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# First aid for eye injuries



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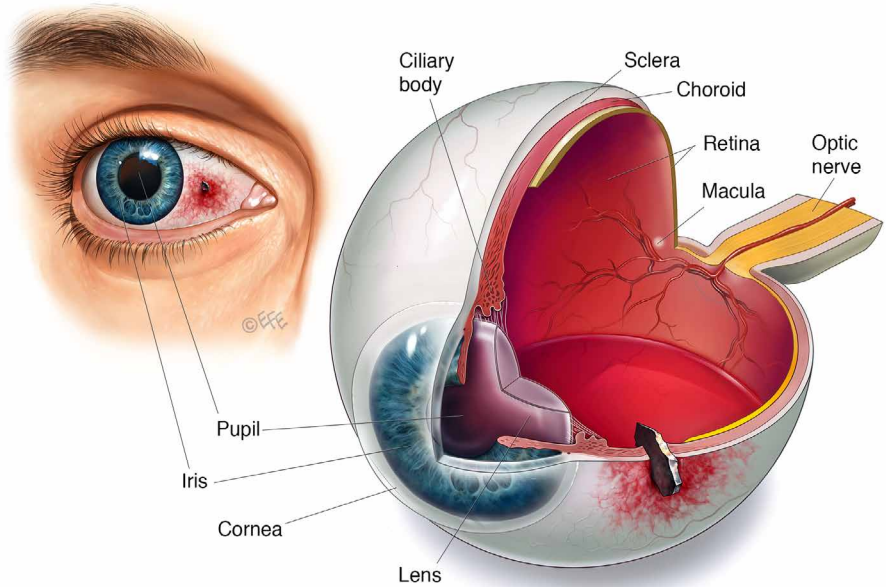


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## The eye

So much of what we do and how we operate in our environment assumes the ability to see. Loss of sight can, therefore, be a devastating experience. The eye is one of the most sensitive and delicate organs in the body, and thus easily damaged.

**Cornea**—the transparent covering of the iris and pupil. The cornea is one of the most sensitive tissues in the body. The cornea helps the eye to focus as light makes its way through it.

**Sclera**—the white part of the eyeball. The sclera is made of a tough material and covers most of the eyeball.

**Pupil**—the black, central opening of your eye that changes size depending on the amount of light.

**Iris**—the coloured area around the pupil that controls the size of the pupil.

## Eye injuries

It is important to treat the eye with great care. The eye is easily injured, and any eye injury or resulting infection can cause vision impairment or blindness.

Any eye injury can be serious because it can damage the cornea—the transparent tissue forming the circular lens in front of the eye. One rule of first aid for eye injuries is to prevent scratching of, or further damage to, the cornea.

When an eye injury does occur, have an ophthalmologist (eye physician and surgeon), or other medical doctor examine the eye as soon as possible. Although the injury may not look or feel serious, it could cause serious damage to your eyes.

If you have blurred vision, partial loss of vision, double vision, or sharp pains in your eye after an accident, see an ophthalmologist or go to a hospital emergency room right away.

### Causes of eye injuries

Eye injuries may be caused by the impact of stones, balls, fists, and other small objects; chemicals (e.g. acids, caustic soda, lime); smoke or lasers; or small objects such as dirt, slivers of wood, metal and sand.

Direct impacts can cause bruising or bleeding around the eye, fractures to eye socket bones, or damage to the eye itself. Objects can be irritating and cause a great deal of pain and damage. Any sharp object that penetrates the eyeball can cause serious damage and may cause infection if not properly managed.

### Prevention of eye injuries

Eye injuries can be prevented by:

- wearing eye protection if there are small objects or debris flying around such as sand or dust (e.g. on a building site)
- staying clear of anyone operating machinery at a workbench (e.g. wood turning, metal working)
- staying clear of anyone chopping wood or mowing lawns
- wearing eye protection when playing sports, especially those that involve balls travelling at high speed (e.g. squash)
- wearing a protective shield when welding
- watching out for low branches.



## Your actions can also prevent the incidences of injuries to the eye.

- Always carry sharp objects down and vertically, not horizontally.
- Never use fireworks in confined spaces, e.g. backyards. Attend public firework displays instead of using fireworks at home.
- Supervise children when they are handling potentially dangerous items, such as pencils, scissors or even blunt butter knives. Be aware that even common household items such as paper clips, elastic cords, wire coat hangers, rubber bands and fish hooks can cause serious eye injury.
- Check the age appropriateness of projectile toys such as toy guns, darts, bows and arrows. Do not allow children to play with air-powered rifles, pellet or paint ball guns.
- Always hold any spray nozzles (e.g. the garden hose) away from the face.
- Use grease shields to cover frying pans to protect the eyes from splattering liquids.
- Read the safety instructions before using tools, chemicals, ammonia, etc.

## In the workplace

- Protective eye wear is required whenever there is a reasonable probability an eye injury may occur.
- A written eye safety program should be implemented in the workplace to help prevent workplace eye injuries.
- Provide adequate supplies of eye protection and have them readily available at the work site.
- Instruct employees on appropriate treatment if an eye injury should occur.
- Make vision screening available for new employees to determine any eye disease.



