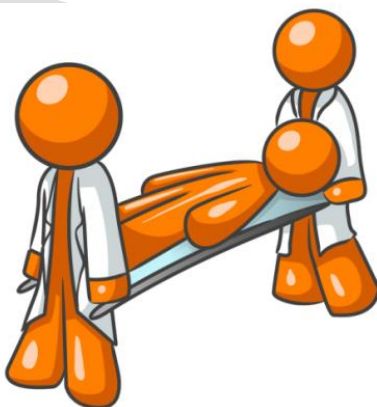




CPR First Aid

Work Book 2018

HLTAID003 and HLTAID004
HLTAID006 Pt1
– Modules 1-10



Index Reference		
Module 1	Introduction to First Aid	
Module 2	Principles/Priorities	
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Module 10	Bites and Stings	

WARNING!

Readers are warned that certain pages contain graphic images of real or simulated injuries to real people. All images have been added for the purpose of education only.

This workbook is not suitable for minors

Instructions: Mark your answers by placing an x in the appropriate square, submit your answers as per booking instructions, if your answer is not correct it will be sent back to you for your second and final attempt. (Questionnaire and Assessment answer sheet can be requested separately if required – refer to last page)

Please note: The submission of the Assessment Answer sheet (Online or hard copy) is evidence of completion of the workbook, however you will also be assessed in the classroom on this workbook. If you are unable to answer the same questions in the classroom then you will be deemed not competent and not pass the course.

This is to deter copying and cheating.

Module 1 – Introduction to First Aid

In this lesson, you'll be learning about:

- 1) First Aid Basics
- 2) Legal Aspects
- 3) Record Keeping
- 4) Human Anatomy
- 5) Infection Control



Estimated Completion Time: 15 minutes

Topic 1.1 – First Aid Basics

What is First Aid?

First aid is the initial care given to an injured or ill casualty until the arrival of a paramedic, nurse or medical doctor.

The four aims of first aid are to:

1. Protect life
2. Prevent further deterioration
3. Promote recovery
4. Preserve life

Any attempt is better than no attempt!

Topic 1.1 – First Aid Basics – Calling for Medical Assistance

Triple Zero (000)

Stay focused, stay relevant, stay on the line:

- Is someone seriously injured or in need of urgent medical help?
- Is your life or property being threatened?
- Have you just witnessed a serious accident or crime?
- If you answered YES, call Triple Zero (000). Triple Zero calls are free.



When you call Triple Zero (000), the operator will ask:

- Do you want Police, Fire, or Ambulance?
- Stay calm, don't shout, speak slowly and clearly
- Tell us exactly where to come. Give an address or location

If you are deaf or have a speech or hearing impairment call 106:

- This is a Text Emergency Call, not SMS
- You can call from teletypewriters
- State which service you need and where to come

Topic 1.1 – First Aid Basics – Calling for Medical Assistance

Mobile phone services: Triple Zero (000) & One One Two (112):

- Triple Zero (000) is Australia's primary telephone number to call for assistance in life threatening or time critical emergency situations.
- 112 is a secondary emergency number that can be dialled from mobile phones in Australia.
- There is a misconception that 112 calls will be carried by satellite if there is no mobile coverage. Satellite phones use a different technology and your mobile phone cannot access a satellite network
- **Important** – if there is no mobile coverage on any network, you will not be able to reach the Emergency Call Service via a mobile phone, regardless of which number you dialled.
- 112 is an international standard emergency number which can only be dialled on a *digital mobile phone*.

Topic 1.2 – Legal Aspects – Duty of Care

In Australia, first aiders are only obliged to render assistance in an emergency (or carry a duty of care) if:

- They were involved in the incident;
- They are on the ocean (e.g. sailing); or
- They choose to accept responsibility on land



Other situations that would be considered 'accepting responsibility' or 'carrying a duty of care' could be:

- Parenting or babysitting a child
- Employment that involves workplace health and safety or first aid provision (e.g. first aid officer role, police officer, teacher, personal trainer etc.)
- If you are an employer or managing/supervising other workers
- Stopping at an emergency – remember that by starting to help you are establishing a duty of care

Topic 1.2 – Legal Aspects – Duty of Care

People with first aid qualifications are not always automatically expected to assist in emergencies. A duty of care needs to exist for the legal obligation to take place. Neglecting an existing duty of care may result in implications associated with negligence. To identify your legal implications or for further clarification, you are encouraged to seek legal advice.

The standard of care required of a person who has a duty of care to respond, is higher. Like other persons in our community who hold themselves out to have a skill, they must perform their tasks to a standard expected of a reasonably competent person with their training and experience. However, this does not mean that the standard of care given must be of the highest level.

All first aiders should remain caring for the casualty at the scene if safe until medical aid (such as a medical doctor, nurse, paramedic or ambulance officer, or the fire brigade) takes over.

Topic 1.2 – Legal Aspects – The Protection of Good Samaritans

A Good Samaritan is an individual that provides assistance, advice or care to another person in relation to an emergency or accident in circumstances in which he or she expects no money or any other financial reward for providing the assistance, advice or care.

First aiders providing care should always stay within the limits of their training. Unless the first aider is put in danger by staying, they are legally expected to continue to provide their support until medical aid takes over. Neglecting a duty of care, or ignoring the limits of first aid training, may result in further implications associated with the law.



Should a casualty recover and the nature of their condition does not require medical attention, the first aider may end their duty of care to the casualty.

Topic 1.2 – Legal Aspects – Casualty Consent

Before providing first aid to a “competent” casualty, a first aider **must** obtain their consent. If first aid is provided without consent, it has the potential of being counted as “medical trespass” (assault). Conscious casualties have the right to refuse first aid treatment and their wishes need to be respected.



If a casualty is a minor (under 18yrs) you should gain the consent from a parent/guardian. Parents and guardians have the right to refuse first aid treatment for their minor. In the absence of a parent/guardian first aiders should regard children as having impaired-decision making capacity.

In the event of refusal, first aiders with a duty of care should contact 000 (ambulance) for advice and should stay at the scene (if safe to do so) until otherwise advised.

Topic 1.2 – Legal Aspects – Treatment Without Consent

Although first aid treatment normally requires consent, an injured or ill person should not be deprived of first aid merely because they lack decision-making capacity. The key legal factors which determine whether treatment can be given without consent are:

- Whether the casualty has or has not decision-making capacity;
- Whether an advance care directive exists;
- The degree of urgency of the situation, and;
- Whether a substitute decision-maker is present, willing and able to consent

If the casualty is incapable of consenting, (e.g. the casualty is unconscious) and no substitute decision maker is present, a first aider may provide urgent first aid to preserve life and health without consent (unless an advance care directive prohibits such treatment).

This means the legal requirement to obtain consent before providing assistance or treatment **is waived** under Common Law and Statute law in several circumstances, e.g. if the casualty is unconscious or becomes unconscious before consent was discussed.

Refer to ARC Guideline 10.5 “Legal & ethical issues related to resuscitation”

Topic 1.2 – Legal Aspects – First Aid and Workplace Health and Safety

In all Australian states, there is legislation that requires all employers to provide a safe working environment for all employees. They are also obliged to ensure there is the provision of first aid and first aid equipment in the event of an emergency.

A designated workplace first aider has a legal duty of care, if they are safe to do so, to give first aid to any person suffering an illness or injury in the workplace. This requires the designated first aider to attend regular first aid training sessions in order to keep their skills current. Refresher training in CPR should be undertaken annually according to ARC guidelines and the Code of Practice for First Aid.

For further information, contact your state government occupational health & safety regulator.



Topic 1.2 – Legal Aspects – Privacy and Confidentiality

Where possible, a first aider must take steps to assist the casualty to maintain dignity and personal privacy. Methods of doing this can be by:

- Having crowd control
- Putting up a privacy screen
- If appropriate to do so, move the casualty to a quiet area
- Cover up any exposed body parts, e.g. emergency rescue blanket, sheets, blankets

The Privacy Act and Principles impacts upon all first aid rendered, therefore a first aider needs to take steps to maintain confidentiality. This means you should not disclose the casualty's personal details, incident details, medical conditions and aid rendered to family members, close friends or answering questions from the media unless you have permission from the casualty.



Topic 1.3 – Record Keeping

It is important that all first aid incidents, inside or outside of work, be recorded in writing.

Each workplace should have appropriate documentation for the reporting of illness or injury.



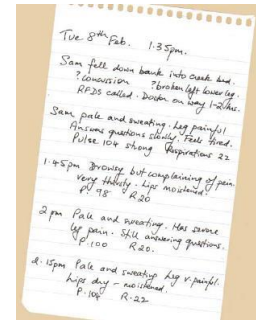
These documents need to be completed in full and should not be altered. Therefore, correction fluid or pencil should not be used on these documents.

Outside of the workplace, if an incident occurs, first aiders should take accurate, brief and clear notes and keep them on hand in case an investigation takes place.

Topic 1.3 – Record Keeping

Notes should include:

1. The time of the incident
2. The date of the incident
3. The location of the incident
4. What the first aider found upon arrival
5. What actions the first aider carried out
6. Any changes in the casualty's condition
7. Any witness details
8. Handover to medical professional's details
9. Did the casualty recover and relieve the first aider of their duty of care?



All documentation should be signed and dated by the first aider and stored securely to maintain confidentiality. Keep your notes clear and easy to understand and ensure you write down exactly how things are presented to you.

Topic 1.3 – Record Keeping

(Childcare) - Law Section 174, Regulations 12, 85-87, 168, 177-178, 183

- Centres must have incident, injury, trauma and illness policies and procedures in the event that a child:
 - (a) is injured; or (b) becomes ill; or (c) suffers a trauma.
- A Centre must ensure that a parent of a child is notified as soon as practicable, but not later than 24 hours after an occurrence, if the child is involved in any incident, injury, trauma or illness
- The details of the occurrence must be correctly and accurately recorded within 24 hours
- The occurrence records are stored safely and securely until the child is aged 25 years
- That the Regulatory Authority is notified of a serious incident which includes:
 - (a) death of a child; or (b) where medical assistance was required; or (c) attendance of emergency services at the education and care service premises was sought, or ought reasonably to have been sought.

