

## First aid workbook





In the spirit of reconciliation Premium Health acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respects to their elders past, present and emerging and extend that respect to all Aboriginal and Torres Strait Islander peoples today.

# OUR PROMISE

“

**Premium Quality,  
without compromise.  
It's the Premium Health  
promise.**



**Phillipa Wilson**

Founder & Managing Director of Premium Health

**Our Trainers are  
Experienced Nurses  
and Paramedics**

Passionate about sharing  
their experience

**Premium Quality  
Programs**

We pride ourselves on the depth  
of our course content and the  
quality of our training materials

**Innovative Techniques,  
Empowering Outcomes**

Methods remembered for years  
to come

**Specialised Training,  
Contextualised to  
Your Workplace**

Relevant and customised to  
workplaces

© PREMIUM HEALTH 2021

PUBLISHER: PREMIUM HEALTH

WRITTEN BY: PHILLIPA WILSON AND THOMAS HOWELL

The technical information and techniques used for first aid management includes the latest knowledge from research and other relevant national and international professional bodies.

Special acknowledgement is given to the Australian Resuscitation Council for the information relating to their Guidelines.

Apart from any fair dealings for purposes of private study, criticism or review, as permitted under the Copyright Act, no part may be reproduced by any process without written permission. Enquiries should be made to the publisher at [info@premiumhealth.com.au](mailto:info@premiumhealth.com.au)

# FIRST AID WORKBOOK

<b>WHAT YOU NEED TO KNOW ABOUT YOUR COURSE .....</b>	<b>7</b>	<b>BLEEDING AND SHOCK .....</b>	<b>40</b>
<b>FIRST AIDER RESPONSIBILITIES .....</b>	<b>8</b>	External bleeding .....	40
Legal responsibilities and obligations of the first aider .....	8	Pressure dressing .....	40
First aid kits.....	10	Examples of external bleeding.....	41
Cultural awareness .....	10	Bleeding from special areas .....	42
Stress management.....	11	Internal bleeding .....	43
Standard precautions.....	13	Shock .....	44
Management of blood and body fluid spills .....	16	<b>ALLERGIC REACTIONS AND ANAPHYLAXIS..</b>	<b>45</b>
Handling and disposal of sharps and other clinical wastes ...	16	What is an allergy? .....	45
<b>MANUAL HANDLING .....</b>	<b>18</b>	What is an allergen? .....	45
<b>FIRST AID .....</b>	<b>19</b>	What is an allergic reaction? .....	45
Recognition and first aid management of the seriously ill person.....	20	Mild – moderate allergic reactions.....	45
Common symptoms of illness in infants and children .....	21	Severe allergic reaction – anaphylaxis .....	45
Management of the conscious and unconscious breathing casualty: first aid priority action plan.....	24	Administration of injectable adrenaline.....	46
Getting help in an emergency .....	27	What should you do when anaphylaxis occurs and the adrenaline auto-injector has expired? .....	48
<b>RESUSCITATION .....</b>	<b>28</b>	EpiPen® instructions .....	48
Cardiac arrest: the chain of survival .....	28	Emergency first aid checklist for anaphylaxis management..	52
Cardiopulmonary resuscitation (CPR) .....	29	<b>RESPIRATORY AND CARDIAC CONDITIONS ..</b>	<b>53</b>
Not breathing normally .....	29	Respiratory conditions .....	53
The purpose of CPR .....	29	Asthma.....	53
To breathe or not to breathe .....	29	Spacers .....	55
When to cease CPR? .....	29	Managing an asthma attack .....	56
Management of the unconscious non breathing casualty: first aid priority action plan .....	30	Choking .....	61
Chest compressions .....	31	Hyperventilation.....	64
Rescue breathing .....	33	Drowning .....	64
Resuscitation in late pregnancy.....	35	The cardiovascular system.....	65
Premium Health CPR method© .....	37	Angina .....	65
Defibrillation .....	38	Heart attack .....	65
Considerations when providing first aid to infants and children.....	39	How to differentiate between angina and a heart attack .....	66

<b>ALTERED CONSCIOUS STATES .....</b>	<b>68</b>	<b>CONDITIONS AND INJURIES OF THE BONES, SOFT TISSUES &amp; SKIN.....</b>	<b>78</b>
Fainting .....	68	The musculoskeletal system .....	78
Seizures.....	68	Fractures .....	78
Epilepsy .....	69	Dislocations .....	79
Febrile convulsions .....	69	Soft tissue injuries .....	80
Head injuries .....	70	Crush injuries .....	81
Concussion .....	70	Chest injuries .....	81
Bleeding from ears or nose.....	71	Eye injuries .....	82
Suspected spinal injury.....	71	Bites and stings .....	83
Stroke .....	72	Types of management .....	83
Poisoning .....	72	Burns .....	86
Specific poisoning routes .....	73	Specific burns management.....	87
Ingested substance.....	73	<b>WOUND MANAGEMENT .....</b>	<b>89</b>
Inhaled substance.....	74	Minor wound management .....	89
Absorbed substance.....	74	<b>RECORDING AN INCIDENT.....</b>	<b>91</b>
Ingested, injected, inhaled and absorbed drug misuse .....	74	<b>APPENDICES.....</b>	<b>93</b>
Diabetes .....	75	Appendix 1: Assistance with self-medication in line with State/Territories relevant laws.....	93
Low blood glucose (hypoglycaemia) .....	75	Appendix 2: First aid qualification requirements under the Education and Care Services national law.....	93
High blood glucose (hyperglycaemia) .....	75		
Body temperature conditions.....	76		
Heat induced illness.....	76		
Hypothermia.....	77		



#### WHEN YOU SEE THIS ICON:

Scan QR Code using your mobile phone camera to access video content.

## Welcome to your course and Premium Health.

---

The aim of this resource is to provide the essential knowledge and skills you require to provide first aid in an emergency.

We select our Premium Health trainers and assessors carefully. All are either nurses or paramedics with appropriate training qualifications, technical expertise and experience in both education and emergency first aid care.

# WHAT YOU NEED TO KNOW ABOUT YOUR COURSE

## Helping you to succeed in your course

We believe learning should be an enjoyable and challenging process and we understand that each learner is different. A variety of methods such as class participation, group discussion, scenarios, workbook exercises and opportunities for practice will help you to achieve competency.

Where there are any difficulties with reading, writing, understanding English or a physical disability, training approaches can be varied to support learning and assessment.

In teaching CPR competencies, the Premium Health method is used. This unique and innovative training technique uses a familiar song to help you recall the rate and rhythm of CPR, thus assisting in the performance of a complex skill. If you had to give CPR, it is intended the song would be sung silently, under your breath.

Research shows that the Premium Health method enables people to retain and recall their CPR skills over a longer period of time. For any first aider, managing a cardiac arrest is stressful, so an easily remembered method to achieve compression rhythm and to count the compression/breath cycles is invaluable.

## Course learning outcomes

The performance criteria for all competency elements can be found at [www.premiumhealth.com.au](http://www.premiumhealth.com.au). This is important information that will assist you to determine what you need to do to meet the assessment requirements for the course.

## What you need to know about assessment

Assessment takes place during your course enabling you to demonstrate your competence in a comfortable and familiar environment with your trainer/assessor.

All assessment tasks are discussed beforehand.

Assessment is never a pass or a fail process. At the end of a set period, you are judged to be Competent or Competency Not Achieved.

If you are considered Competency not Achieved, your trainer/assessor will discuss areas of further work and advise training tasks or options to be undertaken in order to meet competency requirements. You may be asked to call Premium Health to make reassessment arrangements.

## Statement of attainment

A statement of attainment will be issued upon successful completion of your course. The Australian Resuscitation Council recommends CPR be undertaken at least annually and industry requirements have set a precedence of CPR annually.

## Evaluation of the course

Your feedback is vitally important to us as we use this as part of our continuous improvement cycle. We especially value any personal comments you would like to make.

Your trainer will provide you with the way to access the feedback survey.

## Premium Health's customer service

We offer you an on-going service in relation to first aid information and invite you to call our office on **1300 721 292** or email us on [info@premiumhealth.com.au](mailto:info@premiumhealth.com.au).

For more information about Premium Health products, services and policies, access our website [www.premiumhealth.com.au](http://www.premiumhealth.com.au)

## Prerequisite work

There are some courses that require prerequisite work to be completed prior to your face to face assessment.

You will be turned away by your trainer if this work is not presented for review on the training day. Should your course have been arranged by a training coordinator you should contact them to discuss further course management or as an individual enrolment contact our office for instruction.

# FIRST AIDER RESPONSIBILITIES

## LEGAL RESPONSIBILITIES AND OBLIGATIONS OF THE FIRST AIDER

Accidents or acute illness may occur in any setting - the workplace, at home, within the community, at social or public gatherings or sporting events, on the road etc. One consideration to the first aider is whether or not they have a legal responsibility to provide first aid.

### Duty of care

You have a legal duty of care to provide first aid:

- if you are the designated first aider in the workplace where an illness or incident occurs
- when you are employed to care for vulnerable groups such as children, the elderly or people with a disability
- when you have been accepted and appointed as a first aider by a particular group such as a sports club or cricket team

This is a duty of obligation legally imposed on the first aider to provide care appropriate to the setting/casualty. This duty is completed or 'discharged' when:

- the casualty is considered to be in a satisfactory condition following first aid treatment, with or without a recommendation to seek medical assistance
- the care of the casualty, including all details of the accident injury or illness, is handed over to medical personnel i.e. ambulance officers, doctors and nurses

In most other situations a legal duty of care to attend to a casualty does not exist, you have a choice whether or not to provide assistance. However, once you commit to action in providing first aid to a casualty, a legal duty is established.

If the situation poses a significant danger to you in providing first aid, you may withhold your services until the danger is eliminated or contained. You are not expected to become a casualty in the provision of first aid in order to fulfil a duty of care.

### Consent

Consent by the casualty is required before providing first aid. As a first aider you should not intervene if a casualty refuses assistance. Statements such as "I can see you've been hurt; I'm a trained first aider; can I help you?" declare your concern, qualifications and intent.

If first aid treatment is given to a conscious casualty against their wishes, a charge of assault may be brought against you. Consent is implied where the casualty is unconscious.

## Liability

As a first aider you are always responsible for your actions/omissions in administering first aid. To be found negligent, therefore liable, it must be proven in a court of law that your actions/omissions as a first aider were unreasonable, and the casualty suffered damage as a direct result of these actions/omissions. It is important that you:

- act within the bounds of your training
- do not misrepresent your qualifications
- deliver first aid to the best of your ability in order to bring about the best outcome for the casualty

In the workplace the employer generally accepts vicarious liability for designated first aiders. In other words, employers are held responsible for the acts and omissions of their employees.

In the public arena, first aiders who give freely of their services are covered for liability under various Acts i.e. Wrongs Act or Public Liabilities Acts (with Good Samaritan clauses embedded). The following is an example of one of our states legislation.

[http://classic.austlii.edu.au/au/legis/vic/consol\\_act/wa1958111/s31b.html](http://classic.austlii.edu.au/au/legis/vic/consol_act/wa1958111/s31b.html)

### Wrongs Act 1958 - Section 31B

#### Protection of good samaritans

- (1) *A good samaritan is an individual who provides assistance, advice or care to another person in relation to an emergency or accident in circumstances in which -*
  - (a) *he or she expects no money or other financial reward for providing the assistance, advice or care; and*
  - (b) *as a result of the emergency or accident the person to whom, or in relation to whom, the assistance, advice or care is provided is at risk of death or injury, is injured, is apparently at risk of death or injury, or is apparently injured.*
- (2) *A good samaritan is not liable in any civil proceeding for anything done, or not done, by him or her in good faith -*
  - (a) *in providing assistance, advice or care at the scene of the emergency or accident; or*
  - (b) *in providing advice by telephone or by another means of communication to a person at the scene of the emergency or accident*(3)
- (3) *Sub-section (2) applies even if the emergency or accident was caused by an act or omission of the good samaritan*(4)
- (4) *Sub-section (2) does not apply to any act or omission of a good samaritan that occurs before the assistance, advice or care is provided by the good Samaritan.*

## Confidentiality

In any first aid situation, you must take steps to maintain both the casualty's confidentiality and their personal privacy. Information about a worker's health and all records relating to an employee's treatment must remain confidential in accordance with the requirements of the Privacy Act 1988.

If you have provided first aid to a casualty you are unable to talk about the incident to other people unless you have permission from the casualty involved. To assist in maintaining privacy you should aim to keep crowds away, put up a screen if necessary, and cover any exposed body parts with blankets, or sheets, if available.

## Work Health and Safety in Australia (WH&S)

In 2008, Workplace Relations Ministers from around Australia agreed to nationally harmonise work health and safety laws.

Governments from each state and territory and the Commonwealth formally committed to develop and adopt a Work Health and Safety Act supported by Regulations and Codes of Practice within their jurisdiction. The intention is to deliver the same work health and safety protections to all Australians.

Currently Victoria and Western Australia are the two states not to enact these changes. For more information you can refer to the commonwealth website:

[www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

Work Health and Safety principles are that:

- every worker has the right to a safe and healthy work environment
- employers have an obligation to provide a working environment that does not threaten their employees' health, safety and welfare
- employers should make the workplace safe, rather than simply protecting the workers from an unhealthy or unsafe workplace
- workers should follow the company's health and safety policies/procedures
- workers should participate with employers in making decisions about health and safety in the workplace

## First aid in the workplace

Those states that have not enacted the change have differing regulatory requirements relating to first aid in workplaces.

Codes of Practice provide practical guidance concerning the provision of first aid facilities and persons suitably trained to provide first aid. The Code is not law but should be followed unless there is another option which achieves the same result or a better solution. Whereas WH&S regulations provide an overview of how to set up a first aid system that assists with achieving compliance with first aid responsibilities outlined in their WH&S laws.

The websites below will assist you to access information regarding the WH&S information for each State and Territory.

SafeWork NSW	<a href="http://www.safework.nsw.gov.au">www.safework.nsw.gov.au</a>
WorkSafe WA	<a href="http://www.worksafe.wa.gov.au">www.worksafe.wa.gov.au</a>
Workplace Health & Safety QLD	<a href="http://www.worksafe.qld.gov.au">www.worksafe.qld.gov.au</a>
WorkSafe Tasmania	<a href="http://www.worksafe.tas.gov.au">www.worksafe.tas.gov.au</a>
WorkSafe Victoria	<a href="http://www.worksafe.vic.gov.au">www.worksafe.vic.gov.au</a>
SafeWork SA	<a href="http://www.safework.sa.gov.au">www.safework.sa.gov.au</a>
NT WorkSafe	<a href="http://www.worksafe.nt.gov.au">www.worksafe.nt.gov.au</a>
WorkSafe ACT	<a href="http://www.worksafe.act.gov.au">www.worksafe.act.gov.au</a>



## Appropriate first aid facilities

It is suggested you access your WH&S regulatory body to review the current first aid requirements for your State or Territory.

Some of the requirements to determine a workplaces response will be:

- the size and layout of the workplace
- the location of the workplace
- the number and distribution of employees including shift work arrangements
- the nature of work hazards
- known occurrences of accidents or illnesses
- the distance between the workplace and the nearest available and appropriate medical occupational health services, including the nearest ambulance service

The current first aid codes and regulations will give:

- number and location of first aid kits
- employee training and advice on first aid assistance
- the number of first aiders required and training levels
- the need for information to be provided in different languages

### Employee instruction

All employees should be provided with practical instruction in the nature of the first aid facilities in the workplace, the location of first aid kits, the names and work locations of the trained first aiders and procedures to be followed when first aid is required.

This instruction should occur:

- when an employee first becomes employed
- when there is a change in the nature or type of duties performed
- at regular intervals

### FIRST AID KITS

Generally the maximum distance between the employee's usual workstation and the nearest kit is dependent upon the risk or likelihood of an accident occurring. Immediate access is required in areas of particular hazard. Where there are separate work areas it may be appropriate to locate first aid facilities centrally and provide portable first aid kits in each work area. This may include motor vehicles.

First aid kits should be clearly visible and accessible to employees. Employers should ensure that they are regularly maintained.

The container needs to protect the contents of the first aid kit from dust and damage. If any additional first aid kit modules are to be included, the container needs to be large enough to hold them, preferably in separate compartments.

The container needs to be easily recognisable (e.g. with a white cross on a green background prominently displayed on the outside and clearly marked as 'First Aid Kit') and should not be locked.

Kits will vary in contents and size depending on risks and hazards, potential and likely injuries, and work location.



### A first aid kit may include:

- emergency services telephone numbers and addresses
- name, phone number/extension of the nearest first aider
- basic first aid notes
- note pad, pencil
- individually wrapped sterile adhesive dressing
- sterile eye pads
- sterile covering for serious wounds
- triangular bandages
- small medium and large sterile un-medicated wound dressing
- adhesive tape
- gauze squares
- crepe bandage (of different sizes)
- normal saline
- disposable gloves
- CPR shield
- thermal blanket
- instant ice packs
- scissors
- disposable masks

### Additional first aid kit modules

The employer needs to assess whether additional first aid kit modules are required where particular hazards exist. Some examples of additional modules are those dealing with eyes, burns and remote workplaces.

A blue reliever metered dose inhaler or "puffer" (usually Ventolin) and a spacer could be added to the above first aid kit or kept in a separate container.

### CULTURAL AWARENESS

When providing first aid in any context, (in the workplace, as part of caring for people in health, education and community services or as a citizen responding in an emergency) it is essential you approach any person in a culturally aware, sensitive and respectful manner.

Cultural awareness requires recognition that all individuals are influenced by their own culture. Here 'culture' means the patterns of behaviour and beliefs that characterise a particular group at a given moment in time.

Our own cultural background influences how we interpret the world around us, perceive ourselves and interact with other people.

In a first aid situation, cultural issues may arise in relation to:

- language differences and communication of matters relating to interaction and treatment
- obtaining consent
- non-consent for treatment due to cultural beliefs
- standards relating to modesty and physical exposure
- gender differences and personal or physical contact
- the use of gestures

As a basis for increasing your cultural awareness and heightening the effectiveness of your relationships with people of differing cultural backgrounds, keeping these key considerations in mind will help you to approach a casualty in a culturally sensitive manner.

### Recognise your own cultural influences

- avoid judging people's behaviour and beliefs according to your own cultural standards
- be aware of making assumptions about cultural influences and generalising them to individuals
- recognise that the behaviour and beliefs of people within each culture may vary considerably
- understand that the extent to which people adopt practices of their new country and retain those from their cultural background may vary within communities, and even within families
- appreciate that not all people identify with their cultural or religious background
- understand that culture itself is a fluid entity, undergoing transformations as a result of globalisation, migration and forced dispersion
- understand the importance of appropriate communication
- always identify individual needs and preferences wherever possible

Premium Health thanks the Centre for Cultural Diversity in Ageing ([www.culturaldiversity.com.au](http://www.culturaldiversity.com.au)) for allowing the use of information about cultural diversity.

## STRESS MANAGEMENT

It is important to understand that a first aid response can be stressful. Those involved such as first aiders, employees and bystanders may experience changes physically and psychologically following an event. This is perfectly normal. Emergency events can trigger the human stress response and cause changes to mental health impacting the way we think, feel, and behave.

While a stress response is expected, enduring or significant changes need to be addressed early. The support of trained critical incident management professionals helps lessen the impact of stress responses following such events as well as enable people to better understand and manage their reactions.

## Signs and symptoms of stress

The signs and symptoms of critical incident stress may be physical, emotional, cognitive, or behavioural. Individuals express stress in different ways and therefore manifest different reactions. The list below is not exhaustive but will help identify those who are exhibiting stress reactions.

### Physical signs

- loss or change of appetite
- nausea, diarrhoea, constipation, or digestion issues, fatigue, exhaustion or sleeping problems
- chest pain, excessive sweating, increased heart rate or blood pressure
- rapid, shallow breathing, dizziness
- muscle tension, pains, and headaches

### Cognitive signs

- racing thoughts, ruminating, changes in perception or thinking negatively
- memory and concentration problems
- uncertainty, confusion, or difficulty in decision making
- poor problem-solving ability
- nightmares
- flashbacks or recurring memories of event

### Emotional signs

- feeling overwhelmed, or a loss of control
- excessive worrying, apprehension, or fear
- increased anger, irritability, or easily frustrated
- feelings of guilt, grief, sadness, or depression

### Behavioural signs

- avoidance of tasks, situations, or places
- withdrawal or antisocial behaviour
- increased consumption of alcohol or other substances
- changes in communication
- restlessness
- losing confidence or increased self-doubt

**Critical incident stress management (CISM)**

CISM is an intervention procedure primarily intended for people affected by a traumatic event in their life, such as giving first aid to casualties or managing such emergencies.

Some of the CISM interventions that may be used, depending on the situation, include:

**Defusing**

This intervention provides small group support by a trained staff member within 12 hours after the incident. It is designed to conclude the experience of the incident and provide an immediate and more personal level of support. Generally, the defusing process allows those in the group to review the event, ask questions, discuss what happened and address concerns and organise further support and debriefing sessions.

**Debriefing**

This intervention is a powerful event group support generally facilitated by a trained person within 3-7 days following the incident. Debriefing is a structured and supportive group event undertaken when workers have had enough time to take in the experience and put an irregular event into perspective. It offers workers clarity about the critical incident they have experienced and assists them in their emotional recovery.

**Grief and loss counselling**

This intervention may be for an individual or group and are designed to assist people to understand their grief reactions following a death or loss.

These different forms of interventions may be used for individuals, workplace groups, families and community groups. First aiders and helpers (e.g. volunteers, bystanders, work and community members) may need to access the support CISM interventions to enable them to deal with such experiences. In a workplace, the first aider should seek management support and request the initiation of a referral to professionals able to provide appropriate support.

**INFECTION CONTROL**

**An increased risk of infection exists when providing first aid due to the likelihood of exposure to blood and body fluids.**

This means when giving first aid, checking "D for DANGER" is a critical first step in any first aid emergency action plan. The actual risk of transmission in first aid is extremely low but you should take steps to minimise the transfer of infectious disease.

Successful infection control in a first aid setting is straightforward. It is based on good hygiene and a range of practices set in place to reduce the transmission of infections.

**Infectious diseases**

An infectious disease is passed from one person to another with the routes of transmission varying from disease to disease. A person with an infectious disease may be infectious:

- without ever becoming unwell
- before getting ill
- during the illness
- after recovery – acting as a carrier passing the infectious agent to others or shedding it into the environment

**Spread of infectious diseases**

Infectious diseases can be spread by:

- coughing or sneezing
- touch
- an exchange of body fluids (blood, vomit, urine or saliva)
- cuts or abrasions caused by contaminated objects, such as razor blades

Some infectious diseases include:

- influenza (the flu)
- tuberculosis
- common cold
- meningococcal
- herpes
- hepatitis
- glandular fever
- HIV/AIDS
- measles
- COVID-19
- Severe Acute Respiratory Syndrome (SARS)



## STANDARD PRECAUTIONS

Standard precautions are a set of infection control practices used to prevent the spread of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes. These measures are to be used when providing first aid to all individuals.

To adhere to general standard precautions you should:

- use personal protective equipment (PPE). These may include: gloves, protective clothing, face mask, resuscitation protective shield, and eye protection
- maintain personal hygiene: washing hands before and after contact with a casualty or after disposing of used material/s
- use sterile or clean dressings whenever possible
- clean up any areas contaminated with blood or bodily fluids, and dispose of any contaminated items appropriately
- seek medical advice if you believe you've been exposed to any risk of infection

### Planning for first aid emergencies

Appropriate PPE such as gloves, masks and resuscitation devices should be available in all workplace first aid emergency kits.

Written infection control procedures and appropriate equipment including protective clothing, sharps and contaminated waste containers, cleaning equipment and/or a disposable spills kit should be in place or introduced in workplaces where there is a high risk of blood and body fluid spills or injury.

### Improvising to provide protection and control infection

First aid can continue even if gloves, and a resuscitation shield are not available. The first aider must weigh up the risks and make a personal decision to proceed in such situations.

Protection of the first aider and others, in the presence of blood, body fluids and non-intact skin or sharp objects or projections such as glass and torn metal, may be achieved by improvising from materials at hand. For example, by using:

- bottled water or 'wet ones' to clean hands
- plastic bags for gloves

- plastic bags or sheeting, rubber matting, car mats, carpet or rugs, clothing, newspaper or cardboard to create an effective barrier between the blood or glass and first aiders, others and the casualty
- plastic bags with a hole cut out for a resuscitation protective barrier
- blankets, pillows or cushions for covering sharp projections likely to cause injury
- sand, soil, saw dust or 'kitty litter' in place of disinfectant granules to cover hazardous material, so as to soak up and confine spill enabling it to be scooped up easily without risk of splashing/spreading

### Standard precautions when giving first aid

Before first aid treatment:

- Assess the situation for bleeding, secretion or excretion of body fluids.
- Wash hands with mild liquid hand wash (10-15 seconds wash) and pat dry with paper towel. In an emergency, remove visible dirt by rinsing, mechanical rubbing or using wipes such as 'wet ones' and apply a waterless hand sanitiser.
- Check hands and cover cuts and abrasions with watertight dressings.
- Wear disposable gloves if there is bleeding, secretion or excretion of body fluids or if injury is suspected. Gloves are not necessary for contact with intact skin.
- Obtain sterile or clean dressings and equipment whenever possible.

After first aid treatment:

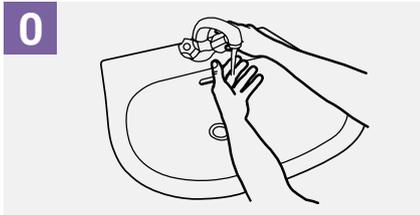
- Dispose of contaminated dressings into a yellow biohazard plastic bag or, in an emergency, use two plastic bags one inside the other.
- Dispose of sharp objects into rigid containers. Final disposal should be according to workplace policy.
- Clean blood spots and spills by isolating area if possible and using the blood and spills procedure appropriate to the size of the spill (see following information).
- Wash hands.

## HOW TO WASH HANDS

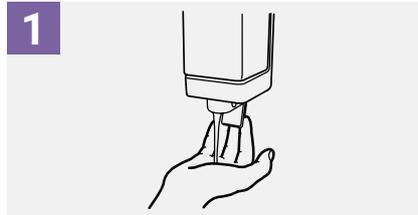
WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HAND SANITISER



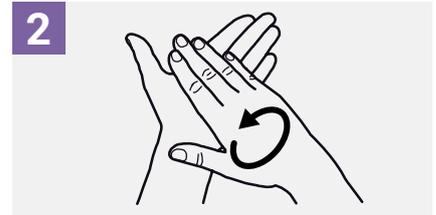
Duration of the entire procedure: 40-60 seconds



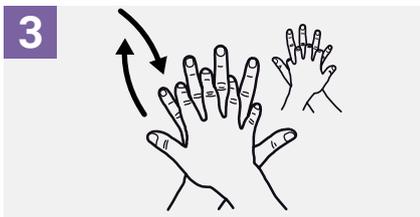
Wet hands with water;



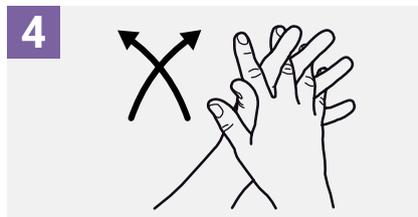
Apply enough soap to cover all hand surfaces;



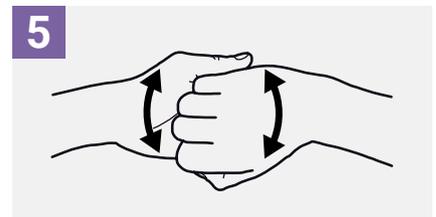
Rub hands palm to palm;



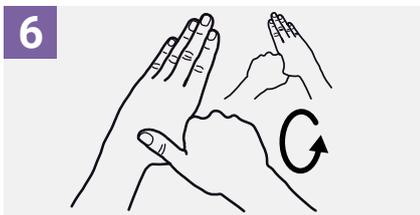
Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



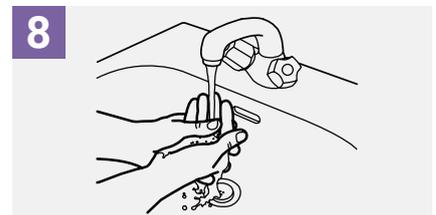
Backs of fingers to opposing palms with fingers interlocked;



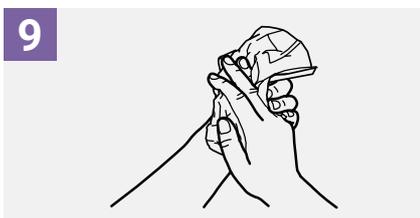
Rotational rubbing of left thumb clasped in right palm and vice versa;



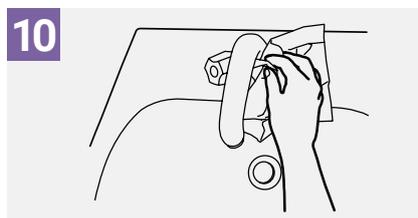
Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



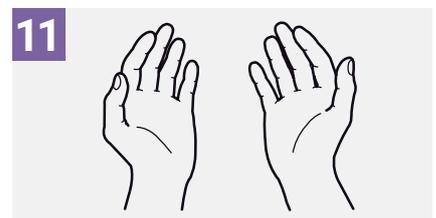
Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.

