the survival rate from cardiac arrest. Time is the essence. The **4 steps** required are: **1) Call ☎ Early** **2) Begin CPR immediately** **3) Early Defibrillation** **4) Advanced cardiac life support by paramedics**

Choking Inhalation of a foreign body can cause partial or complete airway obstruction.

Partial Airway Obstruction (Effective cough):

SIGNS & SYMPTOMS

- Coughing
- Wheezing
- Difficulty breathing
- Noisy breathing
- Cyanosis (blue skin colour)



FIRST AID

- Encourage casualty to keep coughing
- Reassurance
- DO NOT deliver back-blows if cough is effective
- Call ☎ If blockage doesn't clear

Complete Airway Obstruction (Ineffective cough):



SIGNS & SYMPTOMS

- Unable to breathe, speak or cough
- Agitated/ distressed
- Grips the throat
- Cyanosis (blue)
- Rapid loss of consciousness

Back blows are delivered standing or lying using the heel of the hand between the shoulder blades.

Lay an **infant** face down across the lap. If after 5 back blows the airway is still obstructed, use chest thrusts. *Check airway after each back blow. The aim is to relieve the obstruction with each blow rather than to give all five blows.*

An obstruction in the airway will cause resistance when giving **Rescue Breaths**. A foreign body in the airway can be removed later, if it is blown further into the airways during CPR.



FIRST AID

- Deliver up to 5 back-blows.
- Check and clear mouth after each blow.
- Deliver up to 5 chest thrusts.
- Check and clear mouth after each blow.
- Alternate back blows and chest thrusts if obstruction not relieved.
- Call ☎.
- If unconscious, commence CPR (pg 4).
- DO NOT apply abdominal pressure – may cause internal injury.

Chest thrusts are delivered standing or lying using one or two hands- a wall or firm surface is required. Chest thrusts are sharper and slower than chest compressions (CPR). Check airway after each chest thrust.



Chest Thrusts



Back blows on infant



Positional Asphyxia Is where an airway is obstructed due to body position. If it is necessary for security, law enforcement officers or carers to physically restrain a violent person, the restrained person must be continuously monitored.

To prevent positional asphyxia

- Avoid face-down restraint unless absolutely necessary and reposition as soon as possible.
- **Never** sit or lean on the abdomen.
- Identify persons at risk: **Psychosis and Drug** over dose can lead to cardiac rhythm disturbances and fatal breathing difficulties. **Obesity** can make it difficult to breathe in face-down position. **Physically disabled** may have breathing difficulty in some positions.
- Pay close attention to a person **saying they can't breathe**, gurgling or gasping sounds, lips and face turning blue, increased resistance or **sudden tranquility**.

Drowning

Drowning is the process of experiencing respiratory impairment from immersion in liquid. Interruption of oxygen to the brain is the most important consequence of drowning so early rescue and resuscitation are the major factors in survival. Drowning can be fatal or non-fatal.

SIGNS & SYMPTOMS

- Coughing • Chest pain • Frothy sputum
- Clenched teeth • Shortness of breath
- Blue lips and tongue • Unconscious
- Irregular or no breathing

A Drowning Victim



Vomiting and regurgitation often occur during resuscitation of a drowned casualty. After rolling casualty onto their side to clear the airway, reassess condition. If not breathing, promptly roll the casualty on to their back and continue with resuscitation. Avoid delays or interruptions to CPR. **Do not attempt to expel water** or frothy fluid that re-accumulates in upper airway.



Rescuing a Drowning Victim



- **If conscious:** throw a **buoyant** aid (life jacket, surf board) or drag from water using an umbrella, rope, towel, stick.
- **If unconscious:** Turn casualty **face up** and remove from water.
- Consider possibility of **spinal injury** – remove from water gently, maintaining spinal alignment as much as possible.

- **DO NOT attempt to save a drowning casualty beyond your swimming ability.**
- **Remove** casualty from water as soon as possible.
- Only begin **Rescue Breathing in water** if trained to do so (requires a floatation aid) and immediate exit is impossible.
- **Cardiac compressions in water** are both difficult and hazardous and should not be attempted.

FIRST AID

On land or boat:

- Call ☎
- Assess the casualty **on the back** with head and body at same level.
- Do **NOT** routinely roll the casualty onto the side to assess airway and breathing.
- Commence **CPR** if required (pg 4)
- Roll into recovery position if **vomiting** or **regurgitation** occurs.
- DO NOT attempt to empty **distended stomach** by external compression.
- Treat for **Hypothermia** (pg 29) - often associated with immersion.
- Give **oxygen** if available and trained.
- All immersion casualties, **even if seemingly minor**, must be assessed in hospital as complications often follow.

Soft Tissue Injury & Fracture

Sprain: Over-extension of a joint with stretching and tearing of ligaments.

Strain: Over-stretching with tearing of muscle tissues or tendon fibres.

Dislocation: Displacement of bone ends in a joint.

Fracture (#): Broken bone, classified as:

Closed: Fractured bone doesn't penetrate skin.

Open: Fracture is exposed through open wound or penetrates skin.

Complicated: Vital organ, major nerve or blood vessel is damaged by a broken bone.

The **Signs & Symptoms** and **First Aid** for a fracture and soft tissue injury are very similar.

SIGNS & SYMPTOMS

- Pain
- Tenderness
- Snap or pop at time of injury
- Restricted movement
- Discolouration
- Swelling
- Deformity*

* Suggests fracture or dislocation

Fracture Management:

The main aim of fracture treatment is to *support or immobilise* an injured part which:

- minimises pain
- prevents further damage
- minimises bleeding and
- prevents a closed fracture becoming an open fracture.

Support: Leave injured part as found and pack around to give support.

- Immobilise:**
- Use **Splint, Sling** or **bandage** to prevent movement.
 - Stabilise joint above and below fracture site.
 - Apply triangular or broad bandages above and below fracture site.
 - Check circulation every 15 mins (pg 11).
 - **DO NOT** elevate a suspected fracture until it has been immobilised.

Note: If medical help is close by and the casualty doesn't need to be moved, a splint may not be required to immobilise a fracture. However, where a casualty needs to be moved, especially over rough terrain or long distances a splint will help to immobilise a fracture.

Soft Tissue Management: Do No HARM No Heat: No Alcohol: No Running: No Massage.

R.I.C.E.R. Method used to treat soft tissue injuries (sprains/ strains) and fractures.

Rest: Rest casualty and injured part; this prevents further damage and reduces bleeding.

Ice: Reduces pain, fluid and swelling by constricting blood vessels. Apply wrapped ice pack for 10 - 20 mins – do not place ice directly on skin. Ice pack or frozen peas can be placed over a bandage. Continue to cool injury three times/day for 2-3 days after the injury.

Compression: Apply a firm supporting bandage to injured part. This restricts movement of injured part and reduces bleeding and swelling.

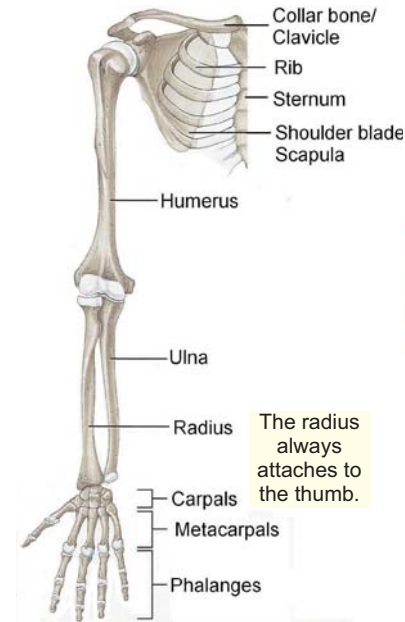
Elevation: Raise injured area above the level of the heart if possible. This slows the flow of blood and reduces swelling.

Refer: Refer casualty to a doctor, in case there is other injury eg fracture. **Record** incident.

- Degree of pain is not a good indicator of injury type since pain tolerance varies in individuals.
- Never manipulate a dislocation - there may be an associated fracture.
- When in doubt, always treat an injury as a fracture.
- Check circulation (pg 11) after immobilisation ie after bandaging, splinting, sling.
- May need to slowly adjust position of limb if no circulation is present.

Soft Tissue Injury

☎ means call your country's emergency number



Arm Slings: Use a triangular bandage or improvise.



Elevation Sling



Arm Sling



Collar & Cuff Sling



Finger Splints: Immobilisation reduces pain. After splinting, apply an elevation sling to minimise swelling.

Upper Limb Injury

Slings and splints can assist with support and immobilisation. If casualty is at rest and comfortable these may not be necessary.

Improvise: By using a belt or buttons on shirt



Rigid Splint: Rolled up newspaper, placed **under** the fracture, tied either end with triangular bandages.

Fractured humerus: Notice deformity



Pain in:	Could be:	Management:
Shoulder	<ul style="list-style-type: none"> • Fractured clavicle • Dislocated shoulder • Fractured upper humerus • Sprain/ strain 	<ul style="list-style-type: none"> • Allow casualty to adopt position of comfort. • Apply sling which best suits casualty. • Keep hand higher than elbow to reduce swelling • If unsure whether injury is a fracture or soft tissue injury, treat as for fracture (pg 8)
Upper Arm	<ul style="list-style-type: none"> • Fractured mid-humerus • Sprain/ strain 	
Fore Arm/ Wrist	<ul style="list-style-type: none"> • Fractured radius/ ulna • Sprain/ strain • Fractured carpal bone 	
Hand	<ul style="list-style-type: none"> • Fractured/ dislocated metacarpal • Fractured/ dislocated phalange • Sprain/ strain 	

Lower Limb Injury

Pelvic Injury:



SIGNS & SYMPTOMS

- Pain in hip or groin region
- Pain worse on movement
- Inability to walk
- Shock (pg 14)

Consider internal bleeding from bladder, uterus, bowel damage.



Hip Injury

Left leg appears shorter and is rotated outwards. Notice swelling over hip due to internal bleeding. This is the typical position of the leg with a fractured hip (fractured neck of femur) and is common in the elderly after a minor fall.



Ankle Injury

R.I.C.E.R. for a sprained ankle:

Rest: Casualty doesn't move ankle
Ice: Cool injured area
Compression: Use a crepe bandage
Elevation: Place foot higher than hip
Refer and record

FIRST AID

- Call ☎
- Reassure casualty
- Control any external bleeding.
- Lie casualty flat with knees slightly bent and supported.
- Place padding between legs and on either side of hips (eg blanket, towel, pillow).
- 'Figure-of-eight' bandage around ankles and feet.
- Apply broad bandage above knees.
- Don't attempt to move casualty.
- Discourage attempts to urinate.
- Maintain body temperature.
- Monitor vital signs (pg 52, 56)

The first aid **aim** is to prevent further injury by immobilizing the fracture. The casualty will usually support and immobilize the injury in the most comfortable position and a splint will not usually be required, especially if an ambulance is available. Do NOT move, or align fractures unless it is necessary to maintain circulation. For suspected fractured pelvis always consider spinal injury. Do not move the casualty unless necessary.



Thigh Injury

A 1.5 litre blood loss can result from a closed fracture of the femur. In this case a 3 litre blood loss could result in shock (pg 14) and death.

This type of injury is common in road traffic accidents.



Knee Injury

R.I.C.E.R.

Support knee in position of comfort. Do not try to straighten knee if painful.

Immobilising Lower limb:

- A **body splint** is an effective way to immobilise lower limb fractures.
- The key to immobilising leg fractures is a figure of 8 bandage around the feet.
- Place padding in natural hollows between legs.
- Stabilise joints above and below fracture site.
- Position all bandages before tying off.
- Apply broad bandages above and below injured area.
- Tie bandages off on uninjured side of body.
- If using a **rigid splint** (eg stick) ensure splint doesn't extend further than length of legs.
- Position splints under the injured limb to provide support.
- Pad over splint to make more comfortable.
- **Check circulation**

SIGNS AND SYMPTOMS that a bandage is too tight:

- Pain • Numbness • Cold to touch • Tingling • Pale or discoloured • Pulse weak/absent below injury



Fracture site.



Position splint underneath limb to support & immobilise fracture.

Bandaging and splints may be required if the casualty needs to be transported. Use triangular bandages, broad bandages, belts, clothing or sheets to tie legs together. Tie-off on uninjured leg, above and below fracture site.

Splints can be classified as:

- **Body Splint:** Uses uninjured, adjoining body part to immobilise an injury. Lower limbs, fingers and toes are commonly strapped together as body splints.
- **Soft Splint:** Folded blankets, towels, pillows
- **Rigid Splint:** Boards, sticks, metal strips, folded magazines and newspapers

Checking Circulation:

- Check skin colour below injury - if pale or discoloured, there may be impaired circulation.
- Assess skin temperature by gently placing hand below level of injury. Compare to other side. If colder, there may be impaired circulation.
- Squeeze fingernail until nail turns white. Colour should return within a few seconds.
- Compare pulse below injury with other side - If weaker or absent, circulation may be impaired.

Pain in:	Could be:	Management:
Hip/groin	• Fractured Pelvis • Fractured neck of femur • Dislocated head of femur • Sprain/strain	<ul style="list-style-type: none"> • Allow casualty to adopt position of comfort. • If unsure whether injury is a fracture or soft tissue injury, treat as for fracture (pg 8). • Elevate a suspected fracture after it has been immobilised. • Minimise movement to avoid further injury. • Check circulation after immobilisation (above).
Thigh	• Fractured femur • Strain: front of thigh (quadriceps) • Strain: back (hamstrings)	
Knee	• Fractured patella • Dislocated patella • Cartilage tear • Sprain	
Lower Leg/Ankle	• Fractured tibia • Fractured fibula • Dislocation • Sprain/ strain	
Foot	• Fractured tarsal/metatarsal/phalange • Dislocation • Sprain/ strain	

Bleeding

Bleeding (haemorrhage) can be external and obvious or internal (within the body) and often not seen.

Bleeding is classified according to the type of blood vessel damaged:

- **Arterial** Bleed - damaged artery; bright red blood; spurting
- **Venous** Bleed - damaged vein; dark red blood; flowing
- **Capillary** - tiny blood vessels; bright red blood; oozing

Types of wounds associated with bleeding are:

- Abrasion • Incision • Laceration • Puncture • Embedded object • Tear • Amputation

Major External Bleeding:

- The aim is to reduce blood loss from the casualty.
- Direct, sustained pressure is the fastest, easiest, most effective way to stop bleeding.
- Apply direct or indirect pressure on or near the wound as appropriate.



Direct Pressure and Elevation

FIRST AID

- Check for Dangers to self, casualty & bystanders.
- Use disposable gloves if available.
- **Direct Pressure Method:**
 - Quickly check for embedded objects (pg 13)
 - Identify the bleeding point and apply firm direct pressure until bleeding stops.
 - Maintain pressure over the wound using hands or pad (sterile dressing, tea towel or handkerchief).
 - Bandage firmly to hold pressure pad in place.
 - **If bleeding continues** - apply another pad and a tighter bandage.
 - Elevate bleeding part, restrict movement, immobilise the part, advise casualty to rest
 - Call ☎
 - Reassure casualty.
 - Monitor vital signs (pg 52, 56)
 - Give oxygen if available.
 - DO NOT give casualty food, alcohol, medication.
 - **If major bleeding continues** - remove all pads to locate a bleeding point, then apply a more direct pressure over the bleeding point.
 - Treat for shock (pg 14) if required.

TOURNIQUET: Used to control life-threatening bleeding (eg traumatic amputation of a limb).

- Use as a **LAST RESORT**.
- Use a wide bandage (>5cm wide).
- Apply **high** above wound.
- Ensure tourniquet is clearly visible.
- Tighten until bleeding stops.
- Note the time of application; write time of application on casualty.
- Continue to maintain direct pressure over wound.
- DO NOT apply tourniquet over a joint or wound.
- DO NOT remove tourniquet until casualty receives specialist care.

☎ means call your country's emergency number

Embedded Object: eg knife, glass, stick or metal.