Topic 1.4 - Human Anatomy

The human body is made up of different anatomical and physiological systems, each performing a vital role. Whilst it is not crucial for a first aider to know detailed information about these systems it will benefit the first aider to have a basic knowledge of how the systems work.

Several are particularly useful for a first aider to have a basic knowledge of.



Topic 1.4 - Human Anatomy – Skeletal System

The skeletal system is made up of 206 bones that provides structure to our bodies, and protects our internal organs from damage. Muscles, ligaments and tendons are closely linked with this system and all play vital roles in allowing movement and function of limbs and body parts.

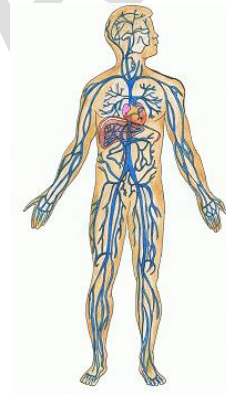
The bones of the skeleton have 4 main functions:

1. To give shape to the body
2. To produce blood cells
3. Support muscles to allow movement
4. Protect vital organs



Topic 1.4 - Human Anatomy – Cardiovascular System

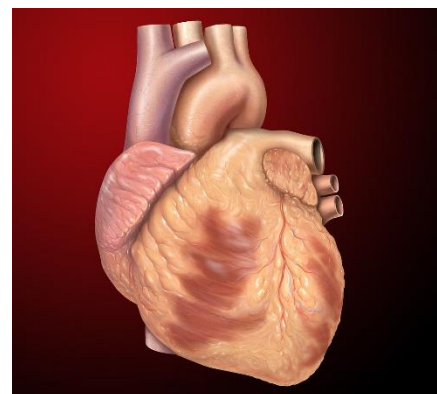
This system is made up of the heart, blood and blood vessels. Blood flowing from the heart delivers oxygen and nutrients to every part of the body. The blood stream removes waste products via transportation to the kidneys and other organs.



Topic 1.4 - Human Anatomy – Cardiovascular System

Heart – a muscular organ in the chest that pumps blood around our body. The heart is divided into four chambers: upper left and right atria; and lower left and right ventricles. The average adult resting heart rate is between 60 – 100 beats per minute.

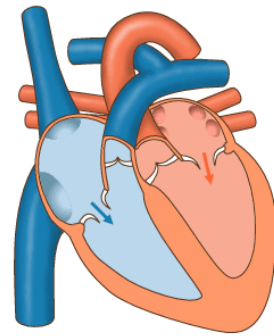
The heart is muscle that pumps blood to all parts of the body. Blood provides the body with the oxygen and nourishment it needs to function. Waste products carried by the blood are removed from the body by organs such as kidneys. The right side of the heart obtains de-oxygenated blood via main veins (Superior and Inferior Vena Cava) and pumps this blood to the lungs where oxygen is absorbed and carbon dioxide is released.



Topic 1.4 - Human Anatomy – Cardiovascular System

The oxygenated blood returns to the heart via the pulmonary vein into the left atrium.

The blood is then pumped into the left ventricle which pumps blood into the body's main artery – the aorta. The aorta is the body's largest artery and carries blood to smaller arteries which distribute blood to all parts of the body. On the return trip, the now de-oxygenated blood carries back to the heart via veins into the right atrium, and the cycle continues.



Topic 1.4 - Human Anatomy – Cardiovascular System

Blood – blood is composed of a clear liquid called plasma. Red blood cells make blood look red, and allow oxygen to be delivered around the body. White blood cells are part of your body's defence against disease. Platelets are cells that help your body repair itself after injury through coagulation (clotting).

Blood Vessels – Arteries transport oxygenated blood away from the heart. Veins transport de-oxygenated blood back to the heart. Arteries narrow into arterioles. Capillaries are the smallest vessels which connect the arterioles to the venules. It is at this level that majority of transfusion with cells takes place.

Heart Rate / Pulse – heart rate, or pulse, is the number of times the heart beats per minute. Normal heart rate varies from person to person. The average normal resting heart rates which vary with age are:

Age Range	Heart Rate
1 - 12 months	100 - 160
1 - 5 years	80 - 130
6 - 14 years	60 - 110
15 - adult	60 - 100

*A basic knowledge of this system will help in understanding the mechanics of **CPR** and **DRS ABCD**.*

Topic 1.4 - Human Anatomy – Nervous System

The nervous system is made up of your brain, spinal cord and a huge network of nerves that thread throughout our entire body.

The nerves receive and conduct information to the brain for processing, which enables the coordination of all of our actions and reactions. From applying correct pressure when gripping a cup, to retracting your hand from a sharp or hot object.

*A basic knowledge of this system is useful when dealing with **burns** and **pain management**.*

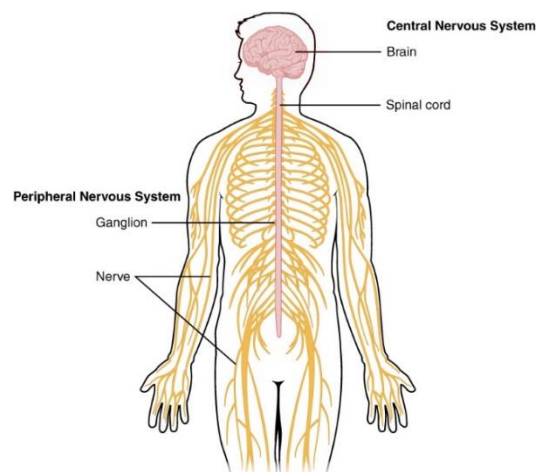


Image by OpenStax College

Topic 1.4 - Human Anatomy – Respiratory System

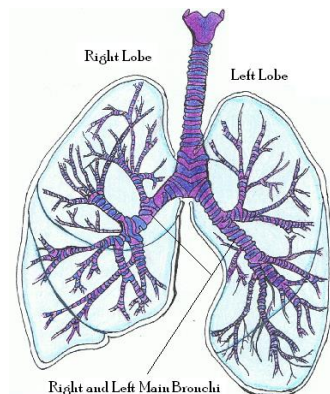
As all cells in our body need oxygen to survive, our respiratory system is vital to our survival.

This system comprises of 2 parts:

Airway - mouth, nose, trachea, larynx, bronchi and bronchioles.

Lungs – are literally large bags of air which contain small air sacs that are called alveoli. As we breathe, oxygen from the alveoli is filtered into the blood stream and carbon dioxide out of the blood stream. This process is essential to our survival – 4-6 minutes without oxygen can cause permanent brain damage.

*A basic understanding of this system is useful when learning about **airway management** and **CPR**.*



Topic 1.4 - Human Anatomy – Respiratory System

Breathing is the process that moves air in and out of the lungs, or oxygen through other respiratory organs. This process is also known as ventilation

Normal Respiratory Rate Ranges

Overall, children have quicker respiratory rates than adults, and women breathe more often than men. The normal ranges for different age groups are listed:

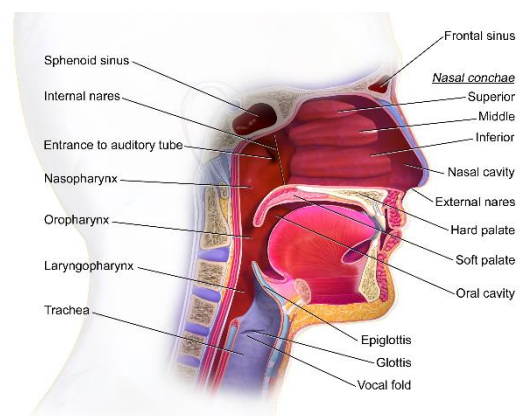
Age Range	Respiratory Rate
1 - 12 months	30 - 60
1 - 5 years	20 - 40
6 - 14 years	15 - 30
15 - adult	12 - 20

Topic 1.4 - Human Anatomy – Upper Airway

A child's airway differs from that of an adult in that the child's tongue is proportionately larger in the oropharynx compared to that of an adult.

Also, a child's airway is smaller and softer and more prone to foreign body obstruction. The trachea is usually about the diameter of a pencil.

Infants have very short and softer tracheas than adults. This means that overextension of the head (Tilting the head) during CPR may result in airway collapse (not too dissimilar to kinking a narrow garden hose).



The Upper Respiratory System

Topic 1.4 - Human Anatomy – Unconsciousness

The causes of unconsciousness can be categorised into four general groups:

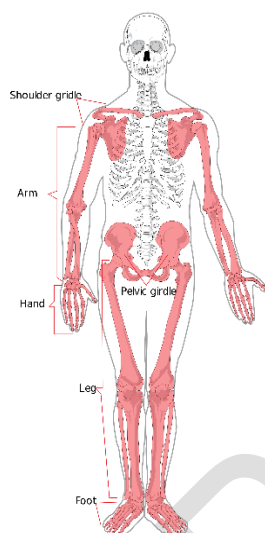
- Low oxygen levels to the brain
- Heart and circulation problems (e.g. fainting, abnormal heart rhythms, severe blood loss)
- Metabolic problems (e.g. low blood sugar, drug overdose, intoxication)
- Brain problems (e.g. stroke, head injury, tumour, epilepsy)

Signs and Symptoms

Before the casualty has loss of consciousness, they may experience:

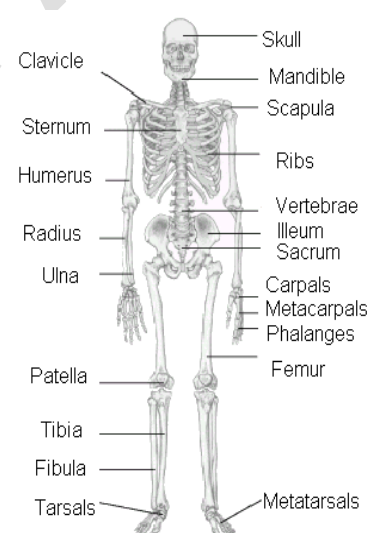
- Yawning
- Dizziness and light headedness, confusion
- Sweating
- Normal skin colour changes
- Changed or blurred vision, slurred speech
- Nausea

Topic 1.4 - Human Anatomy – Musculoskeletal System



The musculoskeletal system is a term used to describe the bones, as well as the adjoining ligaments, tendons and muscles. The following section will provide an overview of the names and locations of different bones; however, you are not expected to demonstrate a complete knowledge of all the bones listed.