# General first aid principles for eye injuries

## Warning

- Rapid first aid can minimise the chances of partial or complete blindness. It may be necessary to also seek medical aid as quickly as possible. Act with extreme urgency (within seconds) if it is a heat or chemical burn.
- Inspection of the eye may be difficult because of spasm, swelling or twitching; mucus and blood discharge; or injuries to the eyelid or face.
- If the patient wears contact lenses that can be removed easily, ask the patient to remove them before you deal with the eye injury. DO NOT remove the contact lenses yourself. DO NOT remove a contact lens if the surface of the eye is badly injured.
- DO NOT allow the patient to rub the eye.
- DO NOT try to remove any object that is embedded in or penetrating from the eye.
- DO NOT persist in examining the eye if the injury is severe.
- DO NOT apply direct pressure when bandaging the eye.

## Signs and symptoms

- pain
- redness
- wateriness
- sensitivity to light
- swollen or spasming eyelids
- bleeding
- inability to open the eye
- injuries around the eye

## What to do

- 1 Follow DRSABCD.
- 2 Wash your hands thoroughly and put disposable gloves on.
- 3 DO NOT try to remove an object that is embedded in or protruding from the eye.
- 4 Cover the injured eye only with one or more sterile pads, avoiding any protruding object.
- 5 DO NOT put direct pressure on the eyeball.
- 6 Help the patient to lie down in a comfortable position on their back.
- 7 Ask the patient to try not to move their eyes.
- 8 Seek medical aid.



## First aid quick reference

Wounds	<ol style="list-style-type: none"> <li>1 Follow DRSABCD.</li> <li>2 Place an eye pad or a light clean dressing over the injured eye only.</li> <li>3 Help the patient to lie in a comfortable position on their back but only if the eyeball is involved.</li> <li>4 Ask the patient to try not to move their eyes.</li> <li>5 Ensure an ambulance has been called—Triple zero (000).</li> </ol>
Objects in the eye	<ol style="list-style-type: none"> <li>1 Follow DRSABCD.</li> <li>2 Ask the patient to look up.</li> <li>3 Draw the lower eyelid down. If the object is visible, remove it with the corner of a moist cloth.</li> <li>4 If the object is not visible, pull the upper lid down.</li> <li>5 If both are unsuccessful, wash the eye with sterile saline or clean cool water.</li> <li>6 If still unsuccessful, cover the injured eye only and seek medical aid.</li> </ol>
Embedded object in the eye	<ol style="list-style-type: none"> <li>1 Follow DRSABCD.</li> <li>2 Cover the injured eye with an eye pad or clean dressing.</li> <li>3 Seek medical aid.</li> </ol>
Penetrating object from the eye	<ol style="list-style-type: none"> <li>1 Follow DRSABCD.</li> <li>2 Call Triple zero (000) for an ambulance.</li> <li>3 Help the patient to lie down.</li> <li>4 DO NOT try to remove the penetrating object.</li> <li>5 Cover the injured eye by placing thick pads above and below the eye, or cover it with a paper cup.</li> <li>6 Bandage the pads or cup in place, making sure there is no pressure on the eyelids.</li> <li>7 Ask the patient to try not to move their eyes.</li> <li>8 DO NOT give the patient anything to eat or drink.</li> </ol>
Burns	<ol style="list-style-type: none"> <li>1 Follow DRSABCD.</li> <li>2 Open the eyelid gently and wash eye with cool flowing water for 20 minutes.</li> <li>3 Place an eye pad or a light clean dressing over the injured eye only.</li> <li>4 Ensure an ambulance has been called—Triple zero (000).</li> </ol>
Smoke	<ol style="list-style-type: none"> <li>1 Follow DRSABCD.</li> <li>2 Ask the patient not to rub their eyes.</li> <li>3 Wash their eyes with sterile saline or cold tap water.</li> <li>4 Seek medical aid if necessary</li> </ol>



## Wounds to the eye

Impacts to the eye area caused by a direct blow (e.g. in a fist fight) or by fast-moving objects (e.g. a squash ball) can cause bruising to the eyelids and soft tissue, damage to the bones of the eye sockets, bleeding from blood vessels and even rupture of the eyeball.

The eye area and the eye itself can also be damaged or cut by fast-moving sharp objects (e.g. wood chips or shattered glass).

Lacerated eyelids generally bleed profusely because of the many blood vessels in this area. A dressing on the injured part will usually control bleeding. However, care must be taken to make sure that no pressure is applied to the eyeball because this may cause permanent damage.

### What to do

- 1 Follow DRSABCD.
- 2 Place a light dressing over the injured eye – make sure there is no pressure on the eye.
- 3 Lie the patient in a comfortable position on their back.
- 4 Ask the patient not to move their eyes.
- 5 Seek medical aid.



## Objects in the eye

Loose eyelashes, grit, dust, glass, cosmetics, metal particles and insects are some of the objects that may enter the eye. The objects usually stay on the surface of the eye (cornea) or under the eyelids (conjunctiva).

The eye tries to flush the object out by producing tears, but this is not always successful. It may be necessary to take further action to remove the object. If the object is not removed from the eye, it could scratch the cornea and may also lead to infection and scarring.