FIRST AID

- DO NOT remove the object - it could be plugging the wound.
- Build up padding around the object.
- Apply sustained pressure over the pad (indirect pressure).
- Bandage firmly over the pad.
- DO NOT apply pressure over the object.
- DO NOT shorten object unless its size is unmanageable.
- Elevate, immobilise, restrict movement of the limb.
- Advise casualty to remain at rest.
- Call ☎



Bleeding

Internal Bleeding: Signs, symptoms and management as for Shock (pg 14)

- Suspect internal bleeding if a **large blunt force** is involved - road traffic accident, fall from a height; or a history of **stomach ulcers**, early pregnancy (**ectopic pregnancy**) or **penetrating injury**.
- Internal bleeding may be concealed or revealed.
- If a casualty is coughing up frothy blood, allow casualty to adopt position of comfort – normally half-sitting.
- First aiders can't control internal bleeding but early recognition and calling ☎ can save lives.

Concealed:

Spleen, liver, pancreas, brain (no bleeding visible).

Revealed:

Lungs – Cough up frothy pink sputum.
Stomach – Vomit brown coffee grounds or red blood.
Kidneys/ Bladder – Blood stained urine.
Bowels – Rectal bleeding: bright red or black and "tarry".
Uterus - Vaginal bleeding.

Nose bleed

FIRST AID

- Pinch soft part of nose just below the bone.
- Have casualty seated and leaning forward.
- Ask casualty to breathe through their mouth.
- Maintain pressure and posture for at least 10 mins (longer may be required after exercise, hot weather or if casualty has high blood pressure or takes aspirin or warfarin tablets - maintain pressure for at least 20 minutes).
- If bleeding continues >20 mins - seek medical assistance.
- Apply cold compress to forehead and neck.
- Advise casualty not to blow or pick their nose for a few hours.



Amputation Manage amputated limb as for major external bleeding (pg 12). Amputation of a limb may require a **tourniquet** (pg 12) to control life-threatening bleeding.

- DO NOT wash or soak amputated part in water or any other liquid.
- Wrap the part in gauze or a clean handkerchief and place in watertight plastic bag.
- Place sealed bag or container in cold water which has ice added to it (The part should not be in direct contact with ice).
- Send to hospital with the casualty.

Shock Shock is a loss of effective blood circulation resulting in tissue/ organ damage and is life threatening.

CAUSES

Loss of blood volume: Bleeding or fluid loss

Loss of blood pressure: Heart/ pump failure or abnormal blood vessel dilatation.

- Internal or external bleeding
 - Major or multiple fractures
 - Severe burns or scalds
 - Severe diarrhoea and vomiting
 - Heat stroke
 - Heart attack
 - Severe infection
 - Anaphylaxis (severe allergy)
 - Brain/ spinal cord injury
- } bleeding
 } fluid loss
 - pump failure
 } abnormal dilatation of blood vessels



The total blood volume in the body is about **6 litres**. Blood loss of **>1 litre** (20%) may result in shock. Rapid blood loss leads to more severe shock.

SIGNS & SYMPTOMS

- Pale, cool, clammy skin
- Thirst
- Feeling cold
- Rapid, shallow breathing.
- Nausea/ vomiting
- Confusion
- Reduced level of consciousness.
- Rapid, weak pulse
- Ridged, painful abdomen (from internal abdominal bleeding).

NB. In early stages of blood loss, children may have a normal pulse rate, but pallor is the warning sign.

FIRST AID

- Control external bleeding (pg 12)
- Call ☎
- Place casualty in position of comfort, ideally lying down
- Administer oxygen if available
- Maintain body temperature
- Reassure
- Monitor vital signs (pg 52, 56).
- Give nothing by mouth (may cause vomiting and/ or delay surgery).

If Unconscious:

DRSABCD (pg 3)

Crush Injury A heavy, crushing force to part of the body usually causing extensive tissue damage from internal bleeding, fractures, ruptured organs, or an impaired blood supply.

FIRST AID

- DRSABCD - ensure your own safety.
- Call ☎
- If safe - remove crushing force as soon as possible.
- Control external bleeding (pg 12).
- DO NOT use a tourniquet (pg 12) to manage a crush injury.
- Manage other injuries.
- Comfort and reassure.
- Monitor vital signs (pg 52, 56)

NB - the casualty's condition may deteriorate quickly due to extensive damage.

Crush Injury Syndrome:

- Is a complication of crush injury usually involving a thigh or pelvis (ie not a hand or foot).
- Toxins released from damaged tissue may cause complications but the risk of sudden death following removal of a crushing force is extremely small.
- It is recommended to remove the crushing force as soon as safe and possible.

Burns Burns may result from: **heat** (flame, scald, direct contact), **cold, friction, chemical** (acid, alkali), **electrical** or **radiation** (sunburn, welders arc).

FIRST AID

- DRSABCD
- Cool affected area with water for as long as necessary - usually 20 mins.
- Remove rings, watches, jewellery from affected area.
- Cut off contaminated clothing – do not remove clothing contaminated with chemicals over the head or face.
- Elevate burnt limb if possible.
- Cover burnt area with a loose, non-stick dressing (sterile non-adherent dressing, plastic cling wrap, wet handkerchief, sheet, pillow case).
- DO NOT allow shivering to occur.
- Hydrogel products are an alternative if water is not available.

- DO NOT apply ice directly to burns.
- DO NOT break blisters.
- DO NOT apply lotions, ointments, creams or powders (except hydrogel).
- DO NOT peel off adherent clothing or other substances.
- DO NOT use “fluffy” dressings to cover burn (towels, tissues, cotton wool).

Seek medical help for:

- Chemical burns
- Inhalation burns
- Infant, child or elderly.
- Burns to hands, face, feet, major joints, or genital area.
- Burn size > casualty's palm.
- Burns encircling limbs or chest.
- Burns associated with trauma.
- Electrical burns
- Full thickness burn

Extensive burns may result in shock from fluid loss (pg 14)



Superficial Burn

(1st degree)
Reddening (like sunburn)
Painful



Partial Thickness Burn

(2nd degree)
Red and Blistering
Very Painful



Full Thickness Burn

(3rd degree)
White or blackened
Not painful

Flame: • STOP, DROP, COVER, ROLL the casualty to put out flames • Smother flames with a blanket, coat or rug and force casualty to lie on the ground • Move to safety • Call ☎

Inhalation: (See also pg 32, Poisons) • Inhalation of flames or heated air can cause severe damage to the airways resulting in swelling and possible airway obstruction • DO NOT enter a burning or toxic atmosphere without appropriate protection • Remove to a safe, ventilated area ASAP • Look for evidence of inhalation injury around nose or face • Coughing or hoarseness may indicate exposure • Give oxygen if available • Call ☎

Chemical: • Acids and alkalis cause chemical burns • Brush powered chemicals from the skin before cooling with water • Do not neutralise acid or alkali burns because this will increase heat generation and cause more tissue damage • Call ☎

Bitumen: • Bitumen holds heat therefore cool with water for 30 mins • DO NOT remove from skin unless it's obstructing the airway • If the limb is completely encircled, split the bitumen lengthwise as it cools • Call ☎

Electrical: • Burns are usually more severe than they appear and often associated with other injuries (pg 16) • Call ☎

Electric Shock

Electric shock may cause: • **Respiratory Arrest** • **Cardiac Arrest** • **Burns**



FIRST AID

- ENSURE SAFETY OF YOURSELF AND BYSTANDERS.
- Call ☎
- Turn off power at plug point (or if not possible at fuse box or main circuit breaker)
- Move casualty from electrical supply.
- Commence CPR if required (pg 4).
- Apply first aid to burns (pg 15).

DO NOT touch casualty's skin before electrical source is disconnected.

BEWARE: **Water** on floor and **metal** materials can conduct electricity from casualty to you.



- When **POWER LINES** are in contact with a vehicle or a person, there should be no attempt at removal or resuscitation of the casualty until the situation is declared safe by electrical authorities.
- Remain at least **10 m** from electrified material (car body, pool of water, cable).
- You can do nothing for a casualty within the danger zone! Protect yourself and others.

Multiple Casualties/ Prioritising

You may be faced with the dilemma of two or more casualties needing your care. In making a decision who to treat first, remember the goal is for the **greatest good for the greatest number of people**. In all cases remember the principles of safety to yourself, bystanders and casualty.

PRIORITIES: 1 = top priority, 5 = lowest priority

1 ALWAYS manage an UNCONSCIOUS casualty first. Opening the airway and rolling the casualty into the recovery position may be all that's required initially.

- 2**
- Severe bleeding (> 1 litre)
 - Crush injury
 - Shock
 - Open chest wound
 - Open abdominal wound
 - Open fractures
 - Burns to 30% of body
 - Head injury, showing deterioration

- 3**
- Moderate bleeding (< 1 litre)
 - Spinal injury
 - Multiple fractures
 - Burns (10-30% of body)

4 • "Walking Wounded"

- 5**
- Obvious death – decapitation, massive head or torso injuries

Remember: A casualty is always in a changing, non-static condition. This is especially important in head and abdominal injuries in which deterioration can occur.

☎ means call your country's emergency number

Chest

Major chest injuries include **fractured rib**, **flail chest** (multiple rib fractures, producing a floating segment of ribs), and **sucking chest wound**. A fractured rib or penetrating injury may puncture the lung.

Fractured Rib/ Flail Chest:

SIGNS & SYMPTOMS

- Holding chest
- Pain at site
- Pain when breathing
- Rapid, shallow breathing
- Bruising
- Tenderness
- Blue lips (flail chest or punctured lung)
- Flail Chest –section of chest wall moves in opposite direction during breathing.
- Onset of shock (pg 14)

FIRST AID

- Position casualty in position of comfort; half-sitting, leaning toward injured side, if other injuries permit.
- Encourage casualty to breathe with short breaths.
- Place padding over injured area.
- Bandage and sling may help to immobilise the injury.
- If bandages increase discomfort, loosen or remove them.
- Apply a 'Collar & Cuff' sling to arm on injured side.
- Call ☎ for an ambulance
- Monitor for internal bleeding/ shock (pg 13, 14)
- **If Unconscious:** Recovery position, injured side down.



Sucking Chest Wound:

SIGNS & SYMPTOMS

- Pain
- Breathing difficulty
- Sucking sound over wound when casualty breathes.
- Bloodstained bubbles around wound when casualty breathes.
- Coughing up bloodstained frothy sputum.
- Onset of shock (pg 14).

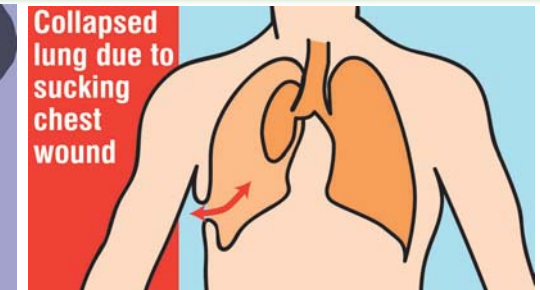
FIRST AID

- Position casualty in position of comfort; half-sitting, leaning toward injured side.
- If the object is still in place, stabilise with padding around the wound.
- If the wound is open, cover with plastic or non-stick pad taped on 3 sides: This allows air to escape from pleural cavity and prevents lung collapse (pneumothorax).
- Call ☎ for an ambulance .
- Monitor for internal bleeding/ shock (pg 13, 14).

Dressing taped on 3 sides



Collapsed lung due to sucking chest wound



Abdomen

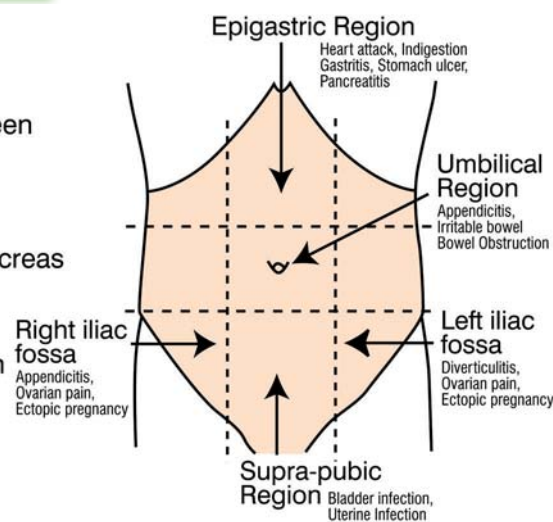
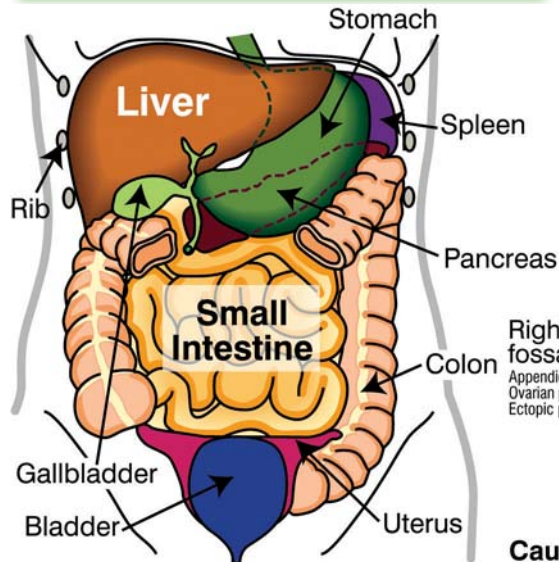
An injury to the abdomen can be an open or closed wound. Even with a closed wound the rupture of an organ can cause serious **internal bleeding** (pg 13, 14), which results in **shock** (pg 14). With an open injury, abdominal organs sometimes protrude through the wound.

FIRST AID

- Call ☎
- Place casualty on their back with pillow **under head and shoulders** and support under **bent knees**.
- **If unconscious**, place in recovery position, legs elevated if possible.
- Cover exposed bowel with moist non-stick dressing, plastic cling wrap or aluminium foil.
- Secure with surgical tape or bandage (not tightly).
- Rest and reassure.
- Monitor vital signs (pg 52, 56).
- Elevate legs if shock develops (pg 14).
- DO NOT push bowel back into abdominal cavity.
- DO NOT apply direct pressure to the wound.
- DO NOT touch bowel with your fingers (may cause spasm).
- DO NOT give food or drink (this may delay surgery for wound repair).



Plastic cling wrap has been placed over an open abdominal wound and secured with surgical tape.



Causes of Non-Traumatic Abdominal Pain

Eye

Types of eye injuries: • Burns • Foreign bodies • Penetrating injury • Direct blow

Burns:

Chemical - acids, caustic soda, lime

UV - Welder's flash, snow blindness (the eyes are red and feel gritty hours later)

Heat - flames or radiant heat

Contact Lenses: • **DO NOT** remove if the surface of eye is badly damaged • Casualty should remove own lenses • Lenses may initially protect the eye but if a chemical or foreign body tracks under the lens, severe injury may occur.

FIRST AID

- IRRIGATE with cool running water or sterile eye (saline) solution for 20 -30 mins.
- Flush from the inside to the outside of eye.
- Irrigate under the eyelids.
- Lightly pad affected eye(s).
- Seek urgent medical assistance.
- **If chemical burn**, DO NOT neutralize with other chemicals as this can create heat.

Foreign body:

Grit, dust, metal particles, insects, eyelashes



FIRST AID

- Gently irrigate eye to wash out object – use sterile eye (saline) solution or gentle water pressure from hose/ tap.
- If this fails, and the particle is on white of eye or eyelid, gently lift particle off using a moistened cotton bud or the corner of a clean handkerchief. (DO NOT attempt this if particle is on coloured part of eye – irrigate only)
- If still unsuccessful, cover the eye with a clean pad ensuring no pressure is placed over injured eye.
- Seek medical aid.
- DO NOT allow casualty to rub eye.