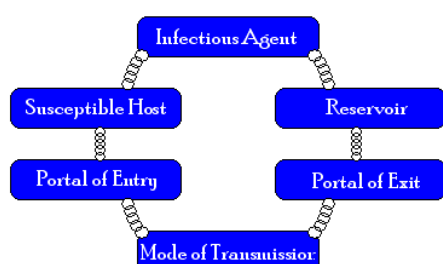
It is recommended that you become familiar with the following section, as it will assist you in understanding medical terminology, and give you a greater knowledge base as a first aider in which to understand and communicate effectively.



Topic 1.5 - Infection Control

When giving first aid to a sick or injured person you should try to minimise the risks to yourself, bystanders and to the casualties.

All around the world, any one person could be infected with a communicable disease. This any one person could very well be your casualty. Diseases that are life threatening can include HIV/AIDS and hepatitis strains.



Topic 1.5 - Infection Control - Chain of Infection

Whether or not infection happens will depend on a number of things. This is best explained by looking at the chain of infection.

The Six links to the *Chain of Infection*

In order for infection to occur, the links to the Chain of Infection must occur.

1. Infectious Agent: Any disease causing micro-organism (pathogen) i.e. bacteria, virus.
2. Reservoir: Where the pathogen is located (i.e. blood, saliva)
3. Portal of Exit: The route of escape of the pathogen from the reservoir (i.e. saliva via coughing, blood via cut in skin)
4. Mode of Transmission: How the pathogen gets from the reservoir to its new host (i.e. propelled through air, direct contact)
5. Portal of Entry: The route in which the pathogen enters the new host (breaks in skin (cuts, wounds), inhalation, ingestion, sexual contact).
6. Susceptible Host: The organism that accepts the pathogen (you or the casualty)

Topic 1.5 - Infection Control – How to break the *Chain of Infection*

Correct Hand Washing - appropriate hand washing by the First Aider remains the most important factor in preventing the spread of micro-organisms. Good hand washing techniques are displayed in the attached picture.

Barriers - use barrier equipment whenever possible (gloves, masks, face shields, eye protection and tongs). Barriers dramatically lessen the spread of infection, both to the casualty and to you!



Topic 1.5 - Infection Control – How to break the *Chain of Infection*

Needle Stick Injuries - needle stick injuries are an opportunity for a pathogen to penetrate directly into the blood stream of another person if not handled carefully. HIV (AIDS) and Hepatitis B are just few of the possible blood borne viruses that can be transferred from one person to another.

- If injured by a used needle stick, one should always seek medical assistance so that testing and preventative measures can be done to decrease the risk of infection.

Follow all safety procedures:

- Latex or nitrile gloves will not protect you against needle stick injuries
- Never bend or snap used needles
- Never re-cap a needle
- Always place used needles into a clearly labelled and puncture-proof sharps approved container

Topic 1.5 - Infection Control – How to break the *Chain of Infection*

If you do become contaminated by a sharp you should follow these steps:

- Penetration of skin - wash the blood / body fluid away with water.
- Contamination of the eye – rinse with water or saline with the eye open.
- Blood in mouth – spit out blood, and repeatedly wash with water.
- Seek professional medical assistance from your local doctor or hospital.



CPR First Aid

Module 2 – Principles/Priorities of First Aid Practices

In this lesson, you'll be learning about:

- 1) Safe Manual Handling
- 2) Basic First Aid Kit
- 3) **DRS ABCD**
- 4) Recovery Position
- 5) Heart Attack
- 6) Angina
- 7) Cardiac Arrest

Estimated Completion Time: 15 minutes

Topic 2.1 - Safe Manual Handling

Manual handling includes pulling, pushing, lifting, moving, carrying, restraining or holding any person or object.

Assessing the situation and the load:

- Can you move the person yourself, or is help required?
- How far will you have to move the person?
- Is the pathway clear or cluttered?
- Are there any manual handling aids available? (sheets / lifting equipment etc.)
- Test the weight by lifting the corners, or tilting the object
- Ask for help if it is too heavy



Topic 2.1 - Safe Manual Handling

Use of good lifting techniques:

- Use good body mechanics - maintain a straight back, bend your legs and use equipment when available
- Maintain a large base of support (stabilising using your feet)
- Don't move a casualty on your own
- Lift only as a last resort (the best lift is NO lift - unless life threatening)
- Keep the object close to your body



Topic 2.2 - Basic First Aid Kit

All workers must be able to access a first aid kit. This will require at least one first aid kit at their workplace. The contents of first aid kits should be based on a risk assessment.

The first aid kit should provide basic equipment for administering first aid for injuries including:

- Cuts, scratches, punctures, grazes and splinters
- Muscular sprains and strains
- Minor burns
- Amputations and/ or major bleeding wounds
- Broken bones
- Eye injuries
- Shock

Topic 2.2 - Basic First Aid Kit

First aid kits should be well maintained. Check that all items are in good condition, within expiry date and if any items are missing. Replenish required items.



For further information on first aid kit requirements go to:

<http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/first-aid-in-the-workplace>

Topic 2.3 - Caring for the Casualty – DRS ABCD

The Australian Resuscitation Council (ARC) recommends using the following 7 step acronym when caring for the casualty – **DRS ABCD**

- | | |
|--------------------------|--|
| 1. DANGERS | Check for danger (hazards/risks/safety) |
| 2. RESPONSIVENESS | Check for response (if unresponsive) |
| 3. SEND | Send for help (Call 000) |
| 4. AIRWAY | Open the airway |
| 5. BREATHING | Check breathing (if not breathing / abnormal breathing) |
| 6. CPR | Start CPR (give 30 chest compressions followed by two breaths) |
| 7. DEFIBRILLATION | Attach an Automated External Defibrillator (AED) as soon as available and follow the prompts |

Topic 2.3 - Caring for the Casualty – DRS ABCD

Bondi Rescue – Cardiac Arrest Video

Please watch this video as you will be assessed on CPR in your course. NB. The casualty does survive in this video: <https://www.youtube.com/watch?v=Ccql9jRbSE>



CAUTION! This video may be disturbing to some viewers as it contains footage of real CPR.

Topic 2.3 - Caring for the Casualty – DRS ABCD

D - Dangers

This step is the same when caring for both a breathing or non-breathing casualty. YOU are the most important person NOT the casualty. Ensure the safety for yourself (the first aider), bystanders and the casualty.

- Checking for danger before approaching any situation is critical. Rushing into a situation without adequately assessing the situation can put yourself and others at needless risk
- The amount of dangers greatly depends on the situation; hence it is important to assess each scene for possible dangers
- Sometimes, danger can be avoided, or the casualty can be moved away from it



Topic 2.3 - Caring for the Casualty – DRS ABCD

R – Responsiveness

This step is the same when both caring for a breathing or non-breathing casualty.

- Check consciousness level, speak in a calm positive manner, identify yourself and ask if you can help.
- Always approach a casualty with caution, feet first. If there is no response and it is safe to do so, implement **C.O.W.S.**
- **C** can you hear me?
- **O** open your eyes?
- **W** what is your name?
- **S** squeeze my hand?



Then grasp and squeeze the shoulders firmly to prompt a response. A casualty who fails to respond or shows only a minor response, such as groaning without eye opening, should be managed as if unconscious.

Topic 2.3 - Caring for the Casualty – DRS ABCD

S - Send for Help

Once you have determined the casualty requires medical assistance, you should next immediately send for help.

- Yell out for assistance! If there are any bystanders, instruct them to call 000. If you are alone and have access to a phone, call 000 and clearly explain the situation.
- CALL FOR HELP, EMERGENCY NUMBER 000 (landline/mobile) or 112 (mobile)



Topic 2.3 - Caring for the Casualty – DRS ABCD

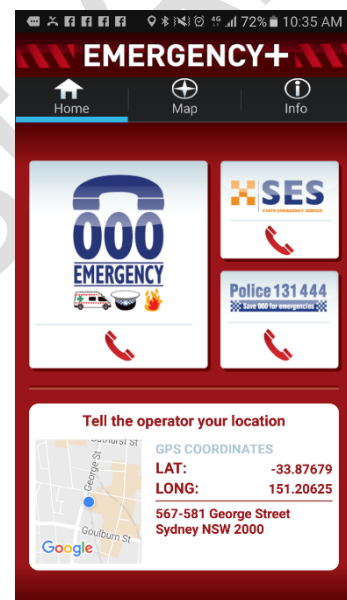
S - Send for Help

Free app available: Emergency +

The following is an excerpt from Australian Communications and Media Authority (acma.gov.au):

Are there advantages in using the Emergency+ smartphone app to call Triple Zero (000)?

The most significant advantage of using the Emergency+ smartphone app to call Triple Zero is that if you do not know your exact location, it uses the existing GPS functionality of your smartphone to enable you to provide emergency call-takers with your location information as determined by your smartphone.



Topic 2.3 - Caring for the Casualty – DRS ABCD

A- Airway

This step is the same when caring for both a breathing or non-breathing casualty. Airway management is required to provide an open airway when the casualty:

- Is unconscious
- Has an obstructed airway
- Needs rescue breathing

For responsive adults and children, it is reasonable to open the airway using the head tilt chin lift manoeuvre. Infants are left in the head position neutral position.