### Hand care

- take care of your hands by regularly using a protective hand cream or lotion, at least daily
- do not routinely wash hands with soap and water immediately before or after using an alcohol-based handrub
- do not use hot water to rinse your hands
- after handrubbing or handwashing, let your hands dry completely before putting on gloves

### Please remember

- do not wear artificial fingernails or extenders when in direct contact with patients
- keep natural nails short

### Person protective equipment (PPE)

PPE should be readily available in or near your first aid kit, to ensure protection to the first aider and casualty.

The PPE available could be:

- gloves
- face mask
- goggles
- apron or long-sleeved gown

Gloves will protect both the first aider and casualty from any contact-based transmission. They should be disposable single use gloves manufactured from nitrile material.

Face masks will offer some protection against droplet and aerosol transmission, ideally the face mask will provide a complete seal around the first aider's mouth and nose. A surgical mask will still provide some protection, but the first aider should be aware that contaminants could still enter through the gaps at the side of the mask.

Aprons and/or long-sleeved gowns provide protection against contact or droplet transmission directly on to the first aider's clothing. Aprons and long-sleeved gowns should be single use and disposed of after use.

When putting on a face mask, only touch the mask by the ear loops or ties. Once in place, pinch the bridge of the nose to create a seal, and pull the bottom edge of mask to cover chin. Once in place do not touch the outside of the mask.

The World Health Organisation recommends (as seen in the table below) that PPE should be **put on** in the order of:

- 1 Hand hygiene
- 2 Gown
- 3 Mask
- 4 Eye wear/face shield
- 5 Gloves

PPE should be **removed** in the order:

- 1 Gown and gloves
- 2 Hand hygiene
- 3 Eye wear/face shield
- 4 Mask
- 5 Hand hygiene

When removing gloves, ensure not to contaminate your hands by touching the outer surface of the gloves.

Firstly, pinch the outside of the cuff of the first glove, and roll the glove down your hand and hold the removed glove in your second hand that is still gloved.

Secondly, place your bare finger on the inside of the glove cuff and roll the glove down the hand, encasing the first glove in the second.

Dispose of in a waste bag and perform hand hygiene.

### HOW TO GUIDE - PUTTING ON PPE FOR CONTACT/DROPLET PRECAUTIONS

**1 Perform hand hygiene**  
 Alcohol based handrub  
 Rub hands for 20-30 seconds.  
 or  
 Water and soap  
 Wash hands for 40-60 seconds.

**2 Put on the gown**

**3 Put on the mask**  
 Medical mask.

**4 Put on eye protection**  
 Put on face shield or goggles.

**5 Put on gloves**  
 Ensure glove is placed over the cuff of the gown.

**Full PPE**

World Health Organization

### HOW TO GUIDE - TAKING OFF PPE FOR CONTACT/DROPLET PRECAUTIONS

Ensure that infectious waste containers are available for safe disposal of PPE. Separate containers should be available for reusable items.  
 Order is important

**1 Remove gloves**

**2 Remove the gown**  
 Ensure gown is pulled away from the body during removal and that clothing does not become contaminated and dispose of them safely.

**3 Perform hand hygiene**  
 Alcohol based handrub  
 Rub hands for 20-30 seconds.  
 or  
 Water and soap  
 Wash hands for 40-60 seconds.

**4 Remove eye protection**  
 Remove face shield or goggles.

**5 Remove the mask**  
 Ensure you are taking the mask off from the straps, avoid touching the mask.

**6 Perform hand hygiene**  
 Alcohol based handrub  
 Rub hands for 20-30 seconds.  
 or  
 Water and soap  
 Wash hands for 40-60 seconds.

World Health Organization

If wearing an apron or gown – pull to tear apron ties and peel off your gloves at the same time. You may need to perform hand hygiene between steps if you think your hands have been contaminated.

When taking off a face mask, ensure to only touch the mask by the ties or ear loops, slightly bend forward with head down when removing mask, so as not to touch the rest of your face/head when removing mask.

Once all PPE has been removed the first aider should dispose of the spent PPE only touching the inside of any PPE into a waste bag and then into the bin. Disposing this way means there is minimal contact with any of the contaminated PPE. Once this has been done, the first aider should wash their hands.

### References

Department of Health and Human Services, State Government of Victoria, Australia. (2020, August 13). *Face Coverings: whole of Victoria*. Retrieved from Victoria State Government Health and Human Services: <https://www.dhhs.vic.gov.au/face-coverings-covid-19>

World Health Organisation. (2020, April 22). *Emergency preparedness, response; HOW TO PUT ON AND TAKE OFF Personal Protective Equipment (PPE)*. Retrieved from World Health Organisation: <https://www.who.int/csr/resources/publications/putontakeoffPPE/en/>

## MANAGEMENT OF BLOOD AND BODY FLUID SPILLS

### Spot cleaning – for vomit, secretions and small spots and spills of blood up to 10cms in size

- Use PPE such as gloves, then wipe up spot or drop immediately with absorbent material (tissue, paper towel or alcohol wipe).
- Discard contaminated material (tissue, paper towel or alcohol wipe) into plastic bag as outlined for handling and disposal of sharps and other clinical wastes.
- Clean with water and finally if possible, spray or wipe down surface with alcohol.
- Wash hands.

**Note:** Where a spill occurs on a carpet, wash with warm water and detergent and shampoo as soon as possible. Do not use bleach.

### Large spills (greater than 10 cm in diameter)

- Isolate the area.
- Collect cleaning equipment.
- Wear disposable rubber gloves, eye protection, waterproof overalls, disposable plastic apron if risk of splashing and waterproof overshoes if the size of the spill calls for it.

- Large spills that have occurred in "dry" areas (such as carpeted floors), should be contained and generation of aerosols should be avoided. Granular formulations that produce high available chlorine concentrations can contain the spilled material and are useful for preventing aerosols. A scraper and pan should be used to remove the absorbed material. The area of the spill should then be cleaned with a mop, and bucket of warm water and detergent. The bucket and mop should be thoroughly cleaned after use and stored dry.
- Use disposable (e.g. cardboard) scraper and pan to scoop up granular disinfectant and any unabsorbed blood or body substances.
- Discard contaminated material (including scraper and pan) into plastic bag as outlined in handling and disposal of sharps and other clinical wastes or into an impervious container such as plastic bucket with lid.
- Wipe area with absorbent material (tissues, paper towelling, toilet paper) to remove any remaining blood or body substances and place in plastic bag or container.
- Wash hands.
- Clean the area thoroughly with mop using warm water and detergent.
- Disinfect the mop with sodium hypochlorite 1,000 ppm of available chlorine (or suitable disinfectant solution) and allow to dry.
- Wash hands thoroughly after cleaning completed.

### Suggested reading

<https://www2.health.vic.gov.au/public-health/infectious-diseases/infection-control-guidelines/manage-blood-body-fluid-spills>



Scan QR Code using your mobile phone camera to access video content.



## HANDLING AND DISPOSAL OF SHARPS AND OTHER CLINICAL WASTES

Sharp items (such as syringes with needles and blades used to penetrate the skin of a person or for first aid treatments, or found in the workplace environment) must not be passed from person to person and no attempt should be made to bend, break, recap or otherwise manipulate the sharp.

It is safer to dispose of the sharp by holding the barrel of the syringe with a latex gloved hand. Dispose of in rigid containers (yellow/orange rigid containers designed for the purpose, labelled and bearing a biological waste hazard sign) and incinerated according to workplace arrangements by a licensed contractor.

Clinical wastes such as cotton balls, used bandages and wound dressings from first aid treatments are placed in yellow plastic bags designed to meet clinical waste disposal specifications and incinerated according to workplace arrangements by a licensed contractor.

Sharp items and clinical wastes have the potential to expose people to blood borne diseases in workplace first aid situations. Medium-sized to large workplaces should have written workplace protocols and appropriate equipment for safe sharps and clinical waste handling and disposal.

In all other first aid situations common sense should prevail when handling and disposing of sharps and wastes. The following disposal methods could be used when equipment is unavailable.

### Sharps

- › Obtain a rigid walled container (e.g. glass or plastic jar, soft drink bottle with lid preferably).
- › Take the container to the sharp.
- › Pick up the syringe with a latex gloved hand by the barrel or 'fat' end.
- › Drop sharp into the container pointed end first.
- › Seal the container.
- › Contact can be made to the local council or health service for collection/disposal information.

### Clinical waste

- › Use two intact plastic bags, one inside the other.
- › Take the bags to the waste.
- › Use gloved hands.
- › Place clinical waste (e.g. cotton wool, bandages, tissues, resuscitation protective shield) in the bag.
- › Tie the bags at the neck.
- › Contact the local council or health service for collection/disposal information.

### Needle stick injury and splash exposure

Needle stick injury immediate actions:

- › Promptly flush the wound under running water (do not squeeze).
- › Wash the wound using warm water and liquid soap (except for the eyes, mouth and nose). Alcohol-based hand rinses or foams (60-90% alcohol by weight) should be used when water is not available.
- › Thoroughly pat-dry the area.
- › Apply a sterile waterproof dressing (such as an adhesive plaster), as necessary, and apply pressure through the dressing if bleeding is still occurring.
- › Follow procedure in handling and disposal of sharps and other clinical wastes and place the syringe in a sealed container.
- › Seek medical assistance.

### Splash exposure immediate actions

- › Remove contaminated clothing.
- › Promptly flush any exposed wound (i.e. cut or broken skin) under running water.
- › Wash the exposed wound using warm water and liquid soap (except for the eyes, mouth and nose).
- › Rinse the affected eye (with affected eye downwards, so as chemical does not affect uncontaminated eye), mouth and nose (if affected) thoroughly with warm water (without soap) or saline.

### Workplace first aid situation

- › Seek advice from local hospital or local workplace medical centre. Manage the exposure as above.
- › Document the incident.
- › Accompany the employee to the hospital or doctor and ensure the doctor is provided with the sealed container with the syringe inside (if needle stick injury).
- › Ensure that confidentiality of the incident and anonymity of the injured person is maintained.

### Prevention practices

A vaccine is available for Hepatitis B Virus (HBV) but none for Hepatitis C (HCV) or HIV. Protection through vaccination is an important consideration for first aiders and where reasonable in terms of a workplace first aid risk assessment, employers should offer (HBV) vaccination to first aiders.

### References

<https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019>

Safe Work Australia: *National Code of Practice for the Control of Work Related Exposure to Hepatitis and HIV (blood-borne) Viruses* [NOHSC: 2010 (2003)]. <https://www.safeworkaustralia.gov.au/search/site?search=Work+related+exposure+to+hepatitis+>

# MANUAL HANDLING

Manual handling is defined as any activity requiring the use of force exerted by a person to lift, push, pull, carry or otherwise move, hold or restrain any object (including a person).

There are three steps to take to manage a person's safety when their work involves manual handling tasks:

- (1) Identify the task(s) involving hazardous manual handling.
- (2) Undertake a risk assessment of the hazardous manual handling task(s).
- (3) Control the risk to ensure that any likelihood of the worker suffering a musculoskeletal disorder is either eliminated or reduced.

## Manual handling and first aid

- always assess the casualty before moving them. This is a quick analysis of the best way to move them given the environment and risks involved to yourself, the casualty and to others helping you
- reduce or eliminate the amount of manual handling wherever possible
- when dealing with casualties who are conscious direct them to assist you with their movements wherever possible. Remember to think ahead - get them to position themselves where they may be easily managed if they become unconscious
- use any movement aids or emergency equipment available or improvise by using materials at hand such as plastic sheeting or smooth surface sheeting as slide/slide board
- manual handling techniques are designed to reduce the force and exertion for the handler's body. These techniques need to be practiced and remembered
- push or pull a casualty or load into the required position rather than lift. Lifting a casualty or any equipment should be avoided wherever possible as lifting is a very high risk activity. A human body is a heavy, unstable and an unpredictable load

When moving a person or load:

- › Move your whole body when transferring your body weight for ideal transfer technique.
- › Turn your whole trunk to avoid twisting your spine.
- › Hold the load being moved close to your body and eliminate any forward or side flexion (bending) or leaning sideways.
- › Your shoulders should be at the same level and facing the same direction as your hips.
- › Work at waist level wherever possible, for example by moving your body down to the casualty.
- › Always transfer a casualty or load to the same level or to a lower level.
- › Try to exert the force on a casualty or load as close as possible to your own body.

## Process of undertaking a manual handling task

- › Stop and think.
- › Position the feet.
- › Adopt a safe working posture.
- › Keep close to the load.
- › Move smoothly.



# FIRST AID

First aid is the first and immediate assistance of a casualty with minimal or no medical equipment.

The aims of first aid are to:

- preserve life
- protect the unconscious
- prevent further injury
- promote recovery

First aiders must be able to quickly assess an emergency situation and identify and minimise risks and hazards to themselves and the casualty.

A first aider also needs to be able to assess the casualty for injury or illness and respond using appropriate first aid procedures and available resources. In some life threatening situations, prompt first aid could be the difference between life and death.

With this in mind, a first aider should be able to recognise and respond to the most life threatening injuries or conditions immediately before moving on to the less serious injuries. For example a first aider must manage a casualty who has breathing difficulty before managing their broken leg.

The initial treatment of a casualty may mean the difference between life and death, and first aiders are required to develop and maintain a wide spectrum of knowledge and skills to effectively manage a casualty's condition.

The ability to rapidly assess the scene and determine probable cause is essential in identifying time critical conditions. Application of this will result in the best outcome for casualties.

## Mechanism of injury

Mechanism of injury (MOI) is the terminology used to determine the way in which the physical injury occurred (e.g. fall from a height, high-or low speed motor vehicle accident, ejection from a vehicle or vehicle rollover).

The MOI is used to estimate the forces involved in trauma and thus, the potential severity for wounds, fractures, and internal organ damage that a casualty may suffer as a result of the injury.

The MOI involves evaluation of the incident scene, questioning of the casualty and bystanders with the resulting information used to identify injury patterns and severity common to the mechanism.

The MOI can be determined through the examination of the forces involved with the trauma. It involves the principles of the energy transfer to determine the potential for serious injury. A casualty who appears to

have minor injuries (blow to the head) may deteriorate rapidly or over a number of days after the initial trauma due to a serious underlying injury, however the examination of the forces involved with the initial trauma can be used to highlight this potential.

Significant mechanisms of injury that will indicate to a first aider that serious injury may be present at the workplace are:

- fall from height
- pedestrian stuck by a vehicle (e.g. forklift, tractor, pallet scissor lift)
- vehicle rollover, high speed crash, ejected from a moving vehicle
- blast injury
- struck by object falling from height
- fist fight

**Note:** Wherever there is any doubt on casualty's condition, particularly when the MOI indicates potential for serious injury, ensure triple zero (000) has been called and remain with the casualty until the arrival of medical assistance.

## Communicating in an emergency

The attitude of the first aider has enormous influence on the casualty/casualties and others at the scene. When assisting a casualty, the first aider should deliver clear instructions and appear:

- calm and controlled
- knowledgeable
- compassionate
- reassuring
- assertive

## Age groups

In providing first aid, the age of the casualty is important in deciding the appropriate actions to take. The following age categories are recognised by the Australian Resuscitation Council.

**Infant:** 0 – 1 Year

**Child:** 1 – 8 Years

**Adult:** Over 8 Years

The size of a child, rather than their age, should be the guiding factor.



Scan QR Code using your mobile phone camera to access video content.



### History of the emergency incident

Collecting information about what happened in an emergency helps to decide what needs to be done. Information about the emergency may be gained from:

- the casualty/casualties
- witnesses
- your observations may include medical alert bracelet/necklace

Asking questions is the best way to find out what happened. Identify who could be the ideal person to tell you what is going on and ask them:

- what has happened here?
- how many people are involved?
- what time did this happen?
- tell me what you saw?
- have they said anything to you?
- how long have they been this way?
- have you moved the person?
- has anyone called the ambulance?

A picture needs to be built up about a casualty's condition. Information gained about the casualty from their signs and symptoms assists the first aider to make appropriate decisions as to the first aid required.

### Signs

Any information gained by the first aider through their senses of sight, smell, hearing and touch, such as:

- **sight** - bleeding, colour of the person's skin, deformity of a body part
- **smell** - smell of urine, vomit
- **hearing** - the sound of breathing, wheezing or gasping breaths
- **touch** - the feel of pulse, the heat of the skin, body temperature

### Symptoms

Something the casualty feels, experiences, complains of or reports, such as:

- pain
- loss of sensation
- cold/heat
- thirst
- dizziness
- nausea
- loss of memory

### Moving a casualty

- the condition of a collapsed or injured casualty may be worsened by movement, increasing pain, injury, blood loss and shock. However, a casualty lying in a hazardous area such as a road/railway line etc. may need to be moved to ensure safety
- a single rescuer may need to drag the casualty: either an ankle drag or arm-shoulder drag is acceptable

- if an unconscious breathing person can be managed within the vehicle, do not remove them from the vehicle unless there is a threat to life. Clear the airway of foreign material; maintain head tilt and jaw support and continuously reassess the airway and breathing
- if the person in the vehicle is unconscious and not breathing normally despite opening the airway, remove the person from the vehicle if possible and commence CPR

### RECOGNITION AND FIRST AID MANAGEMENT OF THE SERIOUSLY ILL PERSON

**Anyone can deteriorate quickly with a serious illness, but certain people are at higher risk including:**

- children under 10
- people over 65 years of age
- people with chronic diseases
- people with weakened immune systems
- Aboriginal and Torres Strait Islander Peoples

**The indicators of serious illness in adults include:**

- rapid breathing
- breathlessness or feeling short of breath
- restlessness, agitation, dizziness, decreased level of consciousness, confusion, slurred speech or disorientation
- shivering or shaking, fever or feeling very cold
- unexplained muscle pain or discomfort
- passing little or no urine
- rapid heart rate
- nausea and or vomiting
- new rash or mottled, blotchy, pale, or discoloured (often described as mottled) skin
- person may say they 'don't feel right' or they might say they feel like they 'are going to die'

### Serious illness in children and infants

Children and infants with serious illness can deteriorate quickly.

### Signs and symptoms of serious illness in infants and children may include:

- rapid breathing, weak cry or grunting
- hard to wake, lethargic or floppy
- seizure or convulsions
- a rash that doesn't fade when you press it
- discoloured, mottled, very pale or bluish skin
- fever, feeling cold or cold to touch
- vomiting repeatedly
- not passing urine (or no wet nappy) for several hours
- not feeding or drinking

### Management

Serious illness is a medical emergency and typically requires in-hospital management and the prompt administration of medications or an operation which target the illness, be it infection or other illness.

In the following pages you will learn how to follow the DRSABCD plan. With deteriorating people calling triple zero (000) is paramount.

### Agitated person

First aiders may be presented with a casualty displaying abnormal behaviour such as aggression, agitation and abnormal thinking or thoughts. Behavioural disturbances can range from mild to life-threatening. The priority in these situations is first ensuring the safety of the first aider and keeping the affected person safe from harm until medical assessment can be undertaken to determine the cause.

### Causes

Agitation or behavioural disturbance can have many causes and may not be related to a mental health disorder or other illness.

There are many causes for agitation or behavioural disturbance including:

- medical conditions such as head injury, infections, hypoglycaemia
- intoxication or withdrawal
- mental health conditions such as schizophrenia, anxiety, personality disorder
- intellectual disability
- grief
- pain
- situational stress

### Signs and symptoms

While common to many medical conditions and highly variable, the history and physical findings will be important in diagnosis and indicate the need for medical assistance.

- agitation
- restlessness

- excitation
- pacing
- unusual thinking
- hallucinations
- state of undress
- altered conscious state
- aggressive or violent behaviours

### Indications of severe and potentially life-threatening behavioural disturbance:

- elevated body temperature
- insensitive to pain
- rapid breathing and pulse
- extreme arousal with violence or aggression

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- › Avoid being alone with the agitated person and maintain physical distance (minimum 2 arm's length).
- › Face the person and maintain visual contact.
- › Do not turn your back on the person.
- › Ensure clear access to two exits.
- › Remove objects that are potential weapons.
- › If unsure or threatened in any way remove yourself and others from situation and seek a safe space.
- › Try to reassure casualty if safe to do so, speaking politely and ensure non-threatening body language.
- › Actively listen to what the casualty is saying, be non-judgemental and be empathetic.
- › Reduce external stimuli.
- › Be aware of cultural background and avoid words or actions that could exacerbate situation.
- › Seek assistance from someone the person knows and trusts but do not leave the scene to find them.
- › Do not attempt to physically restrain.
- › Observe closely for deterioration and manage accordingly.
- › Communicate changes to triple zero (000).

### COMMON SYMPTOMS OF ILLNESS IN INFANTS AND CHILDREN

Infants and children are at a higher risk of becoming unwell than adults as their immune system is still developing. The immune system helps the body fight off diseases and infections and is nearing full development at 7-8 years old. Subsequently, young children and infants are at a greater risk than adults of developing conditions such as whooping cough, chickenpox, ear infections and food allergies. Infections may be more severe and

require a longer period of recovery. Environmental factors must be considered as a child's ability to regulate body temperature is less efficient than an adults and they can very quickly become hypo or hyperthermic.

As children age, their ability to communicate increases and they may be able to tell you they feel unwell, however before a child is able to clearly articulate the best guide to the state of health is a child's behaviour.

Healthy children generally have a good appetite and sleep through the night. They have a lot of energy and display a natural curiosity to surroundings and respond to external stimuli. Children who look, act and behave normally are unlikely to be ill.

### Signs of a sick child:

- quiet and inactive
- cry easily and not be comforted
- irritability when disturbed
- lack of appetite
- hot to touch
- flushed or pale skin
- fretful or listless
- no interest in playing

### Symptoms of a sick child

**Vomiting:** common reaction to bodily upsets. May or may not be serious in the absence of other symptoms and lead to dehydration.

**Diarrhoea:** loss of fluid through repeated watery bowel movement and can lead to dehydration. Commonly caused by gastroenteritis.

**Pain:** pain when passing urine, in the abdomen, throat or ears should be assessed by a doctor. Can be difficult to identify and may be purely behavioural.

**Rash:** Common in children and may be caused by an infectious disease or an allergen. A purple rash that does not fade with pressure requires urgent medical attention.

**Fever:** The fever itself is not harmful it is the rapid/ sudden change in temperature which can lead to febrile convulsions. Requires rest and fluids if viral and antibiotics if bacterial. < 3 months old and a fever above 38 should be treated as an emergency.

### Dehydration

Dehydration occurs when there is not enough fluid in the body to maintain normal function. Water helps the body to maintain normal temperature and young children and infants (particularly < 6 months) are at a greater risk of dehydration than adults.

A child who is very thirsty may already be dehydrated and should be given fluids immediately. A child who is very dehydrated and cannot keep oral fluids down may need to be admitted to hospital for intravenous fluid administration or via a tube through the nose into the stomach.

### Causes of dehydration in infants and children:

- vigorous physical activity
- exposure in hot weather
- existing fever
- vomiting and diarrhoea
- medications
- inadequate fluid intake
- < 6 months of age

### Signs and symptoms (mild):

- dizzy or lightheaded
- nausea and vomiting
- headaches
- dark yellow or brown urine
- dry lips, tongue or throat
- fewer wet nappies or not going to the toilet as often in older children

### Management

#### Infants:

- › Ensure they are seen by a doctor if < 6 months old
- › Feed more often if breastfeeding.
- › Oral rehydration salts as recommended.
- › Monitor temperature.
- › Monitor for change.

#### Older Children:

- › At least one cup of water or oral rehydration solution every hour for four hours.
- › Increase fluid intake for vomiting and diarrhoea.
- › Monitor temperature.
- › Monitor for change.

### Signs and symptoms (severe):

- lethargic, decreased activity
- extreme thirst
- pale skin and sunken eyes
- absent tears when crying
- cold extremities
- increased respiratory and heart rate
- irritable
- drowsiness or confusion

For any severe signs of dehydration call an ambulance or go to your closest hospital emergency department.

### Gastroenteritis

Gastroenteritis is a bowel infection that causes diarrhoea and sometimes vomiting. It is the most common cause of dehydration in infants and children and can result in rapid fluid loss through diarrhoea lasting up to 10 days.

Gastro can be caused by many germs but most commonly by a viral infection, is easily spread and more common and severe in babies and young children.

### Signs and symptoms:

- feel unwell
- not want to eat or drink
- diarrhoea (up to 10 days)
- stomach pain
- fever
- vomiting (usually in the first 24 hours before diarrhoea begins)

### When to seek help:

- < 6 months old due to higher risk of dehydration
- vomiting and diarrhoea and not drinking
- 8–10 watery stools per day or no improvement after 10 days
- frequent vomiting
- signs of dehydration
- severe stomach pain
- blood in stool
- green vomit

### Identification and management of a sick infant

Newborns are at higher risk for infection and should be observed carefully for any signs of illness particularly in the first seven days of life. An infection for a newborn can cause sickness very quickly and the symptoms can be subtle.

Feeding is a reliable measure of a newborns wellbeing and any change to this (not feeding well or sudden change) should be followed up with a doctor.

Behavioural changes such as an increase in crying or a change in activity level may be the first indication of illness in babies. Generally, an infant that is feeding well, looks well, can be comforted when crying and active when awake is unlikely to be very ill. An infant that becomes very fussy or has decreased energy, may be displaying signs of illness and should be seen by a doctor.

### Fussiness

An infant cries as a way of communicating and different cries may indicate what is required. This may indicate the need for food, sleep, nappy change or contact and providing this should console them. An infant that becomes fretful, crying for long periods of time may be in pain or be ill. This may be due to gas, abdominal pain, earache or an infection. An infant that is fussy and cannot be consoled should be taken to a doctor for examination.

### Decreased energy

Decreased energy in an infant may be a sign of a common viral infection such as a cold or a potential more serious infection such as an influenza or meningitis. This can develop slowly over time and may be difficult for parents to identify.

### Signs that indicate a decreased level of energy are:

- sleeping longer than usual
- decreased activity level
- difficult to wake for feedings
- drowsy or sluggish when awake
- no response to visual or auditory stimulation

If an infant is identified to be lethargic or listless, they should be taken to a doctor for examination.

### Fever

A newborn baby or young infant under the age of 3 months may display a fever as the first and only sign of a serious infection. An elevated temperature above the normal range should be assessed by a doctor.

An ambulance should be called if an infant has any of the following signs or symptoms:

- listless or limp
- weak or continuous crying which is high-pitched
- seizures
- inability to wake
- swelling of the fontanelle
- pale, mottled or blue skin
- breathing difficulties
- a rash that does not fade after you press the skin

### Distraction techniques when providing first aid to infants and children

#### Distraction techniques for infants under 6 months:

- rocking, stroking their face, gentle patting
- having family present
- rattles or other baby toys
- singing

#### Distraction techniques for toddlers (6 months to 2 years):

- blowing bubbles
- toys and books that make noise or with buttons to push
- singing your child's favourite song
- light-up toys
- reading a book

#### Distraction techniques for older children:

- big belly breathing, blowing away the scary feelings or blowing away the hurt
- blowing bubbles or a windmill
- counting games
- reading a book, or a search-and-find book
- mind pictures, e.g. think about a favourite sport, family holiday, school game or activity; let your child tell a story or answer questions about what is pictured in their mind

## MANAGEMENT OF THE CONSCIOUS AND UNCONSCIOUS BREATHING CASUALTY FIRST AID PRIORITY ACTION PLAN

A first aid priority action plan is a quick reference tool to guide the first aider in what to do and the order in which actions are taken when managing an emergency situation.

Each letter represents a major step in the care of a casualty and the actions in each step are completed before moving on.

### D

#### DANGER

- › Check for dangers to yourself, bystanders and the casualty.
- › Make the scene safe by removing the danger from the casualty or the casualty from the danger. Only continue when it is safe to do so. If unsafe, remain clear and call triple zero (000).

### R

#### RESPONSE

Is the casualty conscious? A person who fails to respond or shows only a minor response, such as groaning without eye opening, manage as if unconscious.

Assess for response to voice and touch:

- › Give simple commands e.g. "Open your eyes, squeeze my hand". With an adult casualty, grasp the shoulders firmly to determine a response; for children and infants, assess their response by talking or clapping and tapping the ends of their feet. **Never shake an infant.**
- › If the casualty is **conscious**, check **ABCD** and position appropriately and send/call for help (triple zero 000) as necessary.
- › If the casualty is **unconscious**, continue with the letter "S" below.

### S

#### SEND

- › Send/call for help (triple zero 000).
- › Send for AED and first aid kit where available.

### A

#### AIRWAY (air passages)

- › Open the mouth and check for foreign material or obstructions. In an infant make sure the nose is also clear.
- › If airway is not clear from food, vomit, blood or fluids (e.g. immersion incident) turn casualty into the recovery position, open mouth and drain matter downwards, remove loose dentures and remove visible material with rescuer's fingers then position on back.
- › Lift chin upwards (towards the ceiling) by placing fingers under chin or use a pistol grip; this lifts the tongue from the back wall of the throat and opens the airway.
- › With upper hand on forehead, tilt an adult and child's head fully back to further open the airway. Place an infant's head in a neutral position, sometimes known as a "sniffing position" (as tilting an infant's head backwards or forwards may cause airway obstruction).