Penetrating Injury:



FIRST AID

- Lay the casualty flat
- Reassure
- Call ☎
- Aim is to prevent further damage
- Position padding to immobilise the object.
- Protect the area to avoid further damage
- Advise casualty to avoid moving unaffected eye, because this will cause movement of injured eye.
- Cover the unaffected eye, but remove if casualty becomes anxious.
- DO NOT remove embedded object.
- DO NOT apply pressure over the object.

Direct Blow: Any direct blow to the eye such as a fist or squash ball can cause fracture of the eye socket or retinal detachment.

FIRST AID

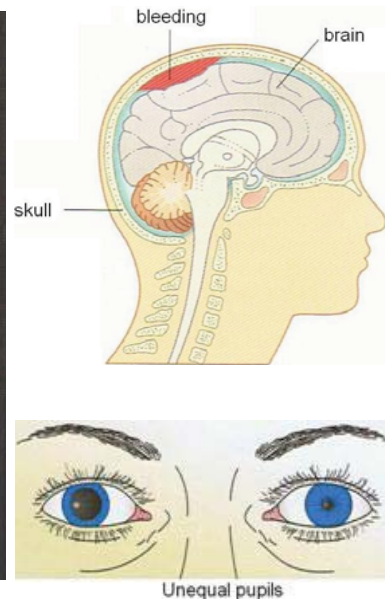
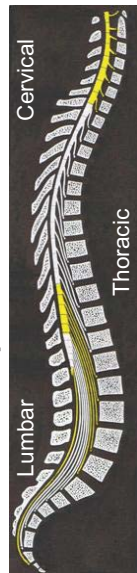
- Rest and Reassure
- Place padding over eye
- Secure with tape or bandage
- Ask casualty to limit eye movement
- Seek urgent medical aid

Head Injury

Blood or fluid from the **ear** may indicate a ruptured eardrum or skull fracture:

- Position casualty injured side down to allow free drainage of fluid from the ear.
- DO NOT plug or bandage ear.
- AIRWAY management takes priority over **ALL** injuries, including spine.
- ALL cases of unconsciousness, even if casualty was unconscious only briefly, must be assessed by a doctor.
- If casualty didn't lose consciousness, but later develops any of the following signs and symptoms (below), urgent medical advice must be sought.
- Monitor all casualties closely for the first 8 hrs after a head injury.
- All head injuries should be suspected as a spinal injury until proven otherwise.

Spinal Column



SIGNS & SYMPTOMS

- Headache or giddiness
- Nausea or vomiting
- Drowsy or irritable
- Slurred speech
- Blurred vision
- Confused or disorientated.
- Loss of memory
- Swelling and bruising around eyes.
- Bleeding into corner of eyes.
- Bruising behind ears.
- Straw coloured fluid or bleeding from nose or ear.
- Loss of power in limbs.
- Loss of co-ordination.
- Seizure
- Unequal pupils
- Loses consciousness, even briefly.

Concussion: "Brain Shake" is a temporary loss or altered state of consciousness followed by complete recovery. Subsequent decline (see signs and symptoms above) suggests a more serious brain injury.

FIRST AID

Check **DRSABCD** (pg 3)

Conscious:

- Support casualty's head as best as possible.
- Reassurance, especially if confused.
- If blood or fluid coming from ear or nostril, loosely cover with a dressing (do not plug).
- Control bleeding and cover wounds (pg 12).
- DO NOT give anything to eat or drink.
- DO NOT give aspirin for headache (may cause bleeding within skull).
- Prepare for possible vomit – locate bowl, towel.
- Seek urgent medical aid.

Unconscious:

- Recovery position with head & neck support.
- Call ☎
- Monitor Vital Signs every 5-10 mins (pg 52, 56).
- Control bleeding and cover wounds.
- Support/stabilise head and neck.
- Keep warm with a blanket.
- Prepare for possible vomit.

Cerebral Compression: Brain swelling or bleeding within the skull shows deteriorating signs and symptoms (above). This is a serious brain injury and could be life threatening.

Spinal Injury

The key to managing a spinal cord injury: **Protect airway & minimise spinal movement**

Conscious:

SIGNS & SYMPTOMS

- Pain in neck or back.
- Pins and needles in any part of body.
- Numbness or weakness.
- Unable to move legs or arms.
- Uncontrolled penile erection.
- Onset of shock (pg 14).

QUICK CHECK

- Can you wriggle your fingers and toes for me?
- Can you make a fist?
- Can you shrug your shoulders?
- Can you pull your toes up towards you and point them away?
- Do you have pins and needles anywhere?
- Can you feel me touch your hands/ feet?

NB. If the casualty has neck or back pain-treat as a spinal injury. The pain may be due to an unstable vertebral fracture which may result in spinal cord damage if handled incorrectly.

Suspect spinal injury with:

motor vehicle accidents, motor bike and cyclists, diving, falls from a height, minor falls in the elderly and sports injuries such as rugby and horse riding.

Unconscious:

Any person found unconscious is potentially spinal injured until proven otherwise - turn casualty onto their side and maintain an open airway.

REMEMBER, airway management takes priority over spinal injury.

Helmet Removal:

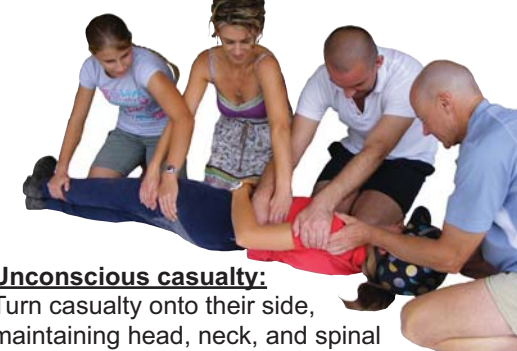
Helmets could be preventing further spinal or head injuries. If a full-face (motorcycle) helmet is impeding proper airway management in an unconscious casualty and/ or you intend to perform CPR, the helmet needs to be removed carefully. Otherwise leave helmet removal to the experts.

FIRST AID

- Prevent further injury by **AVOIDING** movement of patient - leave this to the experts.
- Advise casualty to remain still.
- Call ☎
- Support the head and neck.
- Reassure casualty.
- Maintain body temperature.

Conscious Casualty:

Support the head and neck in a conscious casualty with neck pain. Do not remove helmet and ask casualty to remain still.



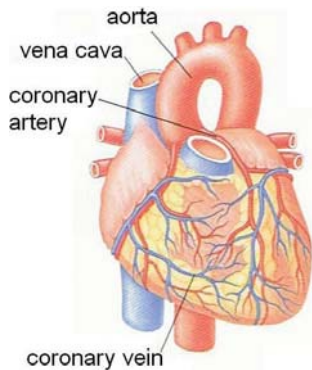
Unconscious casualty:

Turn casualty onto their side, maintaining head, neck, and spinal alignment. Maintain an open airway. (Log roll technique). Use safe manual handling techniques to avoid injuring yourself. eg ask for assistance; bend your knees.

FIRST AID

- Recovery position with head & neck support
- Call ☎
- Monitor Vital Signs every 5-10 mins (pg 52, 56)
- Control bleeding and cover wounds
- Support/ stabilise head and neck
- Keep warm with a blanket
- Prepare for possible vomit

Heart Conditions



Angina is a “**cramping**” of the heart muscle; relieved by rest, with no permanent muscle damage.

Heart attack is caused by a blocked coronary artery, resulting in **muscle damage** which may lead to complications such as **cardiac arrest**.

Cardiac arrest is a condition in which the **heart stops** beating and pumping effectively. The damage caused by a heart attack may cause abnormal rhythms (**Ventricular Fibrillation**) which result in cardiac arrest. Some abnormal rhythms can be reversed by an AED. Cardiac arrest is fatal without basic life support (pg 3).

“**Heart attack**” and “**Angina**” are heart conditions which present with similar signs and symptoms.

SIGNS & SYMPTOMS – vary greatly, and not all symptoms and signs are present!

- **Central chest pain** – may be described as • Crushing • Tightness • Heaviness
- **Breathlessness** or difficulty “catching the breath”
- **Indigestion type pain** in the upper abdomen (referred pain from the heart)
- **Pain** spreading to the • **Jaw** • **Neck** • **Shoulder** • **Left arm or right arm**
- **Heaviness** or **weakness** in **left arm**
- **Dizzy**
- **Nauseous**
- **Pale and sweaty**
- **Irregular pulse**

NB. Casualties having a heart attack may present with breathlessness alone while others may have heaviness in the arm or believe they have indigestion.

FIRST AID

- **STOP** and **REST** – in position of comfort (usually sitting).
- Reassure and talk to casualty – **Are you on prescribed heart medication?** – **Do you have angina? Can you take Aspirin?**
- If casualty has no heart medication and has never been diagnosed with heart problems – treat as for **HEART ATTACK** • **Call ‘📞’** • **Give Aspirin if directed** • **Monitor**
- Assist casualty to take **prescribed heart medication** (Anginine tabs or GTN spray).
- If after 5 mins symptoms are not relieved, **give another dose** of heart medication.

ANGINA should be relieved by rest and medication (tablets or spray).

- If after **3 doses of medication over 10 mins**, the pain has not diminished, then the condition should be considered a **HEART ATTACK**

Warning signs:
Pain lasts > 10 mins
Pain gets suddenly worse

DON'T WAIT
ACT NOW

Call 📞

Monitor vital signs

Give Oxygen if trained

Prepare for CPR

Vital Signs
(pg 52, 56)

Give **Aspirin (300mg)** if directed by emergency services. Before directing you to give Aspirin, emergency services will want to know if:

- Casualty takes **Warfarin** (blood thinning medication)
- Casualty has a history of **Asthma** or **Stomach ulcers**

Asthma Asthma is a disorder of the airways that can cause respiratory distress. **Spasm, inflammation** and **increased mucus** production in the airways causes breathing difficulties. Asthma attacks can be triggered in sensitive airways by changes in the weather, exercise, emotional stress, pollen, dust-mite, food preservatives, smoke, fumes or cold and flu infection. An asthma attack can take from a few minutes to a few days to develop.

SIGNS & SYMPTOMS

Mild:

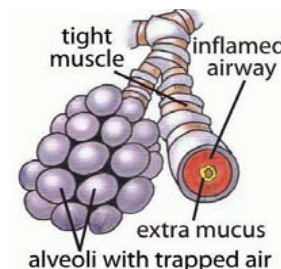
- Dry persistent cough
- Wheeze
- Breathless but speaks in sentences
- Chest tightness

Severe: (Call ambulance straight away)

- Gasping for breath (too breathless to speak)
- Wheeze inaudible (no air movement)
- Cyanosis (blue lips)
- Skin pale and sweaty
- Exhaustion
- Anxious/ Distressed
- Rapid pulse
- Collapse (respiratory arrest)

Young Children may also demonstrate:

- Severe coughing and vomiting
- Stop eating or drinking
- Restless or drowsy
- Muscles in throat and between ribs ‘suck in’



Using Puffer - with spacer



SHAKE
1 PUFF
4 BREATHS
REPEAT X 4

Reliever Medication:

Blue - grey colour.

Salbutamol puffers are the **most common** (eg Ventolin, Asmol, Airomir) also

Terbutaline (eg Bricanyl - supplied in a turbuhaler)

- It is not harmful to give salbutamol to someone who does not have asthma.

• **Adults** can use **Symbicort** in emergency: follow **SMART** action plan, available from **Asthma Foundation**

- Shake inhaler, remove cap and put inhaler upright into **spacer**.
- Place spacer between teeth and seal with lips.
- Administer 1 puff and ask casualty to breathe in and out for 4 breaths through the spacer.
- Repeat until 4 puffs have been given.
- Wait 4 mins and repeat if there is no improvement.

Call 📞 if casualty does not respond to medication. Say it is an asthma emergency

If no spacer available



- Shake inhaler, remove cap. Put inhaler between teeth and seal with lips.
- Administer 1 puff as casualty inhales slowly and steadily.
- Slip inhaler from mouth. Ask casualty to hold breath for 4 sec or as long as comfortable.
- Breathe out slowly, away from inhaler.
- Repeat until 4 puffs have been given.
- Wait 4 mins and repeat if no improvement

Rescue breaths may require more force due to narrow airway. Slowly inflate with steady pressure until chest begins to rise. Allow time for chest to fall during expiration.

Croup/ Epiglottitis

Croup and Epiglottitis are infections of the upper airways (larynx, pharynx and trachea) and occurs in young children. Both conditions start with similar signs and symptoms but epiglottitis progresses to a life-threatening state.

SIGNS & SYMPTOMS

CROUP:

- Cold-like symptoms
- Barking cough
- Noisy breathing
- Slight temperature
- Worse at night
- **Breathing difficulties**
- **Cyanosis (blue lips)**

Mild

EPIGLOTTITIS:

- **Drools –can't swallow**
- **Quiet, doesn't cough**
- **Leans forward**
- **Won't talk**
- **High temperature**
- **Skin flushed**

Severe

FIRST AID

- **DO NOT** examine child's throat – this may cause complete blockage.
- Calm and Reassure.
- Symptoms are often worse if child is upset.
- Seek medical aid.

Call ☎

- Comfort, reassure
- Sit upright on your lap.
- Lots of tender loving care until ambulance arrives.

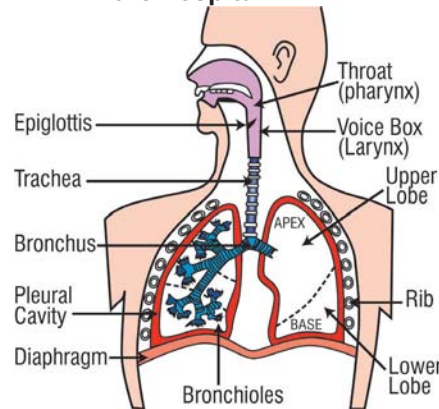
Croup: Viral infection affecting upper airways in infants and children < 5 yrs. Slow onset, usually follows a cold or sore throat and lasts 3-4 days. Can also affect adults.

Epiglottitis: Bacterial infection of the epiglottis (flap above the vocal cords) causing **upper airway obstruction**. It occurs in the **4 - 7 yr** age group and has a rapid onset over 1-2 hrs.

This is an emergency and requires urgent ambulance transport to the hospital.

Doctors find it difficult to clinically differentiate between 'Croup' and 'Epiglottitis' - further tests are usually required.

- Call ☎ if you are not sure



Faint

Fainting is a sudden, brief loss of consciousness caused by lack of blood flow to the brain with full recovery. It often occurs in hot conditions with long periods of standing; sudden postural changes (eg from sitting to standing); pregnancy (lower blood pressure); pain or emotional stress (eg sight of blood). There could be underlying causes, which may need medical assessment.

SIGNS & SYMPTOMS

- Dizzy or light headed.
- Nausea
- Sweating
- Return of consciousness within a few seconds of lying flat.
- Pale and sweaty
- Mild confusion or embarrassment.

FIRST AID

- Lie casualty flat
- Pregnant woman turn onto left side.
- Recovery position if unconscious > few secs.
- **DO NOT** give food or drink to unconscious.
- Check for other injuries.
- Advise casualty to seek medical assessment

Seizure/ Epilepsy A seizure is caused by abnormal electrical activity in the brain. Types of seizure include brief lapses of attention (absence seizure) trance-like wandering (partial-complex seizure) and rigidity followed by jerking (tonic-clonic seizure). A seizure can occur in a person with • **Epilepsy** • **Head Injury** • **Stroke** • **Meningitis** • **Fever** (febrile convulsion) • **Hypoglycaemia** (diabetics) • **Poisoning** • **Alcohol** and • **Drug Withdrawal**.

SIGNS & SYMPTOMS

Tonic-Clonic Seizure

- Aura (warning sign: eg abnormal taste, smell, sound or sight).
- Cry out or make moaning sound.
- Collapse and momentary rigidity (tonic phase – lasts few secs).
- Eyes may roll upwards or stare.
- Jerking movements of body (clonic phase – lasts few mins).
- Blue discolouration of face/ lips
- Excessive salivation
- Tongue biting may result in blood stained saliva.
- Loss of bladder or bowel control.
- Breathing ceases – resumes once seizure finishes.
- Drowsiness and lethargy follows.