Topic 2.3 - Caring for the Casualty – DRS ABCD

B – Breathing

This step is the same when caring for both a breathing or non-breathing casualty.

- LOOK - LISTEN - FEEL FOR BREATHING.
- Get close to the casualty, placing your ear just above their mouth.
- Can you feel breathing on your cheek? Can you hear breathing?
- By looking towards the casualty's chest you will be able to check for rise and fall of the chest.
- If the casualty is breathing, they should be turned into the **Recovery Position**.
- If there is **NO SIGN OF BREATHING** or the casualty is **NOT BREATHING EFFECTIVELY**, you will need to proceed immediately onto CPR.



Topic 2.3 - Caring for the Casualty – DRS ABCD

Gasping is Not Breathing Normally

More than 50% of casualties in cardiac arrest gasp. Gasping has been described as gurgling, agonal or laboured breathing. This has often been misinterpreted by onlookers and even first aiders as signs that the casualty is breathing. The abnormal breathing or gasping may last for a few minutes.



Note that if the casualty has not responded to COWS and a firm shoulder squeeze, that the gasping should be considered as **NOT BREATHING EFFECTIVELY**, therefore, you will need to proceed immediately onto CPR.

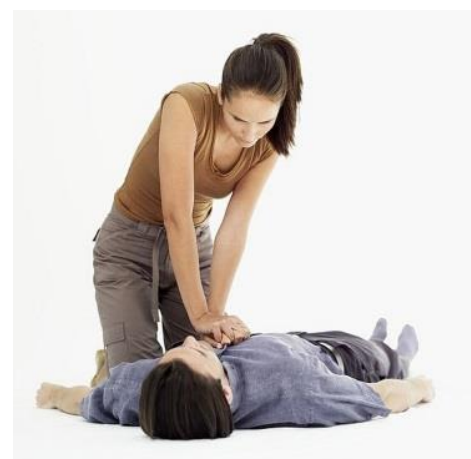
Topic 2.3 - Caring for the Casualty – DRS ABCD

C – CPR

Step 1: Compressions

All first aiders should perform chest compressions on all casualties who are unresponsive and not breathing normally.

Compressions are the first part of **CPR** used in conjunction with rescue breathing to circulate the oxygenated blood around their body.



Topic 2.3 - Caring for the Casualty – DRS ABCD

Compressions are performed as follows:

- Kneel beside the casualty (at the level of the casualty's shoulders)
- Locate the lower half of the sternum on the casualty
- Place the heel of the dominant hand in the centre of the casualty's chest with the other hand on top (or 2 fingers for infants)
- Keeping your arms straight, and your wrists and elbows locked, press down vertically to about a third of the casualty's chest depth, then release pressure
- Give 30 compressions (about 100 to 120 per minute – around 2 a second)
- Give 2 rescue breaths
- Repeat compression / breaths at 30:2 ratio until help arrives

Topic 2.3 - Caring for the Casualty – DRS ABCD

Rescue Breathing	Baby 0-1 years	Child 1-8years	Adult Over 8 yrs
Head Tilt	NIL	Full	Full
Breath into	Mouth & Nose	Mouth or Nose	Mouth or Nose
Breath Size	Puff	Shallow	Full
CPR Compressions			
Compression Depth	1/3 Chest 4 cm	1/3 Chest 5 cm	1/3 Chest >5 cm
Compress with	2 Fingers	One or Two Hands	Two Hands
Cycle 1-2 Person	30 Comp – 2 Breaths	30 Comp – 2 Breaths	30 Comp – 2 Breaths

Topic 2.3 - Caring for the Casualty – DRS ABCD

Quality Chest compressions:

- To optimize the effectiveness of chest compressions, the casualty should be placed on their back on a firm surface
- Interruptions to chest compressions must be minimised
 - A casualty should not be routinely rolled onto the side to assess airway and breathing unless regurgitation occurs
- Allow for complete recoil of the chest after each compression
- Avoid compression beyond the lower limit of the sternum

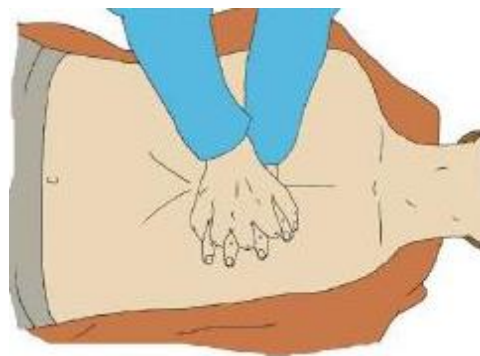


Image Courtesy of European Resuscitation Council

Topic 2.3 - Caring for the Casualty – DRS ABCD

Fractured ribs –this is a common consequence of **CPR**; however, this is acceptable given that the alternative to **CPR** is likely death of the casualty.

First aider change-over – when possible, it is recommended that first aiders change every 2 minutes (5 cycles) to prevent fatigue and also to help ensure that the depth and speed of compressions is maintained. If this is performed, it is important to minimise interruptions to compressions.

Topic 2.3 - Caring for the Casualty – DRS ABCD

Step 2: Rescue Breath methods

After 30 compressions, perform 2 rescue breaths using one of the following methods.

Mouth to Mask

This involves using a **CPR** mask for providing rescue breaths.

- The first aider exhales through a 1-way valve through the mask into the casualty's mouth.
- Head tilt is still required to open up the casualty's airways. Full head tilt for adults and children while no head tilt for infants.



Topic 2.3 - Caring for the Casualty – DRS ABCD

Mouth to Mouth

This is the recommended form of rescue breathing when a mask is not available.

The following steps should be taken to correctly provide mouth to mouth:

- **Head tilt/Chin lift Method:** Place one hand onto the forehead or top of head. The other hand is used in conjunction by holding up the chin using the thumb and forefinger to open the mouth. Place the thumb over the chin below the lip and supporting the tip of the jaw with the middle finger and the index finger lying along the jaw line. Then gently tilt the casualty's head back, not the neck, to open the airway.
- Block the casualty's nose using fingers on one hand



Topic 2.3 - Caring for the Casualty – DRS ABCD

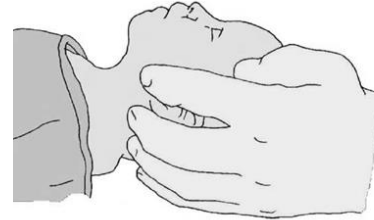
Mouth to Mouth (Continued)

- Take a breath and open your mouth as widely as possible
- Make a firm seal of your mouth onto the casualty's mouth
- Exhale into the casualty's mouth with the required breath size to inflate the casualty's lungs. Visually view the rise of the chest
- Give second breath. Should take around one second per breath

Note: Care should be taken not to over-inflate the chest.

In an infant, maximum head tilt should not be used. Instead the head should be kept neutral. Because of the narrow nasal passages, the upper airway is easily obstructed, so there must be no pressure placed on the soft tissues of the neck. The lower jaw should be supported at the point of the chin while keeping the mouth open. Due to the head size of an infant compared to its body, when laid on its back, the head naturally tips forward towards the chest. A slight backward tilt may be needed to place the head into a neutral position.

Image Courtesy of European Resuscitation Council



Topic 2.3 - Caring for the Casualty – DRS ABCD

Mouth and Nose

This can be used if preferred by the first aider.

- For infants, the first aider should cover the infant's mouth and nose with their own mouth instead of attempting to pinch the infant's nose.
- If providing mouth to nose on adults, the same method as mouth to mouth is used, except that instead of blocking the nose, the first aider should ensure the casualty's mouth is closed when exhaling into the casualty's nose (this involves sealing the mouth by pushing the casualty's lips together with your thumb).



Topic 2.3 - Caring for the Casualty – DRS ABCD

Blocked Airway:

If the casualty's chest does not rise during rescue breathing, check that:

- The head is tilted back correctly
- There is no foreign material in the airway
- The seal of your mouth on the casualty's mouth is firm
- The nose has been blocked
- Enough air is being blown in

D – Defibrillation (will be covered in the next topic: Chain of Survival)

Topic 2.3 - Caring for the Casualty – DRS ABCD

Regurgitation:

It should be noted that about one in four casualties will regurgitate whilst having **CPR** performed on them, especially when drowning is the cause of unconsciousness. This is because when unconscious, the casualty's muscles are totally relaxed, including the valve that stops regurgitation above the stomach.

If the casualty does regurgitate during **CPR**:

- Turn them into the recovery position with the mouth opened and the head turned slightly downwards to allow any obvious foreign matter (e.g. food, vomit, blood and secretions) to drain.
- If required, clear the airways using the 2 finger scoop method.
- If they are still not breathing once the obstruction is cleared from the airway, place them on their back again and re-commence **CPR**.

Those who are trained and willing to give breaths do so for all persons who are unresponsive and not breathing normally.

Topic 2.3 - Caring for the Casualty – DRS ABCD

Duration and Cessation of CPR

A first aider should continue to perform CPR on a casualty until:

- The casualty responds or begins to breathe normally
- It is impossible to continue any further due to exhaustion
- Medical professional/s arrive and take over in performing CPR
- Directions have been given by Medical professional/s to stop CPR
- The scene/location where CPR is being performed becomes unsafe



Topic 2.4 - Recovery Position

Once you have followed **DRS ABCD** and established the casualty is breathing, you need to place them into the recovery position. This is extremely important as it is the best position for an unconscious, breathing casualty.

An unconscious casualty lying on their back can very easily suffocate on their own tongue or stomach contents.