### B

#### BREATHING (lungs)

Adults breathe approximately 12-15 breaths per minute; infants/children approximately 20 breaths.

- › Look for the even movement of the rising and falling of the lower chest for 10 seconds.
- › Listen for the sound of regular normal breathing.
- › Feel air escaping from the mouth/nose with your cheek.

Note: A casualty who is breathing normally is now turned on to their side (recovery position) with neck stability if possible.

**If a casualty is not breathing or not breathing normally, commence resuscitation as per the management of a NON-BREATHING casualty action plan.**

### C

#### CIRCULATION (heart)

- › Check for circulation by checking for warmth and skin colour (if lining inside the mouth is pink this is a positive sign).

### D

#### DEADLY BLEEDING

- › Check for external bleeding – pooling or spurting blood loss, control with a pad and bandage or improvised material which may be replaced when first aid equipment is made available. Elevate and rest area where possible.
- › Check for internal bleeding – bleeding from ears, tenseness or swelling of abdomen/thighs.

## DRSABCD FOR THE BREATHING CASUALTY: FURTHER ACTION POINTS

**Manage** other injuries and/or conditions and document all observations when possible.

**Health professionals may wish to check carotid, apical or brachial pulse for rate, regularity and volume:**

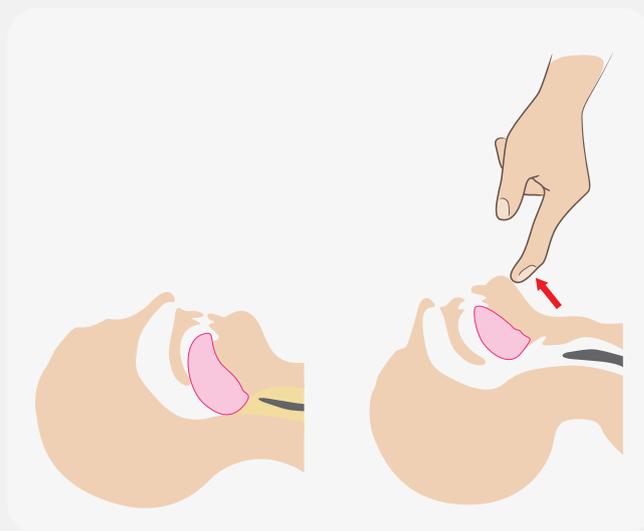
Check quality for 10 seconds (remember if a casualty is breathing they are circulating).

**Constantly monitor** casualty condition for changes, keep warm, check for identification and continually assess ABCD.

If the condition of the casualty worsens **telephone triple zero (000)** again.



Scan QR Code using your mobile phone camera to access video content.



### Common causes of airway obstruction

In an unconscious casualty, management of their airway takes priority over any injury, including the possibility of spinal injury.

There are two common causes for potential airway obstruction in an unconscious casualty:

- 1 When a casualty becomes unconscious, all of their muscles relax. If the casualty is lying on their back, the tongue (a large muscle), which is attached to the base of the jaw, can fall against the back of the throat blocking air from entering the lungs. This is the most common cause of airway obstruction in an unconscious casualty. Tilting the head backwards and lifting the chin up at the same time are actions used to overcome obstruction.
- 2 As an unconscious casualty is unable to cough or swallow, their airway is also at risk of becoming blocked by foreign material. Where the airway is obstructed by fluid (vomit, blood or liquid due to immersion) the casualty should be rolled onto their side to clear the airway (recovery position). The mouth should be opened and turned slightly downwards to allow gravity to assist with drainage; a first aider may use a finger sweep to remove visible foreign material.

### Side (recovery) position

The side position assists in clearing foreign material such as vomit and secretions from all casualties and is the position used to manage all unconscious breathing casualties regardless of other suspected injuries. Protection of the airway always takes precedence.

#### STEP 1 - PREPARE THE CASUALTY

- 1 > Kneel beside the casualty.
- > Place the casualty's far arm straight out.
- > Place the casualty's near arm across the chest.
- > Bend the casualty's nearest knee up.

#### STEP 2 - ROLL THE CASUALTY

- 2 > Place your hand on casualty's knee/hip.
- > Place your other hand on the casualty's shoulder.
- > Gently roll the casualty away from you.
- > Ensure the knee of the upper leg touches the ground.

#### STEP 3 - STABILISE THE CASUALTY

- 3 > Place the casualty's upper arm across the lower arm.
- > Ensure the head is tilted back and the face turned slightly downward to allow drainage of fluids from the mouth.
- > Ensure that the upper shoulder is in line with upper hip.

#### Moving a casualty into the recovery position from a facedown position

- > Kneel beside casualty.
- > Place casualty arm closest to you reaching above head.
- > Place your hand on closest shoulder and your other hand on the hip.
- > Roll casualty towards you using your body to support.
- > Position outstretched arm and upper leg to support as per normal recovery position.



**Note:** A casualty who is bleeding or has clear fluid leaking from the ear, should be positioned injured side down so that fluid may drain.

**Note:** Unconscious pregnant women should be turned onto their left side. This position helps reduce pressure on the major abdominal organs and allows better blood supply to the heart.

**Note:** Where possible, move the casualty into a position which creates accessibility. Do not roll them facing a wall or underneath a table.

### SELF-PRACTICE ACTIVITY

#### Provide first aid to an unconscious casualty using the unconscious breathing casualty: first aid priority action plan (DRSABCD).

Ask a friend or partner to 'be' an unconscious casualty lying on their back.

- ask your casualty to shut their eyes and not to help or hinder you in any way
- manage the unconscious casualty using the priority action plan
- remember to deal with each priority in the correct sequence before moving on to the next



## GETTING HELP IN AN EMERGENCY



### TRIPLE ZERO (000)

Calling triple zero (000) contacts the emergency services and is the primary emergency number in Australia and can be accessed from fixed and mobile networks. Dialling 112 directs you to the same call service and does not give priority over 000. Upon dialling you will be asked which service you require:

- **Ambulance**
- **Fire Brigade**
- **Police**

If you are calling from a mobile phone, you may also be asked which state you are calling from.

The service will ask you:

- what is the exact location of the emergency?
- what is the phone number you are calling from?
- what is the problem/what exactly happened?
- how many people are hurt?
- what is the age of the casualty?
- is the casualty conscious?
- is the casualty breathing?

Do not hang up until told to as you may be required to provide further information. Have someone meet the ambulance and provide directions to the scene.

The call taker will provide instruction where appropriate in what steps the caller should take until the arrival of an ambulance.



### POISONS INFORMATION CENTRE (13 11 26)

# RESUSCITATION

Resuscitation is a general term used to encompass first aid and medical treatments intended to restore a person to life where there are no signs of life and include measures such as rescue breathing, chest compressions and defibrillation.

The Australian Resuscitation Council (ARC) is a voluntary coordinating body which produces resuscitation guidelines based on the consideration of scientific and published material. The purpose of these guidelines is to promote uniformity and simplicity in resuscitation techniques and terminology.

As a result of the efforts of the International Liaison Committee on Resuscitation (ILCOR), of which the ARC is a member, there is now relative standardisation of resuscitation techniques around the world.

## CARDIAC ARREST: THE CHAIN OF SURVIVAL

### Sudden cardiac arrest and death

Cardiovascular disease is the greatest cause of death in the adult Australian population.

A cardiac arrest is the complete cessation of heart action recognised by the absence of response, unconsciousness and a casualty who is not breathing or not breathing normally. A cardiac arrest may occur before the person has time to get to a hospital or seek medical assistance. Importantly, death in these casualties will occur without immediate emergency first aid.

### “Chain of survival”

The “chain of survival” concept was developed by the emergency medical community as a tool to describe the critical emergency actions necessary when an unresponsive collapsed casualty is not breathing and shows no sign of circulation i.e. a cardiac arrest has occurred.

## CHAIN OF SURVIVAL: CARDIAC ARREST CRITICAL ACTIONS

### Early access

Early access to the emergency medical support (EMS) is necessary for prompt arrival of emergency response personnel.

- Dial triple zero (000) for ambulance.
- Take the Automated External Defibrillator (AED) when called to an emergency.

### Early CPR

Early CPR is a critical link because it buys time by supplying sufficient oxygen to keep the brain and heart alive until defibrillation and other advanced care can restore normal heart action. Ideally, CPR will be initiated by bystanders, workmates or the first aider in the vicinity prior to the arrival of the AED if it is not available at the scene.

- Begin CPR immediately if signs of cardiac arrest are present (unconscious and not breathing/not breathing normally).
- Get AED machine to the location of emergency.

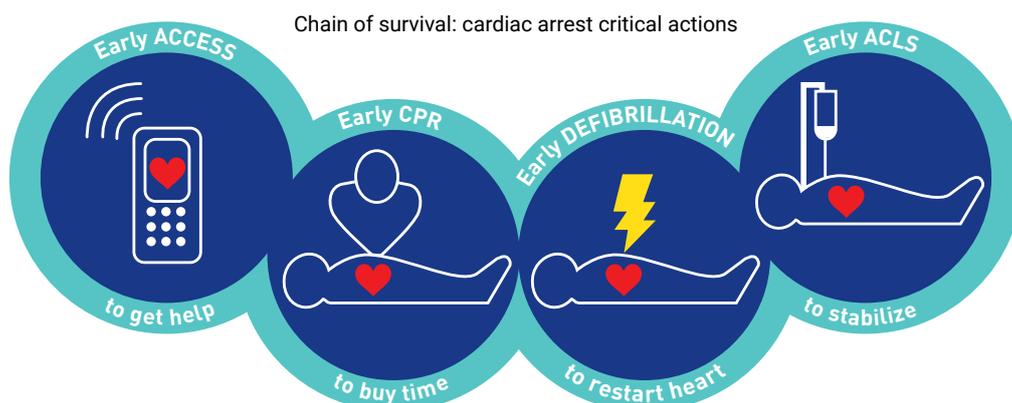
### Early defibrillation

Early defibrillation is the crucial treatment in cardiac arrest as it often restores the normal heart rhythm and pumping action. If defibrillation is given within the first 5 minutes of cardiac arrest there is a 50% chance of survival, but with each subsequent minute the chance of success is reduced by a factor of 7-10%, with little chance of effective revival after 10 minutes.

- Heed any precautions, attach the AED, follow the prompts and defibrillate.
- Manage and defibrillate according to voice prompts until the emergency services arrive.

### Early advanced cardiac life support

Early advanced cardiac life support is provided by highly trained emergency medical support personnel such as paramedics (ambulance officers, MICA, paramedic fire officers etc.) who are trained to provide CPR, defibrillation and more advanced care such as giving cardiac drugs and inserting endotracheal breathing tubes.



## CARDIOPULMONARY RESUSCITATION (CPR)

CPR is required when a person is unconscious, not breathing or not breathing normally.

### NOT BREATHING NORMALLY

A person may not be breathing normally as a result of:

- direct depression of, or damage to, the breathing control centre of the brain, for example following a head injury
- airway obstruction from choking, asthma, immersion (spasm of vocal chords), tongue (incorrect positioning), allergic reactions
- paralysis or impairment of the nerves and/or muscles of breathing e.g. venom, drug overdose

Not breathing normally in the first few minutes of a casualty suffering a sudden cardiac arrest is not uncommon and is known as **agonal breathing**. It occurs because there is a lack of oxygen to the brain.

Agonal breathing is an abnormal breathing pattern characterised by shallow, slow (3-4 per minute), irregular inspirations followed by irregular pauses. Sounds of gurgling, gasping, sighing or coughing may be present, as well as movements of the chest and stomach. Sometimes chest movements are mistaken for “breaths” but these movements are not effective and the person is **not breathing normally**.

Research has demonstrated the presence of agonal breathing in cardiac arrest indicates a more favourable prognosis than in cases of cardiac arrest without agonal breathing.

### THE PURPOSE OF CPR

Chest compressions combined with rescue breathing is known as cardiopulmonary resuscitation (CPR). The purpose of CPR is to temporarily maintain circulation sufficiently to preserve brain function through a reduced oxygen supply until specialised treatment is available. Effective CPR also increases the chance of successful defibrillation.

As brain cells begin to die within 3 minutes of being deprived of oxygen, it is important chest compressions and rescue breathing are commenced as soon as possible.

If chest compressions only are given, they should be continuous at a rate of approximately 100-120 per minute.

If a defibrillator becomes available activate, listen, apply pads quickly and follow the voice prompts.



### TO BREATHE OR NOT TO BREATHE

Many now advocate for compression only CPR however this is an initiative for untrained rescuers or situations where rescue breaths are not possible or practical. The rate of compression only CPR (that is no breaths are given) is approximately 100-120 per minute. Compression only CPR is effective but only for a limited amount of time. Chest compressions with rescue breaths improves chance of survival and is especially important for infants and children where the cause of cardiac arrest is most commonly due to respiratory illness or injury.

Where possible, rescue breaths should **ALWAYS** be performed.

### WHEN TO CEASE CPR?

CPR should be given without interruption until;

- the casualty starts responding or breathing normally,
- or the scene becomes unsafe,
- or when emergency services are ready to take over
- or until you are physically unable to continue.



Scan QR Code using your mobile phone camera to access video content.



## MANAGEMENT OF THE UNCONSCIOUS NON BREATHING CASUALTY

### FIRST AID PRIORITY ACTION PLAN

#### D

##### DANGER

- › Check for dangers to yourself, bystanders and the casualty.
- › Make the scene safe by removing the danger from the casualty or the casualty from the danger. Only continue when it is safe to do so.

#### R

##### RESPONSE

Is the casualty conscious? A person who fails to respond or shows only a minor response, such as groaning without eye opening, manage as if unconscious.

Assess for response to voice and touch:

- › Give simple commands e.g. "Open your eyes, squeeze my hand". With an adult casualty, grasp the shoulders firmly to determine a response; for children and infants, assess their response by talking and tapping the ends of their feet. **Never shake an infant.**
- › If the casualty is **conscious**, check **ABCD** position appropriately and send/call for help (triple zero 000) as necessary.
- › If the casualty is **unconscious**, position the casualty on their back for further assessment.

#### S

##### SEND

- › Send/call for help (triple zero 000).
- › Send for AED and first aid kit where available.

#### A

##### AIRWAY (air passages)

- › Open the mouth and check for foreign material or obstructions. In an infant make sure the nose is also clear.
- › If airway is not clear from food, vomit, blood or fluids (e.g. immersion incident) turn casualty into the recovery position, open mouth and drain matter downwards, remove loose dentures and remove visible material with rescuer's fingers then position on back.
- › Lift chin upwards (towards the ceiling) by placing fingers under chin or use a pistol grip; this lifts the tongue from the back wall of the throat and opens the airway.
- › With upper hand on forehead, tilt an adult and child's head fully back to further open the airway. Place an infant's head in a neutral position (as tilting an infant's head backwards or forwards may cause airway obstruction).

#### B

##### BREATHING (lungs)

Adults breathe approximately 12-15 breaths per minute; infants/children approximately 20 breaths.

- › Look for the even movement of the rising and falling of the lower chest for 10 seconds.
- › Listen for the sound of regular breathing.
- › Feel air escaping from the mouth/nose with your cheek.

**If a casualty is not breathing or not breathing normally commence CPR.**

#### C

##### CARDIOPULMONARY RESUSCITATION (CPR)

- › Deliver 30 compressions and 2 rescue breaths (rescuer takes about 1 second to deliver 1 breath) x 5 times in two minutes and repeat until ambulance arrives.
- › Compressions only, can be given if the first aider is unable or unwilling to perform rescue breathing at approximately 100-120 compressions per minute.

#### D

##### DEFIBRILLATION

- › Open/turn on the defibrillator and follow voice prompts.

## CHEST COMPRESSIONS

Rescuers should start chest compressions if the casualty is unconscious and not breathing or not breathing normally.

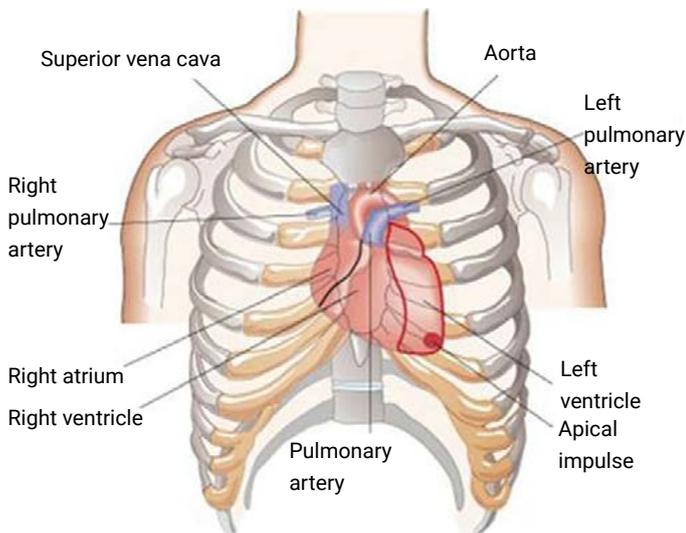
Checking the carotid pulse is an inaccurate method of confirming the presence or absence of circulation and is no longer recommended in basic life support.

If a casualty is found unconscious and not breathing in a chair, wheelchair, upright in bed etc, they should be moved and placed on their back on a firm surface, preferably the floor. Casualties requiring chest compressions should be placed supine on a firm surface (e.g. backboard or floor) before chest compressions to optimise the effectiveness of compressions.

### Rate of compressions

Chest compressions should be performed at a rate of approximately 100-120 compressions per minute. This does not mean however that 100-120 compressions will be delivered every minute. Only around 75 compressions will be delivered each minute due to the interruptions required for the rescue breaths.

It is important to not go too fast as there will not be enough time for the heart to refill with blood.



*Chest anatomy*



Scan QR Code using your mobile phone camera to access video content.



### Compression point

- Place the casualty onto a firm surface and in the case of an adult or child kneel beside the casualty with your knees on one side near the shoulder.
- Position your hands on the LOWER HALF of the sternum (breastbone).
- The lower half can be found by visualising where the 'centre of the chest' is. If you can see the sternum, locate the end and press above this point.

Compression applied too high is ineffective and too low may cause regurgitation and/or damage to internal organs.

### Infants

- Having located the compression point, place only two fingers on the sternum.
- Press downwards to the correct depth (about a 1/3 of the depth of the chest) with your two fingers.
- Use smooth rhythmical compressions allowing full recoil of chest after each compression.



*Infant*

### Children and adults

- Locate the compression point, place the heel of one hand on the sternum, with the fingers pointing away from your body.
- Keep fingers slightly raised to avoid pressure being placed on ribs.
- Place other hand on top of first.
- Interlock your fingers or lock the thumb around the wrist, keeping fingers off the chest.
- Press downwards to the correct depth (about a 1/3 of the depth of the chest) through the heel of your lower hand.
- Keep your elbows straight to allow the weight of your upper body to control the depth.
- Use smooth rhythmical compressions allowing full chest recoil after each.
- Allowing the full chest recoil as this allows the heart to refill with blood.

**Note:** Ribs may be broken during CPR, as a precaution if you feel or hear a rib crack, stop, recheck hand position and continue compressing to the correct depth.



Children



Adults

## RESCUE BREATHING

Deliver 30 compressions and then 2 rescue breaths.

### Mouth to mouth rescue breathing

#### INFANT



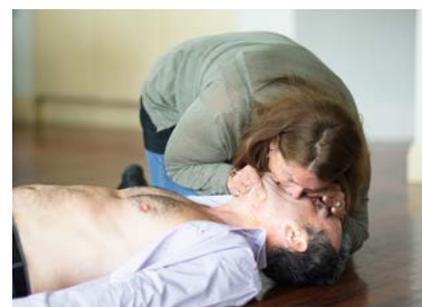
#### CHILD



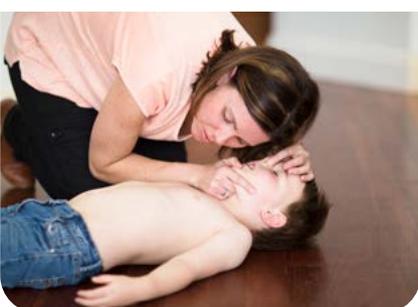
#### ADULT



- Kneel beside the casualty's head (for infant, place on table to avoid bending).
- Open the airway by tilting fully the adult and child casualty's head back, and a neutral or "sniffing" position for an infant.
- Lift the casualty's jaw upwards using a pistol grip.



- Place your mouth over the casualty's slightly open mouth (for an infant – both mouth and nose are covered) to produce an airtight seal.
- Seal the adult/child casualty's nostrils e.g. using your cheek or fingers.
- Blow enough air into the casualty to produce a gentle rise of the upper abdomen or lower chest.
- Deliver your breath over one second (approx 400-500mls for an adult, 200-400mls for a child and gentle puff for infants).
- If your breath meets resistance, reposition the airway and reattempt your rescue breath.



- After delivering the breath, lift your mouth from the casualty's mouth and turn your head towards the casualty's chest to breathe "fresh air" into your lungs then listen and feel for air being exhaled from the mouth and nose and finally look for abdomen or chest deflation.
- Deliver a second breath in the same manner as the first.

### Protective devices

Using a CPR protective device which creates a barrier between the first aider and the casualty during rescue breathing is desirable but not essential. Ideally the shield should provide a sturdy, flexible, non-slip plastic barrier between rescuer and casualty with a filter allowing the delivery of expired air from the rescuer while ensuring none of the casualty's secretions pass into the rescuer's mouth.

The Australian Resuscitation Council Guidelines emphasise that contracting an infectious disease by rescue breathing is a rare event and resuscitation should not be delayed if such a device is unavailable.

### Recovery checks

There is no need to undertake an airway and breathing check during CPR. Evidence has demonstrated that interruption of chest compressions is associated with lower survival rates.

If the casualty begins to breathe normally they should be positioned on their side and managed as for the unconscious breathing casualty.

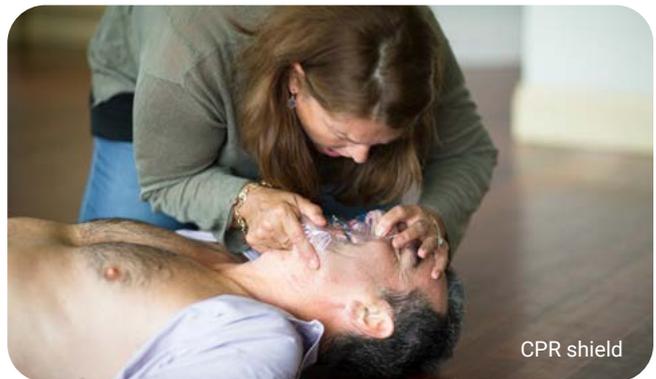
If the casualty vomits during CPR they should be turned into the side position to clear the airway and if still not breathing CPR should be continued. If a change in casualty's condition is identified, reassess response and continue first aid priority action plan.



Two operator CPR

### Mouth to nose rescue breathing

This technique may be used if the casualty's jaws are clenched or there is a significant mouth injury. The technique remains the same as mouth to mouth breathing except for sealing the airway. Close the casualty's mouth with the hand supporting the jaw and push the lips together with the thumb. Take a breath then place your mouth over the casualty's nose and blow to inflate the lungs.



CPR shield

### Transition between two single CPR operators

Chest compressions during CPR are strenuous, tiring, and difficult to maintain over an extended period of time. The Australian Resuscitation Council adopts research which suggests that rescuer fatigue during CPR is a likely contributor to ineffective CPR during extended resuscitation efforts and recommends rotation of operators every 2 minutes (5 cycles).

If another bystander is available and willing, it is recommended that they relieve the first rescuer from performing CPR. Whilst the first rescuer completes two rescue breaths the second rescuer positions themselves with their hands on the casualty's chest to commence compressions once the second breath is delivered. This improves the quality of chest compressions and gives the casualty the best chance for survival.

The ARC recommends where two rescuers are performing CPR, that roles of compressing and ventilating are swapped every two minutes. This change in roles reduces rescuer fatigue.

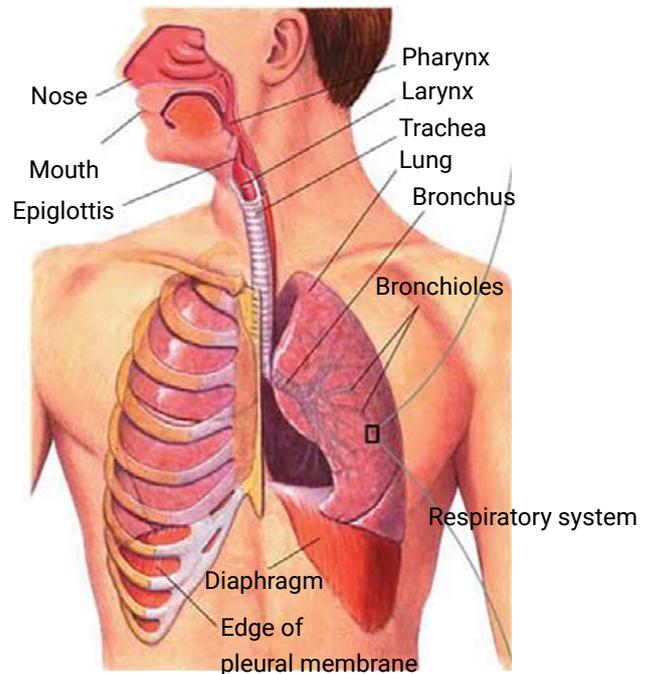
### Reduced or no chest movement when delivering rescue breathing

If there is no chest movement or if marked resistance to air entry is noted during rescue breaths, lung ventilation is inadequate. Possible causes are:

- Obstruction of the airways by a foreign object /material, or the tongue due to incorrect head tilt or jaw lift.
- Inadequate air seal:
  - nostrils not blocked (adult or child)
  - mouth not sealing casualty's mouth
- Insufficient air being blown into the airway.

Distension of the casualty's stomach may occur because:

- The rescuer during rescue breathing, blows too forcefully; and/or
- There is too much air volume; and/or
- The airway is not properly opened.



### Rescue breathing summary

AGE	BACKWARD HEAD TILT	STRENGTH	NUMBER OF BREATHS
Adult 8 + years	Full	Full breaths	2
Child 1 - 8 years	Full	Gentle breaths	2
Infant 0 - 1 year	Neutral ("sniffing")	Puffs (mouth/nose)	2

### RESUSCITATION IN LATE PREGNANCY

An obviously pregnant woman should be positioned on her back with shoulders flat. Sufficient padding needs to be placed under the right buttock to provide an obvious pelvic tilt to the left. This position helps reduce pressure on the major abdominal organs and allows better blood supply to the heart.

**Note:** The rates below will achieve a compression rate of 100-120 per minute, although actual compressions delivered will be 75.

### Cardiopulmonary resuscitation summary

AGE	BACKWARD HEAD TILT	STRENGTH
Adult	<ul style="list-style-type: none"> <li>• 30 compressions and 2 breaths</li> <li>• approximately 5 times every two minutes</li> </ul>	<ul style="list-style-type: none"> <li>• two hands</li> <li>• 1/3 of depth of chest</li> </ul>
Child	<ul style="list-style-type: none"> <li>• 30 compressions and 2 breaths</li> <li>• approximately 5 times every two minutes</li> </ul>	<ul style="list-style-type: none"> <li>• one or two hands</li> <li>• 1/3 of depth of chest</li> </ul>
Infant	<ul style="list-style-type: none"> <li>• 30 compressions and 2 breaths</li> <li>• approximately 5 times every two minutes</li> </ul>	<ul style="list-style-type: none"> <li>• two fingers</li> <li>• 1/3 of depth of chest</li> </ul>

# CARDIOPULMONARY RESUSCITATION

**D**

Danger

**R**

Response: **No**

**S**

Send/call for help (triple zero 000)

**A**

Airway

**B**

Breathing: **No**

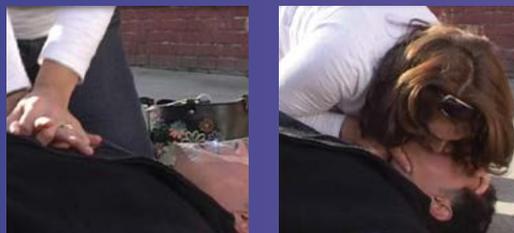


**C**

**CARDIOPULMONARY RESUSCITATION (CPR)**

Give 30 chest compressions followed by 2 breaths x 5 times in 2 minutes and continue until qualified help arrives.

30 X → 2



**D**

**DEFIBRILLATION:**

If available, follow voice prompts

### PREMIUM HEALTH CPR METHOD©

The Premium Health method was developed and researched to assist CPR learners to achieve the correct rate and rhythm for chest compressions as the correct rate and rhythm is essential if CPR is to be effective.

The Premium Health mnemonic method was the first in metronome style CPR in the world, and predates "Stayin Alive" by more than 10 years.

The Premium Health method uses rhythm and rhyme to assist in remembering and recalling how to do CPR and the method is particularly useful in an emergency as it helps rescuers slow the compression rate instead of allowing their adrenaline response to dictate a faster speed.