FIRST AID

- Protect from harm – remove dangerous objects or protect head with cushion/ pillow.
 - Note the time.
 - AVOID restraining unless this is essential to avoid injury.
 - DO NOT put anything into casualty's mouth.
 - Roll into Recovery position as soon as possible.
 - Monitor Vital Signs (pg 52, 56).
 - Reassure casualty and allow to sleep under supervision at end of seizure.
 - **Call ☎ if:**
 - Seizure lasts longer than 5 mins.
 - Another seizure quickly follows.
 - Casualty is pregnant or has diabetes.
 - Seizure occurred in water.
 - This is casualty's first ever seizure.
 - Casualty is injured or you're in doubt.
- A person known to have epilepsy may not require ambulance care and may get upset when one is called.**



Febrile Convulsion

(Normal body temperature = 37°C)

Febrile convulsions are associated with a high body temperature (>38°C). It is the rate of rise in temperature, not how high it gets, which causes the convulsion. They occur in 3% of all children **between the age of 6 mths and 6 yrs.**



- Protect from harm
- Place in recovery position after seizure stops
- Remove excess clothing

SIGNS & SYMPTOMS

- (Similar to epilepsy + fever)
- Fever
 - Skin hot, flushed
 - Eyes roll up
 - Body stiffens
 - Back and neck arches
 - Jerking of face, limbs
 - Frothing at mouth
 - Blue face and lips
 - Lethargy follows

FIRST AID

- Manage as for 'Seizure/ Epilepsy'.
- **PLUS:**
- Remove excess clothing
- Apply cold compress to forehead
- DO NOT allow shivering to occur
- DO NOT put in cold bath

Diabetes

- Diabetes is an imbalance between glucose and insulin levels in the body.
- The imbalance may result in **Hypoglycaemia (Low blood sugar)** or **Hyperglycaemia (High blood sugar)**. Both conditions, if left untreated, result in altered states of consciousness which are medical emergencies.

SIGNS & SYMPTOMS - Both conditions share similar signs and symptoms:

- **Appear to be drunk (Dizzy, drowsy, confused, altered level of consciousness)**
- **Rapid breathing** • **Rapid pulse** • **Unconscious**

DIFFERENCES	HYPoglycaemia (LOW)	HYPERglycaemia (HIGH)
	<ul style="list-style-type: none"> • Pale, cold sweaty skin • Fast progression • Hunger • Trembling • Weakness • Seizure 	<ul style="list-style-type: none"> • Warm, dry skin • Slow progression • Acetone smell on breath (nail polish remover) • Thirst • Passes urine frequently • Nausea and vomiting • Abdominal Pain

- The most common type of diabetic emergency is Hypoglycaemia.
- Hyperglycaemia is not common, as its slow onset allows diabetics to take corrective measures.

FIRST AID

Both conditions (**Hypo and Hyperglycaemia**) are managed the same way by first aiders.

Conscious:

- Give sweet drink/ food: 5-7 jelly beans, 2-4 teaspoons of sugar or honey, glass of fruit juice (not diet or low sugar type).
- **Repeat** if casualty responds
- On recovery assist with **high carbohydrate** food: sandwich, few biscuits, pasta or rice meal.
- Call ☎ if no improvement within a few minutes of giving sugar (could be hyperglycaemia or another medical condition).

Unconscious:

- Place in recovery position
- Call ☎
- DO NOT administer insulin – could be fatal
- GIVE NOTHING by mouth



Fruit Juice

Sugar

Jelly Beans

Hypoglycaemia can occur if a person with diabetes:

- Takes too much insulin
- Fails to eat adequately
- Over-exercises ie burns off sugar faster than normal
- Becomes ill – viral infection eg. diarrhoea and vomiting
- Experiences great emotional stress

The reason sugar is given to diabetics with an altered state of consciousness is that most will be **hypoglycaemic**. The symptoms of hypoglycaemia progress more rapidly and must be addressed quickly.

If the casualty is **hyperglycaemic**, the small amount of sugar given by a first aider will not significantly raise blood sugar levels and will do no harm.

Don't give diet or diabetic food/ drink which contains artificial sweetener – this doesn't correct low blood sugar.

☎ means call your country's emergency number

Stroke

The blood supply to part of the brain is disrupted, resulting in damage to brain tissue. This is caused by either a blood clot blocking an artery (cerebral thrombosis) or a ruptured artery inside the brain (cerebral haemorrhage). The signs and symptoms of a "stroke" vary, depending on which part of the brain is damaged.

SIGNS & SYMPTOMS

- Confusion or dazed state
- Headache
- Unequal-sized pupils
- Blurred vision
- Drooping of one side of face
- Slurred speech
- Difficulty swallowing - drool
- Weakness or paralysis affecting one side of body.
- Loss of balance
- Incontinence of bladder/ bowel.
- Seizure
- Unconsciousness

FAST is a simple way of remembering the signs of a stroke:

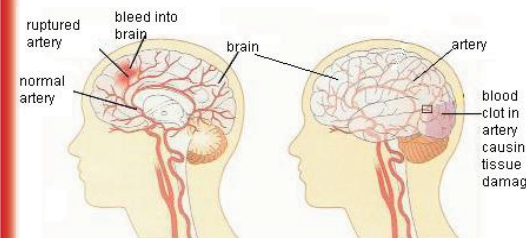
- **F**acial weakness – Can the casualty smile? Has their mouth or eye drooped?
- **A**rm weakness – Can casualty raise both arms?
- **S**peech – Can casualty speak clearly and understand what you say?
- **T**ime to act fast - Call ☎

FIRST AID

- If casualty fails one of the **FAST** tests, act fast and **Call ☎**
- Adopt position of comfort
- Reassure
- Recovery position if unconscious
- Maintain body temperature
- Give oxygen if available
- Monitor Vital Signs (pg 52, 56)

New drugs and medical procedures can limit or reduce damage caused by a stroke. Therefore, prompt action is essential for optimum recovery.

TIA (Transient Ischaemic Attack) is a mini-stroke with signs and symptoms lasting < 60 mins. The risk of a stroke subsequent to a TIA is high, therefore early recognition and treatment is vital.



Cerebral haemorrhage

Cerebral thrombosis

Hyperventilation

Hyperventilation syndrome is the term used to describe the signs and symptoms resulting from stress-related or deliberate **over-breathing**. The increased depth and rate of breathing upsets the balance of oxygen and carbon dioxide which results in diverse symptoms and signs.

SIGNS & SYMPTOMS

- Rapid breathing
- Light-headedness
- Tingling in fingers and toes.
- Blurred vision
- Spasms in hands and fingers.
- Severe Anxiety
- Chest discomfort
- Rapid pulse

FIRST AID

- Calm and Reassure.
- Encourage slow regular breathing - count breaths aloud.
- Seek medical aid – exclude other medical condition.
- **DO NOT** use a bag for rebreathing.

NB. Other conditions

which may present with rapid breathing:

- Asthma attack
- Heart failure
- Heart attack
- Collapsed lung
- Embolus (clot) in lung
- Diabetes
- Some poisons

Heat Exposure

Normal body temp = 37°C

Heat Exhaustion: occurs when the body cannot lose heat fast enough. Profuse sweating occurs in an effort to lower body temperature but this leads to fluid loss and decreased blood volume (mild shock). If not treated quickly, it can lead to heat-stroke.

Heat Stroke: occurs when the body's normal cooling system fails and the body temperature rises to the point where internal organs (eg brain, heart, kidneys) are damaged: Blood vessels near the skin's surface dilate in an attempt to release heat, but the body is so seriously dehydrated that sweating stops (red, hot, dry skin). Consequently, the body temperature rises rapidly because the body can no longer cool itself. This is a life-threatening condition.

Heat Exhaustion

(Mild – Moderate Hyperthermia)

- Body Temp 37°C – 40°C

Organs cook at 42°C

Heat Stroke

(Severe hyperthermia)

- Body Temp > 40°C

SIGNS & SYMPTOMS

- Sweating
- **Pale, cold, clammy skin**
- Headache
- Muscle cramps
- Thirst
- Fainting
- Nausea
- Rapid pulse

(Onset of mild shock due to fluid loss (pg 14))

SIGNS & SYMPTOMS

- **NO Sweating**
 - **Red, hot, dry skin**
 - Nausea and vomiting
 - Visual disturbances
 - Irritability/ confusion
 - Staggering/ unsteady
 - Seizures
 - Unconscious
- Profuse sweating may occur

FIRST AID

- Move casualty to cool, **shaded, ventilated area.**
- **Lie flat with legs elevated.**
- Loosen and remove **excess clothing.**
- **Cool by:** •fanning •spraying with water •applying wrapped ice packs to neck, groin and armpits •draping wet sheet over body and fanning.
- Give **cool water** to drink if fully conscious.
- Seek medical help or
- Call 📞 if in doubt

Heat radiates from the body, especially the head into the surrounding air

During breathing, cold air is inhaled and warm air is exhaled

Heat is lost through evaporation (sweat) on the skin

Heat is conducted from the warm body to a cold object

Heat is lost through convection ie warm air around the body is replaced with cold air - worse on windy days



Heat Exhaustion and Heat Stroke are usually caused by over-exertion in hot, humid conditions with poor fluid intake.



Frost bite

Body heat can be lost quickly in high, exposed areas

Cold Exposure

Exposure to cold conditions can lead to **hypothermia** (generalised cooling of the body) or **frostbite** (localised cold injury).

Hypothermia: is a condition where the body temperature drops **below 35°C**

- Hypothermia can be mistaken for drunkenness, stroke or drug abuse.
- Suspect hypothermia when conditions are **cold, wet and windy**, especially in the young and **elderly** or individuals under the influence of **alcohol** or **drugs**.
- As the core body temperature drops, so does the metabolic rate which means the cells require less oxygen. Hypothermia protects the brain from the effects of hypoxia so resuscitation should be continued until the casualty can be rewarmed in hospital.

MILD Hypothermia 35° – 34°C

- Maximum shivering
- Pale, cool skin, blue lips
- Poor coordination
- Slurred speech
- Apathy and slow thinking
- Irritable or confused
- Memory loss

MODERATE Hypothermia 33° – 30°C

- Shivering ceases
- Muscle rigidity increases
- Consciousness clouded
- Slow breathing } hard to detect
- Slow pulse }

SEVERE Hypothermia <30°C

- Unconscious
- Cardiac arrhythmias
- Pupils fixed and dilated
- Appears dead
- Cardiac arrest

FIRST AID

- Call 📞
- Seek **shelter** – protect from wind chill.
- Handle **gently** to avoid heart arrhythmias.
- Keep **horizontal** to avoid changes in blood supply to brain.
- Replace wet clothing with dry.
- Wrap in **blankets**/ sleeping bag or space blanket and cover head.
- Give **warm, sweet drinks** if conscious.
- IF NOT SHIVERING:
- Apply **heat packs** to groins, armpits, trunk and side of neck.
- **Body-to-body** contact can be used.
- IF UNCONSCIOUS:
- **DRSABCD** (pg 3) - Check breathing/ pulse for **30- 45 secs** as hypothermia slows down everything.
- If **no signs of life** – commence CPR while re-warming casualty.

Frostbite: is the freezing of body tissues and occurs in parts exposed to the cold.

SIGNS & SYMPTOMS • White, waxy skin • Skin feels hard • Pain or numbness

FIRST AID

- Seek shelter • Treat hypothermia before frostbite • Gently remove clothing from affected area • Rewarm affected area with body heat - place in armpit (**rewarming can be very painful**) • DO NOT rub or massage affected area – tiny ice crystals in tissue may cause more damage • DO NOT use radiant heat • DO NOT break blisters
- **NEVER** thaw a part if there is any chance of it being re-frozen. Thawing and refreezing results in far more tissue damage than leaving tissue frozen for a few hours.

Bites/ Stings

LAND ANIMALS	TYPE	FIRST AID
FATAL	Snakes	Pressure Immobilisation Technique (PIT) (see next page for PIT)
	Funnel web Spiders	
	Red back spiders/ others	COLD COMPRESS/ ICE PACK
	Bees	
	Wasps	
	Scorpion	
	Ants	



Red Back Spider

SEA CREATURES	TYPE	FIRST AID
FATAL	Sea Snakes	Pressure Immobilisation Technique (PIT) (see next page for PIT)
	Blue-Ringed Octopus	
	Cone Shell	
	Box Jelly Fish Irukandji Jelly Fish	VINEGAR Liberally apply vinegar for 30 secs (vinegar neutralises stinging cells) then pick off tentacles. If no vinegar available, pick off tentacles with fingers (not harmful to rescuer) rinse with SEAWATER. Do not use fresh water because it can cause stinging cells to discharge.
	Bluebottles	Do not use vinegar for Jelly Fish stings outside tropical waters.
	Fish Stings: Stingray	HOT WATER - Use cold compress if no pain relief with hot water
	: Stonefish	
	: Bullrouts	

Potentially Fatal Bite/ Sting:



Snakes



Funnel web Spider



Blue-Ringed Octopus



Cone Shell

SIGNS & SYMPTOMS: similar for all 4 species with death from **Respiratory Arrest** within minutes to hours.

- **Painless bite** • Droopy eyelids • Blurred vision • Difficulty speaking and swallowing
- Breathing difficulties • Abdominal pain • Nausea and vomiting • Headache
- Tingling/numbness around mouth • Profuse sweating • Copious salivation • Collapse

FIRST AID:

- DRSABCD
- Rest and reassurance
- Call ☎
- Pressure Immobilisation Technique
- Resuscitation if needed, takes priority over PIT
- DO NOT wash bite site (land animals)
- DO NOT suck venom from a bite
- DO NOT cut or incise bite site
- DO NOT use a tourniquet (pg 12)
- DO NOT kill animal – identification of species is made from venom on skin.

☎ means call your country's emergency number

Bites/ Stings



(Both found in tropical waters)

Box Jellyfish



Irukandji Jellyfish

SIGNS & SYMPTOMS

- Severe **immediate skin pain**
- **Frosted pattern** of skin marks
- Collapse
- **Cardiac Arrest**
(Anti-venom available)

SIGNS & SYMPTOMS

- **Mild sting** followed 5-40 mins later by:
- Severe **generalised pain**
- Nausea, vomiting, sweating
- Collapse /**Respiratory arrest**
(No anti-venom)

FIRST AID

- DRSABCD • Remove casualty from water • Call ☎ • Reassure • AVOID rubbing sting area
- Flood sting with **VINEGAR** for 30 secs • If no vinegar–pick off remnants of tentacles and rinse with seawater (**NOT freshwater**) • If unconscious, commence CPR

Non-Serious Bite/ Sticks:

Fish stings: • Sharp barb • Painful wound • Bleeding • Place wound in hot water

Red Back Spider: • Intense local pain at bite site • Not life-threatening • Apply cold pack

Bee/Wasp/ Ant/ Tick: • Localised pain at site (tick bite not painful) • Remove insect from skin and move casualty to safe area • Immediately remove sting or carefully remove tick

- Apply cold pack • If casualty has a history of allergy, follow anaphylaxis plan (pg 33)
- Refer casualty to hospital if stung on face or tongue

Pressure Immobilisation Technique (PIT): This method is used to treat a variety of bites and stings: • Snake • Funnel web spider • Blue-ringed octopus • Cone shell



1. Apply a pressure bandage over the bite area (firm enough NOT to easily slide a finger between bandage and skin).

- **DO NOT** wash bite site
- Mark "X" over bite site

(If only one bandage available: start from fingers/ toes and wind as far up limb as possible covering the bite).

2. Apply a **second bandage** from fingers or toes extending upwards covering as much of limb as possible.

- Bandage over the top of pants/ shirts as undressing causes unnecessary movement
- Mark "X" over bite site

3. **Splint** the bandaged limb, including joints either side of bite site.