### Warning

- DO NOT remove any object embedded in or protruding from the eye.
- DO NOT persist in examining the eye if the injury is severe.
- Warn the patient of the importance of NOT rubbing the eye, even if the desire to do so is very strong. Rubbing may damage the cornea or other parts of the eye.

### What to do

If the object is small and is not embedded in the eye, it may be washed out by natural 'watering' (tears).

**If tears do not remove the object**

- 1 Ask the patient to look up.
- 2 Gently draw the lower eyelid down and out.

**If object is visible**

- 3 Remove the object using the corner of a clean, moist cloth, gauze, cotton bud or eye spear.

**If object is not visible**

- 4 Ask the patient to look down.
- 5 Gently grasp lashes of upper eyelid.
- 6 Pull the eyelid down and over the lower eyelid and ask the patient to blink – this may dislodge the object.

**If unsuccessful**

- 7 Wash the eye with a gentle stream of sterile saline or clean water.

**If still unsuccessful**

- 8 Manage as an embedded object.



## Embedded object in the eye

An object can become embedded in the cornea. An embedded object is one that cannot be easily removed by flushing with sterile saline or water.

### Warning

DO NOT try to remove any object which is stuck in the eye.

### What to do

- 1 Follow DRSABCD.
- 2 Cover the injured eye with an eye pad or clean dressing.
- 3 Seek medical aid.



## Penetrating object from the eye

A penetrating eye injury is usually caused by a sharp object that has gone inside the eye or is protruding from the eye. Such injuries commonly occur in the workplace or at home and can be caused by any sharp object (e.g. tools, branches or sticks, knives or scissors). They can be also caused during sport or recreation (e.g. fish hooks).

This injury may cause serious damage and infection if not managed appropriately, and medical aid should be sought urgently.

### Warning

DO NOT try to remove any object which is stuck in the eye.

### What to do

- 1 Follow DRSABCD.
- 2 Call triple zero (000) for an ambulance.
- 3 Help the patient to lie down.
- 4 DO NOT try to remove the penetrating object.
- 5 Cover the injured eye by placing thick pads above and below the eye, or cover it with a paper cup.
- 6 Bandage the pads or cup in place, making sure there is no pressure on the eyelids.
- 7 Ask the patient to try not to move their eyes.
- 8 DO NOT give the patient anything to eat or drink.



## Burns to the eye

Burns to the eye can be caused by:

- chemicals (e.g. glues and solvents, acids, caustic soda, lime, plant juices or sap)
- heat from flames or radiant heat (the sun)
- welding flash or other ultraviolet light.

The blink reflex usually causes the eye to rapidly close in response to heat. Thus, thermal burns tend to affect the eyelid rather than the eye itself.

Chemical burns are often more serious because they can damage the surface of the eye (the cornea). This can cause scarring, which can lead to vision impairment or blindness. The most dangerous chemical burns involve strong acids or alkalis. Because burns to the eye are very painful, the patient will usually keep their eyelid closed. This can keep the substance against the eye for longer and increase the damage.

Ultraviolet light from welding equipment, bright sunlight (especially when the sun is reflecting off snow or water), or tanning booths can also burn the cornea. This can be prevented with the use of a welding mask or ultraviolet-filtering sunglasses. Ultraviolet burns to the cornea are like sunburned skin, and usually heal within a few days. However, medical aid is still important to prevent infection.

### Signs and symptoms

- pain
- redness
- wateriness
- sensitivity to light
- swollen or spasming eyelids

### Warning

If chemicals have burnt the eye, wash the eye with extreme urgency—within seconds of the injury.



## What to do

### Chemical burn

- 1 Follow DRSABCD.
- 2 Call **Triple zero (000)** for an ambulance.
- 3 Tilt the patient's head back and turn the injured side down.
- 4 Immediately and gently flush the injured eye with cool water for 20 minutes. Keep the eye open with your fingers if necessary (spasms might make this difficult).
- 5 Protect the uninjured eye—do not allow the chemical to wash into the eye.
- 6 Cover the injured eye with an eye pad or sterile, clean, nonadherent dressing.



### Heat burns

- 1 Follow DRSABCD.
- 2 Open eyelids gently.
- 3 Wash eye gently with cold flowing water for 20 minutes. Make sure to wash under eyelids; turn the upper eyelids back.
- 4 Place eye pad or light clean dressing over the injured eye only.
- 5 Ensure an ambulance has been called—**Triple Zero (000)**.



### Welder's flash, snow blindness or other ultraviolet light burn

- 1 Cover the injured eyes with eye pads or sterile, clean, nonadherent dressings.
- 2 Seek medical aid.

### Sunburn to the eyes

- 1 Cover the patient's eyes with thick, cool, moist dressings to cool and keep any light out.
- 2 Reassure the patient.
- 3 Seek medical aid.

## Smoke in the eyes

Smoke is made up of gases, water vapour, and small particles of carbon and other materials from what was being burned.

These can act as an irritant when they come in contact with eyes. If the burning material includes plastics or rubbers, the gases and particles are likely to be particularly irritating.

Smoke in the eyes will probably be painful for the patient, and the eyes will look red and watery.