This unique and innovative training technique uses a familiar song to help you recall and perform CPR correctly. The method helps the body know what the correct rhythm (rate) is, and the rhyme is used to mark CPR's cyclical stages. The time it takes to sing the 2 verses of the nursery rhyme equals the time it should

take to give 30 compressions and reaching the end of the second verse is a signal for the rescuer to deliver 2 breaths.

The song verses are repeated over and over accompanied by compressions and breaths for as long as CPR is required. If you had to give CPR, it is intended the song would be sung silently, under your breath.

Research shows that the Premium Health method enables people to retain and recall their CPR skills over a longer period of time. For any first aider, managing a cardiac arrest is stressful, so an easily remembered method to achieve compression rhythm and to count the compression/breath cycles is valuable.

#### Quick reference guide to the Premium Health CPR method©.

The **bolded white text below** denotes the words to be sung. The shaded boxes below indicate the actions to be performed.

#### VERSE ONE

<b>BAA</b>	<b>BAA</b>	<b>BLACK</b>	<b>SHEEP</b>	<b>HAVE YOU</b>	<b>ANY</b>	<b>WOOL</b>	<b>"BEAT"</b>
Compress (1)	Compress (2)	Compress (3)	Compress (4)	Compress (5)	Compress (6)	Compress (7)	Compress (8)
<b>YES</b>	<b>SIR</b>	<b>YES</b>	<b>SIR</b>	<b>ONE</b>	<b>BAG</b>	<b>FULL</b>	
Compress (9)	Compress (10)	Compress (11)	Compress (12)	Compress (13)	Compress (14)	Compress (15)	

#### VERSE TWO

<b>BAA</b>	<b>BAA</b>	<b>BLACK</b>	<b>SHEEP</b>	<b>HAVE YOU</b>	<b>ANY</b>	<b>WOOL</b>	<b>"BEAT"</b>
Compress (16)	Compress (17)	Compress (18)	Compress (19)	Compress (20)	Compress (21)	Compress (22)	Compress (23)
<b>YES</b>	<b>SIR</b>	<b>YES</b>	<b>SIR</b>	<b>TWO</b>	<b>BAGS</b>	<b>FULL</b>	<b>GIVE TWO BREATHS</b>
Compress (24)	Compress (25)	Compress (26)	Compress (27)	Compress (28)	Compress (29)	Compress (30)	

Continue to deliver CPR - by repeating these 2 verses over and over until emergency assistance arrives.

## DEFIBRILLATION

Of the people who collapse with sudden cardiac arrest, survival is dependent on early defibrillation using an Automated External Defibrillator (AED).

An AED machine is used on casualties who are unconscious, not breathing or not breathing normally; that is, they are in cardiac arrest. An AED will analyse the rhythm to detect if the heart is contracting normally.

If not, the AED will deliver a brief electric shock which may restore normal heart rhythm.

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Send for the AED.
- Continue with CPR whilst waiting.
- Turn on/activate AED.
- Expose and prepare the chest. May need to be dried if wet or shaved if excessively hairy.
- Attach the electrode pads to the chest.
- Follow voice prompts of the AED.
- No-one is to touch the casualty whilst AED is analysing the rhythm.

If a shock is indicated:

- Loudly say to bystanders "do not touch the casualty, stay clear" before shock is administered.
- Push a shock button if directed.
- Continue to follow voice prompts.
- Pads are to remain in place until the arrival of Ambulance.

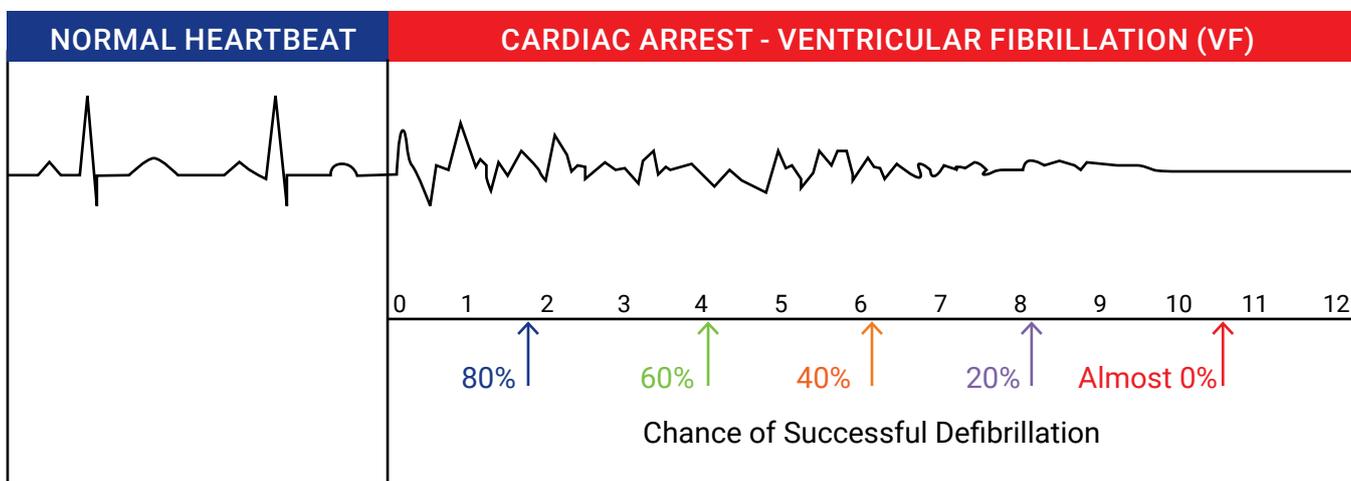
If no shock is indicated resume CPR.

The time to defibrillation is critical. As each minute passes the chance of survival decreases. The Australian Resuscitation Council advocates the use of an AED by trained and untrained people. AEDs are now found in many locations such as train stations, airports, shopping centres and workplaces.



## Defibrillator maintenance

- Regular maintenance (monthly) of an AED is necessary to ensure readiness for its use in an emergency.
- Most defibrillators perform routine self-testing, however it is critical to visually inspect the unit regularly.
- Status "ready" indicators on some AED's shows the unit is ready and operational.
- On others check the battery is working and not expired.
- Check the AED is free of signs of damage.
- Check pads are sealed, unused and not expired.
- Check status of other equipment such as scissors, gloves, razor, alcohol wipes and face shield.



Following a cardiac arrest, every minute of delay in applying a defibrillator reduces the chance of survival by 10%

## CONSIDERATIONS WHEN PROVIDING FIRST AID TO INFANTS AND CHILDREN

### Anatomical differences between adults and children

- an infant is an obligatory nose breather for the first 6 months of its life, which means that a blocked nose can greatly affect their ability to breathe
- a child's airway is obviously much smaller than an adult's
- infants have short and soft tracheas. This means that overextension during airway management may result in airway collapse (not too dissimilar to kinking a narrow garden hose)
- infants have proportionately large heads, short necks and large tongues, which again, makes airway obstruction more likely
- airway management in children should primarily include the head tilt-chin lift technique and avoid overextension of the neck



### The following are important differences between an adult and a child's breathing

- a child has much smaller upper and lower airways which results in a greater chance of respiratory difficulties and failure
- infants are abdominal breathers who rely primarily on the muscles of the diaphragm. This means abdominal distension can lead to respiratory problems
- the muscles associated with breathing, such as the diaphragm, the small muscles between the ribs (intercostal) and the neck and chest muscles are small and likely to fatigue



### Using an AED on children

A cardiac arrest in infants under one year, outside of the hospital setting is rare. Of those cardiac arrests that occur in children, 90% are due to a cause other than a primary cardiac arrhythmia. This results in around 10% of paediatric cardiac arrests requiring defibrillation. Predominantly the use of an AED will result in a 'no shock' recommendation and prompt the continuation of CPR.

For children older than 8 years, standard adult AEDs and pads are suitable for use. Ideally, for children between 1 and 8 years an AED with paediatric capability and pads should be utilised. Pad placement should be the same as for an adult where possible and the pads come with a diagram indicating where on the chest they should be placed.

If the AED does not have a paediatric mode or paediatric pads then the standard adult AED and pads may be used. Apply the pads firmly to the bare chest as for an adult in the anterior-lateral (top right-bottom left) position taking care to ensure pads do not touch each other on the child's chest. If the pads are too large and there is a danger of pad to pad arcing, the pads should be placed in the front-back position (antero-posterior): one pad placed on the upper back (between the shoulder blades) and the pad on the front of the chest, if possible slightly to the left.

An adult AED delivers a biphasic electrical wave to the patient at either 150 joules or 200 joules depending on the brand of defibrillator. Whereas an AED with paediatric capability delivers 50 joules, which provides sufficient energy to ensure that children up to 8 years (or 55 kg) receive at least 2 j/kg.

# BLEEDING AND SHOCK

The circulation of blood to all parts of the human body is essential for life. 4-6 litres of blood flows within the circulatory system through varying sized tubes known as arteries, veins and capillaries. The heart is the pump which moves blood with each beat through these tubes around the body to tissue and organs.

## EXTERNAL BLEEDING

Obvious bleeding can be seen from a wound on the body surface and may be:

- **minor:** minimal blood loss e.g. abrasion, small cut. Blood oozes due to injury to small surface blood vessels (capillaries, small veins)
- **major/deadly bleeding:** loss of, or potential to lose, a large volume of blood e.g. spurting blood from a cut artery

Bleeding may lead to shock or fainting. As a first aider our main aim is to reduce blood loss from the casualty.

## Management of external bleeding

### Minor bleeding

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Apply hand pressure (about 30 seconds).
- Clean wound if necessary.
- Cover with sterile/clean dressing.

### Major/deadly bleeding

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Examine wound for embedded object.
- Put on gloves
- Using hands or fingers, apply, firm, direct and continuous pressure (if there is no obvious foreign body, The casualty or bystander could also apply pressure).
- When a pad and bandage becomes available, firmly apply the pad and bandage over the wound, and in the case of a foreign object, around the wound, until the bleeding stops
- Restrict movement and ideally immobilise the part.
- Rest the casualty.
- Treat for shock.

**Note:** Consider the risk of cross infection in your management: Use gloves if available or some other physical barrier. Where possible, instruct casualty to apply direct pressure to their wound.



Minor bleeding



Minor bleeding



Major bleeding

## PRESSURE DRESSING

- Place pad on the wound.
- Place bandage tail on pad and apply one or two turns reasonably firmly until the pad is completely covered by the bandage.
- Work downwards off the pad (towards the fingers/toes) for one or two turns until the pad is completely covered by the bandage.
- Apply pressure as you now bandage up the limb (towards armpit/groin), covering two thirds of the bandage (of the prior turn) till pad is totally covered.

- Check for:
  - tension of bandage (there should be no 'lift off' of pad and bandage from the skin)
  - changes in sensation
  - changes in circulation (changes in colour/warmth)
- Modify tension of bandage if too loose or too tight by reapplying. This is achieved by undoing half the bandage then reapplying it with more or less tension as required.
- Secure end by tucking into previous wraps or taping.
- Assess for circulation change. There should be a mild change in limb circulation. The hand/foot should look slightly pinker and feel slightly cooler than the unaffected limb. There should however not be any lessening of sensation, that is numbness or tingling in the limb as this may indicate nerve compression.
- Where changes in sensation (numbness or tingling), decreased temperature and colour becomes pale/blue, loosen the bandage.



**Note:** If bleeding occurs through the initial pad and bandage, place a second pad over the first pad and bandage and secure with another bandage. If major bleeding continues it may be necessary to remove the pad(s) to ensure that a specific bleeding point has not been missed. The aim is to press over a small area and thus achieve greater pressure over the bleeding point. For this reason an unsuccessful pressure dressing may need to be removed to allow a more direct pressure pad on the bleeding location.

### Arterial tourniquet

A tourniquet is a constricting device applied firmly to a limb to control life-threatening bleeding that cannot be controlled by direct pressure e.g. limb amputation, shark attack, severe multiple trauma.

Commercially manufactured windlass tourniquets are more effective than improvised tourniquets and optimal when first aiders are trained in correct application. The ARC recommends all arterial tourniquets should be applied in accordance with the manufacturer's

instructions (or 5 cm above the bleeding point if no instructions) and tightened until the bleeding stops. If the bleeding continues, check the position and application of the tourniquet. However if bleeding does continue and is not controlled apply a second tourniquet preferably above the first.

The time of tourniquet application on the limb must be noted and passed onto emergency personnel. Once applied, the casualty requires urgent transfer to hospital and the tourniquet should not be removed until the victim receives specialist care.

If a correctly applied tourniquet(s) has failed to control the bleeding consider using a haemostatic dressing in conjunction with the tourniquet.

Applying a tourniquet and haemostatic dressing require additional training.



Haemostatic dressing

Arterial tourniquet

## EXAMPLES OF EXTERNAL BLEEDING

### Embedded foreign object

Some examples of foreign objects which may become embedded in a wound are:

- knives
- sticks and stakes
- nails
- metal tools

The risk with a deeply embedded foreign object is that it may damage vital tissues including major blood vessels causing severe bleeding and shock.

### Management

- Build up a dressing around the wound to immobilise the object by making a round ring or "donut" with either a triangular or roller bandage. Make sure you leave enough space around the object.



Scan QR Code using your mobile phone camera to access video content.





Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Hold the ring in place.
- Apply a bandage firmly to hold the ring in place.
- Check for:
  - tension of bandage (there should be no 'lift off' of donut and bandage from skin)
  - changes in sensation
  - changes in circulation
- Modify tension of bandage if too loose or too tight by reapplying.

**Note:** Deeply embedded objects must not be removed by a first aider.

**Note:** Always assess colour, warmth and sensation by performing a comparison with the uninjured side.

### Amputation management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Apply pressure to the stump.
- Rest the stump.

Care of the amputated part:

- Place in a plastic bag without washing the part, then label with casualty's name, date, time of amputation.
- Seal the plastic bag and place it into a container of water and ice.
- Transport the amputated part with the casualty to medical aid.



### BLEEDING FROM SPECIAL AREAS

#### Nose

A nosebleed is a relatively common occurrence, usually noticed when it drips out through the nostrils. The flow of blood normally stops when the blood clots. This is encouraged by direct pressure and by sitting the casualty upright with the head tilted forwards.

- tilting the head back is not advised
- in rare cases a nosebleed can be life threatening
- fresh and clotted blood can be swallowed and in some cases the casualty will feel nauseous and vomit

#### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Sit casualty upright with head slightly forward.
- Apply pressure by pinching the nostrils over the soft fleshy area at the end of nose for at least 10 minutes.
- Place cold wet towels on the neck and forehead.
- Encourage the casualty to breathe through the mouth and not to blow their nose.
- It is important to check for frequent swallowing and look in the mouth to check for bleeding from the back of the nose.
- If bleeding continues, reapply pressure for a further 10 minutes.
- If bleeding persists for more than 20 minutes seek medical assistance.

#### Scalp

A significant amount of bleeding may occur from scalp wounds. The bleeding is usually controlled with direct pressure. Be careful to press gently at first because the skull may be fractured. If a depression, spongy area or bone fragments are felt do not put direct pressure on the wound. Instead attempt to control bleeding with pressure around the wound.

If a fracture of the skull has been eliminated, direct pressure may need to be maintained because of the difficulty of bandaging the scalp firmly enough. Manage using the DRSABCD Action Plan and seek medical assistance if there was any loss of consciousness.

## Tooth socket

- Sit the casualty upright with the head forward to allow the blood to drain.
- Place a firm pad or gauze over the socket and instruct the casualty to bite firmly on the pad.
- If the bleeding continues, seek medical or dental assistance.



## Management of a “knocked” out permanent tooth

- Find the tooth.
- Pick up by top (white part), try not to touch the root portion as this harms the root.
- If the tooth is clean, and the casualty is compliant, replant into mouth immediately.
- If the tooth is dirty, rinse in milk or the casualty's saliva and replant. If milk is not available rinse briefly in cold water (however excess rinsing in water damages both the nerve and ligament of the tooth) then replant.
- If it is not possible to replant the tooth, place in a container of milk to keep it moist until dental attention is available. If no milk is available wrap the tooth in plastic wrap (e.g. Gladwrap).
- If the tooth has been in contact with soil or dirt advise the casualty to have an anti-tetanus injection if not currently immunised.
- Advise the casualty to see a dentist as soon as possible.

## INTERNAL BLEEDING

This may be difficult to recognise but should always be suspected where there are symptoms and signs of shock.

### Signs and symptoms

- pain, tenderness or swelling over or around the affected area
- visible swelling e.g. thighs, abdomen or blood from ears
- appearance of blood from a body opening e.g. vomiting/ coughing up blood (stomach/lungs)
- signs and symptoms of shock

### Management

Initiate the first aid priority action plan (DRSABCD). The first aider cannot control internal bleeding, but should take measures to treat/prevent shock and seek medical assistance urgently.



## SHOCK

Shock is a serious, life threatening condition where insufficient blood flow reaches the body tissues. When vital organs do not receive enough oxygen rich blood they fail to function properly. Shock may accompany any injury/illness to some degree. Shock may be delayed.

### Causes

- loss of a large volume of blood or body fluid (external or internal bleeding, burns, diarrhoea, vomiting, severe dehydration/heat stroke)
- heart conditions (heart attack)
- abnormal dilation of blood vessels (severe infection, allergic reactions, severe brain/spinal injuries)
- blockage of blood flow in or out of the heart

### Signs and symptoms

The signs and symptoms and rate of onset will vary widely depending on the underlying cause of the shock.

- weakness
- pale (change of normal skin colour), cool, clammy skin
- rapid breathing
- rapid pulse which may become weak or slow
- thirst and nausea
- vomiting
- inability to think clearly, anxious, disorientated, agitated
- may lose consciousness

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Follow the first aid priorities DRSABCD action plan.
- Position casualty lying on their back. If casualty is unconscious, position on their side in the recovery position.
- Control any bleeding with direct pressure.
- Keep warm.
- Provide reassurance and observe for change in condition.
- Call for medical assistance - Triple zero (000).



## SELF PRACTICE: BANDAGING

**Ask someone to be your "casualty" or apply these two bandages to your own legs.**

Using the triangular bandage (pad) and roller bandage:

- Apply the pad over the "wound" and secure with the roller bandage.
- Apply a "donut" pad around an object and secure with the roller bandage.

### ASSESS YOURSELF CHECKING FOR:

- tension of bandage
- changes in sensation
- changes in circulation

**SHOCK – EXPECT IT, PREVENT IT, MANAGE IT**

# ALLERGIC REACTIONS AND ANAPHYLAXIS

## WHAT IS AN ALLERGY?

An allergy is an abnormal response by the immune system to a substance that is usually harmless to most people. Allergies occur when the immune system produces antibodies against substances in the environment which are called allergens. Allergy or hypersensitivity reactions involve an inflammatory response that can affect the whole body or be localised. Symptoms of an allergic reaction includes skin rash, itchy eyes, lumps on the face or can be all over the whole body as in a rash like hives. Most allergic reactions are mild like a rash or lump from a mosquito bite or sneezing from hay fever.

## WHAT IS AN ALLERGEN?

An allergen is a substance that the immune system recognises as being a substance that may cause damage. The substance is usually ingested, injected, absorbed or inhaled by the body.

**Ingested** – Food and medicines are the most likely causes. Anaphylaxis can occur rapidly.

**Injected** – Stinging insects are the most common cause and includes insects such as bees.

**Absorbed** – Unlikely to cause anaphylaxis except in the form of latex used in gloves.

**Inhaled** – Pollens, dust mite, cat and dog dander and mould. Rarely causes anaphylaxis, but more often cause asthma and hay fever. These allergens stimulate a response from the immune system that presents itself in various ways, the most severe being anaphylaxis.

## WHAT IS AN ALLERGIC REACTION?

Allergic reactions occur when the body's immune system reacts to a particular allergen. When these usually harmless substances cause an allergic reaction they are called allergens (or triggers). Common allergic triggers (allergens) include:

- food (peanuts, tree nuts, sesame, cow's milk, eggs, wheat, soybeans, fish and shellfish). About one in 100 adults will have a food allergy
- insect stings (bees, ants and wasps) and tick bites
- medications including antibiotics (penicillin) and anaesthetic agents
- latex

In some people, other possibly unidentified allergens may trigger an allergic reaction and for others, exercise and alcohol are important co-factors. Any first aider or person attending an emergency should check if the casualty has a history of previous allergic reactions. The casualty may wear a MedicAlert or SOS bracelet or pendant. People who have a known allergy may carry prescribed medication

in the form of tablets, syrup, a puffer or injection to use in case of a reaction. Once an allergy has developed, exposure to the particular allergen can result in symptoms from mild to life threatening. The most severe allergic reaction, anaphylaxis, is rare, but when it does occur it is life threatening and may be fatal. Typically anaphylaxis occurs within 20 minutes after contact with the allergen.

## MILD – MODERATE ALLERGIC REACTIONS

A mild-moderate allergic reaction involves the skin and/or gastrointestinal tract without respiratory and/or cardiovascular involvement. This is not a life threatening reaction.

### Skin

- generalised itchiness and/or redness
- raised, intensely itchy welts (red edges and pale centres) or hives
- tissue swelling (face, lips, eyes, not throat)
- in darker toned casualties, hives appear as raised lumps with reduced colour changes

### Gastrointestinal

- abdominal pain
- vomiting
- loose bowel motions

## Management

Initiate the first aid priority action plan (DRSABCD) and on recognition of a generalised allergic reaction:

- › Implement casualty's ASCIA Action Plan for Anaphylaxis.
- › Give first aid management appropriate to signs and symptoms present e.g. ice pack for itchiness and swelling.
- › Do not leave casualty alone as reaction may progress to severe.
- › Monitor the casualty continuously.
- › If no signs of anaphylaxis, handover to parent/carer - communicate casualty's condition and treatment.
- › Document incident.

## SEVERE ALLERGIC REACTION – ANAPHYLAXIS

Anaphylaxis is a rapidly progressive severe allergic reaction which affects several parts of the body at once. It is a life threatening condition. Anaphylaxis needs to be recognised as a medical emergency and responded to immediately. Anaphylaxis is characterised by respiratory and/or cardiovascular involvement. The only suitable treatment for Anaphylaxis is adrenaline which can be administered by the casualty or the first aider via an auto-injector (EpiPen).

**Respiratory**

- difficulty breathing or
- noisy breathing
- swelling of tongue
- swelling or tightness in the throat
- difficulty talking and/or a hoarse voice
- wheeze or persistent cough
- in crying infants and young children there may be a change in the character of the cry

In some cases, anaphylaxis may be preceded by less dangerous allergic symptoms such as:

- hives or welts
- swelling of face, lips or eyes
- abdominal pain and vomiting

**Causes**

The common allergens triggering anaphylaxis include:

- food – peanuts, tree nuts (e.g. hazelnuts, cashews, almonds), sesame, egg, cow's milk, wheat, soy, seafood
- insect stings and tick bites particularly bees, ants and wasps
- medications including antibiotics (e.g. penicillin) and anaesthetic agents

**Management**

People with diagnosed allergies should avoid all triggers/confirmed allergens and have a readily accessible Anaphylaxis action plan and medical alert device. The injection of adrenaline is the first line drug treatment in life threatening Anaphylaxis. If the casualty's signs and symptoms suggest Anaphylaxis, the following steps should be followed:

- Initiate the first aid priority action plan (DRSABCD) and include the following actions:
  - Lay casualty flat, do not stand or walk (if breathing is difficult, allow to sit).
  - When seated on the floor (not in chair) make sure the legs of the casualty are outstretched in front of them.
  - Hold an infant horizontally in arms.
  - The left side lying position is recommended for patients who are pregnant.
  - Prevent further exposure to the trigger if possible.
  - Stay with casualty and call for help.

**Implement casualty's ASCIA Action Plan for Anaphylaxis**

- Administer adrenaline (bring medication to casualty, do not move them).

**Cardiovascular**

- loss of consciousness
- collapse
- pale and floppy (in young children)

- Call an ambulance (triple zero 000) and monitor casualty continuously.
- Administer oxygen (if trained to administer) and/or asthma medication for respiratory symptoms. Further adrenaline should be given if no response after 5 minutes.
- Handover to relieving ambulance or medical personnel. Communicate casualty's condition and treatment.
- Document incident.
- If breathing stops, commence CPR.

**ADMINISTRATION OF INJECTABLE ADRENALINE**

Adrenaline is the most effective first aid treatment and should be given as soon as the signs and symptoms of anaphylaxis are recognised. It is given by injection into the muscle of the outer mid-thigh. Antihistamines will not treat a severe allergic reaction or prevent a severe allergic reaction from developing if given to someone once the reaction has started.

**Adrenaline**

The adrenaline used in controlled dose auto-injecting devices treats allergic emergencies.

Adrenaline is a medication which:

- narrows abnormally wide blood vessels
- makes the heart beat strongly

These effects help to improve the very low blood pressure and poor circulation that occurs in anaphylaxis.

Adrenaline also:

- opens the air tubes in the lungs. This eases breathing and lessens wheezing
- helps stop swelling, for example, of the face and lips, skin rash and itching
- maintains blood pressure

**EpiPen® adrenaline auto-injectors**

Adrenaline auto-injectors are simple to operate, they:

- provide life-saving first aid medication
- may be self-administered or administered by a carer/teacher/first aider
- automatically inject a pre-measured dose of adrenaline
- adrenaline in an auto-injector begins working in about 2 minutes
- are for single use only
- must be kept in a cool dry place where temperature stays below 25c (not to be refrigerated or frozen)
- should not be used if solution is cloudy, coloured or sediment is present or if beyond its expiry date or if the viewing window shows red (red means the adrenaline auto-injector has already "fired" and cannot be used again)

## EpiPen® Jr EpiPen®



**IMPORTANT:** if someone with known asthma and allergies has sudden breathing difficulties ALWAYS administer adrenaline first and then asthma reliever puffer second.

### EpiPen®

The EpiPen® delivers one 0.3 mL dose of adrenaline (epinephrine). This dose provides 0.3 mg of adrenaline. Although these auto-injectors contain 2 mL of adrenaline 1:1,000 solution, the auto-injector cannot be re-used even though some adrenaline remains after injecting. This dosage is prescribed for children and adults weighing over 20 kg (ASCIA recommendation) or 30 kg (Pharmaceutical Benefits Scheme (PBS) recommendation). The dosage will be determined by the prescribing physician. The EpiPen® is yellow in colour.

### EpiPen Jr®

EpiPen Jr® delivers one 0.3 mL dose of adrenaline (epinephrine). This dose provides 0.15 mg of adrenaline. Although these auto-injectors contain 2 mL of adrenaline 1:2,000 solution the auto-injector cannot be re-used even though some adrenaline remains after injecting. This dosage is prescribed for children weighing between 7.5 - 20 kg (ASCIA recommendation). The dosage will be determined by the prescribing physician. The EpiPen® Jr is green in colour.

### Adrenaline side effects

There are no contra-indications to the use of adrenaline for anaphylaxis. The risk of NOT giving adrenaline far outweighs the potential risk of giving adrenaline. It is very rare for children to suffer any serious side effects from the administration of adrenaline via an auto-injector. The auto-injector contains adrenaline which is a naturally occurring hormone. Short-lived pallor is common due to the medicine acting on the blood vessels. Other symptoms which may occur include shaking, anxiety, palpitations, headache and nausea. These symptoms only last for a short time and are not serious.

### Storage and accessibility

In children's services, for example at a child care centre or kindergarten, parents/carers are required to provide their "at risk" child with their own adrenaline auto-injector kit comprising an insulated container, for example, an insulated lunch pack containing:

- the child's in-date adrenaline auto-injecting device
- a copy of the child's ASCIA Action Plan for Anaphylaxis used in developing the centre or school's anaphylaxis management plan
- telephone contact details for the child's parents/guardians, the doctor/medical service and the person to be notified in the event of a reaction if the parents/guardian cannot be contacted
- any other medications such as an antihistamine if prescribed

In schools, parents/carers are required to provide the student's in-date adrenaline auto-injecting device and an ASCIA Action Plan for Anaphylaxis completed by the doctor. The action plan is used along with other information to compile the student's anaphylaxis management. The adrenaline auto-injector is labelled with the student's name and stored along with their anaphylaxis management plan in an unlocked, easily accessible place and both are taken on all excursions and school camps. Schools are permitted to purchase generic adrenaline auto-injectors as backup to students' own injectors, and this should be done especially where there is no single, central, easily accessible location on the school site, multiple campuses, or for activities away from school, such as excursions and camps – see Anaphylaxis Guidelines: A resource for managing severe allergies in Victorian government schools 2016.

### Giving an adrenaline auto-injector to a child

When giving an adrenaline auto-injector to a child it is important to hold them securely as they are likely to move or pull away. If the needle comes out of the child's leg before the full dose of adrenaline is administered it cannot be reinserted.