Image Courtesy of European Resuscitation Council

Topic 2.4 - Recovery Position

Recovery Position for a Child (1-8 years) or Adult (8+ years)

- Follow **DRS ABCD**, ensure the casualty is breathing effectively.
- Place both of the casualty's arms pointing away from you (the closest arm will be across the casualty's chest).
- Raise the casualty's knee closest to you and bend it.
- Place one hand under the raised knee, and the other arm behind the casualty's shoulders, and remember to support the neck as best as possible.
- Make sure you are holding the casualty's hip so that you can control the roll and not let the casualty fall onto their front.
- Gently turn the casualty onto their side facing away from you and bend up the raised knee further to the front of the casualty to ensure they don't roll onto their front.



Topic 2.4 - Recovery Position

Recovery Position for a Child (1-8 years) or Adult (8+ years) (Continued)

- Make sure the casualty's mouth is the lowest point so that the stomach contents are able to drain from their mouth.
- Lift chin forward in open airway position and adjust hand under the cheek as necessary.
- Continue monitoring **DRS ABCD** until an ambulance arrives – never leave an unconscious casualty unattended.
- If injuries allow, turn the casualty to the other side after 30 minutes.

REMEMBER - WHEN MOVING THE PERSON ONTO THEIR SIDE MAKE SURE THEIR NECK AND BACK DO NOT MOVE. MAKE SURE YOU ARE ROLLING THE BODY NOT TWISTING THE SPINE.

Topic 2.4 - Recovery Position

Recovery Position for an infant (Under 1-year-old)

For a baby less than a year old, a modified Recovery Position must be adopted:

- Cradle the infant in your arms, with their head tilted downwards on their side to prevent them from suffocating on their tongue or inhaling stomach contents.
- Monitor and record vital signs - level of response and breathing until medical help arrives.
- 1-handed recovery position can be used by placing your fingers supporting the baby's neck and jaw.
- The baby should be facing towards the ground so that any vomit or regurgitation will not obstruct their airways.
- This position also leaves your other hand free to make phone calls (i.e. 000 / 112), open doors, do back blows for choking etc.
- If you need to walk around with the infant, be very careful not to trip as you can easily cause injury by dropping or falling onto the child.

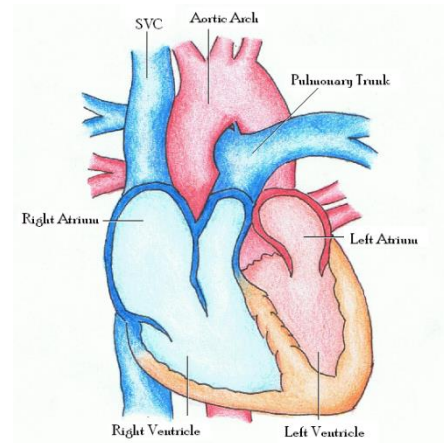


Topic 2.5 – Heart Attack

Heart Attack

Heart Attack is a cardiovascular event caused by sudden death to heart muscle cells. The most common cause of this is due to a blockage of the coronary arteries (arteries that supply the heart with blood) either by thrombus, or less commonly spasms.

The cells become starved of oxygen due to this sudden loss of perfusion which causes the heart to stop functioning normally or to stop altogether.

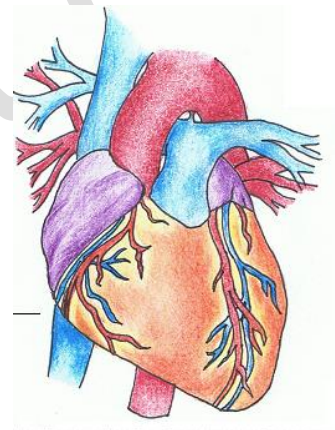


Topic 2.5 – Heart Attack

Heart Attack

Risk Factors include:

- Fatty deposits on the artery walls (atherosclerosis)
- Smoking
- High blood pressure / Hypertension
- Poor diet
- Obesity
- Lack of Exercise
- Age
- Diabetes
- A positive family history of first degree relatives with cardiovascular events at a fairly young age (<60yrs)



Topic 2.5 – Heart Attack

Signs and Symptoms of a Heart Attack:

- Casualty may complain of central chest pain that may radiate to the shoulders, neck or jaw. They may also clutch at their chest
- Unfortunately, heart attacks do NOT always involve chest PAINS but rather DISCOMFORT such as tightness, heaviness, squeezing and dull rather than sharp/stabbing sensations or simply angina "equivalents" symptoms such as shortness of breath/lethargy in diabetics
- Pale, cool skin
- The casualty may start sweating for no apparent reason
- Breathing may become strained and rapid. Casualty may have obvious difficulty breathing
- Loss of consciousness
- Nausea or vomiting
- Feeling dizzy or light-headed.
- Women can have all sorts of "atypical" symptoms, so if in doubt call an ambulance!

Topic 2.5 – Heart Attack

Treatment:

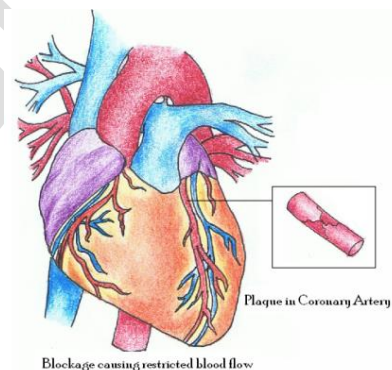
- Call 000 / 112 immediately, and ask for an ambulance
- Encourage the casualty to stop what they are doing
- Sit the casualty down, and make them comfortable
- Provide reassurance and stay calm
- Remove clothing that potentially inhibits breathing
- Give dissolvable aspirin 300mg (usually one tablet)
 - Withhold if the casualty is known to be anaphylactic to aspirin
- Ensure good access to fresh air (ideally oxygen)
- Monitor **DRS ABCD**, and be prepared to start **CPR** if the casualty becomes unconscious and stops breathing



Topic 2.6 - Angina

Angina is a symptom of a condition called myocardial ischemia. Basically put, this means that the heart muscles are receiving inadequate blood flow and hence inadequate oxygen for the amount of work the heart is doing at a particular time.

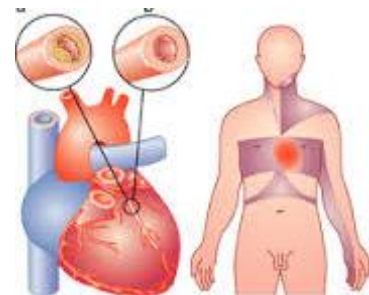
This is due to disease of the coronary arteries called atherosclerosis (fatty deposits causing hardening and narrowing of the artery lumen). At rest, a casualty will have no symptoms. This is because although the arteries are narrowed, the heart does not require a lot of blood at rest anyway. Angina occurs during physical or emotional excitement when the heart starts beating faster requiring more oxygen.



Topic 2.6 - Angina

Signs and Symptoms:

- The same as heart attack symptoms, although generally not as severe
- Symptoms will subside when the heart slows down or the casualty takes any medications prescribed for their angina
- The casualty may tell you that they know they have angina



Treatment:

- Stop exercise / physical exertion. Advise the casualty to relax
- Keep casualty calm
- Assist casualty to take any medication they have been prescribed by their doctor (normally Anginine, nitro-glycerine tablets or spray)
- Monitor **DRS ABCD**
- If pain persists for more than 10-15 minutes, call 000 / 112 (as this could be a sign of a heart-attack)

Topic 2.7 – Cardiac Arrest

Cardiac arrest is the cessation of effective blood circulation due to the sudden loss of normal heart function.

Note that a heart attack and a cardiac arrest are not the same. Heart attacks are caused by a blockage that stops blood flow to the heart and at times may cause a cardiac arrest.

Cardiac arrest is caused when the heart's electrical system malfunctions and stops working properly, often resulting in death. This may be caused by abnormal, or irregular, heart rhythms (called arrhythmias).

A common arrhythmia in cardiac arrest is ventricular fibrillation – *refer to image*

Cardiac arrest is a medical emergency and requires immediate response.



Topic 2.7 – Cardiac Arrest

Signs and Symptoms:

- May occur without prior warning
- A slow or racing heart beat
- Fainting, dizziness, blackouts
- Fatigue
- Chest pain
- Shortness of breath, weakness
- Nausea and vomiting

Treatment will be addressed in the next training module: Chain of Survival

Module 3 – Chain of Survival

In this lesson, you'll be learning about:

- 1) The Chain of Survival
- 2) Post Incident Debriefing
- 3) Positional Asphyxia
- 4) Fainting
- 5) Determining Appropriate Treatment
- 6) Drowning
- 7) Respiratory Distress

Estimated Completion Time: 15 minutes

Topic 3.1 - The Chain of Survival



- **Cardiac arrest** can happen anytime, anywhere. More than 75% of cardiac arrests happen outside a hospital, and of that – only 5% survive if left untreated
- Survival from cardiac arrest depends on a series of critical interventions.
- If one of these critical actions is neglected or delayed, survival is unlikely.
- The *American Heart Association* has used the term **Chain of Survival** to describe this sequence.

Topic 3.1 - The Chain of Survival

First Link - Early Access

Early access is recognizing that a person is unconscious or not breathing, and that they need more than basic first aid and then calling for an ambulance or medical assistance as soon as possible.



When calling 000 for assistance you need to be clear on your information. Give specific details as to your location, the nature of the emergency, and follow all their instructions.

Topic 3.1 - The Chain of Survival

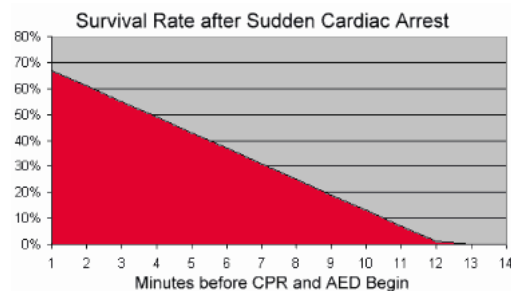
Second Link - Early CPR

The 2 most vital anatomical systems in our body are the **Cardiovascular System** and the **Respiratory System**. If these systems fail for only a short time the body cannot function normally and this will eventually cause death.