### What to do

- 1 Follow DRSABCD.
- 2 Ask the patient not to rub their eyes.
- 3 Wash the eyes with sterile saline or cold water.
- 4 Seek medical aid if necessary.



## Preventing infection

During first aid, the first aider and the patient are at risk of infection.

Taking standard precautions can protect the first aider and the patient from infection. These precautions aim to prevent the transmission of blood and other body fluids (saliva, vomit, pus, urine, faeces), and to keep wounds and surfaces clean.

### What to do

#### Carry standard protective equipment

- a pocket mask or face shield (for mouth-to-mouth contact)
- disposable latex gloves
- alcohol gel to clean your hands.

#### Take standard precautions

- Wash and dry your hands thoroughly before and after giving first aid, even if you are going to wearing gloves.
- Always wear clean disposable gloves, whether or not you are likely to be exposed to blood or other body fluids.
- Avoid coughing, sneezing or talking while managing a wound.
- Use sterile or clean dressings.
- Handle and dispose of sharps (needles) and waste (bloody gauze, pads or bandages) appropriately.
- If the patient has any signs or symptoms of infection, advise them to seek medical aid.
- If you do come into contact with a patient's body fluids, seek medical advice as soon as possible.



## Basic life support

Basic life support is the aid provided to maintain a clear and open airway, breathing and circulation—and thereby, life—in the hope that the natural function of the lungs and heart will be restored. If there is no breathing or response, cardiopulmonary resuscitation (CPR) and automatic external defibrillation (AED) must be quickly given to save a life.

Basic life support is closely linked to the Chain of Survival—the time taken to call for help and provide basic life support skills (CPR and defibrillation) is vital.

There are two main actions in providing basic life support:

- 1 maintaining an airway—this may involve having to clear an obstruction, such as the tongue, foreign material or vomit from the airway
- 2 giving external cardiac compressions combined with breaths, and carried out in a rhythmical fashion.



Making an open and clear airway.



Giving 30 chest compressions.

These simple techniques will either restart normal heart action or maintain circulation sufficient to preserve brain function until specialised assessment and treatment are available.

**If the patient is unconscious and breathing**, ensuring the airway is open takes precedence over any other injury. However, it is important to handle the patient gently with a minimum of movement.

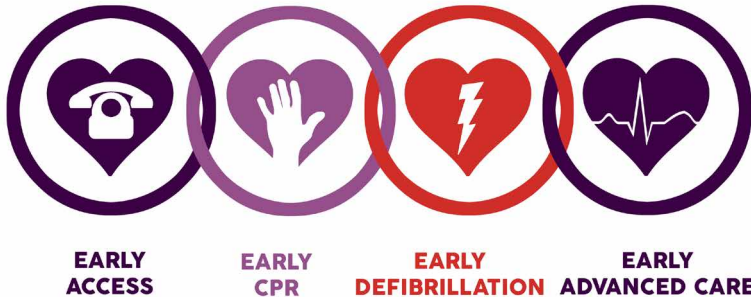
**If you are faced with an emergency in which there is a life-threatening situation**, what you do in the first few minutes will be critical. It is important that the call for the ambulance is performed as soon as possible in an emergency. If the patient is an infant or small child, take them with you to make the call.



## The Chain of Survival

Immediate action needs to be taken to maximise a patient's chances of survival, particularly when there is no breathing, movement or response.

This 'Chain of Survival' is the key to improving the survival rate from sudden cardiac arrest in our community. Time is of the essence!



## The Chain of survival explained

### Early access

The ambulance must be called immediately to ensure that early defibrillation and advanced life support can commence without delay.

### Early CPR

If CPR is begun within 4 minutes of the heart stopping, oxygenation of the vital organs (such as the brain) is maintained.

### Early defibrillation

If CPR is given within 4 minutes and defibrillation within 8–12 minutes, there is a significantly improved chance of survival.

### Early advanced life support

Definitive treatment by the ambulance service, such as giving medication and stabilising the airway, may increase chances of survival even further.



# DRSABCD action plan

## DANGER

Check for danger and ensure the area is safe for:

- yourself
- bystanders
- the patient.

## RESPONSE

Check for a response:

- ask name
- squeeze shoulders.

### No response?

- Send for help.

### Response?

- Make comfortable.
- Monitor breathing and response.
- Manage severe bleeding and then other injuries.



## SEND FOR HELP

Call triple zero (000) for an ambulance or ask a bystander to make the call.

### Stay on the line.

[If alone with the patient and you have to leave to call for help, first turn the patient into recovery position before leaving to calling for an ambulance.]



# In an emergency call **triple zero (000)** for an ambulance

## AIRWAY

Open the patient's mouth and check for foreign material.

### **Foreign material?**

- Roll the patient onto their side and clear the airway.

### **No foreign material?**

- Leave the patient in the position found.
- Open the airway by tilting the head back with a chin lift.



## BREATHING

Check for breathing.

- Look, listen and feel for 10 seconds.

### **Not normal breathing?**

- Ensure an ambulance has been called.
- Start CPR.

### **Normal breathing?**

- Place in the recovery position
- Monitor breathing.