### Disposal of an adrenaline auto-injector

Adrenaline auto-injectors cannot be reused even if some adrenaline remains inside the device. The used adrenaline auto-injector should be placed in a container, labelled clearly with the time it was given and then handed over to the ambulance. Do not throw the adrenaline auto-injector away. To dispose of an adrenaline auto-injector safely:

- carefully place the used EpiPen® orange tip first into a protective tube (puncture proof)
- place the tube in a container and write time adrenaline auto-injector was administered on the outside of the container. If no container available, write time on protective tube
- give the used adrenaline auto-injector to the ambulance officer or attending medical personnel to accompany the casualty to hospital for safe disposal

### Expiry checking routine

The shelf life of adrenaline auto-injectors is normally around 12 – 18 months from date of manufacture. A checking routine should be put in place to ensure that all adrenaline auto-injectors are within their expiry date, wherever these are located - at home, within children's services organisations or schools. Marking the expiry date found on the side of each device on a calendar will assist in prompting replacement prior to the due date. Do not discard an expired auto-injector before a replacement auto-injector has been obtained

### WHAT SHOULD YOU DO WHEN ANAPHYLAXIS OCCURS AND THE ADRENALINE AUTO-INJECTOR HAS EXPIRED?

Expired adrenaline auto-injectors are not as effective when used for treating anaphylaxis. However, a recently expired adrenaline auto-injector should be used in preference to not using one. An EpiPen® has a clear window near the tip where you can check the colour of the drug – if it is clear (not brown or cloudy or containing sediment) it should be safe to use.



### EPIPEN® INSTRUCTIONS

#### To use auto-injector:

- 1 Check area prior to administration. Beware of items in pockets, seams of trousers, etc. which may be a barrier to administration.
- 2 Grasp auto-injector firmly with the orange tip pointed downwards (orange to the thigh, blue to the sky).
- 3 Place orange tip against mid outer thigh. **Do not inject into buttocks.**
- 4 Firmly push against mid outer thigh at a 90 degree angle until a click is heard (**Auto-injector is designed to work through clothing**).
- 5 Hold **firmly against thigh** for 3 seconds to deliver adrenaline. The injection is now complete.
- 6 Remove auto-injector from thigh (the orange needle cover will automatically extend to cover needle).
- 7 Call triple zero (000) and seek immediate medical attention.
- 8 Further adrenaline doses may be given if there is no improvement after 5 minutes or if instructed by the triple 000 operator.
- 9 Ensure used auto-injector is transported with casualty.



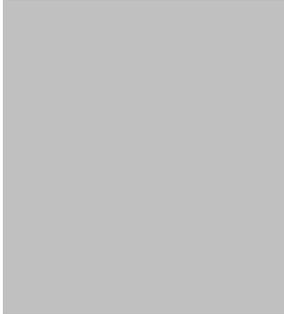
Scan QR Code using your mobile phone camera to access video content.



# ACTION PLAN FOR Anaphylaxis

Name: \_\_\_\_\_  
Date of birth: \_\_\_\_\_

For use with **EpiPen®** adrenaline (epinephrine) autoinjectors



Confirmed allergens:

Family/emergency contact name(s):

1. \_\_\_\_\_

Mobile Ph: \_\_\_\_\_

2. \_\_\_\_\_

Mobile Ph: \_\_\_\_\_

Plan prepared by doctor or nurse practitioner (np): \_\_\_\_\_

The treating doctor or np hereby authorises medications specified on this plan to be given according to the plan, as consented by the patient or parent/guardian.

Whilst this plan does not expire, review is recommended by DD/MM/YY

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

## SIGNS OF MILD TO MODERATE ALLERGIC REACTION

- Swelling of lips, face, eyes
- Hives or welts
- Tingling mouth
- Abdominal pain, vomiting - **these are signs of anaphylaxis for insect allergy**

## ACTION FOR MILD TO MODERATE ALLERGIC REACTION

- For insect allergy - flick out sting if visible
- For tick allergy  seek medical help or  freeze tick and let it drop off
- Stay with person, call for help and locate adrenaline autoinjector
- Give antihistamine (if prescribed) \_\_\_\_\_
- Phone family/emergency contact

**Mild to moderate allergic reactions (such as hives or swelling) may not always occur before anaphylaxis**

## WATCH FOR ANY ONE OF THE FOLLOWING SIGNS OF ANAPHYLAXIS (SEVERE ALLERGIC REACTION)

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

## ACTION FOR ANAPHYLAXIS

### 1 LAY PERSON FLAT - do NOT allow them to stand or walk

- If unconscious or pregnant, place in recovery position - on left side if pregnant, as shown below
- If breathing is difficult allow them to sit with legs outstretched
- Hold young children flat, not upright



### 2 GIVE ADRENALINE AUTOINJECTOR

### 3 Phone ambulance - 000 (AU) or 111 (NZ)

### 4 Phone family/emergency contact

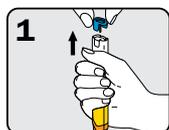
### 5 Further adrenaline may be given if no response after 5 minutes

### 6 Transfer person to hospital for at least 4 hours of observation

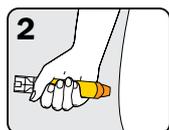
### IF IN DOUBT GIVE ADRENALINE AUTOINJECTOR

Commence CPR at any time if person is unresponsive and not breathing normally

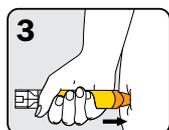
### How to give EpiPen®



Form fist around EpiPen® and PULL OFF BLUE SAFETY RELEASE



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



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

EpiPen® is prescribed as follows:

- EpiPen® Jr (150 mcg) for children 7.5-20kg
- EpiPen® (300 mcg) for children over 20kg and adults

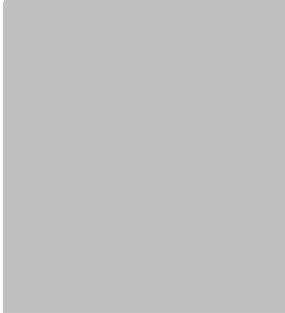
**ALWAYS GIVE ADRENALINE AUTOINJECTOR FIRST, and then asthma reliever puffer** if someone with known asthma and allergy to food, insects or medication has SUDDEN BREATHING DIFFICULTY (including wheeze, persistent cough or hoarse voice) even if there are no skin symptoms

Asthma reliever medication prescribed:  Y  N

Note: If adrenaline is accidentally injected (e.g. into a thumb) phone your local poisons information centre. Continue to follow this action plan for the person with the allergic reaction.

Name: \_\_\_\_\_

Date of birth: \_\_\_\_\_



Confirmed allergens:

Family/emergency contact name(s):

1. \_\_\_\_\_

Mobile Ph: \_\_\_\_\_

2. \_\_\_\_\_

Mobile Ph: \_\_\_\_\_

Plan prepared by doctor or nurse practitioner (np):

The treating doctor or np hereby authorises medications specified on this plan to be given according to the plan, as consented by the patient or parent/guardian, including use of adrenaline if available.

Whilst this plan does not expire, review is recommended by DD/MM/YY

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Note: This ASCIA Action Plan for Allergic Reactions is for people who have allergies but do not have a prescribed adrenaline (epinephrine) injector. For instructions refer to the device label or the ASCIA website [www.allergy.org.au/anaphylaxis](http://www.allergy.org.au/anaphylaxis)

Adrenaline injectors are given as follows:

- 150 mcg for children 7.5-20kg
- 300 mcg for children over 20kg and adults
- 300 mcg or 500 mcg for children and adults over 50kg

## SIGNS OF MILD TO MODERATE ALLERGIC REACTION

- Swelling of lips, face, eyes
- Hives or welts
- Tingling mouth
- Abdominal pain, vomiting - **these are signs of anaphylaxis for insect allergy**

## ACTION FOR MILD TO MODERATE ALLERGIC REACTION

- For insect allergy - flick out sting if visible
- For tick allergy  seek medical help or  freeze tick and let it drop off
- Stay with person and call for help
- Give antihistamine (if prescribed) \_\_\_\_\_
- Phone family/emergency contact

Mild to moderate allergic reactions (such as hives or swelling) may not always occur before anaphylaxis

## WATCH FOR ANY ONE OF THE FOLLOWING SIGNS OF ANAPHYLAXIS (SEVERE ALLERGIC REACTION)

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

## ACTION FOR ANAPHYLAXIS

### 1 LAY PERSON FLAT - do NOT allow them to stand or walk

- If unconscious or pregnant, place in recovery position - on left side if pregnant, as shown below
- If breathing is difficult allow them to sit with legs outstretched
- Hold young children flat, not upright



### 2 GIVE ADRENALINE INJECTOR IF AVAILABLE

### 3 Phone ambulance - 000 (AU) or 111 (NZ)

### 4 Phone family/emergency contact

### 5 Transfer person to hospital for at least 4 hours of observation

### IF IN DOUBT GIVE ADRENALINE INJECTOR

Commence CPR at any time if person is unresponsive and not breathing normally

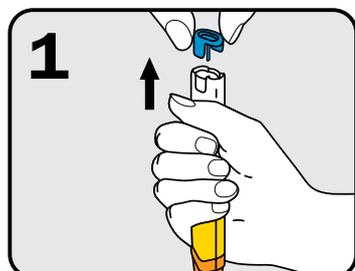
**ALWAYS GIVE ADRENALINE INJECTOR FIRST, and then asthma reliever puffer** if someone with known asthma and allergy to food, insects or medication has SUDDEN BREATHING DIFFICULTY (including wheeze, persistent cough or hoarse voice) even if there are no skin symptoms

Asthma reliever medication prescribed:  Y  N

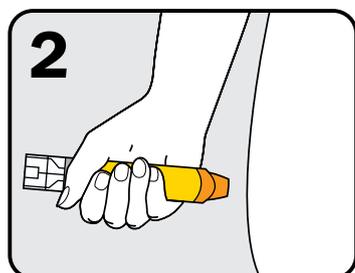
Note: If adrenaline is accidentally injected (e.g. into a thumb) phone your local poisons information centre. Continue to follow this action plan for the person with the allergic reaction.

For use with EpiPen® adrenaline (epinephrine) autoinjectors

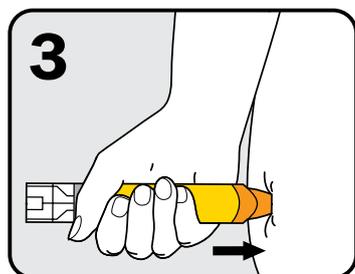
## How to give EpiPen®



Form fist around EpiPen® and PULL OFF BLUE SAFETY RELEASE



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



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

REMOVE EpiPen®

EpiPen® is given as follows:

- EpiPen® Jr (150 mcg) for children 7.5-20kg
- EpiPen® (300 mcg) for children over 20kg and adults

## SIGNS OF MILD TO MODERATE ALLERGIC REACTION

- Swelling of lips, face, eyes
- Hives or welts
- Tingling mouth
- Abdominal pain, vomiting - **these are signs of anaphylaxis for insect allergy**

## ACTION FOR MILD TO MODERATE ALLERGIC REACTION

- For insect allergy - flick out sting if visible
- For tick allergy seek medical help or freeze tick and let it drop off
- Stay with person, call for help and locate adrenaline autoinjector
- Phone family/emergency contact

Mild to moderate allergic reactions (such as hives or swelling) may not always occur before anaphylaxis

## WATCH FOR ANY ONE OF THE FOLLOWING SIGNS OF ANAPHYLAXIS (SEVERE ALLERGIC REACTION)

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

## ACTION FOR ANAPHYLAXIS

### 1 LAY PERSON FLAT - do NOT allow them to stand or walk

- If unconscious or pregnant, place in recovery position - on left side if pregnant, as shown below
- If breathing is difficult allow them to sit with legs outstretched
- Hold young children flat, not upright



### 2 GIVE ADRENALINE AUTOINJECTOR

### 3 Phone ambulance - 000 (AU) or 111 (NZ)

### 4 Phone family/emergency contact

### 5 Further adrenaline may be given if no response after 5 minutes

### 6 Transfer person to hospital for at least 4 hours of observation

### IF IN DOUBT GIVE ADRENALINE AUTOINJECTOR

Commence CPR at any time if person is unresponsive and not breathing normally

**ALWAYS give adrenaline autoinjector FIRST, if someone has SEVERE AND SUDDEN BREATHING DIFFICULTY (including wheeze, persistent cough or hoarse voice), even if there are no skin symptoms. THEN SEEK MEDICAL HELP.**

Note: If adrenaline is accidentally injected (e.g. into a thumb) phone your local poisons information centre. Continue to follow this first aid plan for the person with the allergic reaction.

## EMERGENCY FIRST AID CHECKLIST FOR ANAPHYLAXIS MANAGEMENT

### 1. Respond to the situation

The situation is assessed in a manner that recognises an urgent response is required and:

**D: Manage DANGERS** - Identify physical hazards and immediate risks to health and safety of self, casualty, others minimise, remove or isolate identified hazards/ immediate risks using established first aid principles and procedures e.g.

- Where a sting is identified, check for presence of insects e.g. more bees.
- If sting is seen flick it out immediately – scrape sideways do not squeeze.
- Initiate interim response activities while assessing casualty.
- Call for casualty's adrenaline auto-injector and ASCIA Action Plan for Anaphylaxis if risk known.
- Prepare to give auto-injector immediately when anaphylaxis signs are recognised.
- Do not move casualty unless in immediate danger (e.g. if situated near a beehive).
- Position lying flat, may sit but do not allow to stand.

### Assess the casualty

**R: Determine casualty's RESPONSE** - Assess conscious state.

- **Consciousness** - seek information about incident from casualty and/or from witnesses – check anaphylaxis status if not yet known.
- **Unconsciousness.**

**S: Send** call for help.

**A: Assess AIRWAY** – is it clear or obstructed, is the throat is swollen?

**B: Assess BREATHING** - interpret signs and symptoms and either:

- **Breathing is satisfactory** - conclude mild-moderate allergic reaction where skin – gastrointestinal signs and symptoms exist and there is no history of an insect sting – follow ASCIA Plan, manage the situation, monitor casualty continuously, prepare for anaphylaxis.

or

- **Breathing is present and patient unconscious** - place casualty in recovery position on side, manage the situation, monitor casualty continuously.

or

- **Breathing is difficult** - conclude anaphylaxis – follow ASCIA plan, give adrenaline auto-injector immediately if available or administer as soon as it arrives on scene, call or direct someone to call ambulance, manage the situation, monitor casualty continuously.

or

- **Breathing is absent and other signs of collapse** - concludes anaphylaxis and cardiac arrest – follow ASCIA Plan - give adrenaline, call or direct someone to call ambulance, give CPR.

**C: Assess CIRCULATION** – check colour and warmth if conscious/other signs of life if not breathing.

### 2. Provide first aid treatment for anaphylactic reaction (follows ASCIA Plan for Anaphylaxis)

#### 3. Communicate details of incident

- Direct someone to get casualty's adrenaline auto-injector and ASCIA Action Plan for Anaphylaxis from designated location if not already done OR uses one from first aid kit if has one.
- **If not already done - give or assist casualty to give adrenaline auto-injector as soon as available** - note time of administration.
- Repeat adrenaline dose if no response after 5 minutes and another auto-injector is available.
- If a sting is seen **flick it out immediately** – scrape sideways do not squeeze (do not remove ticks) and apply an icepack from first aid kit if available.
- Monitor casualty continuously for further or worsening signs of anaphylaxis e.g. increased breathing difficulty, signs of shock, change in conscious state/ unconsciousness.
- Prepare to commence CPR.
- Hand casualty over to ambulance officer or attending medical personnel - communicate details of incident, casualty's condition and treatment given.
- Document incident in workplace incident record.

#### Evaluate the first aid response to anaphylactic reaction after the event.

- Assess the first aid treatment given against centre/ school's/organisation's procedures.
- Compare response to casualty's ASCIA Action Plan for Anaphylaxis.
- Assess response in relation to need for change in risk management strategies.
- Identify aspects for improvement and/or further development of skills and knowledge.

# RESPIRATORY AND CARDIAC CONDITIONS

Breathing is essential for life. Any injury, medical condition or illness which affects the respiratory centre has the potential to lead to death.

## RESPIRATORY CONDITIONS

### ASTHMA

Asthma is a disorder of the smaller airways of the lungs. People with asthma have sensitive airways which can narrow when exposed to certain 'triggers' leading to difficulty in breathing.



Asthma is often characterised by wheezing, coughing, chest tightness and shortness of breath. The severity of an asthma episode can vary from person to person and can last for a varying length of time.

Statistics:

- it is estimated that over 2 million people in Australia have asthma
- 14% - 16% of children are currently diagnosed with asthma
- 10% - 12% of adults are currently diagnosed with asthma

### In an asthma attack three things occur:

- 1 Muscle spasm – the muscles surrounding the airways tighten.
- 2 Inflammation – the inside lining of the airways become inflamed and swollen.
- 3 Excess mucous – more than usual amounts of mucous is produced in the airways causing blockage and clogging.

### Common asthma triggers include:

#### Allergic:

- pollens
- house dust mites and dust
- animal dander (fur, hair)
- food preservatives
- mould and mould spores

#### Non allergic:

- smoke
- colds and flu
- emotions
- medications
- industrial chemicals
- exercise
- weather changes
- cigarette smoke

### Assessment of severity

Asthma episodes vary greatly in their severity and are classed as mild, moderate or severe.

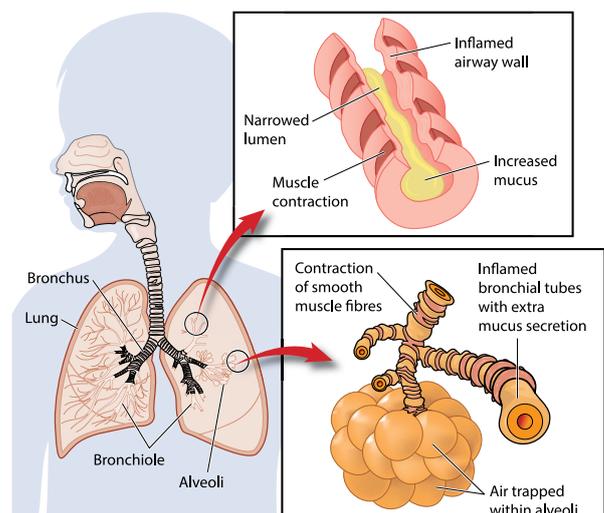
### Signs and symptoms

#### Mild/moderate:

- dry, irritating, persistent cough, particularly at night, early morning, with exercise or activity
- wheeze (high pitched whistling sound during breathing)
- chest tightness
- shortness of breath or rapid breathing

#### Severe:

- severe chest tightness
- inability to speak more than one or two words per breath
- feeling distressed and anxious
- gasping for breath
- little or no improvement after using 'reliever' medication
- 'sucking in' of the throat and rib muscles
- blue discolouration around the lips
- skin colour changes and sweaty skin
- symptoms getting worse quickly or using reliever more than every two hours



As well as the above symptoms, young children appear restless, unable to settle or become drowsy. A child may also 'suck in' muscles around the ribs and may have problems eating or drinking due to shortness of breath. A child may have severe coughing and vomiting.

### Exercise induced asthma

When we breathe through our nose, the air is warmed and moistened. When we exercise, we often will try to take more air into our system and open our mouth to do so. Doing this makes the air drier and colder. As a result of the cold air the muscles around the airways tighten, making it more difficult to breathe.

### How can someone with asthma prepare before exercise or activity?

- doctors may advise them to take the blue reliever puffer 5 – 10 minutes before exercising
- ensure they always carry their reliever medication with them
- ensure they avoid exercising when there is a high pollen count, air pollution and on very cold days

### Management of exercise induced asthma

Follow the Emergency Asthma Action Plan. Only return to the activity if you are symptom free.

### Medications

#### Relievers (used in asthma emergencies)

If a person with a history of asthma is showing signs of an asthma attack, locate their reliever medication. The reliever medication relaxes the tight muscles around the airways and works within minutes. The most common reliever medication is Ventolin which is blue in colour. Another reliever that can be used within the community is Bricanyl, although it is only recommended for people over the age of 6. Bricanyl is known as a turbuhaler and is administered differently to a 'puffer'.



Ventolin  
(Reliever)



Bricanyl  
(Reliever)

### How to use a Bricanyl turbuhaler:

- 1 Unscrew and remove cover.
- 2 Check dose counter.
- 3 Keep inhaler upright while twisting grip around and then back until a click is heard.
- 4 Breathe out gently away from mouthpiece.
- 5 Place mouthpiece between teeth without biting and close lips to form a good seal.
- 6 Breathe in strongly and deeply.
- 7 Remove inhaler from mouth.
- 8 Breathe out gently away from mouthpiece.
- 9 If an extra dose is needed, repeat steps 3 to 9.
- 10 Replace cover.

### Preventers (NOT to be used in emergencies)

Preventer agents have anti-inflammatory properties and are generally taken every day to reduce symptoms and exacerbations. They make the airways less sensitive by reducing the swelling of the lining of the airways and decreasing the production of mucous. They vary in colours (brown, yellow, orange, and white). Preventers do not provide relief for acute asthma attacks.



Flixotide  
(Preventer)



Pulmicort  
(Preventer)

### Symptom controllers (NOT to be used in emergencies)

Symptom controllers (also called long acting relievers) help to relax the muscles around the airways for up to 12 hours. They are taken daily and are only prescribed for people who are taking regular inhaled 'steroid' preventers. They too vary in colours (green, light blue). Symptom controllers may be prescribed for people who experience symptoms despite treatment with regular inhaled "steroid" preventers, night-time symptoms, and/or exercise-induced asthma.



Serevent  
(Long acting reliever)



Serevent Accuhaler  
(Long acting reliever)

### Combination medication (NOT to be used in emergencies)

Combination medications combine a preventer with a symptom controller in the same delivery device. The medication needs to be taken at the same time each day at the dosage prescribed by a doctor. They are generally purple or red in colour.



Seretide Accuhaler  
(Combination medication)

### Symbicort-SMART therapy

Symbicort Maintenance And Reliever Therapy (SMART) is a Symbicort dosing schedule for managing asthma. With this schedule, Symbicort is used BOTH for regular daily maintenance treatment AND for relief of breakthrough symptoms – a reliever and a preventer. A separate reliever inhaler is not necessary. Symbicort can be used in this way because it is an effective reliever (like Bricanyl and Ventolin) and continues to work for at least 12 hours. Symbicort is the only asthma inhaler that can be used for both maintenance and reliever treatment. This is because it has rapid onset of action (1–3 minutes) for symptom relief that lasts at least 12 hours, as well as an inhaled corticosteroid that treats inflammation. Symbicort is only to be used in people over the age of 12 due to the corticosteroid dose.



Symbicort Turbuhaler  
(Combination medication)

## SPACERS

A spacer is a special device shaped like a clear football or tube and is used with inhaler medication. It has a mouthpiece or mask at one end and a hole for an inhaler at the other. A spacer increases the amount of medication inhaled into the lungs and reduces the amount of medication that stays in the mouth or throat.

### Spacers are useful because:

- more medication gets into the lungs than if you just use the puffer alone
- when used with inhaled steroids they reduce side effects (hoarse voice, oral thrush)
- they don't require the coordination and timing you need to take a puffer on its own
- they work as well as nebulisers in treating most asthma attacks

### Spacers should particularly be used:

- by anyone taking an inhaled corticosteroid from a puffer
- by adults who have trouble coordinating the 'squeeze and breathe' timing required to use a puffer
- by children of all ages
- during an asthma attack

### Caring for your spacer

Before first use, and about every four weeks, the spacer should be washed in clean, warm, detergent water and allowed to drip dry. **Do not** rinse or wipe dry. Drying your spacer with a cloth or paper towel will cause static on the inside, which means the medication will stick to the inside of the spacer instead of travelling through into the lungs.

### Community use of spacers

Some schools, children's services, sporting clubs or workplaces will have a spacer ready just in case there is an asthma emergency.

Asthma Australia recommends that all spacers should be used by one person only. This recommendation is based on NHMRC Australian Guidelines for the Prevention and Control of Infection in Healthcare which advises that medical devices that come into contact with mucous membranes or non-intact skin should be single use or sterilised after use. This means that once a spacer has been used, it should be given to the person who used it, or thrown away. **They should not be washed and reused for another person.**

Spare spacers should always be available to restock the Asthma emergency kit. While the risk of transmission of infection is small, first aiders must always follow infection control instructions. For more information, contact your local Asthma Foundation on 1800 645 130.

*(Information obtained from Asthma Foundation)*



Spacer



Spacer with face mask



Spacer with ventolin attached

### MANAGING AN ASTHMA ATTACK

If a person has a personal written asthma action plan then that plan should be followed: If there is no asthma plan then the following is recommended.

#### Asthma first aid plan for mild/moderate asthma episode

- Sit the person upright (DO NOT leave person alone).
- Without delay shake a blue reliever puffer and give 4 separate puffs. The medication is best given one puff at a time via a spacer device. If spacer is not available, simply use the puffer.
- Ask the person to take 4 breaths from the spacer after each puff of medication.
- Wait 4 minutes.
- If there is no improvement repeat previous steps, wait 4 minutes.
- If there is no improvement – call triple zero (000) and state that the casualty is in severe respiratory distress.
- Continuously repeat the 4 puffs of reliever medication (with 4 breaths between each puff) every 4 minutes, whilst waiting for the ambulance.
- If oxygen is available, it should be administered.
- If breathing stops – commence CPR.

If casualty is showing signs of a **severe asthma attack** – **call an ambulance (triple zero, 000) straight away** and then follow the Asthma first aid plan while waiting for the ambulance.

**NOTE:** If a person has difficulty breathing and is not known to have a history of asthma still follow this management plan. This treatment could be lifesaving for someone whose asthma has not been previously recognised and will not be harmful. The first aider should provide assistance with administration of a reliever if required.

If a spacer is unavailable:

- Shake the inhaler.
- Place mouth piece in person's mouth.
- Fire one puff as person inhales slowly and steadily.
- Ask the person to hold their breath for 4 seconds, then take 4 normal breaths.
- Repeat until 4 puffs have been given.

**NOTE:** If the casualty is unable to take reliever OR reliever medication is not available, call an ambulance immediately, keep a conscious casualty calm and upright and monitor ABC's (see *Appendix 1: Assistance with Self Medication in Line with State/Territories Relevant Laws*).

**NOTE:** The most common reliever medication is Salbutamol (Ventolin). Alternative relievers that may need to be considered for adults are Terbutaline (Bricanyl) or Eformoterol plus budesonide (Symbicort).

## Bricanyl

A Bricanyl Turbuhaler may be used in first aid treatment if a puffer and spacer are not available.

- Give 2 separate doses of a Bricanyl inhaler. If a puffer is not available, you can use Bricanyl for children aged 6 years and over, even if the child does not normally use this medication.
- Wait 4 minutes. If the child still cannot breathe normally, give 1 more dose.
- If the child still cannot breathe normally, call an ambulance immediately. Call triple zero (000).
- Say that a child is having an asthma attack.
- Keep giving reliever. Give one dose every 4 minutes until the ambulance arrives.

### Administering Bricanyl

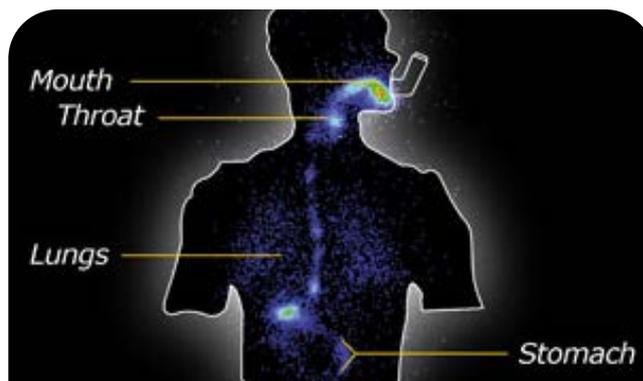
- Unscrew cover and remove.
- Hold inhaler upright and twist grip around then back.
- Get child to breathe out away from inhaler.
- Place mouthpiece between child's teeth and seal lips around it.
- Ask child to take a big strong breath in.
- Ask child to breathe out slowly away from inhaler
- Repeat for the second dose however remember to twist the grip both ways to reload before each dose.
- Replace cover.

### First aid asthma management protocol

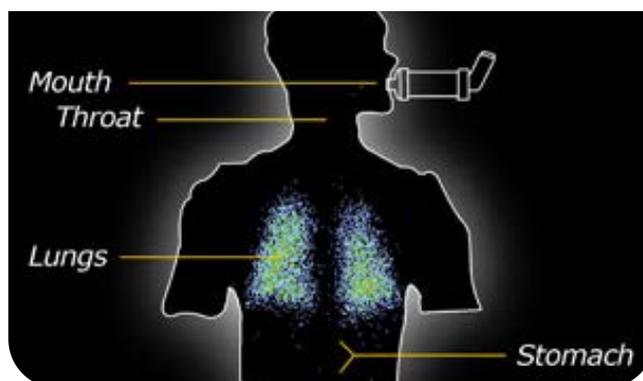
If a person has a personal written asthma action plan then that plan should be followed or use the one on the following page:



Scan QR Code using your mobile phone camera to access video content.



Demonstrates Ventolin administration without the use of a spacer.



Demonstrates Ventolin administration with the use of a Volumatic spacer.

### Management – severe episode

If the person is showing signs of a severe asthma episode, call an ambulance first and then follow their first aid action plan, or the First Aid For Asthma Chart.