- Rest casualty and limb.
- **DO NOT** elevate limb.
- Bring transport to casualty
- Check circulation (pg 11)
- **DO NOT** remove bandage and splint once it has been applied.

PIT (Pressure Immobilisation Technique) slows the lymph flow and inactivates certain venoms by trapping them in the tissues.

Poisons A **poison** is any substance which causes harm to body tissues. A **toxin** is a poison made by a living organism (eg animal, plant, micro-organism). A **venom** is a toxin which is injected by a fang or sting (eg snake, spider, fish).



13 11 26 - Poisons Information Centre Free Call, 24/7, Australia wide.

Poisons can be **ingested (swallowed)**, **absorbed**, **inhaled** or **injected**. The effect of a poison will depend on what the substance actually is and how much has been absorbed.

Ingested: *Swallowed* substances can be broadly categorised into '**corrosive**' eg dish washer detergents, caustics, toilet/ bathroom cleaners and petroleum or '**non-corrosive**' eg plants, medications (tablets/ liquids) and illicit drugs. Some drugs make people drowsy or unconscious, others can cause panic or aggression others cause dangerous dehydration.

Adverse drug experience - ('bad trip') indicated by confusion, hallucination, overcome by crowds, possibly violent. Keep yourself safe, seek assistance. **To help:**

- Stay calm yourself and talk calmly • Reassure the person
- Rest the person • Reduce stimuli, move slowly, take to a quiet place • Encourage happy, positive, simple thoughts.

SIGNS & SYMPTOMS of a corrosive substance:

- Pain in the mouth/ abdomen
- Burns to lips/ mouth • Nausea/ vomiting • Tight chest • Difficulty breathing • Sweating • Unconscious

- If rescue breathing is required, wipe away any contamination from around the mouth.
- Use a resuscitation mask if available.
- DO NOT use **Syrup of Ipecac** to induce vomiting unless advised by Poisons Information Centre.

Absorbed:

Chemical splash from eg pesticide, weed killer.

FIRST AID

- DO NOT become contaminated yourself – wear gloves, goggles, protective clothing.
- Ask casualty to remove all contaminated clothing.
- Flood affected area with running water • Seek medical advice if required

Inhaled: Toxic fumes from gas, burning solids or liquids. Inhaled poisons include: carbon monoxide (car exhausts); methane (mines, sewers); chlorine (pool chemicals, cleaning products); fumes from paints, glues, and industrial chemicals.

SIGNS & SYMPTOMS

- Breathing problems • Headache
- Nausea • Dizziness • Confusion

Injected: As a result of a bite or sting (pg 30, 31) or may be injected with a needle. The most common type of drug overdose via injection are narcotics which cause respiratory depression (slow breathing), respiratory arrest (no breathing) or unconsciousness. **Seek urgent medical assistance if breathing is slow or abnormal.** The most common injection sites are: hands, feet, crease of elbow, between toes and fingers. NB. Narcotic users may be carriers of Hepatitis B, C, and/ or HIV (AIDS).

FIRST AID

- Identify type and quantity of poison (from container/ bottle).
- Establish the time of poisoning.
- DO NOT induce vomiting *unless advised*.
- DO NOT give anything by mouth unless advised.
- Drinking too much water can cause serious problems

FOR ALL POISONING:

- DRSABCD
- What? When? How Much?
- Call Poisons Information Centre for advice or Call 📞
- Monitor Vital Signs (pg 52, 56)
- Send any containers and/ or suicide notes with casualty to hospital.
- Send any vomit with casualty to hospital.

FIRST AID

- Move casualty to fresh air
- Loosen tight clothing
- Give oxygen if available & trained
- Call 📞

Allergy/ Anaphylaxis Anaphylaxis is a life-threatening allergic reaction which can be triggered by **nuts** (especially peanuts), **cow's milk**, **eggs**, **wheat**, **insect stings/bites** (bee, wasp, ant, tick), **fish**, **shellfish**, and certain **drugs** (eg Penicillin). The airways rapidly swell and constrict, interfering with **breathing**, and the blood vessels widen, leading to **shock** (pg 14). Casualties need an immediate injection of adrenaline. People who know they are at risk may wear a **medical alert bracelet** and carry their own injectable adrenaline.

FIRST AID

- Lay casualty flat, do not stand or walk. If breathing is difficult allow to sit
 - Give adrenaline (record time adrenaline was given)
 - **Call 📞**
 - Administer oxygen if available
 - Give asthma reliever medications for breathing difficulties (pg 23)
 - Further adrenaline should be given if no improvement after 5 mins
 - Collapse or unresponsive - **DRSABCD** (pg 3).
- If in doubt give the autoinjector*

SIGNS & SYMPTOMS

Can be highly variable and may include:

Mild to moderate Allergic reaction:

- Swelling of lips, face, eyes
- Hives or rash (red, itchy)
- Tingling mouth
- Abdominal pain, vomiting (severe if reaction to insects)

Severe Allergic Reaction (Anaphylaxis):

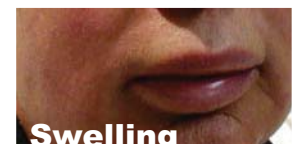
Mild allergy may not precede anaphylaxis

- Difficult/ noisy breathing
- Wheeze or persistent cough
- Difficulty talking/ hoarseness
- Swelling/tightness in throat
- Persistent dizziness
- Pale and floppy (young child)
- Collapse or unconsciousness

Use adrenaline when symptoms become severe. EpiPen and Anapen are auto-injecting pens containing a measured dose of adrenaline (Epinephrine). It can take only **1- 2 mins** for a mild allergic reaction to escalate to anaphylaxis.



Hives



Swelling

How to Use an EpiPen:



Form fist around EpiPen and pull off blue safety-release.



Push orange end hard into outer thigh so it clicks and hold for 10 secs
Remove EpiPen and massage injection site for 10 secs

NB. When the orange needle end is withdrawn from the thigh, the needle is automatically protected.

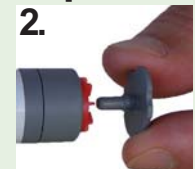
How to Use an Anapen:



Pull off Black needle shield.



Place needle end firmly against outer mid-thigh (with or without clothing)



Pull off grey safety cap from red button.



Press red button so it clicks and hold for 10secs.
Remove Anapen and massage injection site for 10secs

BEWARE of needle protruding from end after use.

Why Asthma is Dangerous

The extra mucus that is produced during an asthma attack, can form a mucus plug in the air sacs (alveoli) in the lungs. The mucus plug **prevents the casualty from exhaling**. This causes dangerous levels of CO₂ (carbon dioxide) in the lungs and blood which leads to acidosis. **Acidosis is life threatening and needs advanced medical management, in hospital.** When a person's asthma can't be controlled with reliever medication it is critical that they receive urgent hospital care before carbon dioxide levels build to an irreversible level.

Asthma Medications & Devices

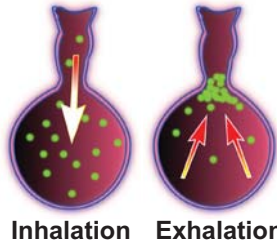
EMERGENCY	Blue, Blue/Grey	Relievers		Metered Dose Inhaler = "puffer"
		Names	Salbutamol brands are Ventolin, Airomir, Asmol. Terbutaline brand is Bricanyl.	
		Speed	Fast acting.	
		Purpose	Relax airway muscles.	
NOT FOR EMERGENCY	Orange, Brown	Device	Ventolin & Asmol Puffer. Airomir Autohaler. Bricanyl Turbuhaler*	
		Preventers		
		Names	Brands include: Flixotide, Pulmicort, Qvar, Alvesco, Tilade, Intal Forte, Singulair	
		Speed	Slow acting. Can take weeks for full effect.	
	Green	Purpose	Reduces the sensitivity to asthma triggers.	
		Device	Puffer, Accuhaler, Turbuhaler, Tablet.	
		Symptom Controllers		
		Names	Oxis and Serevent	
	Purple	Speed	Slower acting than relievers. About 30 minutes.	
		Purpose	Relax airway muscles lasts up to 12 hours.	
Device		Turbuhaler, Accuhaler		
Combination Medication Preventer plus a Symptom Controller				
Adult use only	Red & White	Name	Seretide	
		Speed	Slower acting	
		Purpose	Prevention plus control of symptoms	
		Device	Accuhaler or MDI (Puffer). Taken twice a day.	
	Combination Medication Can be used in emergency for ADULTS			
	Red & White	Name	Symbicort	
		Speed	Reliever is fast acting	
Red & White	Purpose	Prevention plus control of symptoms		
	Device	Turbuhaler* or MDI (Puffer).		
Red & White	Red & White	Symbicort may be used for casualties over 12, when prescribed. Max 6 doses at a time. Max 12 doses per day of Symbicort#.		
		CAUTION		

SMART action plan for Symbicort use as a reliever is available from Asthma Foundation

Spacers

- Help medication to reach the lungs.
- Protect the throat from irritation.
- Help coordinate breath with puff.

Diagram shows how CO₂ is trapped in the lungs during an asthma attack.



Inhalation Exhalation



Children may need a spacer with a mask

* Turbuhaler needs sharp "in-breath". This may not be possible in emergency

Note: Spacers are for **single person use** only. Once used from a first aid kit they need to be replaced. Used spacer can be given to casualty. **Personal spacers** should be washed every month. Use warm soapy water; air dry; do **not** rinse.

Asthma in the workplace - some occupations have higher risks of asthma

Occupational Asthma (OA) People affected:

- **Flour, dust:** (cooks, bakers, farmers)
- **Sawdust:** (builders, carpenters)
- **Animals:** (vets, lab technicians)
- **Detergents:** (cleaners)
- **Resins, solvents, solder:** (repairers, builders, electricians, Spray painters)

Managing Workplace Asthma - How to reduce the risk

- PPE (Personal Protective Equipment)
- Re-deploy workers to lower risk area or duties
- Have Emergency Asthma Kit available at first aid station
- Keep filters clean
- Seek less toxic alternatives
- Provide emergency asthma management training



Manage asthma in aged care

How to help people with asthma who have special needs and circumstances

- **Wheelchairs.** Keep person in wheelchair; upright as possible. (Unconscious - DRSABCD)
- **In-bed asthma attack.** Raise the bed head or use pillows or cushions to support upright.
- **In shower or bath.** Maintain client in bath or shower (on seat if possible) support sitting up. Empty the bath water. Keep client warm. Preserve client's dignity - cover.
- **Communication difficulty.** Use communication aids to reassure and to give explanations.
- **Intellectual disability.** Develop and maintain regular routines.



Exercise Induced Asthma (EIA)

At rest breathing is mostly through the nose. During exercise, air is breathed through the mouth and air that enters the lungs is colder, dryer and unfiltered. These factors can trigger an asthma attack.

Exercise is an excellent activity for everyone including asthmatics as it helps to improve overall health and lung function. Exercise is one trigger that should not be avoided. Therefore it is important to manage EIA so people with asthma can continue to participate in most sports.

Managing EIA

- Take reliever 5-20 minutes before exercise
- Warm-up before exercise
- Warm-down after exercise
- Always carry blue reliever medication in case needed
- Tips for coaches:**
 - Use the "2 Strikes - You Are Out" rule (If symptoms occur during match: Stop playing & take reliever. Resume activity if symptom free. If symptoms recur: take reliever, do not play again on same day.)
 - Get whole team to warm-up / warm-down
 - Asthma training for coaches and first aiders
 - Display asthma posters and brochures in club rooms
 - Check with Australian Sports Anti-Doping Authority¹ for info on banned medications

¹ Australian Sports Anti-Doping Authority (ASADA) <http://www.asada.gov.au/substances/>



Allergy/Anaphylaxis Facts

Anaphylaxis is the most severe form of allergic reaction. Anaphylaxis can cause symptoms such as swelling of the tongue and throat and this can lead to breathing difficulties. Many substances can cause anaphylaxis, but the most common are **Food, Medicine and Insects. Anaphylaxis is a medical emergency.**

Causes of death from anaphylaxis

- 60% medications
- 20% insects
- 10% unknown
- 5% food
- 5% other (latex, hair dye, etc)

Medications:



Anaesthetics and injected medications such as antibiotics are the most common drugs to cause anaphylaxis.

Some over-the-counter medications such as aspirin and anti-inflammatories (NSAIDs) can cause anaphylaxis. Some alternative and complementary medicines are based on bee products and flowers that are known allergens.

Food: Food is the most common cause of anaphylaxis in **children**



Any food can cause anaphylaxis but these 9 Foods are the most common

- Peanuts • Dairy • Sea Food • Shell Fish
- Tree Nuts • Gluten • Soy
- Sesame Seeds • Eggs

What does all this mean? Most allergic reactions do not cause death. However when anaphylaxis is **life threatening** it develops very rapidly and requires immediate treatment with adrenaline. First Aiders and carers must learn to identify signs of anaphylaxis and be prepared to act quickly

Anaphylaxis Facts - Australia

- Allergies in Australia are very common, affecting about 1 out of 5 people.
- Death from anaphylaxis is rare.
- About 12 die each year from anaphylaxis
- Most allergic reactions are NOT life threatening but...
- IF anaphylaxis is fatal then death usually occurs very soon after contact with the trigger.
 - < 5 min after injected medication
 - < 15 min after insect stings
 - < 30 min after food

Insect stings/ticks:

Ants, Bees and Wasps are the most likely insects to cause anaphylaxis. Ticks also cause anaphylaxis in some people; most reactions to tick occur when attempting to remove the tick.

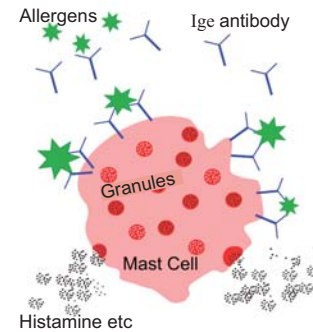


See ASCIA for info on ticks: www.allergy.org.au

means call your country's emergency number

About Anaphylaxis

There are two basic categories of anaphylaxis: **Ige mediated and idiopathic.** Ige mediated anaphylaxis is a result of the immune system releasing large quantities of histamine and other chemicals which causes the typical signs of anaphylaxis. Idiopathic anaphylaxis is not fully understood, but also causes severe life threatening reactions.



What happens in an anaphylactic reaction?

- **The first time** an allergy prone person runs across an allergen (peanuts for example), their immune system produces large amounts of **peanut Ige antibody**. As a result of this their body is sensitised to peanuts.
- These Ige molecules attach themselves to mast cells.
- **The second time** this person comes into contact with peanuts, the peanut Ige antibodies trigger the mast cells to release granules of powerful chemical mediators, such as histamine and cytokines into the blood stream
- These chemical mediators (histamine etc) cause
 - Vasodilation
 - Fluid loss into tissues
 - Smooth muscle contraction
 - Increased mucus secretion
- This causes the common anaphylaxis signs & symptoms
 - Redness, rashes and welts
 - Swelling, chest tightness and breathing difficulties
 - Shock
 - Cardiac arrest

What does adrenaline do?

Adrenaline:

- Reverses vasodilation
- Reduces swelling
- Increases heart output
- Eases breathing difficulties
- **Prevents mast cells from releasing chemicals**

Give Adrenaline Early

- If the mast cell response is slowed down *quickly*, with **early** use of adrenaline, the amount of histamine and mediators released by the mast cells is greatly restricted, to the point where adrenaline can effectively reverse the effects these chemicals have.
- Otherwise the combined effects of vasodilation and oedema (fluid leaking into the tissues) can result in severe shock leading to cardiac arrest.
- The first signs of mild and severe anaphylaxis can look the same.
- It is very important to give the adrenaline autoinjector if the signs and symptoms of the casualty suggest anaphylaxis.
- If you are in doubt - give the autoinjector.
- **Call** . The reaction could return when the effects of adrenaline wear off after about 20 minutes

What is an autoinjector? Autoinjectors contain a pre-measured dose of medication. When activated, a spring fires a needle and all the medication is pushed out. **Each Autoinjector can only be used once.**

EpiPen & Anapen are different BRANDS of autoinjector. Both brands contain adrenaline. Each brand **has different operating instructions!** It is much better to take a few seconds to read the instructions and administer the medication correctly than to rush and make mistakes in a panic. In the past rescuers have injected themselves. Don't make the same mistake.