Statistics show that our brain cells begin to die in as little as 3-4 minutes without oxygen. Brain cells do not regenerate therefore if **CPR** is delayed the more chance the casualty may suffer permanent brain damage, and the less chance of survival.

Early **CPR** within the first 2-3 minutes can greatly improve the chances of survival.



Topic 3.1 - The Chain of Survival

Third Link - Early Defibrillation (D – Defibrillation)

Automated External Defibrillator (AED) is a portable computerised device that provides an electrical charge to return the heart to a normal rhythm.



The portable device has a built in computer and sensor that will check for the heart rhythm once placed on the casualty's chest and it will determine if defibrillation is required. Voice prompts are given to the user to follow and to streamline the defibrillation process.

Topic 3.1 - The Chain of Survival

Third Link - Early Defibrillation (Continued)

- Access to Early Defibrillation is the single most important step in this cycle
- Every minute early defibrillation is delayed reduces the person's chances of survival by 10%. This is why it is so important to call 000 / 112 if a cardiac arrest is suspected. A defibrillator is necessary to reverse this process and 'reboot' the heart back into its normal cycle
- An AED can be used effectively with minimal training, as all the current models are designed not to function unless an abnormal "shockable" heart rhythm is detected by the unit
- AED use is not restricted to trained personnel – any first aider can use an AED
- AED units can accurately identify the casualty's cardiac rhythm as 'shockable' or 'non-shockable'
- An AED is only to be applied to a **non-breathing** casualty!

Topic 3.1 - The Chain of Survival

AED for Adults

Once it is determined that the casualty is unconscious and not breathing after having a suspected **cardiac arrest**, and after calling 000, the following steps should be taken to correctly use an AED as soon as one is available:

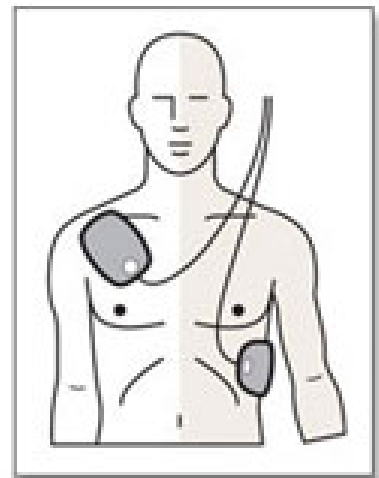
1. **CPR** should not be delayed while waiting for the AED to arrive – Start **CPR** immediately
2. Defibrillation is to be used in conjunction with **CPR** on casualties who are unconscious and not breathing. The casualty is to be supine (lying on their back)
3. Turn on the AED and follow the voice or display commands
4. Move any clothing out of the way of the casualty's chest
5. If the casualty is wet or sweaty, remove any moisture with something dry before placing the AED pads on the casualty
6. Tear open the AED pad packets and remove AED pads
7. If the casualty has a lot of body hair and the pads don't stick to the chest you will need to shave the hair on the chest

Topic 3.1 - The Chain of Survival

AED for Adults (Continued)

Attach one pad to the casualty's upper right chest, and the other to the casualty's lower left chest – these positions will be labelled on the pads (see diagram)

8. Avoid placing pads over any implantable devices – pads should be placed at least 8cm from any such devices
9. Do not place pads over medication patches – remove the patches before continuing as these can block the current and cause burns to the casualty
10. If not already attached, plug the cables from the pads into the unit (most units already have this ready for use)



Topic 3.1 - The Chain of Survival

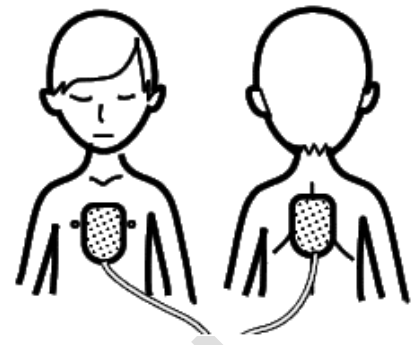
AED for Adults (Continued)

11. Move any bystanders out of the way – ensure no one is touching the casualty
12. AED will analyse casualty. If the AED determines that a shock is needed, move everyone away from the casualty
13. Make sure you are not touching the casualty and press the 'Shock' button, and then let the AED re-analyse
14. Follow the instructions of the AED – at this point you may be instructed to commence **CPR**, DO NOT remove the pads, or the AED unit may otherwise instruct you that another shock is necessary
15. Continue **CPR** and AED until the ambulance arrives

Topic 3.1 - The Chain of Survival

AED for children

- Standard adult AED pads are suitable for persons 8 years and older.
- For children under 8 years of age, paediatric pads should be used when available.
- When using paediatric pads on a child, they should be positioned the same way as an adult
- If these are not available, standard adult AED pads can be used. Ensure the pads do not touch each other on the child's chest. If the pads are too large, there is a danger of pad-to-pad arcing. In this case, the pads placement is not the same as for adult AED. One pad needs to be placed in the centre of the chest, and the other on their back in the centre. This will be labelled on the pads (see image)



NOTE: Always refer to manufacturer's directions/guidelines as they may vary between brands

Topic 3.1 - The Chain of Survival

Forth Link - Early Advanced Care

Early advanced care means the sooner a paramedic can attend to the casualty; the greater chance a casualty can be stabilised. As such, it is important that you call 000 as soon as possible. The sooner you contact emergency services, the sooner a paramedic will be on the scene, which dramatically increases the casualties' chance of survival.



Remember to convey all details of the incident when handing over to the paramedics.



Topic 3.2 - Post Incident Debriefing

Once you have provided **CPR** or **first aid** to a casualty and handed over responsibility to the paramedics, it is recommended that you undergo a debriefing.

- Talk through your actions with your manager, other first aiders, psychologists, doctors, family or friends.
- Take time to calm down and reflect on your actions, don't go straight back to work if incident occurred in a workplace setting.

Note that anyone around the incident such as the casualty, the first aiders and onlookers which may include children can be affected by stress from the trauma that had occurred. Psychological stress can badly affect people of all ages either during or after the incident. For example, talk with children about their emotions and responses to the incident. Provide support as required.

Topic 3.2 - Post Incident Debriefing

Post Incident Reactions

The following reactions are normal, and help people come to terms with a critical incident.

Physical reactions

Disturbed sleep, nausea, nightmares, restlessness, headaches, excessive alertness, undue crying and being easily startled.

Cognitive reactions

Poor concentration, visual images of the event, intrusive thoughts, disorientation or confusion, poor attention and memory.

Emotional reactions

Fear, numbness and detachment, avoidance, depression, guilt, over-sensitivity, anxiety and panic, withdrawal and tearfulness.

Topic 3.2 - Post Incident Debriefing

Seek Professional Help

Traumatic stress can cause very strong reactions in some people.

You should seek professional help if you:

- Are unable to handle the intense feelings or physical sensations
- Don't have normal feelings but continue to feel numb and empty
- Feel that your emotions are not returning to normal after three or four weeks
- Continue to have physical symptoms
- Continue to have disturbed sleep or nightmares
- Find that relationships with family and friends are suffering
- Are becoming accident prone and using more alcohol or drugs.



Support can be accessed via counselling, educational material that explains the situation including stress-management techniques, professional help, wellness programmes

Topic 3.3 - Positional Asphyxia

Positional Asphyxia is a condition that occurs when a person's position causes their breathing to be restricted. It can be potentially fatal if they are in such a position for any length of time. Positional asphyxia occurs commonly in small infants who find themselves in a position where their airways are restricted and are unable to reposition themselves.

This can also occur in adults either by an accident where they become stuck in a difficult position, i.e. car accident or more commonly during restraint by police officers, security guard or even health care staff if not carefully performed.

People who are at higher risk include those with:

- Heart problems, such as angina
- High blood pressure or diabetes
- Intoxicated or drug affected people
- The elderly



Topic 3.3 - Positional Asphyxia

Warning Signs:

If the person complains of or demonstrates any of the following:

- Difficulty breathing
- Feeling sick / nauseous
- Obvious distension of the veins in their neck
- A change in behaviour – either becomes more or less resistant
- Becomes limp or unresponsive
- Loss of consciousness

What to do if they lose consciousness:

Follow DRS ABCD

- If the person is breathing, lay them in the recovery position and monitor closely
- If the person is not breathing, then you should start **CPR** immediately and call 000

Topic 3.4 Fainting

Fainting is a temporary loss of consciousness, otherwise called syncope. It is generally caused by a temporary reduction in the blood supply to the brain. Before fainting, the casualty may feel light-headed, nauseous or dizzy and may appear pale and clammy.

Fainting can be caused by a variety of factors such as:

- A sudden drop in blood pressure
- A sudden change in position, i.e. from lying to standing
- Dehydration
- Stress or fear
- Poison or Alcohol
- Heat
- Pain

Topic 3.4 Fainting

Management of Fainting

Before Fainting:

- If a casualty is light-headed, and appears near to fainting, the best thing to do is to lie them down on their back and raise their legs, increasing the blood supply to the brain
- If the casualty refuses to lie down, keep close to the casualty in case they collapse. Remember also to protect your back – if the casualty is falling, do not attempt to keep them upright, but rather guide them gently down onto the ground
- Once on the ground they can be placed in the recovery position

Topic 3.4 Fainting

Management of Fainting

If Unconscious:

- If they lose consciousness, follow **DRS ABCD**. Fainting usually only lasts from a few seconds to a minute or two, and the casualty may even have a slight seizure
- Proper placement into the recovery position will assist recovery. Once conscious, encourage the casualty to lie down until they feel better, then very gradually moving back into an upright position to reduce the risk of fainting again



Topic 3.5 - Determining Appropriate Treatment of a Casualty

Respectful Behaviour Towards a Casualty

A first aider at all times should display a respectful attitude towards casualty, whether they are conscious or not. While giving aid to a casualty be mindful of the following:

- Help comfort the casualty to feel safe, secure and supported
- Be gentle and help maintain their dignity
- Use appropriate and respectful communication
- Help the casualty to remain calm and reassure them that help is on the way
- Stay with the casualty until help arrives

Topic 3.5 - Determining Appropriate Treatment of a Casualty

Determining appropriate treatment of a casualty is heavily reliant upon a good assessment of the situation and the casualty themselves. When arriving at a scene where there is one or multiple casualties, a visual survey is the first key in determining what response is necessary.