**Note:** If the casualty is unable to take reliever OR reliever medication is not available, call an ambulance immediately and keep conscious casualty calm and upright, monitor ABCs (see Appendix 1, Assistance with self-medication in line with State/Territories relevant laws).

**Note:** If a person has difficulty breathing and is not known to have a history of asthma still follow this management plan. This treatment could be lifesaving for someone whose asthma has not been previously recognised and will not be harmful.

# First Aid for Asthma

## 1

### Sit the person comfortably upright.

Be calm and reassuring.  
Don't leave the person alone.

## 2

### Give 4 puffs of a blue/grey reliever

(e.g. Ventolin, Asmol or Airomir)

Use a spacer, if available.

Give 1 puff at a time with 4 breaths after each puff

Use the person's own inhaler if possible.

If not, use first aid kit inhaler or borrow one.

OR

### Give 2 separate doses of a Bricanyl or Symbicort inhaler

If a puffer is not available, you can use Symbicort (people over 12) or Bricanyl, even if the person does not normally use these.

## 3

### Wait 4 minutes.

If the person still cannot breathe normally, **give 4 more puffs.**

Wait 4 minutes.

If the person still cannot breathe normally, **give 1 more dose.**

## 4

If the person still cannot breathe normally,

### CALL AN AMBULANCE IMMEDIATELY (DIAL 000)

Say that someone is having an asthma attack.

### Keep giving reliever.

Give 4 puffs every 4 minutes until the ambulance arrives.

Children: 4 puffs each time is a safe dose.

Adults: For a severe attack you can give up to 6–8 puffs every 4 minutes

If the person still cannot breathe normally, **CALL AN AMBULANCE IMMEDIATELY (DIAL 000)** Say that someone is having an asthma attack.

### Keep giving reliever while waiting for the ambulance:

For Bricanyl, give 1 dose every 4 minutes

For Symbicort, give 1 dose every 4 minutes (up to 3 more doses)

## HOW TO USE INHALER

### WITH SPACER



- Assemble spacer
- Remove puffer cap and shake well
- Insert puffer upright into spacer
- Place mouthpiece between teeth and seal lips around it
- Press once firmly on puffer to fire one puff into spacer
- Take 4 breaths in and out of spacer
- Slip spacer out of mouth
- Repeat 1 puff at a time until 4 puffs taken – remember to shake the puffer before each puff
- Replace cap

### WITHOUT SPACER



- Remove cap and shake well
- Breathe out away from puffer
- Place mouthpiece between teeth and seal lips around it
- Press once firmly on puffer while breathing in slowly and deeply
- Slip puffer out of mouth
- Hold breath for 4 seconds or as long as comfortable
- Breathe out slowly away from puffer
- Repeat 1 puff at a time until 4 puffs taken – remember to shake the puffer before each puff
- Replace cap

### BRICANYL OR SYMBICORT



- Unscrew cover and remove
- Hold inhaler upright and twist grip around and then back
- Breathe out away from inhaler
- Place mouthpiece between teeth and seal lips around it
- Breathe in forcefully and deeply
- Slip inhaler out of mouth
- Breathe out slowly away from inhaler
- Repeat to take a second dose – remember to twist the grip both ways to reload before each dose
- Replace cover

### Not Sure if it's Asthma?

#### CALL AMBULANCE IMMEDIATELY (DIAL 000)

If a person stays conscious and their main problem seems to be breathing, follow the asthma first aid steps. Asthma reliever medicine is unlikely to harm them even if they do not have asthma.

### Severe Allergic Reactions

#### CALL AMBULANCE IMMEDIATELY (DIAL 000)

Follow the person's Action Plan for Anaphylaxis if available. If the person has known severe allergies and seems to be having a severe allergic reaction, use their adrenaline autoinjector (e.g. EpiPen, Anapen) before giving asthma reliever medicine.

For more information on asthma visit:

Asthma Foundations – [www.asthmaaustralia.org.au](http://www.asthmaaustralia.org.au)

National Asthma Council Australia – [www.nationalasthma.org.au](http://www.nationalasthma.org.au)

National Asthma  
Council Australia  
leading the attack against asthma

# ASTHMA ACTION PLAN

Take this ASTHMA ACTION PLAN with you when you visit your doctor



<b>NAME</b> .....	<b>DOCTOR'S CONTACT DETAILS</b>	<b>EMERGENCY CONTACT DETAILS</b>
<b>DATE</b> .....		<b>Name</b> .....
<b>NEXT ASTHMA CHECK-UP DUE</b> .....		<b>Phone</b> .....
.....		<b>Relationship</b> .....

**WHEN WELL** *Asthma under control (almost no symptoms)* **ALWAYS CARRY YOUR RELIEVER WITH YOU**

**Your preventer is:** ..... (NAME & STRENGTH)

Take ..... puffs/tablets ..... times every day

Use a spacer with your inhaler

**Your reliever is:** ..... (NAME)

Take ..... puffs .....

When: You have symptoms like wheezing, coughing or shortness of breath

Use a spacer with your inhaler

Peak flow\* (if used) above: .....

**OTHER INSTRUCTIONS**  
(e.g. other medicines, trigger avoidance, what to do before exercise)

.....

.....

.....

**WHEN NOT WELL** *Asthma getting worse (needing more reliever than usual, having more symptoms than usual, waking up with asthma, asthma is interfering with usual activities)*

**Keep taking preventer:** ..... (NAME & STRENGTH)

Take ..... puffs/tablets ..... times every day

Use a spacer with your inhaler

**Your reliever is:** ..... (NAME)

Take ..... puffs .....

Use a spacer with your inhaler

Peak flow\* (if used) between ..... and .....

**OTHER INSTRUCTIONS**  Contact your doctor  
(e.g. other medicines, when to stop taking extra medicines)

.....

.....

.....

**IF SYMPTOMS GET WORSE** *Severe asthma flare-up/attack (needing reliever again within 3 hours, increasing difficulty breathing, waking often at night with asthma symptoms)*

**Keep taking preventer:** ..... (NAME & STRENGTH)

Take ..... puffs/tablets ..... times every day

Use a spacer with your inhaler

**Your reliever is:** ..... (NAME)

Take ..... puffs .....

Use a spacer with your inhaler

Peak flow\* (if used) between ..... and .....

**OTHER INSTRUCTIONS**  Contact your doctor today  
(e.g. other medicines, when to stop taking extra medicines)

**Prednisolone/prednisone:**

Take ..... each morning for ..... days

.....

.....

.....

**DANGER SIGNS** *Asthma emergency (severe breathing problems, symptoms get worse very quickly, reliever has little or no effect)*

**DIAL 000 FOR AMBULANCE**

**Call an ambulance immediately**  
**Say that this is an asthma emergency**  
**Keep taking reliever as often as needed**

Peak flow (if used) below: .....

Use your adrenaline autoinjector (EpiPen or Anapen)



\* Peak flow not recommended for children under 12 years.

FOR USE WITH PUFFER AND SPACER

# ASTHMA ACTION PLAN

## VICTORIAN SCHOOLS

Student's name: \_\_\_\_\_

DOB: \_\_\_\_\_

Confirmed triggers: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PHOTO

**ASTHMA  
AUSTRALIA**

- Child can self-administer if well enough
- Child needs to pre-medicate prior to exercise
- Face mask needed with spacer

**ALWAYS give adrenaline autoinjector FIRST, and then asthma reliever puffer** if someone with known asthma and allergy to food, insects or medication has **SUDDEN BREATHING DIFFICULTY** (including wheeze, persistent cough or hoarse voice) even if there are no skin symptoms.

Adrenaline autoinjector prescribed:  Y  N Type of adrenaline autoinjector: -

## ASTHMA FIRST AID

**For Severe or Life-Threatening signs and symptoms, call for emergency assistance immediately on Triple Zero "000"**  
Mild to moderate symptoms do not always present before severe or life-threatening symptoms

- Sit the person upright**  
Stay with the person and be calm and reassuring
- Give - separate puffs of Airomir, Asmol or Ventolin**  
Shake the puffer before each puff  
Puff 1 puff into the spacer at a time  
Take 4 breaths from spacer between each puff
- Wait 4 minutes**  
If there is no improvement, repeat step 2
- If there is still no improvement call emergency assistance**  
Dial Triple Zero "000"  
Say 'ambulance' and that someone is having an asthma attack  
Keep giving - puffs every 4 minutes until emergency assistance arrives

**Commence CPR at any time if person is unresponsive and not breathing normally.**

**Blue/grey reliever medication is unlikely to harm, even if the person does not have asthma.**

## SIGNS AND SYMPTOMS

### MILD TO MODERATE

- Minor difficulty breathing
- May have a cough
- May have a wheeze
- Other signs to look for:



### SEVERE

- Cannot speak a full sentence
- Sitting hunched forward
- Tugging in of skin over chest/throat
- May have a cough or wheeze
- Obvious difficulty breathing
- Lethargic
- Sore tummy (young children)

### LIFE-THREATENING

- Unable to speak or 1-2 words
- Collapsed/exhausted
- Gasping for breath
- May no longer have a cough or wheeze
- Drowsy/confused/unconscious
- Skin discolouration (blue lips)

Emergency contact name: \_\_\_\_\_

Plan prepared by Dr or Nurse Practitioner: \_\_\_\_\_

Work ph: \_\_\_\_\_

Signed: I hereby authorise medications specified on this plan to be administered according to the plan

Home ph: \_\_\_\_\_

Date prepared: \_\_\_\_\_

Mobile ph: \_\_\_\_\_

Date of next review: \_\_\_\_\_



- Assemble spacer.
- Remove cap from puffer.
- Shake puffer well.
- Attach puffer to end of spacer.

- Place mouthpiece of spacer in mouth and ensure lips seal around it.
- Breathe out gently into the spacer.
- Press down on puffer canister once to fire medication into spacer.
- Breathe in and out normally for 4 breaths (keeping your mouth on the spacer).

## CHOKING

Choking is where a blockage in the airways restricts or prevents breathing. Choking may be caused by inhalation through:

- eating or drinking
- running and stumbling whilst eating or drinking
- inadequate chewing of food where a piece blocks the airway
- swallowing splinters of bone/foreign material which lodge in the airway
- laughing or crying whilst eating or drinking

### Choking signs and symptoms in the conscious casualty

#### Mild airway obstruction

- noisy breathing
- wheezing
- coughing

#### Severe airway obstruction

- inability to breathe, speak, cry or cough
- clutching the throat
- increasing blueness of the face, neck, lips, ears and fingernails
- there may be efforts at breathing but there is no sound of breathing and no escape of air from the nose and/or mouth

## Management of the conscious casualty

### Mild airway obstruction

- › Lean the conscious casualty forward.
- › Encourage the casualty to relax and breathe deeply.
- › Encourage casualty to cough to remove the object.
- › If the obstruction persists for more than a few minutes - call triple zero (000) for an ambulance.

### Severe airway obstruction

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- › Call triple zero (000) for an ambulance.
- › Deliver up to 5 back blows, checking after each to see whether the blow has relieved the obstruction.

**Note:** The aim is to free the obstruction rather than give all 5 back blows.

### If the back blows are unsuccessful

- › Deliver up to 5 chest thrusts, checking after each to see whether the thrust has relieved the obstruction.

If the obstruction is not relieved and the casualty is still conscious continue alternating back blows and chest thrusts.

**Note:** The aim is to free the obstruction rather than give all 5 chest thrusts.



Scan QR Code using your mobile phone camera to access video content.



## RESPIRATORY AND CARDIAC CONDITIONS

### Method for delivering back blows

- **Position of casualty:** Small infants or children may be placed head downwards along or across first aider's thighs, adults or large children may either sit or stand.
- **Back blows:** Using the heel of one hand deliver a forceful blow in the middle of the back between the shoulder blades.

Infant



Child



Child



Adult in a seated and a standing position



OR



## Method for delivering chest thrusts

- **Position:** Adults or children may either sit or stand against a firm support (wall or chair back). Infants should be placed with their face upwards i.e. supine position along a first aider's thigh with their head supported.
- **Chest thrust:** Apply a sharp, forceful chest compression delivered at the same point as for CPR.

### Infant



### Child in a seated or standing position



OR



### Adult in a seated or standing position



OR



## Management of the unconscious casualty

- DRSAB - Attempt finger sweep if foreign material is visible.
- Commence C - Compressions and attempt rescue breaths.
- Continue until the ambulance arrives.
- Turn on / open AED and follow voice prompts.

CPR is given if the person is unconscious and not breathing.

The action of delivering compressions and rescue breathing to an "obstructed" unconscious casualty, may force the object upwards out of the trachea when doing compressions or force the obstruction downwards into one of the bronchi to allow the second bronchi to be clear to accept the rescue breath.

## HYPERVENTILATION

Hyperventilation is a condition caused from over-breathing. In this condition the rate and depth of breathing exceed that required to maintain normal levels of carbon dioxide in the blood.

Causes of hyperventilation can include excitement, hysteria or panic attack.

### Signs and symptoms

- light headedness
- shortness of breath
- unable to 'get enough breath in'
- rapid breathing
- blurred vision
- chest discomfort, palpitations
- a feeling of panic and impending death
- normal or pink skin colour
- rapid pulse
- feeling of choking, suffocation and a need to breathe deeply
- pins and needles in hands, feet and face
- hands and feet may be bent at the joints with finger and toes straight
- altered levels of consciousness

### Management

- Firm reassurance; consider isolating casualty from the cause of hyperventilation.
- Encourage the casualty to take slow, regular breaths.

**Note:** Re-breathing from a paper bag is no longer recommended.

**Note:** Not every person who is breathing deeply or rapidly has hyperventilation syndrome. Other more serious conditions which could cause this include: asthma, heart failure, clot in the lung, heart attack, some poisoning incidents, collapsed lung, and uncontrolled diabetes. If any of these conditions are suspected call triple zero (000) for an ambulance.

## DROWNING

Drowning occurs when a casualty's breathing becomes impaired due to being submerged or immersed in liquid (usually water).



### Prevention

- learn to swim
- learn safety rules for boating and using swimming pools
- learn basic rescue and resuscitation techniques
- children need to be supervised around water and wear a life jacket"

### Signs and symptoms

- not breathing
- blue face and lips
- possibly a fine, foamy froth from the mouth and nose

### Management

## D

#### DANGER

- Remove casualty from the water as soon as possible.

## R

#### RESPONSE

- Assess the casualty on their back with the head at the same level as the trunk, rather than in a head down position. This decreases the likelihood of vomiting and is associated with increased survival.

## S

- Send/call for help triple zero (000) and seek medical assistance urgently.

## A

#### AIRWAY

- Vomiting and regurgitation often occur after immersion. If vomit is found on initial assessment or any time during resuscitation, roll the casualty onto their side and clear the upper airway. Roll back if resuscitation needs to continue.

## B

#### BREATHING

- If the casualty recovers, manage for cold exposure and monitor closely until medical assistance arrives.

## C

#### CIRCULATION

- If not breathing or not breathing normally commence CPR.

### WARNING:

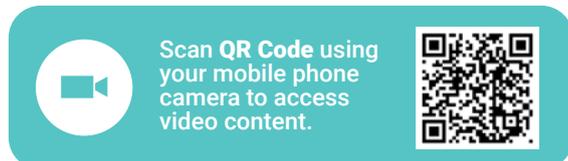
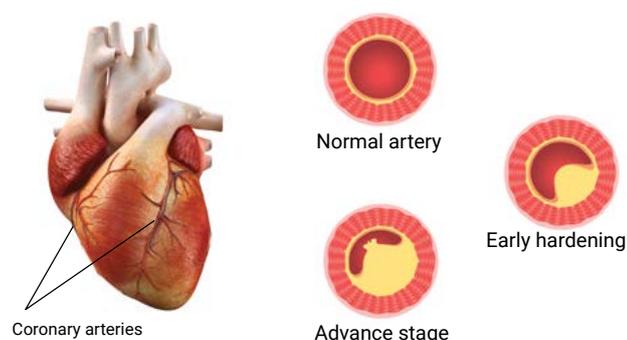
Never attempt a rescue beyond your capability.

## THE CARDIOVASCULAR SYSTEM

The heart is one of the most important organs in the body. The heart and circulatory system (also called the cardiovascular system) make up the network that delivers blood to the body's tissues. With each heartbeat, blood is sent throughout our bodies, carrying oxygen and nutrients to all of our cells.

Cardiovascular conditions affect the heart and blood vessels and are a leading cause of death in Australia. Cardiovascular diseases cause 27% of deaths in Australia. Around 1.2 million Australians have 1 or more heart or vascular conditions.

Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect your heart's muscle, valves or rhythm, also are considered forms of heart disease.



## COMMON CARDIAC CONDITIONS

### ANGINA

Angina is temporary chest pain or discomfort due to a reduced blood supply to the heart muscle. It is often associated with exercise or emotional stress because at these times the heart beats more quickly and needs an increased blood supply. Rest and medication generally relieve the pain.

Angina sufferers are usually under medical treatment and are likely to understand their condition and carry medication (see *Appendix 1: Assistance with self-medication in line with State/Territories relevant laws*).

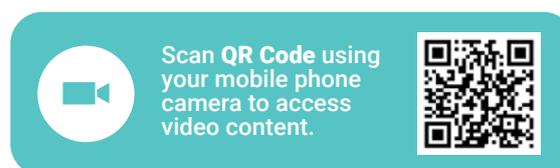
### Signs and symptoms

- pain or discomfort in the centre of the chest which may radiate into arm, neck or jaw
- shortness of breath

## Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Support the casualty in a sitting position.
- Encourage rest and provide reassurance.
- Assist with medication if carried.
- If pain continues for longer than 10 minutes it may indicate a heart attack. In this case, call triple zero (000) for an ambulance.
- Otherwise advise casualty to see own doctor.



**Note:** Not all heart attacks are accompanied by pain. Some people simply look and feel unwell. The most common symptom of heart attack in casualties without chest pain is shortness of breath.



## HEART ATTACK

A heart attack occurs when there is the complete blockage of a coronary artery, or its branches, depriving a section of the heart muscle of its blood supply and therefore oxygen.

The onset of pain is usually sudden and may occur at rest. It is not relieved by rest or angina medication.

A heart attack is different from, but may lead to a cardiac arrest. Cardiac arrest is the cessation of the heart, whereas heart attack is a blockage.

Survival after a heart attack can be improved by current treatments and clot-dissolving medications that clear the blocked artery, restore blood supply to the heart muscle and limit damage to the heart. These therapies are most effective if administered as soon as possible following the onset of symptoms with these benefits declining with delays in treatment.

### Signs and symptoms

- central chest pain, discomfort or tightness which lasts for more than 10 minutes
- the pain may spread to arm, neck, jaw, back, both or either shoulders
- shortness of breath
- nausea and/or vomiting
- sweating
- feeling dizzy or light-headed
- possible collapse due to a cardiac arrest

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Assist the conscious casualty into a comfortable position, usually sitting up.
- Encourage total rest and provide reassurance.
- If the casualty has been prescribed medication such as a tablet or oral spray to treat episodes of chest pain or discomfort associated with angina, assist them to take as directed.
- Call triple zero (000) for an ambulance urgently.
- Routine administration of oxygen in persons with suspected heart attack is no longer recommended. Administer oxygen only if there are obvious signs of shock or evidence of low oxygen saturation
- The Australian Resuscitation Council (ARC) suggests that first aiders give aspirin 300 mg orally to adults with non-traumatic chest pain unless the casualty has known anaphylaxis to aspirin or doctor has recommended not to take it.

(see Appendix 1: Assistance with self-medication in line with State/Territories relevant laws).

### HOW TO DIFFERENTIATE BETWEEN ANGINA AND A HEART ATTACK

#### Questions to ask

- 1 Do you have a history of heart condition?
- 2 If so, do you have some medication? Where is it?
- 3 Where is the pain located?
- 4 How long have you been experiencing this pain?
- 5 Has the pain worsened?
- 6 Does it ease when you rest?

**Note:** If it is the casualty's first episode of chest pain, then suspect a heart attack.



Scan QR Code using your mobile phone camera to access video content.



# Will you recognise your heart attack?



## Warning Signs Action Plan

Do you feel any

pain pressure heaviness tightness

In one or more of your

chest neck jaw arm/s back shoulder/s

You may also feel

nauseous a cold sweat dizzy short of breath

Yes

**1 STOP** and rest now

**2 TALK** tell someone how you feel

### If you take angina medicine

- Take a dose of your medicine.
- Wait 5 minutes. Still have symptoms? Take another dose of your medicine.
- Wait 5 minutes. Symptoms won't go away?

Are your symptoms severe or getting worse?

or

Have your symptoms lasted 10 minutes?

Yes

**3 CALL 000** and chew 300mg aspirin, unless you have an allergy to aspirin or your doctor has told you not to take it

Triple Zero

- Ask for an ambulance.
- Don't hang up.
- Wait for the operator's instructions.

# ALTERED CONSCIOUS STATES

An altered state of consciousness (or awareness) is defined as a state of consciousness that differs significantly from a normal awake state and is almost always temporary.

## FAINTING

Fainting is a brief loss of consciousness. It occurs when there is a reduced flow of blood (and with this reduced oxygen) to the brain. The loss of consciousness usually only lasts from a few seconds to one or two minutes, providing the casualty is placed in the side recovery position.

### Causes

- standing still for a long time in hot conditions
- sudden change of position e.g. from lying to standing
- pain
- strong emotion e.g. fear, unpleasant sights or smells, bad news, over excitement

### Signs and symptoms

- before loss of consciousness the casualty may feel light-headed, nauseous, restless, anxious and look pale (have a change in their normal skin colour), sweaty and feel cool to touch
- may yawn, and complain of tingling or numbness in the fingers or toes
- slow, full pulse
- unconsciousness
- rapid return of consciousness after being placed in the lateral recovery position
- the casualty may have a partial or generalised seizure due to the lack of oxygen to the brain

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Encourage a gradual return to the upright position when recovering i.e. lying - sitting - standing - walking. Be guided by the casualty's response to any change in position.



## SEIZURES

Seizures are caused by a sudden, excessive electrical discharge within the brain. There are many different types of seizures. They are divided into two basic types: focal and generalised.

### Causes

- epilepsy
- lack of oxygen to the brain
- brain injury or illness
- poisoning
- withdrawal from alcohol or other drugs of dependence
- in children under 6 years in association with a high temperature (febrile convulsion)



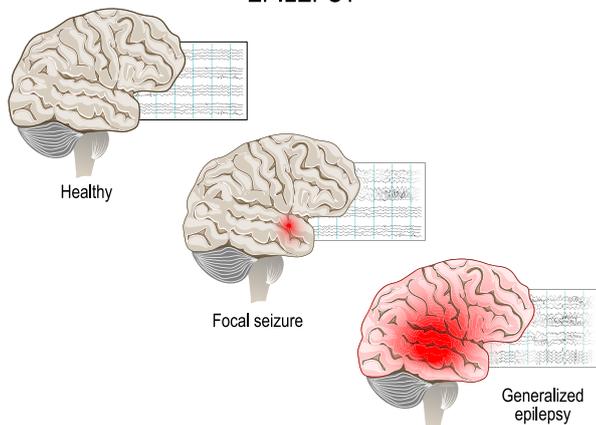
Scan QR Code using your mobile phone camera to access video content.



Scan QR Code using your mobile phone camera to access video content.



## EPILEPSY



### Signs and symptoms

#### Focal seizure

Focal seizures are brief and sudden brain disturbances.

The seizure activity involves one area of the brain. It causes a brief “blurring of consciousness” that may go unnoticed or be mistaken for anything from intoxication to daydreaming.

There may be:

- slight twitching movements of lips, eyelids or head
- “automatic” movements such as fiddling with buttons or clothing, repetitive hand movements etc.
- a period of memory loss where the casualty is unaware that a seizure has occurred

**Note:** A focal seizure may progress to involve the whole brain, leading to a generalised seizure.

#### Generalised seizure

Generalised seizure activity involves the whole brain causing the person to become unconscious. There are many types of generalised seizures:

##### Generalised tonic-clonic seizures

The most universally recognised seizure.

- sudden spasm of muscles producing rigidity and loss of consciousness. The casualty usually falls to the ground (tonic phase)
- alternating relaxation and contraction of the muscles resulting in jerking movements of the arms, legs and head. This clonic phase is often associated with noisy breathing, dribbling, frothing at the mouth and urinary incontinence
- on regaining consciousness the casualty is usually confused for several minutes and unaware of the seizure. The casualty may be very drowsy and need to sleep for a short time

### Management

The priority is to protect the casualty. Seizures that do not result in a loss of consciousness require little first aid other than protection from danger during the seizure, and reassurance following the seizure.

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Protect the casualty by removing objects that may cause injury.
- Do not restrain the casualty, prise their mouth open or attempt to insert any object into their mouth.
- When seizure stops, assess for, and manage any injuries resulting from the seizure. Reassure the casualty who will be dazed, confused or drowsy.
- Allow the casualty to sleep under supervision after the seizure.

### EPILEPSY

Epilepsy is a disorder in which the normal electrochemical activity of the brain is disrupted, resulting in seizures. During a seizure a person’s consciousness, movement, or actions may be altered for a short time. The majority of people with epilepsy achieve good control through the use of antiepileptic medication and may become seizure free.

A person known to have epilepsy does not need urgent medical assistance unless: they are injured as a result of the seizure, the seizure lasts longer than 5 minutes, another seizure occurs before the casualty has fully recovered from the previous one or they have diabetes.

### Management

- Manage as for a generalised seizure.
- Rest the person on their side whilst drowsy.
- Seek medical assistance as necessary.



Scan QR Code using your mobile phone camera to access video content.



### FEBRILE CONVULSIONS

Febrile convulsions are usually associated with a fever. One in every 20 children will have one or more febrile convulsions. A febrile convulsion is not epilepsy and does not cause brain damage. Around 30 per cent of babies and children (up to the age of 6) who have had one febrile convulsion will have another. There is no way to predict who will be affected or when this will happen.

### Management

- Manage as for a generalised seizure.
- Rest the child on their side whilst drowsy.
- Seek medical assistance as soon as possible.

**Note:** For children who have a temperature, it is no longer recommended they are cooled with water.

## HEAD INJURIES

All injuries to the head should be treated seriously. There may be fractures of the skull or damage to the brain or blood vessels inside the brain. The priority is to maintain an open and clear airway, and to control any bleeding to the scalp.



If there is any fluid coming from the ear the unconscious casualty should be placed in the recovery (side-lying) position with the injured side down. Every casualty with a suspected head injury should be referred to medical assistance for assessment and observation.



Scan QR Code using your mobile phone camera to access video content.



## CONCUSSION

Concussion is a temporary condition where there may be a loss or altered state of consciousness. A rapid recovery usually follows. It is generally caused by a direct blow to the head causing "brain shaking". A casualty who shows any of the below signs and symptoms and whose conscious state deteriorates may have bleeding inside their brain. This requires immediate medical assistance.

**Note:** A casualty, who loses consciousness, even for a second, should be sent to medical assistance for review and observation. A spinal injury should be suspected in any casualty who loses consciousness as a result of a head injury.

### Signs and symptoms

- headache of increasing severity
- nausea and/or vomiting
- blurred vision and/or double vision
- being stunned or dazed
- slurred speech
- pupils becoming unequal in size
- short term memory loss and/or memory loss of the event
- blood or fluid discharge from ears, nose or mouth
- loss of coordination, dizziness, unsteady walking
- confusion
- deterioration in consciousness
- seizure/s

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- › If unconscious and breathing, place the casualty in the recovery (side-lying) position. If bleeding from the ear, ensure to position with the affected ear downward to aid drainage.
- › If conscious, sit the casualty down with head supported and elevated, allow bloody fluid (if present) to drain from ear and collect on a clean pad.
- › If consciousness returns, keep the casualty lying down at rest and reassure them.
- › Control any bleeding and cover wounds.
- › Seek medical assistance.



Scan QR Code using your mobile phone camera to access video content.



## BLEEDING FROM EARS OR NOSE

Blood or fluid coming from the ear or nose may indicate a fracture of the base of the skull. The ear canal **should not be plugged**. Place a clean pad under the affected ear and the conscious casualty should sit up and incline the head to the injured side to drain and relieve pressure. If unconscious lie person with injured side down in the recovery (side-lying) position.



## SUSPECTED SPINAL INJURY

A spinal injury should be suspected in any casualty who loses consciousness as a result of a head or back injury. The way you move a person with a suspected spinal injury is very important. Further injury may be minimised if a log roll is used when turning the unconscious casualty onto their side.

### Log roll

The purpose of a log roll is to turn the casualty onto their side whilst keeping the spine and head in alignment.

### How to perform a log roll with one or two bystanders:

- The first aider kneels at the head end of the casualty, other(s) kneel beside the casualty.
- The first aider places both hands securely on either side of the casualty's head positioning open palms over the casualty's ears (similar to gripping a football).
- Straighten the casualty's arm closest to the bystander/s.
- Place the casualty's upper arm across the chest.
- Ask the bystander(s) to place one hand under the shoulder and their other hand on the hip, if two bystanders the other person places hands on thigh and mid-calf.
- Take a firm grip - this can be to clothing or a belt if secure.
- The roll must be conducted in unison with one or two bystanders. It is best to plan the manoeuvre to make sure it is done smoothly. Agreeing to count down from 3 to 1 and then turn is the usual way of doing this.
- Once each person has a firm grip, listen to the main first aider for instructions as when to all simultaneously roll the casualty onto their side.
- Place the casualty's hand in front of the chest to create a stabiliser to assist in holding the log roll position in place (see picture).