Read the instructions first.

Manage Anaphylaxis Risks

There are four sectors that need to consider the risks of anaphylaxis.

1. **Children in care.** This includes, Long Day Care, Kindergarten, Pre-school, Out-Of-School-Hours Care (OOSH), Family Day Care.
2. **Schools.** Primary and Secondary
3. **Workplaces.** All workplaces, including the workers in child care employment.
4. **Voluntary organisations, especially those working with minors.** This includes Sporting Clubs, Youth Groups eg Church Group, Scouts/Guides, Bike Clubs etc.

Each of these sectors should have an **anaphylaxis policy** and an **anaphylaxis management plan** (pg 53) and communication plan (pg 45) in place. For the **Child Care** sector there are stringent legal requirements that impose obligations on the child care centres, the employees and the parents.

Voluntary Organisations - Duty-of-Care

Generally voluntary organisations have a duty-of-care responsibility when running activities.

When a duty-of-care relationship exists there is responsibility to

1. Do what a **reasonable** person would do
2. In **similar** circumstances
3. With the same level of **training**



Case study.

- “Billy”, was a member of a local football club and known to be allergic to wasps.
- While playing football “away” from the “home ground”, some wasps were attracted to a plate of cut up oranges.
- Billy was stung on the hand when he ate one of the pieces of orange.
- Billy’s adrenaline autoinjector was in his sports bag, in the dressing room.
- An ambulance was called, and Billy was rushed to hospital.
- The subsequent investigation revealed the football club anaphylaxis policy helped Billy survive.

Organisations should

- Conduct a risk assessment.
- Develop a policy
- Have communication plan



A **Risk Assessment** *should* be part of the planning for every activity. Some risks can be anticipated. For example a child playing sport could have an anaphylactic attack if they were allergic to insect stings.

Example:

- Billy’s club knew he was anaphylactic from questions on the **registration form**.
- The club policy **encouraged** members to “Let People Know”, so Billy’s **team mates** knew about his anaphylaxis and they all knew where his **autoinjector** was located.
- A communication plan was developed which included an **awareness program**.
- Information **posters** for conditions like **anaphylaxis**, asthma, epilepsy and diabetes were on the clubroom notice boards and **articles** were printed in the club newsletter.
- The communication plan made sure **the coach, the trainers and the first aiders** were all aware that Billy was anaphylactic and they were all **properly trained**.
- The policy required that an **Anaphylaxis trained person** was present at every activity.

Anaphylaxis Action Plans

ASCIA has Action Plans and many other resources: www.allergy.org.au

ASCIA is a professional medical organisation, comprised mostly of scientists and specialist doctors in the field of allergy and immunology.

ASCIA provide useful information and resources about Allergy and Anaphylaxis and also produce ASCIA **Anaphylaxis Action Plans**. Action plans provide important information to help all stakeholders reduce the risks of anaphylaxis.

Personal Action Plans should be stored with medication.

They contain:

- **Individual's details** - name, age
- **Emergency contact details**
- **Extra instructions**
- **General signs and symptoms**
- **Doctor's signature** - this is a medical document
- **Instructions for using either Anapen or EpiPen**

Action Plans must be supplied to **child care centres and schools** by the parents* of a child who is diagnosed with Anaphylaxis.

In a **workplace**, although it is not compulsory to provide an action plan in a workplace environment it is strongly recommended and employers should encourage workers to inform first aiders and co-workers about anaphylaxis and other life-threatening conditions so co-workers including first aiders can respond better in an emergency.

Child details
Date of birth

Child photo

What child is Allergic to

Parent/carer Details

Signed by Doctor

Instructions printed on plan and on autoinjector
The mid-outer thigh is the BEST site for FASTEST absorption of medication.

ascia
australian society of clinical immunology and allergy
www.allergy.org.au

ACTION PLAN FOR Anaphylaxis
For use with EpiPen® adrenaline autoinjectors

MILD TO MODERATE ALLERGIC REACTION

- Swelling of lips, face, eyes
- Hives or welts
- Tingling mouth
- Abdominal pain, vomiting (these are signs of a severe allergic reaction to insects)

ACTION

- For insect allergy, flick out stinging if visible. Do not remove ticks.
- Stay with person and call for help
- Locate EpiPen® or EpiPen® Jr
- Give other medications (if prescribed)
- Dose:
- Phone family/emergency contact

Mild to moderate allergic reactions may or may not precede anaphylaxis

Watch for any one of the following signs of Anaphylaxis

ANAPHYLAXIS (SEVERE ALLERGIC REACTION)

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

ACTION

- 1 Lay person flat. Do not allow them to stand or walk. If breathing is difficult allow them to sit.
- 2 Give EpiPen® or EpiPen® Jr
- 3 Phone ambulance* - 000 (AU), 111 (NZ), 112 (mobile)
- 4 Phone family/emergency contact
- 5 Further adrenaline doses may be given if no response after 5 minutes (if another adrenaline autoinjector is available)

If in doubt, give adrenaline autoinjector

After giving adrenaline:

- Commence CPR if there are no signs of life
- Give asthma medication if unsure whether it is asthma or anaphylaxis

EpiPen® is generally prescribed for adults and children over 5 years.
EpiPen® Jr is generally prescribed for children aged 1-5 years.
*Medical observation in hospital for at least 4 hours is recommended after anaphylaxis.

Additional information

Note: This is a medical document that can only be completed and signed by the patient's treating medical doctor and cannot be altered without their permission.

How to give EpiPen®

- 1 Form fist around EpiPen® and PULL OFF BLUE SAFETY RELEASE.
- 2 PLACE ORANGE END against outer mid-thigh (with or without clothing).
- 3 PUSH DOWN HARD until a click is heard or felt and hold in place for 10 seconds.
- 4 REMOVE EpiPen®. Massage injection site for 10 seconds.

Instructions are also on the device label and at www.allergy.org.au/health-professionals/anaphylaxis-resources

This is a sample Anaphylaxis action plan for **EpiPen**.

What to do for mild reaction

What to do for anaphylaxis

If in doubt... give the autoinjector

For privacy, Action Plans should be displayed discreetly to enable rescuers to recognise individuals and their set of signs and symptoms.

The difference between EpiPen Action Plan and an Anapen Action Plan is the instructions on how to use each device

A copy of the Action Plan should be stored with medication.

Throughout this book the word parent includes legal guardian

Assess Hazards and Minimise Risk

Hazard Assessment is required for child care and most other workplaces. Use the matrix to evaluate the consequence of hazards, then develop strategies to reduce the level of risk.

Risk Assessment Matrix		Consequence (C)				
Hazard (eg Anaphylaxis)		1=Slight	2=Minor	3=Moderate	4=Major	5=Severe
		No treatment	1st aid 1 or 2	1st aid >2	Hospital 1 or 2	Death or Hospital >2
Likelihood (L)	5 = Almost certain Is expected during activity	LOW	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	4 = Very Likely Expected more often than not	LOW	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	3 = Likely Will occur on occasion	LOW	MEDIUM	HIGH	HIGH	VERY HIGH
	2 = Unlikely May occur but more likely not to	LOW	LOW	MEDIUM	HIGH	HIGH
	1 = Very Unlikely Practically impossible to occur	LOW	LOW	LOW	LOW	LOW

Risk Assessment for Anaphylaxis				Risk Rating		
Instructions to use this matrix: 1. Look up "Likelihood" score 2. Look up "Consequence" score 3. Read "Risk" from table.				Likelihood Refer matrix above	Consequence Refer matrix above	Risk Refer matrix above
No.	Type	Activity	Hazard			
#1	Child Day Care Centre	BYO Lunches	Children share lunches. Possible contamination.	3	5	VH
2		Cooking activity	Exposure to allergen. "Hidden" ingredient. Accidental cross contamination of ingredients	3	5	VH
3		Excursion	Exposure to trigger, communication difficulties, separation of child from medication.	4	5	VH
4	Workplace	Catering for function	Accidental cross contamination of food platter, supplied by caterers for in-service training	3	3	H
#5		Outdoor worker working alone	Worker allergic to Jack Jumper Ant (JJA) works alone as a meter reader	2	5	H
6		Power line tree clearing	Worker allergic to bees	2	5	H

Risk Rating Table : A risk rating table can be customised to meet needs of an organisation

Risk rating & Action	VERY HIGH	Activity must not proceed while any risk is rated VERY HIGH
	HIGH	Activity can only proceed while any risk is rated HIGH with risk solution approved and signed by Safety Officer and Management (Principal)
	MEDIUM	Risk management plan must be in place before activity begins
	LOW	No further action required

How to use the template to complete risk assessment. Two worked examples of risk assessment. One example in a child care centre and one in a workplace.

1 Sharing lunch, for an anaphylactic child who is allergic to food (eg egg products). After the "strategy" is put in place the residual risk is MEDIUM. The risk rating table (above) shows a MEDIUM risk activity can proceed provided the risk management plan is in place.

5 Working alone outdoors. Although it is unlikely that the worker will get stung, the consequence could be death. The residual risk is still HIGH. The risk rating table shows that HIGH risk "strategy" can proceed but must be approved by the safety officer and manager, to ensure all practicable steps have been taken to control the risk.

Strategy		Residual Risk			Person responsible	
		Likelihood	Consequence	Risk	Name	Done
In schools and child care strategies must be developed in consultation with parents. Each workplace should develop a set of strategies that is suitable for that workplace						
Develop and implement "No Sharing" policy. Eat inside under supervision of staff trained in first aid. Autoinjector in room. Individual Anaphylaxis Plan in room. Send info in newsletter.		2	3	M	Room Coordinator	
Prior notification of activity. Plan menu in consultation with parents to determine safe ingredients/brands. Separate utensils for different foods. Correct labelling & storage of ingredients. Develop and initiate cleaning policy. Invite parents to assist.		1	3	L	Activity Coordinator	
Advise all workers of child's allergy. Ensure medication and copy of emergency action plan is with child. Take mobile phone on activity. Ensure first aider with anaphylaxis training is immediately available. Approved by Parent and Manager.		2	5	H	Activity Coordinator/ Manager	
Use only approved caterer. Advise caterers to prepare food separately, supplied on labelled platters. Nominate person to receive food. Advise all participants of risk and precautions.		2	4	H	Activity Coordinator/ Safety Officer	
Uniform protects ankles. Inspect meters before approaching. Carry mobile phone / radio as required. Establish monitored default SMS reporting. Utilise GPS monitoring. Carry medication on person. Wear medi-alert.		2	5	H	Safety Officer Supervisor	
Advise all co-workers. Medication immediately available. Advise first aiders and supervisor. Isolate worker if bees present. Establish alternative communication path if required.		2	5	H	Safety Officer Manager	

Asthma Risk Assessment

Common Asthma Triggers	Possible Risk Management Strategies
<ul style="list-style-type: none"> Pollens from grasses, trees, shrubs 	Consider removing problem plants around schools, child care centres and work places.
<ul style="list-style-type: none"> Weather Changes especially sudden cold changes; moving from hot to cold. 	Careful planning of night time activities, camps, working overtime, plan for unexpected delays. Preheat rooms.
<ul style="list-style-type: none"> Moulds are affected by wind rain and temperatures. Can be present in garden mulches and wood chips. 	PPE* when gardening, potting or working with mulches. Scheduled cleaning of bathrooms, commercial laundries; use nontoxic cleaners.
<ul style="list-style-type: none"> Animal dander and saliva 	Consult with parents before introducing a "pet" day. Cats, dogs, horses, rodents, even insects, can trigger asthma.
<ul style="list-style-type: none"> Chemicals & cosmetics 	Develop a dress code policy. Avoid highly scented deodorant. Include cleaning staff in communication plan.
<ul style="list-style-type: none"> Foods & Additives 	Have a food policy. Check ALL ingredients, for identified triggers. Alert cooking staff, catering suppliers.
<ul style="list-style-type: none"> Dust & Dust Mites 	Schedule cleaning to reduce dust levels during open times. Vacuum frequently. Use damp cloth for dusting.
<ul style="list-style-type: none"> Exercise is a common asthma trigger and affects about 50% of people with asthma. 	Allow time for people to warm up AND warm down. Aim to control asthma rather than avoid exercise.

Examples using the risk assessment matrix

Child care centre has three children with asthma enrolled. The Asthma management plans supplied to the centre identify triggers: grass pollens; hair spray, cosmetics and food additives (MSG sulphites and salicylates).

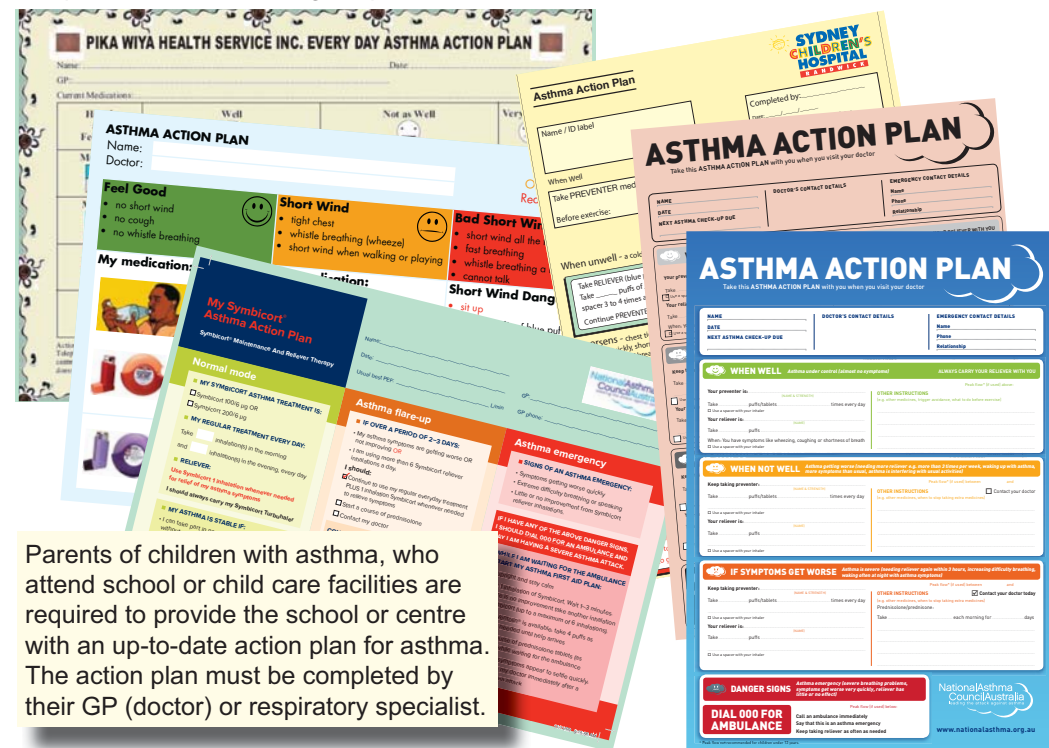
Workplace A factory worker reports asthma being triggered by the floor sanding. The residual risk is HIGH. The risk rating table (pg 41) indicates that the safety officer and management must both approve the strategies before work can proceed.

*PPE = Personal Protective Equipment

Example of Risk Assessment for Asthma				Risk Rating		
No.	Type	Activity, infrastructure or environment	Hazard	Likelihood Refer page 40	Consequence (pg 40)	Risk (pg 40)
1	Child Care	Lawn Mowing	Grass pollens known trigger	4	3	H
2		Hair spray, cosmetics, deodorant, perfumes	Child care workers trigger asthma in sensitive children	3	2	M
3		MSG, sulphites, salicylates	Snack foods and lunches may contain ingredients that trigger asthma	4	3	H
4	Work	Employees triggered by dust	Cleaning and vacuuming disturb dust.	4	4	VH
5		Sanding timber floors	Occupational asthma caused by wood dust	5	4	VH

Asthma Action Plans

Asthma Management Plans and Asthma Action Plans are an integral part of an asthma policy and communication plan. There are a great variety of Asthma Action Plans available. A sample of some of the range is presented here.