## CPR

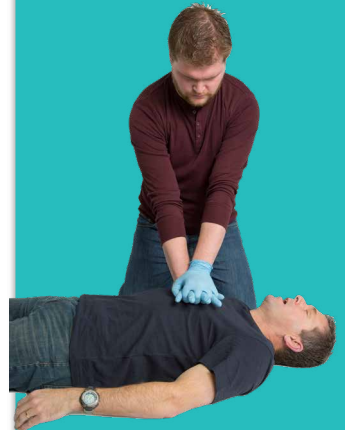
Start CPR

30 chest compressions

: 2 breaths

Continue CPR until:

- help arrives
- the patient starts breathing
- or you are physically unable to continue.



## DEFIBRILLATE

Apply a defibrillator as soon as possible and follow the voice prompts.



## Handling an emergency

The DRSABCD action plan is a vital aid to the first aider in managing a patient during an emergency.

<b>D</b>	Danger
<b>R</b>	Response
<b>S</b>	Send for help
<b>A</b>	Airway
<b>B</b>	Breathing
<b>C</b>	CPR (cardiopulmonary resuscitation)
<b>D</b>	Defibrillation

This plan helps you find out:

- what dangers are around that may affect you, bystanders and the patient
- if the patient is conscious or unconscious
- if the patient's airway is clear of foreign matter and open
- if the patient is breathing
- if resuscitation and defibrillation is needed
- what, if any, immediate first aid is required
- if the patient needs an ambulance.



## Danger

Check for danger to yourself, bystanders and the patient.

### What to do

- 1 Before approaching the patient look and listen for any signs of danger.
- 2 Once you have carefully checked to make sure the area is safe, you can approach the patient and check for a response.



Examples of danger and an immediate threat to yourself or bystanders might include:

- electrical wires
- toxic fumes
- wet and slippery surfaces
- unstable structures.

Deep water is a particular hazard. If you are helping a drowning person, do not endanger your own safety. Throw a rope or something that floats and which may aid the victim in keeping their head above water. Call for help.

### Note

Make sure that you do not become a patient too. You are no help to the patient if you become injured yourself.



## Response

As soon as you have determined that the situation is safe, you need to check if the patient is conscious by checking if they can respond to you.

### What to do

1 Gently squeeze the patient's shoulders and ask:

- Can you hear me?
- Open your eyes!
- What is your name? (Remember 'COW')

Or ask the patient to squeeze your hands (both hands should be tried if a stroke is suspected).

### Unconscious patient (no response)

- 1 For an unconscious patient, it is important to get help as quickly as possible.
- 2 **Call triple zero (000)** for an ambulance.

### Conscious patient (response)

- 1 Leave the patient in the position in which you found them, provided there is no further danger.
- 2 Reassure the patient.
- 3 Manage any life-threatening injuries that need immediate attention, such as severe external bleeding.
- 4 Manage other injuries.
- 5 **Call triple zero (000)** for an ambulance if the injuries require it.



## Send for help

In an emergency, it is important that you call for help as soon as possible.

Call triple zero (000) for an ambulance, or ask another person to make the call.

### Note

If the patient is unconscious and breathing and you are alone with them and have to leave the scene to call triple zero (000), place the patient in the recovery position first and then go and make the emergency call.

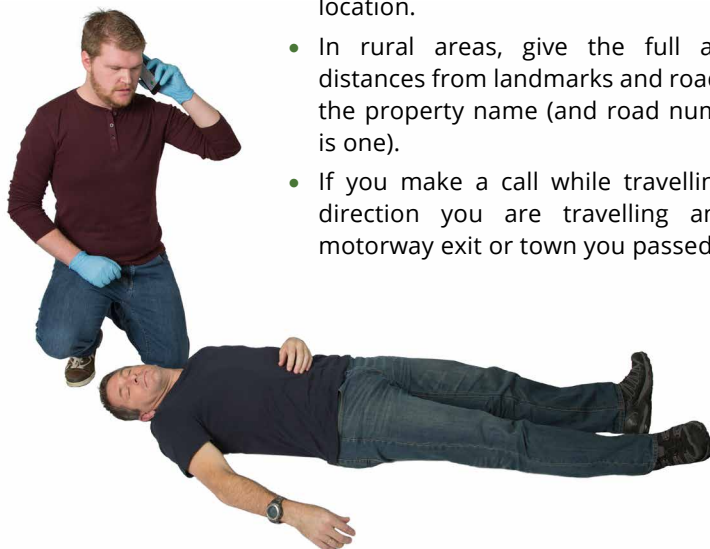
### What to do

#### When you call

- You will be asked if you need police, fire or ambulance.
- Your call will be directed to the service you asked for.
- Speak clearly and answer the questions.
- Stay on the phone until the operator tells you to hang up.

#### Providing location information

- You will be asked where you are.
- Try to provide the suburb, street name, street number, nearest cross-street and your actual location.
- In rural areas, give the full address and distances from landmarks and roads, as well as the property name (and road number if there is one).
- If you make a call while travelling, state the direction you are travelling and the last motorway exit or town you passed.



# Airway

## Checking the airway

The patient's airway must be clear and open so that the patient can breathe. Ensure the airway is open before you treat any other injury.