- The head may be heavy for the first aider to hold for a long period of time, so a firm object can be placed between the ground and head keeping the spine straight in the log roll recovery position. Improvise by using any firm object, for example, a phone book, shoes or blanket.

**3 person team:** Where three people are available, the first aider manages the casualty's head; whilst the other two bystanders manage the casualty's trunk and legs.

**2 person team:** Where only two people are available, the first aider manages the casualty's head and the bystander manages the casualty's trunk.

**1 person:** Where only one person is available, extend one arm perpendicular straight above the head with the ear nested near the elbow, roll as per normal recovery position however ensure casualty's outstretched arm supports the head.



**Note:** The lead first aider will need to arrange for the other first aider(s) to support and immobilise the casualty's body in position, using hands, knees and thighs.



Scan QR Code using your mobile phone camera to access video content.



**STROKE**

A stroke occurs when the blood supply to the brain is suddenly disrupted. This may be due to a burst blood vessel or a blockage by a clot or fatty deposit (atheroma). The effects of the stroke will depend on how much and which part of the brain is affected.

Without oxygen from the interrupted blood supply the surrounding brain cells are quickly damaged. If treatment is provided quickly through the ambulance and hospital response some of these damaged brain cells can survive, that's why calling triple zero (000) is so important.

**Signs and symptoms**

- sudden, severe headache
- weakness or loss of movement and feeling, usually on one side of the body
- slurred speech
- difficulty in swallowing
- altered levels of consciousness
- dizziness
- loss of balance
- loss of vision
- drooping eye or mouth
- arm weakness

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- If conscious, position casualty sitting up and comfortably supported.
- Loosen tight clothing.
- Reassure the casualty and seek medical assistance urgently.
- Routine administration of oxygen is no longer given to casualties with a stroke.

**Use the FAST Test to recognise common signs of stroke:**

- F** Facial weakness
- A** Arm weakness
- S** Speech difficulty
- T** Time to act fast – call triple zero (000)



Scan QR Code using your mobile phone camera to access video content.

**POISONING**

A poison is any substance that, when taken into the body may be harmful to the normal functioning of the body. Poisonings may be accidental or deliberate. Poisons may take the form of a:

- solid (e.g. dishwashing granules, pills)
- liquid (e.g. weed killer, shampoo, heroin, methamphetamine and alcohol)
- vapour and gas (e.g. chlorine, cyanide, smoke, methamphetamine, cannabis)

Poisons may enter the body by the mouth (ingested), lungs (inhaled) or skin (absorbed or injected).

Recognise **STROKE** Think **F.A.S.T.**



F

Has their  
**FACE**  
drooped?



A

Can they lift both  
**ARMS?**



S

Is their  
**SPEECH**  
slurred and do they  
understand you?



T

Call 000,  
**TIME**  
is critical



If you see any of  
these symptoms  
**Act FAST**  
**call 000**

The principles of managing a casualty who has been poisoned are:

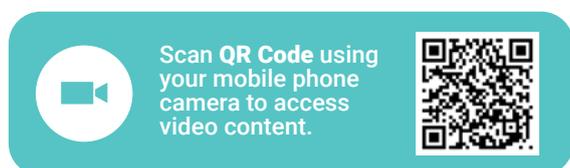
- › Prevention of poisoning of the rescuer.
- › Decontamination of the casualty.
- › Resuscitation and supportive care
- › Ensuring emergency services know about the suspected poison.

## Prevention

Poisoning is a common problem in Australia where most cases are unintentional and one third of the cases are children between the ages of 1-4 years.

It is important to know what poisons are stored in the worksite and to manage these according to specifications in the safety data sheet (SDS). For this you will need to access the dangerous goods legislation in your state or territory.

- › Store poisonous substances in their original containers in locked or child-resistant cupboards or out of reach of children.
- › Dispose of unwanted medicines and poisons correctly
- › Read all labels and use according to directions.
- › Wear protective clothing and equipment when using toxic or caustic chemicals.
- › Be aware of poisonous fumes or gases in enclosed spaces.



## General signs and symptoms

These depend on the nature of the poison and may include:

- nausea/vomiting/diarrhoea
- difficulty in breathing, wheezing
- pale or bluish skin colour
- odours of the breath, skin or clothing
- drowsiness, disorientation
- burning pains in the mouth or throat
- headache/chest or abdominal pain
- blurred vision
- seizure/s
- sudden collapse leading to respiratory or cardiac arrest
- unconsciousness

## General management

Evaluate the situation remembering to protect yourself. If possible try to identify:

- › The poison.
- › The route of exposure inhaled, ingested, absorbed/injected.
- › Quantity the casualty was exposed.
- › Time of exposure.

If the casualty is unconscious initiate the first aid priority action plan (DRSABCD).

- › When calling triple zero (000) ask for both the ambulance and fire brigade if the atmosphere is contaminated.

If the casualty is conscious initiate the first aid priority action plan (DRSABCD) and include the following actions:

- › Identify substance.
- › If substance has been swallowed it is recommended that the mouth be rinsed.
- › Wear PPE and keep safe.
- › If a corrosive substance has been swallowed do not induce vomiting, but wipe or wash the casualty's face and mouth with water and seek medical assistance.
- › Give nothing by mouth.
- › Move casualty to fresh air if required.
- › Remove contaminated clothing if appropriate.
- › Flush any contaminates from eyes and skin (20 mins).
- › Call the Poisons Information Centre on 13 11 26 to determine the next step in managing the casualty.

## SPECIFIC POISONING ROUTES

### INGESTED SUBSTANCE

Symptoms typically begin soon after ingestion but with certain poisons (such as some medications) they can be delayed.

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- › Remove the item from the casualty.
- › Rinse mouth out with water.
- › Do not induce vomiting.
- › Give nothing by mouth.
- › If conscious immediately call Poisons Information Centre on 13 11 26 to determine next step in managing the casualty.
- › If possible identify substance.

**INHALED SUBSTANCE**

This may lead to a life threatening situation. In some cases the effects may be delayed, so if an inhalation incident is suspected the casualty should always seek medical assistance.

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Immediately get the casualty to fresh air, without placing yourself at risk.
- Avoid breathing the fumes.
- If it is safe to do so, open doors and windows wide.
- If conscious, immediately call Poisons Information Centre on 13 11 26 to determine next step in managing the casualty.
- If possible identify substance.

**ABSORBED SUBSTANCE**

These are often spilt on the skin or clothing and then forgotten. These poisons include fertilisers, weedkillers and pesticides.

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Wear PPE and keep safe.
- Remove contaminated clothing, taking care to avoid contact with the poison.
- Flood contaminated skin with running, cold water for 20 minutes.
- If poison enters the eye, flood the eye with cold, running water for up to 20 minutes ensuring you keep the person warm.
- Wash skin gently with soap and water and rinse well.
- Call Poisons Information Centre on 13 11 26 to determine next step in managing the casualty.
- If possible identify poison.

**Note:** Where to find information about poisons

Poison Information Centres operate in each State and Territory. The 24 hour national phone number for information regarding poisons is: **13 11 26**  
Or for non-urgent information visit the Victorian Poisons Information Centre website at:  
<http://www.austin.org.au/poisons>

**INGESTED, INJECTED, INHALED AND ABSORBED DRUG MISUSE**

Drugs can be categorised by the way in which they affect our bodies:

- depressants – slow down the function of the central nervous system

- hallucinogens – affect your senses and change the way you see, hear, taste, smell or feel things
- stimulants – speed up the function of the central nervous system

Some drugs affect the body in many ways and can fall into more than one category. For example, cannabis appears in all 3 categories. The category of drugs generally determines the effect on the central nervous system (CNS). Depressants such as barbiturates, benzodiazepines, narcotics, alcohol and various inhalants (acetone, butane, petrol, kerosene, paints, aerosol sprays) alter the conscious state to some degree. They also depress the respiratory system and may cause a respiratory or cardiac arrest.

Stimulants are a class of drugs that speed up the messages between the brain and the body. They can make a person feel more awake, alert, confident or energetic.

Large doses of stimulants can cause over-stimulation, causing anxiety, panic, seizures, headaches, stomach cramps, aggression and paranoia. In some instances, stimulants can also cause respiratory distress, disrupt normal heart rhythm and cause death. Stimulants include caffeine, ice, nicotine, amphetamines, and cocaine.

Drug abuse is the misuse or overuse of any medication or drug, including alcohol. Many street drugs have no therapeutic benefits. Use of these drugs is a form of drug abuse. Legitimate medications can be abused by people who take more than the recommended dose or who intentionally take them with alcohol or other drugs.

Drug interactions also produce adverse effects. Many drugs are addictive. Sometimes the addiction is gradual, while sometimes an addiction (such as cocaine) can happen after only a few doses.

A drug dose that is large enough to be toxic is called an overdose. Prompt medical attention may save the life of someone who accidentally or deliberately takes an overdose.

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- If necessary, begin CPR.
- If the patient is unconscious and breathing, place in the recovery (side-lying) position.
- If the patient is conscious, loosen the clothing, keep the person warm, provide reassurance and call triple zero (000).
- Try to keep the patient calm.
- If an overdose is suspected, try to prevent the patient from taking more drugs.
- If seizure occurs, manage in accordance with seizures described earlier in this chapter.
- If possible, try to determine which drug(s) were taken and when. Save any available pill bottles or other drug containers. Provide this information to emergency medical personnel.



Do not jeopardise your own safety. Some drugs can cause violent and unpredictable behaviour. Call for professional assistance.

Do not try to reason with someone who is on drugs. Do not expect them to behave reasonably

Do not offer your opinions when giving help. You don't need to know why drugs were taken in order to give effective first aid.

## DIABETES

Insulin is a hormone that moves glucose from our blood stream, into the cells of our body, where it is used for energy. When a person has diabetes, the body either can't make enough insulin or the insulin that is being made does not work properly. This causes the blood glucose levels to build up and can become life threatening if not treated.

To achieve control of this condition, diet and exercise/ activity are modified and medication may be required. Not all people with diabetes require medication but some require insulin several times a day i.e. are insulin dependent.

Many people with diabetes who use insulin wear a medic-alert or SOS bracelet or pendant.



Blood glucose monitor

### LOW BLOOD GLUCOSE (HYPOGLYCAEMIA)

Low blood glucose is rapid in onset (10-15 minutes). It can occur if the casualty:

- takes the correct amount of insulin but misses or delays a meal
- takes too much insulin
- participates in unplanned or unaccustomed exertion
- becomes ill (diarrhoea, vomiting)

#### Signs and symptoms

- weakness, dizziness and faintness
- muscle tremors
- pale (change of normal skin colour)
- profuse sweating
- agitation, aggressive behaviour
- mental confusion
- rapid progression to unconsciousness

## Management

Initiate the first aid priority action plan (DRSABCD) and include the following action:

Conscious casualty:

- If the person has a diabetes management plan, follow the plan.
- If the person is able to follow simple plans and swallow safely, give sugar in some form such as a sugary drink, like lemonade, Cola Cola (no diet drinks), 200mls fruit juice, 3 teaspoons of honey or sugar, 6-20 jellybeans depending on brand and size).
- A small meal (complex sugars) e.g. sandwich, glass of milk should be given, to stabilise blood sugar level.
- Advise casualty to seek medical assistance.

Unconscious casualty:

- Seek medical assistance urgently.



Scan QR Code using your mobile phone camera to access video content.



### HIGH BLOOD GLUCOSE (HYPERGLYCAEMIA)

Hyperglycaemia means too much glucose in the bloodstream. It can occur if the casualty:

- overeats
- doesn't do enough exercise
- takes insufficient medication
- is unwell

Hyperglycaemia is slow in onset but if it goes unmanaged it can progress to a state called diabetic ketoacidosis. With no insulin to move glucose from the blood stream into the cells of the body to use as energy, another energy source is required – fats. Diabetic ketoacidosis is a dangerous condition in which the body starts to break down fats for fuel. Toxic chemicals called ketones are produced as a by-product and they make the blood acidic. Without treatment, unconsciousness and death can result.

#### Signs and symptoms (ketoacidosis)

- excessive thirst
- excessive urination
- nausea and/or vomiting
- weakness and fatigue
- abdominal pain
- breath smelling like acetone (like nail polish remover or apple cider)
- unconsciousness

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following action:

- Seek medical assistance urgently.

**Note:** When in doubt give sugar.

If the casualty is conscious and you are unsure whether the condition is due to high or low blood sugar, manage by giving the casualty sugar. The casualty will respond quickly where the signs and symptoms are due to low blood sugar (hypoglycaemia). This is not the case in hyperglycaemia however the additional sugar will cause no harm.

**BODY TEMPERATURE CONDITIONS**

The body normally maintains a temperature between 36-37°C, despite considerable changes in the surrounding temperature. The heat regulatory centre in the brain acts like a thermostat to control body temperature by initiating body activities to raise or lower the temperature.

In hot conditions the body loses heat by:

- dilating blood vessels at the skin surface
- increased sweating

In cool conditions the body saves heat by:

- constricting blood vessels at the skin surface
- shivering
- erecting body hair

**HEAT INDUCED ILLNESS**

Heat induced illness may be caused by:

- excessive heat absorption from a hot environment
- excessive heat production from metabolic activity
- failure of the body's cooling mechanisms (e.g. sweating)
- an alteration in the body's set temperature

Contributing factors to heat induced illness include:

- excessive physical exertion
- hot climatic conditions with high humidity
- inadequate fluid intake
- infection (particularly viral illness)
- wearing inappropriate heavy clothing on hot days
- drugs which affect heat regulation
- inappropriate environments (e.g. unventilated hot buildings)



Heat induced illness

**Heat exhaustion**

Mild elevation in body temperature is normally controlled by sweating. Sweating allows cooling by evaporation. In these conditions the body requires a much higher fluid intake to compensate for the fluid lost in sweating.

If fluid intake is inadequate a person becomes too dehydrated to sweat and the body systems that regulate temperature become overwhelmed. As a result the body produces more heat than it can release. If heat exhaustion is NOT corrected then heat stroke is likely to follow.

**Heat stroke**

Heat stroke occurs when heat exhaustion is left untreated and the casualty's core body temperature continues to rise.

Heat stroke is a life threatening emergency. In heat stroke, the body loses its ability to regulate its temperature in very hot conditions. In heat stroke, the heat regulation centre in the brain ceases to function, that is the body's thermostat switches off.

As a result sweating ceases and the body temperature increases to 40°C and higher. This condition is most likely to occur when the brain is immature or ageing, in other words, in very young children or very old people.

**Signs and symptoms****Heat exhaustion:**

- pale (change in normal skin colour)
- dizzy
- fatigue
- sweating with clammy skin
- rapid, weak pulse
- feels hot, weak and exhausted/fatigued
- headache
- nausea and vomiting
- possible collapse

**Heat stroke:**

- red, flushed skin colour
- dry skin to touch
- hot skin to touch
- rapid and pounding pulse
- collapse – unconsciousness
- confusion, irritability
- headache
- nausea and vomiting
- possible seizures

## Management

### Heat exhaustion:

- DRSABCD.
- Move casualty, if possible, to a cool place.
- Assist to lie down if conscious.
- Remove excess clothing.
- Wet skin with a moist cloth or spray bottle.
- Cool by fanning.
- Give cool or cold water to drink if conscious, small amounts at first.
- Seek medical assistance.

### Heat stroke:

- DRSABCD.
- Move casualty, if possible, to a cool place.
- Remove excess clothing.

#### If over 5 years of age:

- Immerse in cold water up to the neck for 15 minutes.

#### If not available:

- Wet with cold water under a shower or hose. Apply cold or ice packs to neck, armpits and groin to cool blood in the large blood vessels. Give cold fluids if fully conscious.

#### If under 5 years of age:

- Cool in a tepid bath, sponging frequently.

#### If unavailable:

- Repeatedly moisten the skin.
- Fan continuously.
- Give cold fluids if fully conscious.

**Note:** Approximate body temperature guide

<b>36-37°C</b>	Normal body temperature
<b>35°C</b>	Maximum shivering
<b>33°C</b>	Severe hypothermia develops
<b>32°C</b>	Shivering may stop
<b>28°C</b>	Heart may stop if irritated
<b>20°C</b>	Cardiac standstill



## Signs and symptoms

- shivering (this will stop when body temperature drops below 32°C)
- pale, cool skin
- impaired coordination
- slurred speech
- slow irregular pulse
- drowsiness and/or confusion
- increased muscle stiffness
- loss of coordination
- unconsciousness

## Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Remove to a warm, dry place.
- Replace wet clothing (do not remove wet clothing if there is no dry blanket or other suitable cover).
- Apply insulation between the casualty's body and the environment e.g. blanket.

**Note:** Do not place casualty in a warm bath.



Scan QR Code using your mobile phone camera to access video content.



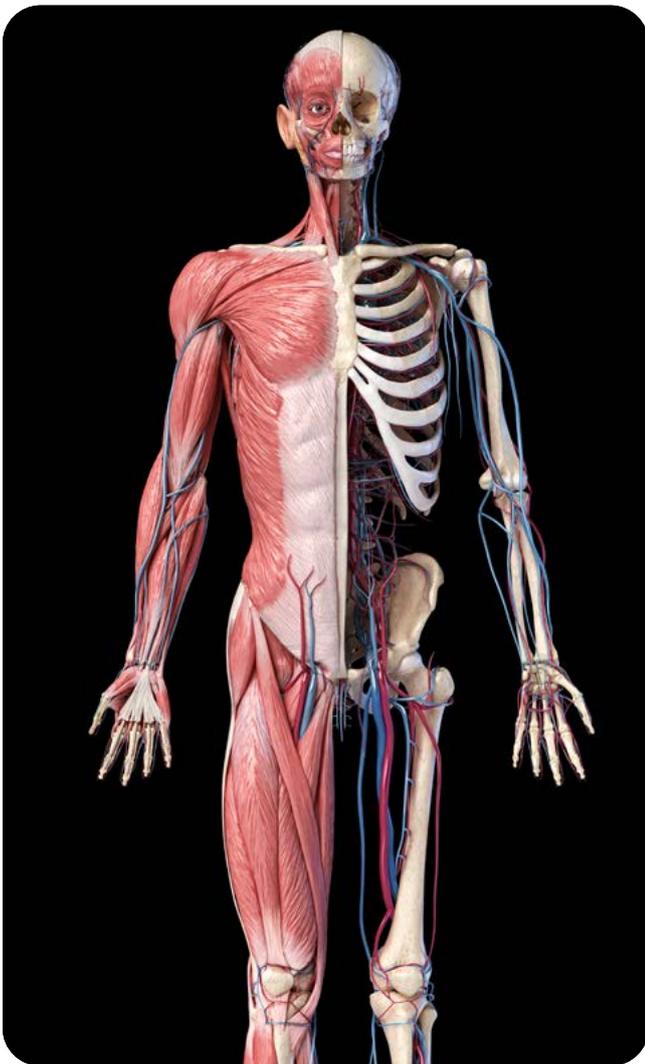
## HYPOTHERMIA

Overexposure to cold is a progressive condition. When the body temperature falls to below 35°C the state is called hypothermia. The severity of hypothermia depends on the:

- period of exposure
- age and physical condition of casualty
- casualty's clothing
- temperature
- wind speed

# CONDITIONS AND INJURIES OF THE BONES, SOFT TISSUES & SKIN

The musculoskeletal system is made up of the body's bones (the skeleton), muscles, cartilage, tendons, ligaments, joints, and other tissue that supports and binds tissues and organs together. Its primary functions include supporting the body, allowing motion, and protecting vital organs.



## THE MUSCULOSKELETAL SYSTEM

There are 5 basic tissues comprising the musculoskeletal system:

- 1 Bones.
- 2 Ligaments (attaching bone to bone).
- 3 Cartilage (protective substance lining joints).
- 4 Muscles.
- 5 Tendons (attaching muscle to bone).

Injuries to the musculoskeletal system are common. These injuries may involve damage to bones, muscles, tendons and ligaments. Depending on the severity, there may be life threatening injuries as well as the potential for pain and permanent disability. It is not always easy to identify the injury involved, although the site and recent history will provide clues.

### FRACTURES

Bones are hard dense tissue with a rich supply of blood vessels and nerves. When an injury to a bone occurs there will usually be bleeding and pain present. A fracture is a broken, chipped or cracked bone and is a more serious injury than a sprain or a strain. A fracture causes bleeding, damage to surrounding tissues and blood vessels, pain and possibly shock. Fractures may be caused by:

- direct force - a heavy object falling onto the foot may fracture a toe bone
- indirect force - falling onto an outstretched hand may fracture a collarbone
- abnormal muscular contraction - stumbling and trying to regain balance may cause a fractured knee cap

### Signs and symptoms

A fracture may be suspected if in addition to pain, swelling and tenderness, there is:

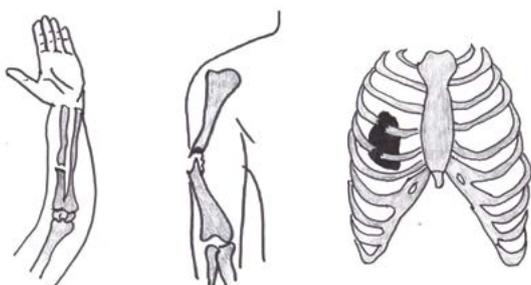
- a snap or crack, heard or felt by the casualty
- loss of movement or function
- deformity i.e. abnormal twisting or shortening
- broken skin overlying the suspected fracture
- bone protruding through the skin
- crepitus (a coarse bony grating upon movement, not actively looked for by the first aider)



Scan QR Code using your mobile phone camera to access video content.



There are three types of fractures:



### Closed

Skin remains intact.

### Open

There may either be a bone penetrating the skin, or a wound that leads to the fracture below.

### Complicated

The fracture has also caused damage to another structure or organ.

## Management

The key management points for a fracture are to:

- Immobilise.
- Support.
- Rest.
- Elevate if possible.
- Ensure the conscious casualty is in a supported and comfortable position
- Seek medical assistance.

The purpose of immobilisation, support and rest is to ease pain by overcoming the pull of the muscles (spasm), and prevent further injury. If movement occurs the sharp bony edges may damage soft tissues and blood vessels, perhaps even piercing the skin resulting in an open fracture where initially it was a closed fracture.

Many methods are used to immobilise a fracture: hands, coats, cushions, splints and slings. When managing a casualty with a fracture the first aider needs to consider the following:

- the casualty's conscious state
- the position of the casualty (lying/sitting)
- the position of the injured part (perhaps grossly twisted)
- the distance from medical assistance. If an ambulance is expected to arrive within an hour the first aider would try to prevent double handling of a potentially painful injury

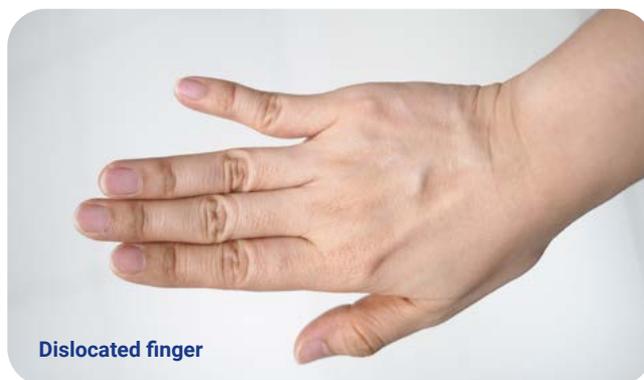
Taking the above factors into account, the first aider needs to decide on the best way to provide immobilisation, support and rest. If the incident occurs within the metropolitan area the first aider may consider the following methods most suitable:

- Allowing the casualty to cradle an injured arm.
- The first aider using hands to support a fractured leg by holding above and below the swelling created by the fracture.
- Using the ground to support a fractured pelvis, supported by cushions or coats.

Consider now some examples of casualties with a fracture. How could you manage the situation?

We suggest you role-play with a partner at home/work or write your answers in your workbook.

- a conscious casualty with a closed fracture of the ribs
- a conscious casualty with a closed fracture of the collarbone
- a conscious casualty with a fractured spine
- a conscious casualty with a fractured nose
- an open fracture of the forearm
- a closed fracture of the lower leg
- an unconscious casualty with a fractured jaw



Dislocated finger

## DISLOCATIONS

A dislocation is where a bone is displaced out of its position at a joint.

### Signs and symptoms

In addition to pain, swelling and tenderness, there may also be:

- deformity
- loss of movement

### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Support in a position of comfort.
- Apply an ice pack around the injured joint.
- Elevate if possible.
- Seek medical assistance.

**Note:** A first aider should not attempt to manipulate a dislocation back into place. There may be damage to nerves and blood vessels nearby. Further injury could occur if an attempt to manipulate the dislocation was made.



This picture shows the management of a dislocated shoulder using an ice pack over damp clothing and towel. The shoulder is immobilised with the casualty seated and the forearm resting on casualty's thigh.

## SOFT TISSUE INJURIES

### Sprains

A sprain is the overstretching or tearing of a ligament at a joint.

#### Signs and symptoms

- pain
- swelling
- tenderness
- reduced movement

### Strains

A strain is the overstretching or tearing of a muscle and/or tendon.

#### Signs and symptoms

- pain
- swelling
- tenderness
- reduced movement
- a snapping sound may be heard from a tendon tearing

### Bruises

A bruise is bleeding into the tissues.

#### Signs and symptoms

- pain
- swelling
- bruising
- tenderness

## Management

The RICE treatment protocol is still the preferred management. Recently there has been consideration regarding the RICE benefit, however until research proves otherwise soft tissue injuries will still be managed this way.

### R REST

Make sure the casualty stops doing the activity that caused the injury. Assist the casualty into a position of comfort. Resting the part will reduce pain and bleeding.

### I ICE

An ice pack should be applied for 15-20 minutes (5-10 minutes for children). The ice should be wrapped in a damp towel and applied over the injured area. Ice causes the blood vessels to constrict which minimises swelling and eases pain.

### C COMPRESSION (used on limbs, fingers and feet)

Use a moderately firm, elastic bandage applied initially over the icepack to hold it in position and provide compression. When the icepack has been removed after 15-20 minutes the bandage should be reapplied. The circulation in the limb below the injury and bandage should be assessed for colour and sensation, and if the bandage is too tight then it should be removed and reapplied. Compression reduces swelling and bleeding at the injury site.

### E ELEVATION

Elevation of the part assists in drainage and controls swelling by slowing the blood flow to the injured area.

For the next 24 hours, whilst the casualty is awake, an ice pack should be reapplied every 2 hours. The ice can then be reapplied every 4 hours during the following 24-48 hours. It is recommended that the casualty seek medical advice as soon as possible to exclude more serious injury and receive further treatment.



### Factors that must be avoided in the treatment of soft tissue injuries:

- H** Heat as it increases bleeding and swelling.
- A** Alcohol consumption increases bleeding and swelling due to dilation of blood vessels.
- R** Running or exercising too soon as it may cause further injury.
- M** Massage or any other form of heat in the first 24-48 hours as it increases bleeding and swelling.

### CRUSH INJURIES

Crushing forces can cause severe damage to skin, muscle, bone, blood vessels, nerves and underlying organs. The area of the body crushed, degree of force and period of time force is applied will all influence the condition of the casualty. Deterioration of the casualty's condition may occur even if they do not appear distressed and are well orientated.

#### Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

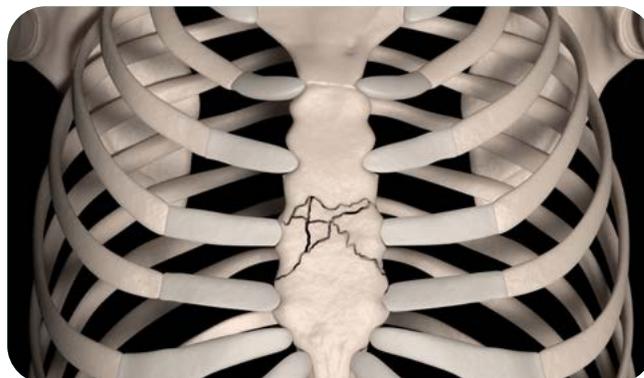
- If safe and physically possible, all crushing forces should be removed as soon as possible.
- Call triple zero (000) for an ambulance.
- Keep the casualty as comfortable as possible.
- Closely monitor the casualty until the ambulance arrives.



**Note:** Although the casualty may appear to be alert and not distressed, severe and irreversible damage may have been sustained and their condition may deteriorate rapidly.

### CHEST INJURIES

Injuries to the chest may involve the ribs, lungs and internal organs. They may include open, closed or complicated fractures. Damage to vital organs within the chest may lead to rapid deterioration and death.



#### Signs and symptoms

- difficulty breathing
- pain at the injury site which increases on movement and breathing
- obvious deformity
- abnormal movement of the chest
- blood stained, frothy sputum/saliva
- blood or sucking sounds from a wound
- aerated blood sprayed whilst coughing
- cyanosis (blue tinge to skin)
- shock
- altered conscious state

#### Management

- DRSABCD.
- Seek medical assistance urgently.