Parents of children with asthma, who attend school or child care facilities are required to provide the school or centre with an up-to-date action plan for asthma. The action plan must be completed by their GP (doctor) or respiratory specialist.

Strategy				Residual Risk			Person responsible	
In schools and child care facilities, strategies must be developed in consultation with parents				Likelihood	Consequence	Risk	Name	Done
Arrange for gardening to be conducted on weekends.				2	3	M	Manager	
Perfume and cosmetics policy. Communication plan to ensure all stakeholders notified.				1	2	L	Manager	
Food policy, no sharing policy. Treat alternatives provided by parents. Communication plan.				2	5	H	Coordinator/ Manager	
Communicate with cleaners. Arrange cleaning to be done after work. Budget for carpet replacement with alternative coverings.				2	4	H	Manager/ Safety Officer	
Dust extraction system. PPE. Positive pressure masks.				2	4	H	Safety Officer Supervisor	

Regulations, Codes and Procedures

First Aiders in the workplace need to have **knowledge of** and **comply** with, state and territory **regulations**, first aid **codes of practice** (also called compliance codes) and **workplace procedures**. Often workplace procedures will provide guidelines on how to comply.

Regulations control a wide range of activities in the workplace such as

- qualifications required
- electrical safety
- storage and transport of dangerous goods
- food safety
- transport including school busses
- fire safety

Codes of Practice give approved methods of how to comply with regulations for example the compliance code for first aid

- Lists what to put into in a workplace first aid kit (pg 50) explains how many first aiders are required for workplace
- Describes how to conduct a hazard assessment (pg 40)
- There are many Codes of Practice/Compliance Codes covering a wide range of workplace health and safety issues

Workplace Policy & Procedures are instructions written by an employer on how to perform tasks safely. Some examples of tasks that should have a P&P

- cleaning eg a coolroom
- unloading a delivery vehicle
- use tools eg chain saw
- cleaning an asthma spacer
- changing a nappy
- preparing for an excursion

National Child Care Legislation

Child care first aiders should be aware of the regulations that affect first aid and medications in child care settings. These are regulations 90 to 95.

90 Medical Conditions Policy.

This regulation requires education and care services to have a written policy about medical conditions.

91 Medical conditions policy must be provided to parents.

This policy is very important for children with medical conditions such as asthma, diabetes and anaphylaxis.

93 Administration of medication.

Medication must be authorised. It must be recorded. In an emergency medication can be authorised verbally by parent or if unable to be contacted by a GP or emergency service.

95 Procedure for administration of medication

Medication must be

- Administered from it's original container,
- with child's name on it
- "in date"
- Instructions must be followed.
- The dosage of the medication and
- the identity of the child must be checked by another person (*Family Day Care do not need to check with another person*)

92 Medication Record

This regulation is about medication records which must record the following details:

- Authorisation to administer
- Medication
- Dosage
- Name of child
- Method
- Time and Date
- Name of who administered
- Other person's name (see reg 95)
- Signatures



94 Exception to authorisation requirement— anaphylaxis or asthma emergency. Medication may be administered to a child without an authorisation in case of **anaphylaxis or asthma emergency**. In such case notify parent and emergency services as soon as practicable.

Communication Plans

A **Communication Plan** is an essential part of managing anaphylaxis or asthma risks to **identify-**

- **Who needs to know (the stakeholders)**
- **The roles of each of the stakeholders**
- **What information is needed**
- **How the information will be distributed**
- **Where medication will be located**

A card system can assist children to summon help. The colour of the card, visible from a distance, is sufficient to alert staff.

Medical Alerts communicate to rescuers



In a **factory** the stakeholders will include

- Management
- Union representatives
- First Aid Officers & Safety Officers
- Health & Safety representatives
- Canteen staff / Catering contractors
- Co-workers / Supervisors

Privacy Privacy is important. Personal information must be stored securely. The information can only be revealed to authorised people. The communication plan should explain who would have access to this information. In a school this would include teachers for example. In a workplace this would include first aiders and supervisors. A workplace must provide opportunity for new employees to reveal life threatening conditions during the induction process. The employer must act on the information when it is supplied. An employee may **choose NOT to reveal** anaphylaxis, asthma or other medical conditions. This will be more likely to happen if an employee senses they will be teased or bullied about their condition.

A communication plan should explore ways to **encourage** employees to **inform key people** about medical conditions and explain the benefits of sharing vital information with co-workers. When co-workers know how to use an autoinjector, and know where it is located, they can respond to an emergency more efficiently.

Use notice boards and newsletters to raise awareness about medical conditions in the school, club house or workplace. Employees are more willing to reveal important medical information if they feel the information will be used respectfully, in a supportive environment.

Seek permission

Always seek permission from an employee before passing on medical information that has been provided in confidence. This should be done in writing and to explain **how** the information will be circulated, **why** the information will be circulated and **who** the information will be provided to. This information can be included on the medical form, at commencement of employment.

Stakeholders:

In an **office** environment the stakeholders will include

- First Aiders
- Employers
- Co-workers
- Managers / supervisors
- Caterers

In a **school setting** stakeholders will include

- Carers & Parents
- First Aid Officers
- Teachers (also Relief & Temporary) and Teacher's Aids
- Speciality teachers including Sport, Drama, Music, Cooking and Teachers on Yard Duty
- Food industry staff including canteen and caterers
- Administration, Cleaning staff, Maintenance, and Bus Drivers
- Outdoor Education Staff
- School Camp Providers
- Volunteers
- Other students

Normal clinical values for children

Generally children and infants have different heart rates and respiration rates from adults. These differences vary, depending on many conditions.

In adults it is generally accepted that

- Normal heart rate (at rest) is about **72**
- Normal breathing rate is about **15**
- Normal temperature is about **37°C**.

	Adults	12-5 y	5-1 y	<1 y
Pulse/min	60-100	80-120	95-150	100-180
Breaths/min	12-20	20-25	25-35	40-30
Temp °C	36-37	36-37	36-37	36-37

Table shows approximate range of normal clinical values by age

Children and babies usually have about the same temperature (37°C) as adults

Heart rate (pulse) and breathing rates are fastest in infants and younger children and slow down as the child gets older. One reason **AED's are not recommended for use on infants (under 12 months)** is because the devices are not reliable when checking if the heart rhythm is a normal rhythm. The faster heart rate of infants can cause the AED to give a false reading.



There are a number of other differences between smaller children and adults.

Cartilage in the trachea is not fully developed at birth which means the airway is very soft and pliable and very easy to obstruct.

Infants skull **bones are not fully knitted together**, which can make them more vulnerable to head injury.

Proportionally an infant's **head is much larger** than an adult. A baby's head is nearly 20% of total body surface area, while an adult head is only about 10%. A burn to an infant's face is even more serious than a burn to an adult face.

Infants do not have fully developed **temperature regulatory systems** which means infants are more susceptible to hypothermia and hyperthermia. Children can become dehydrated very quickly, especially if they are vomiting or have episodes of diarrhoea.



AED* for child care (Defibs)

Defibs can be used on a casualty who is unconscious and not breathing normally and who is over the age of 8 years old.

For children **under 8**, use with paediatric (child) pads *if available*. If child pads are not available use adult pads. If the pads cannot be placed without touching each other, position one pad on the front of the casualty's chest and the other pad on the back of the chest. Some defibs automatically adjust the size of the shock to the size of the casualty. Check manufactures instructions.

Do not use defibs on infants (under 12 months). They are not reliable when checking infant heart rhythms.

Care should be taken when purchasing an AED for an education or care setting to select a device that is suitable for the age group.



* AED = Automated External Defibrillator (pg 5)

Understanding Child Care Law

The Australian Commonwealth

Government makes laws that apply to the whole of Australia (for example taxation law.)

State Governments make laws that only apply to a state (for example health or education.)

Local Governments make laws that only apply to a council (for example use of incinerators.)

The **Australian constitution** prohibits the Commonwealth government from passing laws about things not authorised in The Constitution. **Education** and **health** are matters for State legislation.

National Laws are not one single act of the Commonwealth Parliament but are the same legislation passed separately in each state.

Sometimes a proposed National Law conflicts with existing State laws. **An example of this is laws about who can administer an autoinjector.** When there is a conflict then the relevant State may change the wording of the National Law for that particular state.

So even though National Child Care Regulations are intended to be the same across Australia they still vary from state to state. **You need to check what the law is in your state.**



National Child Care Regulations.

Both Commonwealth & State Governments recognised it would be desirable to have uniform child-care regulations across Australia.

The Commonwealth Government does not have legal jurisdiction to create this legislation, so instead, the states used COAG in a cooperative action to pass the same legislation in each of their States. ACECQA was created to coordinate implementation of **National Child Care Legislation**.

Since the introduction of the National Child Care Regulations the Child Care law in all States will now be very similar to other States but may have important differences.



WHO is COAG?

The Council of Australian Governments (COAG) was created to oversee policy reforms which require **cooperative** action by Australian Governments. COAG created the NQF (National Quality Framework) and ACECQA to introduce National Child Care Law and Regulations.

National Child Care Regulations apply to long day care, OOSH, pre-school & family day care but **do not apply to schools**. Regulations for schools are the responsibility of each of the State Education departments.

Victoria's Ministerial Order 90 is a sample of regulations for schools. Other States have similar legislation (pg 44)

WHO is ACECQA? The Australian Children's Education and Care Quality Authority (ACECQA) was created by the COAG to provide national leadership in promoting continuous improvement in early childhood education and care and school age care in Australia.

ACECQA has many resources: www.acecqa.gov.au

Principles of First Aid

What is First Aid? It's the immediate care of an injured or suddenly sick casualty until more advanced care arrives.

The aims of first aid are to:

- **Preserve life** – This includes the life of rescuer, bystander and casualty.
- **Protect from further harm** – Ensure the scene is safe and avoid harmful intervention.
- **Prevent condition worsening** – Provide appropriate treatment.
- **Promote recovery** – Act quickly, provide comfort and reassurance, get help, call ☎.

Helping at an emergency may involve:

- Phoning for help • Comforting casualty or family • Keeping order at an emergency scene
- Administering first aid

There are many ways you can help, but first you must decide to act.

Reasons why people do not help:

- Fear of doing something wrong • Fear of disease transmission • Uncertainty about the casualty • Nature of injury or illness (blood, vomit, burnt skin can be unpleasant) • Presence of bystanders (embarrassed to come forward or take responsibility)

You may need to compose yourself before acting. Do not panic – a calm and controlled first aider gives everyone confidence. If you follow basic first aid procedures, you should deliver appropriate care, even if you don't know what the underlying problem is. Remember, at an emergency scene, your help is needed.

Getting Help:

Call ☎ for ambulance, fire or police. If ☎ from a mobile phone fails, call '112'.

If you ask for 'ambulance' a call taker will ask you the following: • What is the exact **location** of the incident? • What is the **phone number** from which you are calling? • Caller's name • What has **happened**? • **How many** casualties? • Condition of the casualty(s)

Stay calm and respond clearly. The call taker will provide you with first aid instructions and dispatch the ambulance and paramedics. **DO NOT hang-up** until you are told to do so or the operator hangs up first. If a bystander is making the ☎ call, ensure they confirm with you that the call has been made and that the location is exact.

Legal Issues

No 'Good Samaritan' or volunteer in Australia has ever been successfully sued for the consequences of rendering assistance to a person in need. A 'Good Samaritan' is a person acting in 'good faith' without the expectation of financial or other reward. **Duty of care:** In a workplace there is an automatic duty of care to provide help to staff and customers, which means you are required to provide help to your best ability at your work place. In the community, you are usually under no legal obligation to provide first aid. **Consent:** Where possible, always gain consent from the casualty before providing first aid. If the casualty refuses help, you must respect that decision. When the casualty is a child, if feasible seek permission from the parent/ guardian. If the parent/guardian is not present immediate first aid should be given. In a **child care** situation, parents must notify the centre if the child has any medical conditions and also provide medications and instructions. Consent forms are signed at enrolment. In an emergency, parents or a doctor can also provide authorisation over the phone. (see also reg 94 on pg 44) **Confidentiality:** Personal information about the health of a casualty is confidential. This information includes details of medical conditions and treatment provided. First aiders should only disclose personal information when handing-over to medical assistance eg paramedics. **Currency requirements** for first aid skills & knowledge varies between jurisdictions. A first aid certificate is a statement that the candidate was assessed as competent **on a given date**. The accepted industry standard is that certificates are valid evidence of competency for **3 years for first aid** and **1 year for CPR**. Some industries require employees to renew certificates more frequently.

Communication

The role of the first aider depends on gaining and honouring the trust of casualties. Maintaining trust requires attentiveness to body language, quality of listening and finding culturally appropriate ways of communicating that are courteous and clear. It may sometimes be necessary to communicate through verbal and non-verbal communication and you may need to identify issues that may cause conflict or misunderstanding. The first aider also needs to maintain respect for privacy and dignity and pay careful attention to client consent and confidentiality.

Reports

While waiting for help and if time permits, make a brief written report to accompany the casualty to hospital. This will reduce time spent at the scene for ambulance crew and further assist medical and nursing staff with initial patient management. A report can be written on a spare piece of paper and should include the following:

- **Date, time, location of incident**
- **Casualty details** - Name, DOB, Address.
- **Contact person for casualty** - Family member, friend.
- **What happened** - Brief description of injury or illness.
- **First aid action taken** – What you did to help the casualty.
- **Other health problems** – Diabetes, epilepsy, asthma, heart problems, operations.
- **Medications/ allergies** – Current tablets, medicines.
- **When casualty last ate or drank** – Tea, coffee, water, food.
- **Observations of Vital Signs** - Conscious state, pulse, breathing, skin state, pupils.
- **First aider's name/ phone number** in case medical staff need any further information.

The back inside page contains a 'First Aid Report Form,' which can be torn off and used at a first aid incident.

Record Keeping

In the workplace, it is important to be aware of the correct documentation and record keeping used in first aid situations.

Every organisation has its own procedures and documentation so familiarize yourself with the correct process.

All documentation must be legible and accurate and must contain a description of the illness or injury and any treatment given. Thorough and accurate medical records are essential in any court case or workers compensation issue.

In addition:

- Write in pen (not pencil) • Never use correction fluid – cross out and initial any changes
- Sign and date the form • Keep contents strictly confidential

Self-help/ Evaluation

Each person reacts differently to traumatic events and in some instances strong emotions may affect well being and work performance. Symptoms may appear immediately or sometimes months later after an event and may develop into chronic illness.

There is no right or wrong way to feel after an event. It is important for all people who have been involved in an incident take part in a debrief. Workplaces must provide opportunity for debriefing after an incident. In a community setting speaking to an understanding friend, counselor or medical professional may be beneficial in assisting you to cope with the situation. In addition, seeking feedback from medical personnel about your first aid performance may assist with self-improvement and prepare you better for any future events.

Some Reactions/ Symptoms • Crying for no apparent reason • Difficulty making decisions • Difficulty sleeping • Disbelief • Irritability • Disorientation • Apathy • Sadness • Depression • Excessive drinking or drug use • Extreme hunger or lack of appetite • Fear/anxiety about the future • Feeling powerless • Flashbacks • Headaches • Stomach problems • Heart palpitations • Muscle aches • Stiff neck

Safe Work Practices and Manual Handling

When moving a casualty (eg into recovery position, or out of danger) it's important the first aider protects him/herself from injury eg using correct manual handling techniques; bending the knees and using leg muscles to protect against back injury. Knowing your own **skills and limitations** and asking for help when required will help prevent injury. Always adhere to safe work practices to reduce potential risks. In the workplace (including when providing first aid) there is a legal obligation to use supplied **Personal Protection Equipment (PPE)**.