What to look for:

- Does the casualty appear conscious or unconscious?
- If conscious, does the casualty appear in pain, or are they demonstrating signs of an altered mental status?
- Is there blood present, or any signs of violence?
- Is medication in the casualty's hand or lying nearby?
- Is the casualty wearing a medical bracelet or necklace?
- Based on the location and circumstances, is there a high risk of alcohol and / or illicit drugs being involved?

Topic 3.5 - Determining Appropriate Treatment of a Casualty

If the casualty is unconscious, always follow **DRS ABCD** – this is a highly recommended method of assessing a casualty because it covers all of the most important aspects of assessing a casualty's wellbeing in a logical and easy to remember order.

If the casualty is conscious, follow a logical progression of questioning and assessment to determine what has occurred.

Ask the conscious casualty:

- **TIME:** Does the casualty know what the time is? What the date is? The year?
- **PERSON:** Does the casualty remember their own name?
- **PLACE:** Does the casualty know where they are?
- **EVENT:** Does the casualty know how they got here? What they are doing here?



Topic 3.5 - Determining Appropriate Treatment of a Casualty

If the casualty can answer all of these and is cooperative, then generally they can indicate what has occurred and how they are injured.

Generally speaking, by undertaking a good visual assessment and verbal questioning you can almost always form a good idea of what is occurring. From there, it is simply a matter of putting your first aid skills to use to determine the best course of action.

- If they are bleeding, apply direct pressure, then immobilise and restrict movement of the injured part if possible
- If they are suffering from an impaired level of consciousness call an ambulance and monitor them closely until paramedics arrive



Topic 3.6 - Drowning

Drowning is the process of experiencing respiratory impairment from immersion in liquid. Treatment of a casualty who has been rescued from drowning and is unconscious involves following **DRS ABCD**.

The very first step is to place the casualty on their side during the checking / assessment stages of **DRS ABCD**, including checking for breathing (if possible). This allows for any liquid to drain from the lungs with the assistance of gravity. If the casualty is unconscious and not breathing lay the casualty on their back and commence **CPR**.

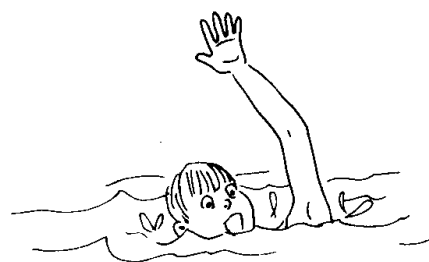


Image: "Used with permission from Microsoft."

Topic 3.6 - Drowning

Specific problems related to treatment of a drowning casualty:

Vomiting / regurgitation

- This is a possibility whenever **CPR** is performed, however due to inhalation of water during drowning it is much more likely to occur in this situation
- Laying the casualty on their side during initial assessment will assist in reducing this risk during **CPR**
- If the casualty does vomit / regurgitate during **CPR**, immediately roll them onto their side, clear the airways, reassess **DRS ABCD** and continue **CPR** if necessary

Topic 3.7 - Respiratory Distress

Breathing difficulties can range from:

- Being short of breath
- Being unable to take a deep breath and gasping for air
- Feeling like you are not getting enough air

Some causes of acute ineffective breathing:

- Upper airway obstruction
- Problems affecting the lungs
- Drowning or near drowning
- Asthma
- Suffocation
- Damage to breathing control centre of the brain
- Multiple other conditions will result in respiratory distress as symptoms progress



In any situation where a casualty is unconscious and not breathing effectively, follow **DRS ABCD** and perform **CPR**.

Topic 3.7 - Respiratory Distress

Treatment for conditions causing respiratory distress:

There are specific treatments for different conditions causing of respiratory distress.

Some respiratory distress conditions include:

- Asthma (will also often be accompanied by wheezing)
- Airway obstruction (casualty may be distressed and clutching at throat)
- Heart Attack (accompanied by symptoms such as chest pain)
- Anaphylaxis (after exposure to allergen, may be accompanied by hives and extreme anxiety)

Please refer to the appropriate sections in this text for first aid directions for these causes of respiratory distress.

Module 4 – Illnesses

In this lesson, you'll be learning about:

- 1) Anaphylaxis
- 2) Asthma
- 3) Diabetes

Estimated Completion Time: 15 minutes

Topic 4.1 - Anaphylaxis

What is an Allergy?

An allergy is when a person's immune system reacts to triggers (allergens) that the person is hypersensitive to and is usually harmless to most other people. Symptoms of an allergy can range from mild to potentially life threatening (severe). It occurs when the body mistakes something as harmful and creates a defence system (antibodies) to fight it.

The ways allergens can enter the body:

- Ingested (most common, in the mouth)
- Inhaled (breathed in)
- Injected (bees, wasps, ants or medication)
- Absorbed (through touching the skin)
- Allergy symptoms develop when the antibodies are battling the "invading" allergen



Topic 4.1 - Anaphylaxis

What is anaphylaxis?

Anaphylaxis is a severe and sometimes sudden allergic reaction. It can occur when a susceptible person is exposed to an allergen (such as a food or an insect sting). Reactions usually begin within minutes of exposure and can progress rapidly over a period of up to two hours or more.

Anaphylaxis is potentially life threatening and always requires an emergency response.



Topic 4.1 - Anaphylaxis

Common Causes of Anaphylaxis:

- Food allergies, such as peanuts, tree nuts, fish, lactose, eggs, wheat, seafood, fish, soy
- Insect stings, such as bees, wasps or even ants
- Some materials, such as latex
- Some herbal remedies can also induce reactions



Topic 4.1 - Anaphylaxis

Signs and Symptoms (Allergy):

- Initial signs (these can be used as warning signs to get help)
- May begin with itchy hands, mouth or feet
- Eyes may become red, watery and puffy
- Tingly around the mouth
- Swollen lips and face
- Rash or *hives* can develop, especially on the chest, armpits and groin (hives are white itchy bumps which look and feel like insect bites)
- *Stomach pain*, vomiting, diarrhoea



Topic 4.1 - Anaphylaxis

Soon after hives develop, more serious symptoms (Anaphylaxis) may occur, including:

- Shock
- Altered mental status
- Difficulty breathing, or shortness of breath and gasping
- Casualty may become very anxious and have a great sense of fear
- Respiratory or cardiac arrest and unconsciousness
- Difficulty and/or noisy breathing
- Swelling of the tongue
- Swelling or tightness in the throat
- Difficulty talking or hoarse voice
- Wheeze or persistent cough
- Loss of consciousness and/or collapse
- Pale and floppy (young children)

Topic 4.1 - Anaphylaxis

Management of an Allergic Reaction (Mild to Moderate):

- Follow **DRS ABCD** as required
- For insect allergy, flick out sting if visible. In the case of tick bite, if there is no history of tick allergy, immediately remove the tick
- If the casualty has a history of tick allergy, the tick must be killed where it is, rather than removed.
- Apply cold compress to bite/sting site
- Stay with casualty and reassure
- Call for help. Get someone to contact 000 / 112
- If prescribed, give other medications as noted on Personal Action Plan for Allergic Reactions
- Continue to monitor the casualty for signs of anaphylaxis

The form is titled 'ACTION PLAN FOR Allergic Reactions' and is from ASCIA (www.allergy.org.au). It includes sections for 'SIGN'S OF MILD TO MODERATE ALLERGIC REACTION', 'ACTION FOR MILD TO MODERATE ALLERGIC REACTION', '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)', and 'ACTION FOR ANAPHYLAXIS'. The 'ACTION FOR ANAPHYLAXIS' section includes steps: 1. Lay person flat - do NOT allow them to stand or walk. 2. Give adrenaline (epinephrine) autoinjector if available. 3. Phone ambulance - 000 (AU) or 112 (NZ). 4. Phone family/emergency contact. 5. Transfer person to hospital for at least 4 hours of observation. It also includes a note: '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 available, and then asthma reliever puffer if someone with known asthma and allergy to food, insects or medication has SIGNS OF BREATHING DIFFICULTY (including wheeze, persistent cough or hoarse voice) even if there are no skin symptoms. Asthma reliever medication prescribed.' The form also has fields for Name, Date of birth, Confirmed allergies, Family/emergency contact names, Work Ph., Home Ph., Mobile Ph., Plan prepared by, and Date.

Topic 4.1 - Anaphylaxis

Management of Anaphylaxis (Severe Allergic Reaction):

- Follow **DRS ABCD**
- Lay the casualty flat. If having difficulty breathing, sit them upright and try to calm them
- If known and possible, remove the source of the allergy
- Use the autoinjector (EpiPen) to inject adrenaline. Specific training is required
- Call 000 / 112 for an ambulance
- Continually monitor the casualty's airways, breathing and respiration, as a sudden change may occur which may need CPR at any time. Ensure that the EpiPen has been administered before commencing CPR.
- Contact parent/guardian or other emergency contact
- If available, further adrenaline doses may be given if there is no response after 5 minutes
- If uncertain whether it is asthma or anaphylaxis, give adrenaline autoinjector FIRST, then asthma reliever

Topic 4.1 - Anaphylaxis

EpiPen:

- An EpiPen is a small, hand-held, automatic injection device.
- It contains adrenaline and is injected into the fleshy part of the casualty's thigh when experiencing an anaphylactic reaction.
- EpiPens are prescribed to people with known allergies and they may be able to inject themselves, or may need assistance from the first aider
- Note: Single use only



Topic 4.1 - Anaphylaxis

EpiPen:



See video on how to use an EpiPen: [LINK](#)

Child Green Auto Injector (<20kg).
Adult Yellow Auto Injector (>20kg)



Topic 4.1 - Anaphylaxis

Anaphylaxis Management Plan

Ensure that all patients prescribed an adrenaline auto-injector have an anaphylaxis management plan that includes:

- Referral to an appropriate specialist
- Identification of the relevant allergen(s)
- Education on avoiding allergen(s)
- An anaphylaxis action plan (*see image*)
- Appropriate follow-up and review
- Train patients to recognise the symptoms of anaphylaxis and how to use their adrenaline auto-injector correctly



Topic 4.1 - Anaphylaxis

Parents should advise preschools or schools of their child's adrenaline autoinjector prescription, and provide a completed anaphylaxis action plan illustrating the use of the device prescribed.