Unconscious and breathing casualty:

- Position the casualty with the injured side down where possible. This sometimes aids breathing by protecting the "good side/lung" by being uppermost.

Conscious casualty:

- Position the casualty sitting up or reclining, leaning slightly toward the injured side.



Foreign body on edge of cornea

## EYE INJURIES

The eye is very sensitive and even small objects can cause great irritation. The most common cause of eye injuries is foreign objects, such as dust, dirt or eyelashes. If a casualty complains that a foreign object has entered their eye it should be gently examined. The first aider may attempt to remove loose objects but anything embedded in the eye should be immediately referred to medical assistance. Blunt trauma to the eye should also be referred to medical assistance because of the risk of internal bleeding. Chemical splashes or burns to the eye should also be managed promptly. Injuries to the eye should never be underestimated because of the potential damage to the casualty's vision.

### Signs and symptoms

- pain in the eye
- sensitivity to light
- reddening and watering of the eye
- loss of fluid or blood from the injured eye
- singeing of the eyelids may be present in the case of a burn
- grittiness possibly hours after exposure in the case of a welder flash or ultra violet burns
- loss of or impaired vision

When examining the eye:

- Sit the casualty on a chair with their head back.
- Stand behind the casualty and gently separate their eyelids.
- Ask the casualty to look left, right, up and down so that you can examine every part of the eye.

### Note:

- do not let the casualty rub the eye
- do not try to remove a foreign body from the coloured part of the eye
- do not try to remove a foreign body that is embedded in the eye
- do not attempt to examine the eye if the injury is severe
- do not attempt to remove contact lenses. If the casualty cannot easily remove them, wait for medical assistance

### Management

If the foreign body is small and loose (dust, eye lash) attempt to remove object by:

- Asking casualty to look up and pulling the upper eyelid down over lower eyelid, blink several times.
- If unsuccessful, flush out with saline or water.
- If unsuccessful, seek medical assistance.

Blunt trauma or embedded foreign objects:

- Lay the casualty down.
- Cover the injured eye with a pad and advise the casualty to limit movement of the uninjured eye (sometimes both eyes are covered to limit eye movement).
- May use a ring pad for embedded foreign bodies.
- Seek medical assistance urgently.

Burns to the eyes:

- Open the eyelids gently with your fingers and flush with cool, flowing water for 10 minutes (20 minutes for chemicals), ensuring that you wash under the eyelids.
- Cover eye/s with eye pad/s as appropriate.
- Seek medical assistance.

Welding flash or ultraviolet radiation burns:

- Cool eye area with running water for up to 20 minutes.
- Place eye pads over both eyes if necessary.
- Seek medical assistance.



Scan QR Code using your mobile phone camera to access video content.





Rupture of the eye globe

## BITES AND STINGS

Australia is home to some of the most venomous creatures in the world. The bites and stings of some animals are potentially dangerous due to the venom injected or because the casualty is allergic to the sting/venom. The purpose of first aid for bites and stings is to stop the venom spreading away from the bitten area and attacking vital organs of the body or to respond effectively in response to an allergic reaction to a bite or sting. Those bites and stings which require the pressure immobilisation technique require rapid intervention as life threatening effects can occur within 10 minutes.

With prompt effective first aid management the casualty may require less antitoxin or other treatment/s upon arrival at the hospital.

Capturing a photo on a phone may help in identification but should not delay sending for an ambulance and commencing treatment.

For advice concerning any envenomation call the Australian Venom Research Unit 24 hour advisory line 1300 760 451 or for online information visit [www.avru.org](http://www.avru.org)

### Signs and symptoms

- bite/sting marks
- pain
- itchy rash
- skin redness
- sweating
- nausea/vomiting
- headache
- respiratory weakness
- muscle spasm
- collapse
- copious amounts of saliva
- tingling around mouth

## Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Establish the history:
  - What time was the casualty bitten or stung?
  - Was the casualty able to identify the creature involved?
  - Does the casualty have a known allergy to the creature?
- Manage the casualty according to the type of bite or sting.
- Lie the casualty down and reassure.
- Observe for and manage allergic reactions.
- Seek medical assistance.



Scan QR Code using your mobile phone camera to access video content.



## TYPES OF MANAGEMENT

### 1. Pressure immobilisation technique

Pressure immobilisation was originally introduced for the treatment of Australian snake bites. This method is also recommended for various bites/stings from other Australian animals such as funnel web spiders, blue ringed octopus and cone shell.

Pressure immobilisation acts to slow the rate at which the venom reaches the bloodstream via the lymphatic system, perhaps for several hours. The toxic effects of the venom are then delayed. In some cases the venom may also be inactivated when trapped in the bandaged tissue.

- Apply a broad firm bandage over the site of the bite as soon as possible.
- Elastic compression bandages are ideal to achieve adequate compression. There are also snake bite bandages with a unique indicator to show the correct tension required for applying compression using the Pressure Immobilisation Technique (PIT).
- The bandage should be as firm as you would apply to a sprained ankle but not as tight as a pressure bandage to control bleeding.
- Then begin a new bandage from the extremity (toes or fingers of the bitten limb) upwards to cover as much of the limb as possible.
- Splint the limb including joints on either side of the bite to restrict limb movement.
- Keep the casualty and the limb completely at rest.
- Bring transport to the casualty if possible. Transport the casualty to medical care, preferably by ambulance.
- If alone, the casualty should apply the pressure immobilisation technique if possible and seek help.

- Do not remove the bandages or splints.
- If the bite is not on the limb, firm direct pressure on the bite site may be useful.



## Indications for use of the pressure immobilisation technique



Snakes including sea snakes



Funnel web spiders



Blue-ringed octopus



Cone shell

### Note:

- do not try to catch the snake
- do not "cut and suck"
- do not wash the area
- do not apply a tourniquet
- do not move the casualty

## 2. Ice management

The application of ice packs is aimed at reducing both pain and swelling.

### Indications for use of ice management



Bee

Remove bee sting before using an ice pack, by scraping the sting sideways with a fingernail.



Red back spider

Wash the bite area with soap and water prior to applying ice pack. Anti-venom is available for Red Back spider envenomation.



White-tailed spider

Wash the bite area with soap and water prior to applying ice pack.



Minor non tropical jellyfish (Pelegia)

Minor non tropical jellyfish stings also use the ice only management after rinsing in sea water (not fresh). If more than 50% of the skin of one limb is affected seek urgent medical assistance.



Mosquito



European wasp



Scorpion



Centipede



Nettle



Ant

### 3. Hot water immersion or hot pack

Place the casualty's stung area in hot water (not hotter than the rescuer can comfortably tolerate).

#### Indications for use of hot water immersion or hot pack



Catfish



Stingray



Stone fish



Leather jacket



Gurnard



Flathead



Blue bottle or Portugese man of war



Remove any tentacles sticking to the skin by flooding area with sea water (do not wash with freshwater). Remove remaining tentacles with forceps or a gloved hand. If local pain is unrelieved by heat, or hot water is not available, the application of ice may be effective. Vinegar is not recommended.

### 4. Vinegar

Vinegar is used to inactivate the discharge of nematocysts (stinging capsules) of all known box jellyfish and therefore prevent further injection of venom. Vinegar may cause nematocyst discharge in some other jellyfish stings and therefore should be used only in tropical areas where potentially fatal jellyfish stings may occur.

Vinegar cannot relieve the pain already present, other agents are promoted for pain relief in jellyfish stings. Any water applied to a jellyfish sting, once the skin has dried, will cause the undischarged nematocysts present to fire, yet the extreme temperatures of the water (hot or ice) can, paradoxically, give relief from the pain.

Liberally pour vinegar over the site of box jellyfish welts, tropical jellyfish stings and Irukandji stings.

#### Indications for use of vinegar



Box jellyfish



Irukandji jellyfish

#### Management techniques & indications summary

##### Pressure immobilisation technique used for:

- all snakes and sea snakes
- funnel web spider
- blue-ringed octopus
- cone shell

##### Ice management technique used for:

- bee
- centipede
- wasp
- ant
- mosquito
- flies
- nettle
- scorpion
- red back spider
- white-tailed spider
- minor non-tropical jellyfish stings

##### Hot water immersion or hot pack technique used for:

- stingray
- stone fish
- blue bottle or Portugese man of war
- stinging fish:
  - flathead
  - gurnard
  - catfish
  - leather jacket

##### Vinegar technique used for:

- box jellyfish
- irukandji jellyfish
- tropical jellyfish

## BURNS

Burn injuries need prompt first aid management as they may be life threatening, and can cause considerable pain. When a casualty receives a burn, tissue fluid leaks from the damaged tissue resulting in shock. With any burn there is also a risk of infection. It is important to remember the cause of the burn may still be present at the scene, causing danger to everyone present.

### Causes:

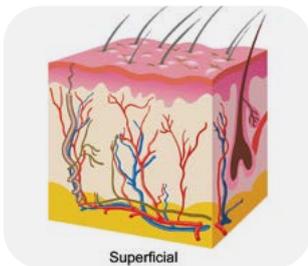
- dry heat
- hot water and/or steam
- chemicals
- radiation
- electricity
- cold/freeze burn
- friction

### Classification

Burns are a type of soft tissue injury and are classified according to the size and the depth of tissue affected. Burns are categorised as superficial, partial-thickness or full-thickness burns.

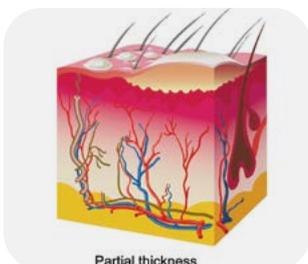
#### Superficial burns:

- affects the epidermis only e.g. sunburn
- the skin is red and dry and the area may be swollen
- these burns are very painful (but less serious), because the nerve endings are stimulated
- generally heal in 5 – 6 days without permanent scarring



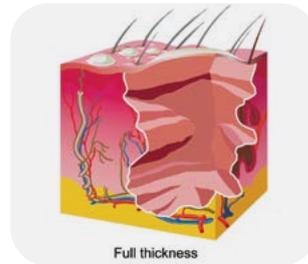
#### Partial-thickness burn:

- involves the epidermis and dermis, and are very painful.
- the burnt area is painful, reddened and swollen and will have blisters
- superficial burns usually heal within 3-4 weeks, although some scarring may occur



#### Full-thickness burns:

- affects the epidermis and part or all of the dermis. Deeper tissue may also be involved (e.g. fat, muscle or bone)
- thick walled opaque blisters will be present when only part of the dermis is involved
- pain may be varying depending on nerve ending damage. If nerve endings have been destroyed there may be little or no pain
- burnt skin may look brown, charred or whitened
- surrounding skin will usually have an accompanying, a partial thickness and superficial burn
- deep burns take weeks to heal. If a large area is involved, skin grafting will be required to aid healing
- full-thickness burns are life-threatening
- when burns are open the body loses fluid, and the victim will be in shock
- these burns are highly prone to infection



#### Points to remember:

- a casualty with burns is likely to show signs and symptoms of shock quickly because of pain and loss of fluid
- a casualty with a burn rarely bleeds
- a casualty with fatal burns is often initially conscious and unaware of the severity of their injury

#### Rescuing a burnt casualty:

- don't put yourself in danger
- stop the burning process

If fire is involved:

- STOP, DROP and ROLL the casualty to put out the flames.
- Lay casualty on ground and smother flames with a blanket, coat or other suitable material.

### Management of all burns

- DRSABCD.
- Cool burnt area under cool, flowing water for up to 20 minutes.
- If possible, remove all rings, watches, jewellery or other constricting items from the burnt area without causing further tissue damage.
- Cover the burnt area with a loose and light non-stick dressing, preferably sterile or clean, lint free material such as a sheet or pillow case.
- Seek medical assistance urgently.
- Offer drinks of clear fluid to people with radiation burns.
- Where possible elevate burnt limbs to minimise swelling.

**Note:** Water is always the first choice for cooling a burn injury. If water is not available, hydrogel products are an alternative to water.

#### Note:

- do not touch the burn as this will increase the risk of infection
- do not remove clothing or other materials that are stuck to the skin
- do not break blisters
- do not apply creams or lotions
- do not use ice water to cool the burn as further damage may result

### Referral

It is not always easy to decide whether a burn casualty should seek medical assistance, because the extent and depth of the burn are not always obvious. A casualty should seek medical assistance if their burns include:

- deep burns
- superficial burn larger than a 20 cent coin
- burns involving airways, hands, feet, face or genitals
- chemical or electrical burns
- if the first aider is unsure how serious the burn is
- burns associated with inhalation burns
- burns in the very young or old
- burns with associated trauma
- circumferential burns of the limbs or chest



Scan QR Code using your mobile phone camera to access video content.



## SPECIFIC BURNS MANAGEMENT

### Scald

- Immediately run cool tap water directly onto burn for up to 20 minutes.
- Keep the rest of the casualty warm, remove wet clothing and cover unburnt areas.
- If cool water not available, remove all wet clothing not stuck to the skin immediately as clothing soaked with hot liquids retains heat.

### Chemical burns

- Avoid contact with any chemical or contaminated material by using heavy duty gloves and safety glasses.
- Immediately run cool tap water directly onto the area for up to 20 minutes.
- If available, refer to Safety Data Sheet (SDS) for specific treatment.
- Refer to instructions on the container for specific treatment.
- Calls the Poisons Information Centre on 13 11 26 for further advice.
- Remove the chemical and any contaminated clothing not stuck to the skin as soon as practical.
- Brush powdered chemicals from the skin.
- If chemicals enter the eye, open and flush the affected eye(s) thoroughly with water for up to 20 minutes and refer the casualty for urgent medical assistance.

Do not attempt to neutralise either acid or alkali burns, because this will increase heat generation which may cause more damage.

### Types of chemical burns

#### Phosphorus

Dress wounds from phosphorus burns with saline soaked dressings to prevent re-ignition of the phosphorus by contact with the air. Phosphorus may be found in flares, fireworks and weapons made in chemistry laboratories. When exposed to the air, phosphorus may ignite spontaneously.

**Note:** Some chemical burns react with water or alternatively oxygen. For example, burns from phosphorus need to be managed underwater as the burnt area will ignite when exposed to the air. SDS are required in all workplaces as part of Dangerous Goods Legislation. These safety data sheets will indicate the first aid management of all workplace chemical burns.

## Hydrofluoric acid

Hydrofluoric acid is used as a cleaning agent by jewellers, in glass etching and in other industries. It is one of the most dangerous and corrosive acids which causes a full thickness skin burn and excruciating pain; even a small area or persistent pain needs urgent medical assessment and may become life threatening if left untreated.

Early and copious irrigation with water is needed. If available it is critical to apply calcium gluconate gel as soon as possible. Calcium gluconate should be available at all worksites where hydrofluoric acid is used.

## Bitumen

Bitumen should not be removed from the casualty's skin because this may cause more damage. Bitumen continues to hold heat therefore irrigation with cool water should continue for at least 20 minutes. Consider scoring or cracking the bitumen if it is encircling a limb or finger/thumb.

## Petroleum products

Petroleum (not flame) may cause a chemical burn due to direct toxic effects. Prolonged contact has been associated with organ failure and death. Copious irrigation with cool water is required.

## Electrical burns

When a person suffers an electric shock, the passage of electrical currents through the body may stun the casualty, causing breathing and even the heart to stop. The current may cause two burns to the skin. The first is where the electricity enters the body and the second is where the current exits the body (to go to earth). Burning of deeper tissue occurs along the path of the electrical current.

## Management of the electrical danger

The priority is safety. The first aider needs to ensure that the power is disconnected before approaching the casualty.

## Domestic voltage electricity:

- Turn off switch and remove plug from socket or turn off mains.
- If this is not possible, remove casualty from the current using dry, non-conducting material such as a wooden stick.

## High voltage electricity:

- Contact the appropriate authority to disconnect the electricity or call triple zero (000).
- Wait until you are advised by the electricity authority before entering scene.
- When power lines are in contact with a vehicle or a person, do not approach. The first aider should ensure that all bystanders remain at least ten meters clear of any electrified material; eg a car body.

## Management of the casualty:

- DRSABCD.
- Manage burns making sure that burns are cooled with water well away from live wires.
- Seek medical assistance.
- Commence CPR if required.

## Lightning burns:

- DRSABCD.
- Cool superficially burnt areas with cool water for up to 20 minutes.
- Assess and manage any associated injuries.
- Commence CPR if required.

## Inhalation burns:

Should be suspected when an individual is trapped in an enclosed space for some time with hot or toxic gas or fumes produced by a fire, a leak, chemicals etc. An inhalation injury may result from irritant gases such as ammonia, formaldehyde, chloramines, chlorine, nitrogen dioxide and phosgene. These agents produce a chemical burn and an inflammatory response.

Always assume inhalation injury if there are burns to the face, nasal hairs, eyebrows or eyelashes, or if there is evidence of carbon deposits in the nose or mouth. Coughing of black particles in sputum, hoarse voice and/or breathing difficulties may indicate damage to the airway.

Do not assume the burn victim is stable following an inhalation injury simply because the casualty is breathing, talking and able to get up. Some agents produce delayed lung inflammation which may develop up to 24 hours later.

## Signs and symptoms:

- wheezing
- shortness of breath
- a choking sensation
- disorientation

## Management:

- DRSABCD.
- Remove casualty from the contaminated environment if safe to do so.
- Give oxygen if possible.
- Call triple zero (000).

# WOUND MANAGEMENT

## MINOR WOUND MANAGEMENT

The aim of managing a minor wound is to prevent infection. Minor bleeding is readily controlled by pressure and elevation. Cleansing a minor wound can be undertaken by using basic first aid material. This material can be as simple as using individual items such as water/saline, gauze and Band-Aid or a pre-prepared sterile dressing pack containing forceps, cotton balls, gauze and sterile towel.

### Care instructions

- Get all items needed for the dressing out of the first aid kit. Make sure you have a rubbish bag handy for disposal of used swabs.
- Wash your hands and put on gloves.
- Create a clean area in which to work, using a barrier such as a paper towel.
- Where the wound is dirty or contains small foreign objects such as sand, clean it by using saline or water to rinse the wound.

- Swab wound thoroughly from centre out, using a clean swab (wipe) for each wipe.
- Pat dry with gauze then discard gauze.
- Cover the wound with a sterile non-stick dressing, and use extra padding if wound is likely to weep.
- Secure with tape or bandage and elevate if necessary.
- Clean up area, dispose of soiled materials appropriately and wash hands.
- The casualty should be instructed to keep the dressing dry.

The casualty should be referred to medical assistance if there is a special risk of infection, such as:

- an animal bite
- a human bite
- penetration by a dirty object e.g. garden fork, splinter
- the person has a medical condition such as diabetes or is undergoing cancer treatment

Advise the casualty of the signs and symptoms of wound infection and to seek medical assistance should they occur. These signs include redness, swelling, localised pain, offensive discharge and the casualty generally feeling unwell.

### Minor wound management using first aid kit items



## Securing a pad and dressing

A pad provides bulk for controlling bleeding and absorbing seepage from a wound. A dressing is material (preferably sterile and sometimes non-stick) that is placed directly over a wound. A dressing helps to absorb blood and other fluids and gives protection against infection.



Roller bandage

### Roller bandages

A roller bandage, which conforms to the shape of the body part, may be used to secure a dressing and pad. Apply the bandage using a simple spiral technique. Anchor the bandage with two initial turns over the pad. Work downwards off the pad one/two turns (towards fingers or toes). Begin to move up the limb, covering two thirds of the bandage, leaving one third uncovered. Finish by turning around the limb to secure. Pins should not be used to secure a bandage on an infant or a child as they may cause harm.

### Triangular bandages

A triangular bandage can be folded for use in a variety of ways. It may be used as a pad, to secure a dressing and pad, or to elevate an arm in a sling. It may also be used as a donut to place indirect pressure around a wound, which has an embedded foreign body.

To make a donut, hold the tail of the triangular bandage into the palm and wind around the hand in a circular motion tightly and remove hand. This is placed over the object and anchored in place with a roller bandage.



Making a donut bandage

## Slings

A sling may be used to elevate a bleeding arm, to immobilise a fracture of the arm or to provide further support to a painful arm injury. The choice of sling should be determined by the type of injury and the casualty's own position of comfort. The first aider must determine the most appropriate manner to achieve this. Whilst a sling may be useful, improvisation using clothing or pillows may allow for less movement of the injured arm thus preventing further movement, pain and shock.



Large arm sling  
(fractured forearm)

## RECORDING AN INCIDENT

A workplace first aider should take care to fully document all incidents where a casualty requests first aid advice for an injury, illness or condition or where first aid is administered. This can be recorded in a first aid record book and/or the accident/incident register according to the procedures of the particular workplace.



### Reporting and referring

Report formats vary from workplace to workplace because each presents a different context.

No matter how small the treatment, the first aider has a responsibility to record all treatments given.

A handover report of all first aid incidents should be given to the appropriate person, e.g. ambulance officer, nurse, supervisor, etc. A casualty should always be referred to appropriate medical or nursing personnel when a first aider is unsure of what first aid management to give, or is concerned about the casualty's condition. An incident report may also be required to enable investigation of the cause of an accident.

### Guidelines for recording of information are as follows:

- Write in ink.
- Sign and date the report including any alterations.
- Do not use correction fluid to alter an entry, but draw a line through the incorrect area and initial and date the alterations made.
- Record the facts as stated by the casualty.
- Record your observations but do not offer comments for which you have no supporting evidence.

- If possible, the casualty should sign the report.
- The contents of the report are strictly confidential.
- The record book must be kept for 30 years.

### Information that may be recorded on the register/report form:

- name of the casualty
- address, work department
- nature of the incident
- where incident occurred
- date and time of incident
- nature of the injury or illness
- signs and symptoms
- first aid management
- referral

### Incident notification systems

Incident notification systems require an employer to notify the WH&S authorities immediately after the employer becomes aware of an incident at the workplace which results in:

- the death of any person
- a person requiring medical treatment within 48 hours of exposure to a substance
- a person requiring immediate treatment as an in-patient in hospital
- a person requiring immediate medical treatment for:
  - major bleeding
  - amputation
  - spinal injury
  - head injury
  - serious eye injury
  - degloving or scalping
  - electric shock
  - serious burns
  - serious lacerations

### Workplace Incident Report Form (EXAMPLE)

Name of casualty:		Date of injury:		Time:	
-------------------	--	-----------------	--	-------	--

Job title at the time of incident:		Sex:		Age:	
------------------------------------	--	------	--	------	--

Names of witnesses (if any):	
------------------------------	--

#### Incident / Injury / Trauma / Illness details

Location:	
-----------	--

Describe step by step what led up to the injury (continue on another page if necessary):	
--	--

#### First aid treatment given, please give a detailed response of your first aid management:

Danger:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Action taken:			
---------	-----------------------------	------------------------------	---------------	--	--	--

Response:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Verbal <input type="checkbox"/>	Pain <input type="checkbox"/>		
-----------	-----------------------------	------------------------------	---------------------------------	-------------------------------	--	--

Send for help:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Ambulance <input type="checkbox"/>	First aid kit <input type="checkbox"/>	AED <input type="checkbox"/>	Oxygen <input type="checkbox"/>
----------------	-----------------------------	------------------------------	------------------------------------	--	------------------------------	---------------------------------

Airway clear:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Action taken:			
---------------	-----------------------------	------------------------------	---------------	--	--	--

Breathing:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Not effective <input type="checkbox"/>			
------------	-----------------------------	------------------------------	--	--	--	--

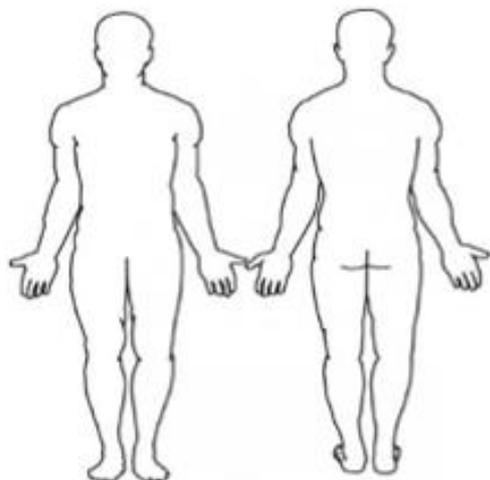
CPR:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Time started:			
------	-----------------------------	------------------------------	---------------	--	--	--

Defibrillator:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Shocked <input type="checkbox"/>	Number of shocks:		
----------------	-----------------------------	------------------------------	----------------------------------	-------------------	--	--

Further treatment:	
--------------------	--

Referred to:	Hospital <input type="checkbox"/>	Occupational Health Nurse <input type="checkbox"/>	Doctor <input type="checkbox"/>	No Further Action <input type="checkbox"/>	
--------------	-----------------------------------	--	---------------------------------	--	--

Areas affected: (shade all that apply)	Nature of injury: (most serious one)
--	--------------------------------------



- Abrasion, scrapes
- Amputation
- Broken bone
- Bruise
- Burn (heat)
- Burn (chemical)
- Concussion (to the head)
- Crushing injury
- Cut, laceration, puncture
- Eye injury
- Illness
- Sprain, strain
- Other \_\_\_\_\_

Name of person completing form:		Contact number:	
---------------------------------	--	-----------------	--

Signature:		Date:	
------------	--	-------	--

# APPENDICES

## APPENDIX 1: ASSISTANCE WITH SELF-MEDICATION IN LINE WITH STATE/ TERRITORIES RELEVANT LAWS

This summary is provided as a guide only. It must not be taken or used as a prescriptive account of the relevant legislation in each of the States / Territories. You should always seek the advice of the relevant government departments in each State / Territory.

In Australia generally speaking, the role of the first aider in relation to medications is to assist a casualty or person requiring assistance, to take their own medication if needed. An example of this is someone suffering an episode of asthma. The asthmatic person should have their own Ventolin, which the first aider can then assist retrieve and / or assist administer the medication. The same situation exists for someone who has Angina. They should have their own sublingual medication and the first aider would only assist the person to retrieve and administer to themselves. Otherwise, emergency services are to be called immediately. Across Australia, a first aider may assist someone take medicines that belong to and are prescribed for the casualty.

If someone requires medication for something such as pain due to a non-acute reason, they should see a medical professional to determine the actual cause of the pain and subsequent appropriate treatment / response.

The administration of something sweet orally for someone thought to be diabetic and hypoglycaemic is not related to medication. Food is not medication.

### Other medications

In certain rural and remote regions and certain heavy industrial workplaces, first aiders may be required to administer gas analgesics (or other specific medications) to afford severely injured casualty's some pain relief (or other purpose), until professional emergency services are available. The laws and provisions for dealing with such situations vary across all States and Territories.

We suggest you research and follow your State or Territory legislative requirement.

## APPENDIX 2: FIRST AID QUALIFICATION REQUIREMENTS UNDER THE EDUCATION AND CARE SERVICES NATIONAL LAW

### First aid qualifications requirements

**National Law:** Section 169

**National Regulations:** Regulation 136

### Children centre-based services

At all times and at any place that an approved service is operating, the following person/s must be in attendance and immediately available in case of emergency:

- at least one educator who holds a current approved first aid qualification, and
- at least one educator who has undertaken anaphylaxis management training, and
- at least one educator who has undertaken emergency asthma management training

The same person may hold one or more of these qualifications.

A list of approved first aid qualifications is published by ACECQA.

If the approved service is provided by a school on a school site (for example, a government kindergarten or preschool), the person/s holding these qualifications may be on the school site as long as they are immediately available in an emergency.

The service should consider how it will meet this requirement during all parts of the day, including breaks, and have contingency plans in place for educator illness or leave.

### Family day care services

Each family day care educator engaged by or registered with the service must:

- hold a current approved first aid qualification, and
  - have undertaken anaphylaxis management training, and
  - have undertaken emergency asthma management training
-







Premium Health has a range of health care, first aid and mental health training programs conducted by our nurses, paramedics or mental health practitioners.



Call us to discuss our onsite face-to-face and live virtual classroom options, delivered anywhere in Australia.

#### HEALTH CARE

- Assisting clients with medication
- Assisting clients with medication (part 2)
- Autism spectrum disorder
- Blood pressure – using a digital blood pressure machine
- Bowel management – elimination
- Coronavirus and infection control
- Dementia training for support workers
- Diabetes training for support workers
- Dysphagia for support workers
- End of life care
- Epilepsy training for support workers
- Epilepsy training and midazolam administration via intranasal and buccal routes
- Food safety awareness for support workers
- Infection control
- Managing behaviours with positive support
- Manual handling
- Nebuliser training for asthma
- Ostomy and stoma care for support workers
- Pressure injury – prevention and care for support workers
- Providing personal care with dignity and respect
- Shallow suctioning
- Tube feeding management
- Urinary catheter care
- Wound care awareness for support workers

#### FIRST AID TRAINING

- Cardiopulmonary resuscitation (CPR)
- Provide first aid
- Asthma and anaphylaxis
- Advanced first aid

#### MENTAL HEALTH

- Mental health first aid
- Leadership and resilience training
- Mental health awareness

And many others...

1300 721 292

[premiumhealth.com.au](https://premiumhealth.com.au)

[info@premiumhealth.com.au](mailto:info@premiumhealth.com.au)

ABN 24 692 649 946