Needle Stick Injury

The risk of catching a serious infection (Hepatitis B, C and HIV) from needle stick injury is very low.

Reduce the risk of needle stick injury:

- Never bend or snap used needles
- Never re-cap a needle
- Place used needles into a sharps approved container
- Hepatitis B vaccination for workers who regularly come in contact with blood/ body fluids

NB. Disposable gloves will not protect against needle stick injury.

Hygiene Minimise the risk of cross infection to yourself, bystanders and casualty by taking **standard precautions to control infection:**

Prior to treatment:

- Wash hands with soap and water, or rinse with antiseptic.
- Cover cuts on your hands with a waterproof dressing before putting on gloves.
- Wear disposable gloves.
- Do not touch any unclean object when wearing gloves.
- Use a plastic apron and eye protection.
- Cover any adjacent areas likely to produce infection.

During treatment:

- Use a face shield/mask, if available when performing resuscitation.
- DO NOT cough, sneeze or breath over a wound.
- Avoid contact with body fluids.
- DO NOT treat more than one casualty without washing hands and changing gloves.

After treatment:

- Clean up the casualty, yourself and immediate vicinity.
- Safely dispose of used dressings, bandages and disposable gloves
- Wash hands thoroughly with soap and water, even if gloves were used.
- Restock first aid kit.

FIRST AID

- Squeeze blood out of injury site.
- Wipe with alcohol swab.
- Wash hands.
- Place syringe in plastic drink bottle or sharps container.
- Take syringe with you to hospital for analysis.

Contents for workplace first aid kit

from Worksafe Vic Compliance code

Basic first aid notes	1
Book for recording first aid provided	1
Disposable gloves	2
Individually wrapped sterile adhesive strips	10
Large sterile wound dressings	1
Medium sterile wound dressings	1
Non-allergenic tape	1
Plastic bags for disposal	2
Resuscitation mask or shield	1
Rubber thread or crepe bandage	2
Safety pins	5
Scissors	1
Small sterile wound dressings	1
Sterile coverings for serious wounds	1
Sterile eye pads (packet)	2
Sterile saline solution 15 ml	2
Triangular bandages	2
Tweezers	1

Also contact details for First Aid Officers & emergency services

First Aid Kits

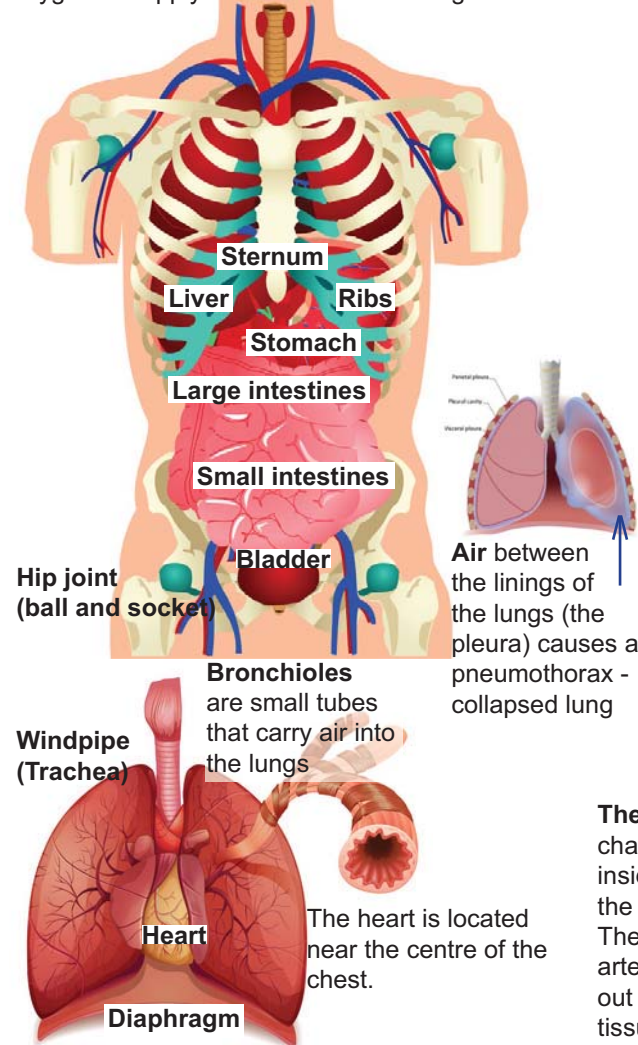
- Locate first aid kits in **workplaces, vehicles** and in the home in a clean, dry, dust-free location.
- Make sure first aid kits are **accessible** and signage clearly indicates their location.
- **Check** kits regularly for completeness and valid dates.
- Contents will **vary** depending on the number of employees, and the **industry** you work in. High risk industries may need extra modules.
- List **first aid officers** in workplace kits.
- Under **State and Territory legislation** first aid kits are required in all workplaces.

Basic Anatomy and Physiology

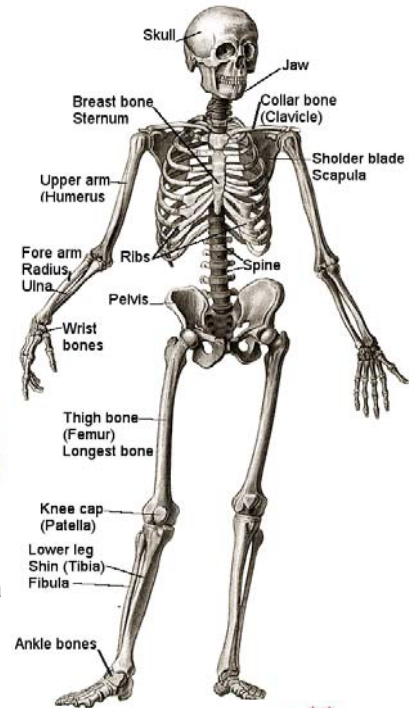
Anatomy: The science of the structure of the body

Physiology: The science of the functions of the body

Normal breathing is breathing in and out regularly about every 3-5 seconds. If a person is not breathing normally, their body will not have enough oxygen to supply the brain and other organs

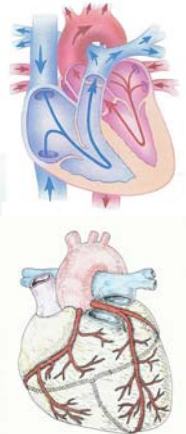


The Skeleton protects vital organs, provides anchor points for muscles, and a structure to the body. Bone marrow is an important source of blood cell production. Fractures of major bones can cause major internal bleeding and impair blood cell replacement



The Heart has four chambers. Valves inside the heart control the way blood flows. The aorta is the main artery taking blood out to the organs and tissues.

Coronary arteries. A heart attack is caused by the coronary arteries becoming blocked



When we breathe-in the diaphragm contracts and the muscles between the ribs contract. To breathe-out we relax these muscles. If there is pressure on the abdomen (eg a person sitting on abdomen), this can prevent air exhaling when the person relaxes. This can cause "positional asphyxia"

Casualty Assessment



Radial pulse

When dealing with a person who is ill or injured, you need a clear **Plan of Action**:

1. Start with a Primary Survey (DRSABCD), (pg 3) which enables identification and management of life-threatening conditions.
2. If there are no life-threatening conditions which require immediate first aid (severe bleeding, no response) then proceed to **Secondary Survey**.

Secondary Survey: is a systematic check of the casualty involving

- **Questions • Examination • Clue Finding** to help identify any problems that may have been missed.
- If the casualty is **unconscious**, the secondary survey is conducted in the recovery position. You may need to look for external clues and ask bystanders some questions.
- If the casualty is **conscious** start with questions followed by examination. Remember to introduce yourself, ask for consent to help and ask their name.

Questions

- What happened?
- Do you feel pain or numbness anywhere?
- Can you move your arms and legs?
- Do you have any medical conditions?
- Do you take any medications?
- Do you have any allergies?
- When did you last eat?
- (Bystanders may be helpful)

External Clues

Medical Alert: casualties with medical conditions such as diabetes, epilepsy or severe allergy usually have a bracelet, pendant or card to alert people of their condition.

Medications: People on regular medication usually carry it with them.



Carotid pulse

NB. The pulse is not checked during CPR

Examination

Vital Signs: are indicators of body function and provide a guide to the casualty's condition and response to treatment.

- **Conscious State:** There are 3 broad levels –
• Conscious • Altered consciousness • Unconscious
Altered consciousness = uncooperative, aggressive, confused, drowsy.
- **Pulse:** The carotid pulse in the neck is the best pulse to check. Feel for rate, rhythm, force, irregularities.
Normal pulse rates: Adults: 60-80 /min
Children: 80-100/min
- **Breathing:** Look, listen and/or feel for breathing rate, depth and other noises eg wheezing, noisy breathing.
Normal breathing rates: Adults 16-20 breaths/min
Children: 25-40 breaths/min

(Check pulse/ breathing for **15 secs then x by 4** to get rate/min. Use a watch)

- **Skin State:** Look at face and lips.
Red, hot skin – fever, heat exhaustion, allergy
Cool, pale, sweaty – shock, faint, pain, anxiety
Blue lips (cyanosis) – airway obstruction, asthma, flail chest, collapsed lung, heart failure, hypothermia
- **Pupils:** Unequal, reactive to light

Head to Toe:

- Seek consent from the conscious casualty before you begin.
- Look and feel for bruises, cuts, deformities and painful areas.
- Start from the head and work down.
- Explain to casualty what you are about to do at each stage eg "I'm just going to move your arm".
- Ask casualty for feedback at each stage eg "Does it hurt when I move your arm?"

Asthma/Anaphylaxis Management Plan

School/Employer:			
Phone:			
Student/Employee name:			
Date of birth		Age:	Year level/Department:
Severely allergic to:			
Other health/medical conditions:			
Storage Location of Medication:			
Parent/carer/next-of-kin information 1		Parent/carer/next-of-kin information 2	
Name:		Name:	
Relationship:		Relationship:	
Home phone:		Home phone:	
Work phone:		Work phone:	
Mobile:		Mobile:	
Address:		Address:	
Other emergency contacts (if above unavailable):			
Medical practitioner contact:		Phone:	
Emergency care to be provided at school/work:		Refer to action plan. Other:	
General use autoinjector storage:			
The anaphylaxis management plan has been put together with my knowledge and input			
Communication plan actioned:		Review date:	
Signature of parent/employee:		Date:	
Signature of principal/supervisor:		Date:	

This management plan can be adapted to a workplace and should include:

- Location of workplace
- Type of work undertaken
- Layout of workplace
- Location of medication
- Availability of emergency assistance
- Likelihood of working alone

RISK	STRATEGY - <i>remove the risk if possible: otherwise reduce the risk</i>	WHO
Music	Music teacher to be aware, there should be no sharing of wind instruments. e.g. recorders. Speak with the parent about providing the child's own instrument.	Music teacher
Canteen	<ul style="list-style-type: none"> • Staff (or volunteers) trained to prevent cross contamination of 'safe' foods • Child having distinguishable lunch order bag • Restriction on who serves the child when they go to the canteen • Photos of the "at risk" children in the canteen • Encourage parents of child to view products available • Display posters / School Canteen Discussion Guide. www.allergyfacts.org.au 	Canteen manager
Sunscreen	Parents of children at risk of anaphylaxis should be informed that sunscreen is offered to children. They may want to provide their own.	Principal
Excursions	<ul style="list-style-type: none"> • Plan an emergency response procedure prior to the event. • Outline the roles of teachers / helpers if an anaphylactic reaction occurs. • Distribute laminated cards to all attending teachers, detailing the following: Location of event, Map reference (Melway), Nearest cross street. • Procedure for calling ambulance advise: allergic reaction; requires adrenaline. • Prior to event, check that mobile phone reception is available and if not, consider other form of emergency communication eg radio. 	Excursion planner

This and other resources available from: <http://www.education.vic.gov.au/school/teachers/health/Pages/anaphylaxischl.aspx>

[illegible]

(Complete this form as best as you can and give copy to paramedic and keep record in accordance with WHS procedures)

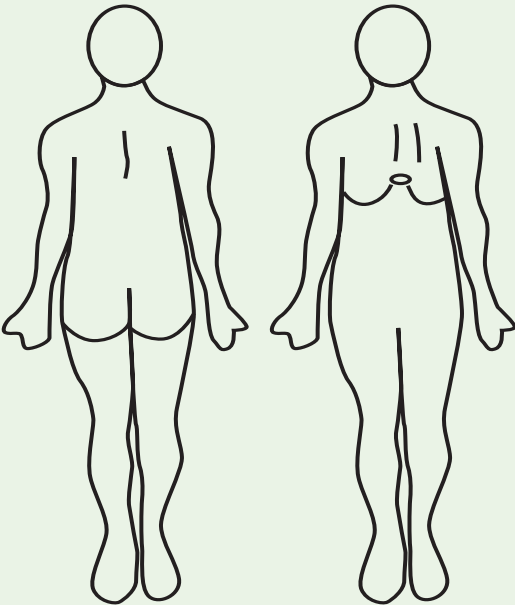
Date: / /		Time:		Location:																
Casualty Details:			Department:																	
Name:		DOB: / /		M / F																
Home Address:																				
Postcode:																				
Family Contact Name:		Phone		Notified <input type="checkbox"/> yes																
Work department:		Supervisor name:		Notified <input type="checkbox"/> yes																
		Management::		Notified <input type="checkbox"/> yes																
		Work safe:		Notified <input type="checkbox"/> yes																
What Happened (a brief description):																				
First Aid Action Taken:																				
Ambulance called: <input type="checkbox"/> yes		Time:		Referred to:																
Known health issues		Current Medications:																		
Diabetes	<input type="checkbox"/> yes																			
Epilepsy	<input type="checkbox"/> yes	Known Allergies:																		
Asthma	<input type="checkbox"/> yes																			
Anaphylaxis	<input type="checkbox"/> yes	Last ate or drank: What?																		
Heart	<input type="checkbox"/> yes	When?																		
Other		<div>Medications given</div> <table border="1"> <thead> <tr> <th>What</th> <th>Time</th> <th>Dose</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>				What	Time	Dose												
What	Time	Dose																		

Turn over


Casualty Examination: mark location of injuries on diagram and briefly describe injury eg cut, bruise, pain, swelling, burn.

Verbal Secondary Survey
W-H-A-M-M-E-D

- W**hat happened
- H**urt - where does it hurt
- A**llergy
- M**edications
- M**edical conditions - alerts
- M**ove your arms and legs
- E**at or drink last
- D**ocument the answers



Observations
of Vital Signs:

Time					
Conscious State Fully Conscious Drowsy Unconscious					
Pulse rate: description:					
Breathing rate: description:					
Skin State Colour: Temp: Dry/Clammy:					
Pupils  R L					

First Aider's Details:
(In case the hospital needs to contact you for more information regarding the incident).

Name:(Print)_____

Phone:_____ Signature:_____



ABC of First Aid Asthma & Anaphylaxis is divided into seven main colour coded sections:

- 1. Essential First Aid**
- 2. Trauma**
- 3. Medical Emergencies**
- 4. Asthma & Anaphylaxis**
- 5. Risk Assessment**
- 6. Education & Childcare**
- 7. General First Aid**

In conjunction with an approved first aid course, this book will assist you learn the skills to handle most emergency situations.

This book incorporates the latest guidelines and is written for Australian conditions.

For training purposes, this book satisfies the Australian Health Training Package competency units:

HLTAID001: Provide CPR

HLTAID002: Provide Basic Emergency Life Support

HLTAID003: Provide First Aid

HLTAID004: Provide an emergency first aid response in an education and care setting

22024VIC: Course in Emergency Management of Asthma in the Workplace

22099VIC: Course in First Aid Management of Anaphylaxis



ABC of First Aid Asthma & Anaphylaxis



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