The airway may be blocked by:

- the back of the patient's tongue
- solid or semisolid material, such as food, vomit or blood
- swelling or injury of the airway
- position of the neck (eg an unconscious seated person with their chin on their chest).

## What to do

### Adult or child (over 1 year)

- 1 If the adult or child is lying on their back, leave them in that position. If the adult or child is lying face down, roll them onto their side.
- 2 Open the patient's mouth and look for any blockage.
- 3 If there is a blockage:
  - roll the patient onto their side (if not already so)
  - tilt the patient's head back with the mouth slightly downwards
  - clear the blockage with your fingers. Only remove dentures if they are loose or broken.



### Infant (under 1 year)

- 1 Lay the infant down on a firm surface.
- 2 Clear their mouth of the blockage with your little finger.



# Airway

## Opening the airway

Opening the airway will ensure the patient can breathe. The patient can be either rolled onto their side (if you needed to clear the mouth of any blockage) or on their back.

### What to do

#### Adult or child (over 1 year)

- 1 Place your hand high on the patient's forehead.
- 2 Place the thumb of your other hand over the patient's chin below their lip, supporting the tip of the jaw with the knuckle of your middle finger. Place your index finger along jaw line.
- 3 Gently tilt the patient's head backwards to bring their tongue away from the back of their throat. Avoid pressure on the neck and soft tissue under the skin.
- 4 Lift the chin, opening the patient's mouth slightly.

#### Infant (under 1 year)

The upper airway in infants is easily blocked because the trachea (windpipe) is soft and may be distorted by an excessive backward head tilt or chin lift.

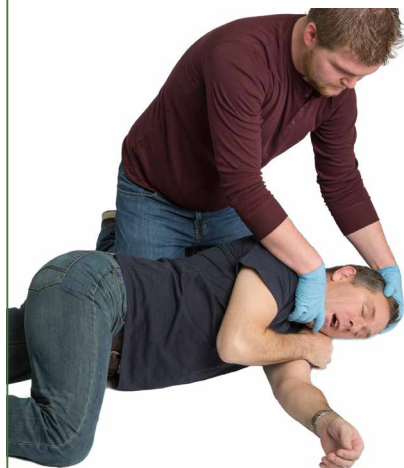
- 1 Place the infant flat on their back.
- 2 Keep the head in a neutral position and the jaw supported at the chin to keep the mouth open and to prevent the head from falling back.

If this does not provide an open airway,

- 3 tilt the infant's head back very slightly to open the airway
- 4 and gently lift the infant's chin to bring their tongue away from the back of their throat. Avoid pressure on the soft tissue under the infant's chin.

#### Seated, unconscious patient

If a patient is found unconscious in a seated position (e.g. car accident or slumped in chair), simply tilting the head back, lifting the chin and moving the jaw forward will open the patient's airway.



## Recovery position

### What to do

#### Adult or child (over 1 year)

- 1 With the patient on their back, kneel beside the patient and position their arms
  - Place the patient's furthest arm directly out from their body.
  - Place the patient's nearest arm across their chest.
  - Position the patient's legs
  - Lift the patient's nearest leg at the knee and place their foot on the floor so the leg is bent.
- 2 Roll the patient into position
  - Roll the patient away from you onto their side, carefully supporting their head and neck the whole time.
  - Keep the patient's leg bent with their knee touching the ground to prevent the patient rolling onto their face.
- 3 Place the patient's hand under their chin to stop their head from tilting and to keep their airway open.



#### Infant (under 1 year)

- 1 Lie the infant face down on your forearm.
- 2 Support the infant's head with your hand.



# Breathing

## Check for breathing

After you have ensured the airway is clear and open, you should check if the patient is breathing normally. This will tell you whether or not to start CPR.

### What to do

- 1 Look and feel for chest movement.
- 2 Listen and feel for sounds of air escaping from the mouth and nose (an occasional gasp is not adequate for normal breathing).

Take no more than 10 seconds (2–3 breaths) to do this.



### Unconscious breathing patient

- 1 Ensure an ambulance has been called–**Triple zero (000)**
- 2 Ensure the patient's airway is clear and open.
- 3 Turn the patient into the recovery position.
- 4 Continue to check the patient for normal breathing until medical aid arrives.
- 5 If the patient stops breathing, roll them onto their back and start CPR.
- 6 If, during CPR, the patient starts breathing but is still unconscious, turn them back into the recovery position.
- 7 Continue to check the patient. Be ready to turn the patient onto their back again and restart CPR if breathing stops.



# Cardiopulmonary resuscitation (CRP)

## Note

- Any attempt at resuscitation is better than no attempt at all.
- If a first aider is unwilling or unable to give breaths, giving compressions only will be better than not doing CPR at all.
- Children (1–8 years of age) should be managed as for adults.

Cardiopulmonary resuscitation is given to a patient when they are unconscious and not breathing normally.

CPR is the repeated action of giving 30 chest compressions followed by 2 breaths.

- Compressions should be given at a rate of 2 compressions per second (approx. 100–120 compressions per minute).
- Try to achieve 5 sets of 30 compressions and 2 breaths in about 2 minutes.
- The first aider should minimise interruptions to chest compressions.

## Changing the person doing CPR

If two first aiders are present, or if a second person arrives to help, it is possible to change the person doing CPR, if necessary.

- 1 Before changing over ensure that an ambulance has been called.
- 2 Change over smoothly with minimal interference to the resuscitation procedure.
- 3 Changes should be done frequently, approximately every 2 minutes, to minimise tiredness.

## When to stop CPR

The first aider should continue CPR until any of the following conditions have been met:

- the patient begins breathing normally
- you are physically unable to continue.
- more qualified help arrives and takes over
- a health care professional directs that CPR be ceased.



# Cardiopulmonary resuscitation

## Compressions for an adult or child (over 1 year)

### What to do

Give compressions with the patient on a firm surface.

1 Get into position.

- Place the patient on their back.
- Kneel beside the patient's chest.
- Locate the lower half of the sternum (breastbone) in the centre of the chest.
- Place the heel of one hand on the lower half of the sternum and the heel of your other hand on top of the first hand.
- Interlock the fingers of your hands and raise your fingers.

2 Press down on the sternum.

- Position yourself vertically above the patient's chest.
- With your arms straight, press down on the patient's chest until it is compressed by about one-third.

3 Release the pressure. Pressing down and releasing is 1 compression.

4 Give 30 compressions.



# Cardiopulmonary resuscitation

## Giving breaths for an adult or child (over 1 year)

### What to do

- 1 Open the airway using the head tilt and chin lift.
  - Place one hand on the patient's forehead or top of their head.
  - Use the other hand on the chin to tilt their head (not the neck) backwards.
  - Avoid pressure on the neck and soft tissue under the skin.
- 2 Give breaths.
  - With the head tilted backwards, pinch the soft part of the nose closed with your index finger and thumb, or seal the nose with your cheek.
  - Open the patient's mouth by placing your thumb over the chin below the lip and supporting the tip of the jaw with the knuckle of your middle finger. Place your index finger along the jaw line. The chin is held up by your thumb and fingers in order to open the mouth and keep the airway clear.
  - Take a breath and place your lips over the patient's mouth, ensuring a good seal.
  - Blow steadily for about 1 second, watching for the chest to rise.
  - Turn your mouth away from the patient's mouth and watch for chest to fall, and listen and feel for signs of air being expelled. Maintain head tilt and chin lift.
  - Take another breath and repeat the sequence. This is now 2 breaths.

If the chest does not rise, recheck the patient's mouth and remove any obstructions. Make sure the head is tilted and chin lifted, and ensure there is a good seal around the mouth (or mouth and nose).



# Cardiopulmonary resuscitation

## Compressions for an infant (under 1 year)

### What to do

Give compressions with the patient on a firm surface.

1 Get into position.

- Place the patient on their back.
- Place self beside the patient's chest.
- Locate the lower half of the sternum (breastbone) in the centre of the chest.

2 Place 2 fingers over the lower half of the sternum

3 Press down on the patient's chest until it is compressed by about one-third.

4 Release the pressure. Pressing down and releasing is 1 compression.

5 Give 30 compressions.



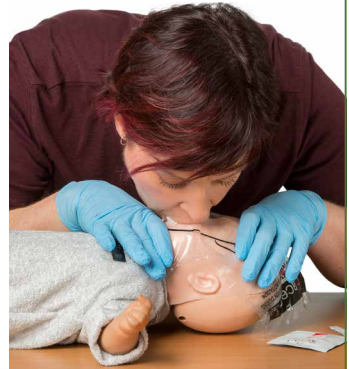
# Cardiopulmonary resuscitation

## Giving breaths for an infant (under 1 year)

### What to do

- 1 Tilt the infant's head back very slightly.
- 2 Lift the infant's chin to bring their tongue away from the back of their throat.
- 3 Avoid pressure on the neck and the soft tissue under the chin.
- 4 Give breaths.
  - Place your lips over the infant's mouth and nose, ensuring a good seal.
  - Blow steadily for about 1 second, watching for the chest to rise.
  - Turn your mouth away from the infant's mouth and watch for chest to fall, and listen and feel for signs of air being expelled. Maintain head tilt and chin lift.
  - Take another breath and repeat the sequence. This is now 2 breaths.

If the chest does not rise, recheck the mouth and remove any obstructions, and ensure there is a good seal around the mouth and nose.



### Note

- In infants the head should be kept neutral and maximum head tilt should not be used.

The upper airway in infants is easily obstructed because the trachea (wind-pipe) is soft and may be distorted by an excessive backward head tilt or chin lift.

The lower jaw should be supported at the point of the chin with the mouth maintained open. There must be no pressure on the soft tissues of the neck. If this does not provide a clear airway, the head may be tilted backwards very slightly with a gentle movement.

# Cardiopulmonary resuscitation

## What to do

### Drowning patient

- 1 Remove the victim from the water as soon as possible, but do not endanger your own safety. Throw a rope or something that floats and which may aid the victim in keeping their head above water. Call for help.
- 2 Follow DRSABCD.
- 3 If the patient is unconscious and not breathing normally, start CPR.
- 4 If the patient is breathing, roll them onto their side and continue to check their breathing.
- 5 Call **Triple zero (000)** for an ambulance for all drowning patients, even if the event is seemingly minor or the patient appears to have recovered fully.

### Patient in a wheelchair

If the patient is in a wheelchair and requires CPR, carefully and safely take the patient out of the wheelchair and place them onto their back to start CPR.

### Pregnant patient

If a woman in an advanced state of pregnancy requires CPR.

- 1 Place her on her back with her shoulders flat.
- 2 Place padding under her right buttock to tilt her pelvis to the left.
- 3 If there is not enough padding available to achieve a definite tilt, a second person should hold the patient's pelvis tilted to the left while CPR is performed.
- 4 Do not delay CPR to find padding.



# Defibrillation

## Signs and symptoms

- Defibrillation is given to a patient whose heart has stopped beating normally.
- The patient is unconscious and not breathing normally.

## Note

- CPR must continue while the defibrillator is being collected, opened and the pads are being attached.
- If you are alone with the patient, place the patient in the recovery position and collect the defibrillator (if available nearby).
- If two first aiders are present, one should collect the defibrillator while the other begins CPR on the patient.
- You can do no harm by connecting a defibrillator, because the defibrillator will detect if a shock is needed or not.
- The defibrillator will provide visual or vocal automatic instructions (depending on the make of defibrillator). Follow the visual or vocal voice prompts.

## Infants under 1 year

- Infants under 1 year of age who are not breathing or responsive are more likely to be in respiratory arrest. This is when normal breathing stops due to failure of the lungs to function effectively. Defibrillation is not recommended. Ensure an ambulance has been called–**Triple zero (000)**.

## Prepare the patient

### What to do

- 1 Expose the patient's chest, removing any clothes if necessary.
- 2 If the patient's chest is damp or wet, wipe it down with a towel to ensure it is dry before applying the defibrillator pads.
- 3 Remove any medication patches located where the pads will be applied.
- 4 Remove or move any jewellery where the pads will be applied.
- 5 Check for pacemaker or implant scars, found between the collarbone and the top of the breast, or either side of the chest. If an implant is identified, place the pad at least 8 cm away from the site. Do not place the pad on top of the pacemaker or implant site.



# Defibrillation

## What to do

- 1 Open the defibrillator case.
- 2 Follow the defibrillator's automatic prompts, which will tell you where the pads are to be placed on the patient's chest.
- 3 If there is a second first aider, CPR should continue while the pads are being placed.

## Applying the pads onto an adult

- 4 Place one pad to the patient's right chest wall, below the collarbone.
- 5 Place the other pad on the patient's left chest wall, below the left nipple.
  - Check for pacemaker or implant scars, found between the collarbone and the top of the breast, or either side of the chest.
  - If an implant is identified, place the pad at least 8 cm away from the site. Do not place the pad on top of the pacemaker or implant site.



## Applying the pads onto a child (1–8 years)

- 4 Place one pad in the centre of the patient's chest, between the nipples.
- 5 Place the other pad in the centre of the patient's back, between the shoulder blades.
  - If child pads are not available, adult pads should be used. Place adult pads as you would on an adult, ensuring the pads do not touch.
  - If insufficient space on the child's chest, one pad can be placed on the chest, and the other on the back.



# Defibrillation

## What to do

### Using the defibrillator

- 1 Once the pads are placed, the machine will provide visual or vocal automatic instructions (depending on the make of defibrillator).
- 2 It is important that no one touches the patient during the analysis and shock process.
- 3 If a person has been performing CPR, they should stop and move slightly away so they are not in contact with the patient.
- 4 The defibrillator will analyse the heart and determine whether a shock should be given.
- 5 After the shock is delivered, continue CPR until medical assistance arrives.
- 6 If the patient starts breathing normally, place them in the recovery position.
  - DO NOT remove the pads.
  - DO NOT turn off the defibrillator.
- 7 Continue to check the patient's breathing. Be prepared to begin CPR again if the patient stops breathing normally.



# Eye injuries first aid module

Order your kit online – [shop.stjohn.org.au](http://shop.stjohn.org.au)



The St John eye injuries first aid module contains:

- 1 x light, conforming bandage, 5 cm
- 1 x roll of hypo-allergenic tape, 2.5 cm x 9 m
- 4 x eye pads
- 2 x gauze swabs, 7.5 cm x 7.5 cm (5/pack)
- 4 x saline steritubes, 15 mL

(Contents correct at the time of printing)

First aid for eye injuries includes

- ▶ step-by-step instructions, with illustrations, for wounds, small objects, embedded or penetrating objects, burns or smoke
- ▶ general principles of first aid for eye injuries
- ▶ a quick first aid reference
- ▶ eye anatomy
- ▶ common causes of eye injuries
- ▶ how to prevent eye injuries
- ▶ the DRSABCD Action plan, and full illustrated step-by-step instructions for basic life support.



## EMERGENCY TELEPHONE NUMBERS

### TRIPLE ZERO (000)

- ▶ Ambulance
- ▶ Fire
- ▶ Police

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13 11 26

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[www.allergy.org.au/](http://www.allergy.org.au/)

Asthma Australia  
1800 645 130

Diabetes Australia  
1300 136 588

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1800 088 200

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