Some high-risk patients can be prescribed two adrenaline autoinjectors, but they must be of the same brand.

Advise patients to check the expiry date of their adrenaline auto injector regularly.

See the *Australasian Society of Clinical Immunology and Allergy* (ASCIA) website for health professional and consumer anaphylaxis resources.

Note: Symptoms of severe allergic reactions or anaphylaxis can occur when there is no history of known allergies. This situation should be treated as an emergency. An adrenaline Autoinjector should be administered, if available, an ambulance called and first aid provided until expert help arrives

Topic 4.2 - Asthma

It is estimated that at least 2 million Australians have asthma. Up to 16% of children are estimated to have asthma in Australia. The majority of people with asthma do not have an action plan and many do not carry their reliever medication with them. People with asthma have very sensitive airways. An asthma attack is caused by spasm or narrowing of the bronchioles (air passages) in the lungs.

During an episode, air passages become narrowed by muscle spasm, swelling of mucous membranes and increased mucous production. Although the exact cause of asthma is still unknown, exposure to certain toxins, such as smoking during pregnancy is linked with the condition.



Topic 4.2 - Asthma

Main Factors that can Cause the Airways to Narrow

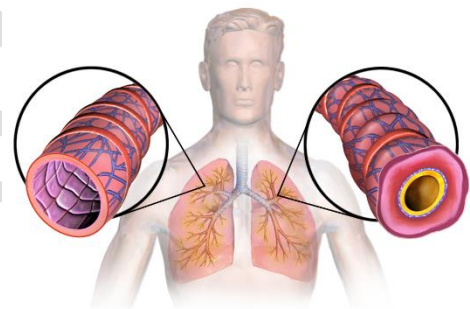
Muscle Spasm:

- The layer of muscle surrounding each bronchiole constricts or tightens, causing the air passage to become narrower

Inflammation:

- The lining of each passage, being very sensitive, becomes inflamed and swollen

Image by BruceBlais



Excess Mucus:

- More than usual amounts of mucus are produced in each bronchiole that contributes to the narrowing of the airways

These above may cause coughing (varied), wheezy breathing (not always), tiredness, difficulty speaking, chest tightness, and shortness of breath or rapid breathing. The casualty may become very distressed because of difficulty in breathing.

Topic 4.2 - Asthma

How to Assess Asthma Attacks

Mild Asthma attack:

- Cough
- Soft wheeze
- Minor difficulty breathing
- No difficulty speaking in a sentence

Moderate Asthma Attack:

- Persistent cough
- Loud wheeze
- Tightness in the chest
- Obvious difficulty breathing
- Able to speak in short sentences only



Topic 4.2 - Asthma

Severe Asthma Attack:

- Very distressed and anxious
- Gasping for breath
- Unable to speak more than a few words in one breath
- Pale and sweaty
- May have blue lips
- Little or no improvement from reliever medication
- Feeling anxious and distressed

Asthma Medication (Bronchodilators)

Relievers:

- Used to relieve symptoms: relaxes tight muscles around the airways
- Common names: Airomir, Asmol, Bricanyl, Epaq, Ventolin, Atrovent
- Inhaler colour: Blue – Grey



Topic 4.2 - Asthma

Treatment: Using a Puffer (4-6 x 4-6 x 4-6):

1. Sit the person upright, reassure them and attempt to keep them calm
2. Do not leave the person alone
3. Without delay shake a blue reliever puffer and give 4 to 6 separate puffs through a spacer (if available). Use 1 puff at a time and ask the person to take 4 to 6 breaths from the spacer after each puff
4. Wait 4 to 6 minutes.
5. If there is no improvement repeat step 2
6. If there is still no improvement after another 4 to 6 minutes, or you are concerned at any time, call an ambulance immediately (Dial 000), and repeat steps 2 and 3 until ambulance arrives or the casualty is breathing normally

Topic 4.2 - Asthma

Note: When ringing 000, respiratory physicians and some ambulance services recommend to state "severe asthma attack" (if appropriate) straight up so there is no unnecessary delay in dispatching an ambulance - personal and all other details can be collected later.



Using an Inhaler



Using an Inhaler with spacer

Topic 4.3 - Diabetes

Diabetes Mellitus is a metabolic disorder in which there is a higher than normal amount of sugar found within the blood (hyperglycaemia). In a non-diabetic person, the pancreas creates insulin which breaks down sugars to be transferred to the body's cells. This doesn't happen to a person with diabetes.

There are three main types of diabetes– Type 1, Type 2 and gestational, all of which have similar symptoms but vary in the underlying cause.

- Type 1 is generally due to destruction of pancreatic beta cells which produce insulin
- Type 2 involves resistance to insulin of body tissue
- Gestational diabetes is not well understood, but its underlying cause is thought to be due to some abnormal interaction between foetal requirements and maternal metabolic controls

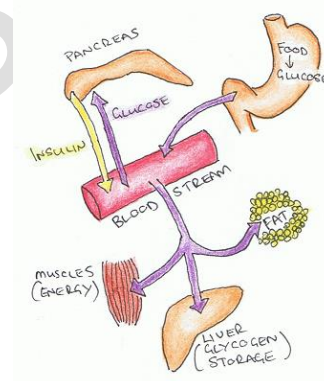


Topic 4.3 - Diabetes

Hypoglycaemic Attack (Low blood sugar)

There are many symptoms that can be associated with low blood sugar. The following is a shortlist of the more common ones:

- Mental confusion, inability to concentrate
- Headache
- Sweating
- Pale skin
- Mood swings, such as temper outburst
- Rapid pulse
- Dizziness or light headedness
- Trembling, shaking or weakness
- Hunger, a craving for sweets
- Slurred speech
- Unresponsive or seizure
- May progress to unconsciousness



Topic 4.3 - Diabetes

Hypoglycaemic Attack (Low blood sugar)

Management (If a hypoglycaemic attack is suspected):

- Stop any exercise, rest and reassure
- Offer the casualty sugar. Ideally, this should be something that can be absorbed quickly such as:
 - Fruit juice – approx. 200ml
 - Soft drink, sugar sweetened beverage (not diet, etc) – approx. 200ml
 - Confectionary (jelly beans 5-20, Skittles 20-25)
 - Honey or sugar – 3 teaspoons
 - Glucose gels - 15g
- Monitor for improvement – resolution of symptoms would be expected within 15 minutes



Topic 4.3 - Diabetes

Hypoglycaemic Attack (Low blood sugar)

Management (If a hypoglycaemic attack is suspected):

If symptoms still persist after 10 to 15 minutes, and the casualty is capable of swallowing and following basic commands, administer another round of substance with sugar as noted in the previous slide

Once the casualty is feeling better, suggest a small meal with carbohydrates (e.g. sandwich & milk), as this will help stabilise their blood sugar over a longer period of time

If condition deteriorates, or does not improve:

- By the casualty becoming unconscious, follow DRS ABCD
- Seek medical aid urgently

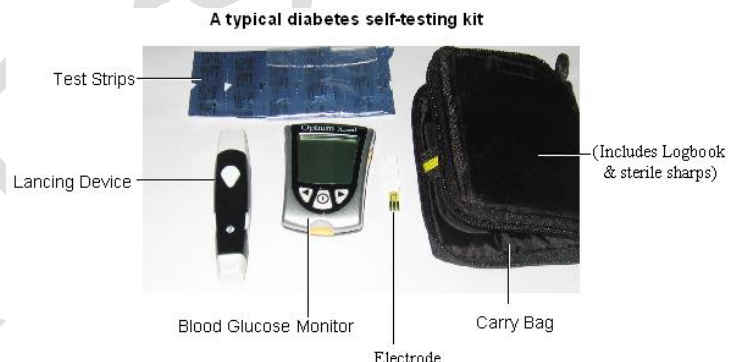
DO NOT attempt to feed an unconscious casualty sweet food by mouth, as this will only cause a significant risk to their airways and likely cause them to choke.

Topic 4.3 - Diabetes

Hyperglycaemia (High blood sugar)

High blood sugar occurs generally in people with undiagnosed diabetes. The effect is a build-up of toxins in the blood called Ketoacidosis. Prolonged high blood glucose also alters the shape of the lens in the eye, and hence blurred vision can also be a symptom.

When Ketoacidosis is present, the smell of acetone may be found to be present in the casualty's breath (this is a very sweet smell) as well as rapid, deep breathing, nausea, vomiting, abdominal pain and a state of altered consciousness. It can lead to unconsciousness if not managed.



Topic 4.3 - Diabetes

Hyperglycaemia (High blood sugar)

Symptoms:

The most common symptoms of hyperglycaemia are:

- Excessive thirst
- Excessive and frequent urination
- Recent weight loss
- Rapid pulse
- Nausea and vomiting, abdominal pain
- Rapid breathing
- Fruity sweet smell of acetone on the breath (similar to paint thinner or nail polish Remover)
- Dry skin and mouth, with sunken eyes (signs of dehydration)
- Confusion, a deteriorating level of consciousness, or unresponsiveness



Topic 4.3 - Diabetes

Hyperglycaemia (High blood sugar)

Management

If the casualty presents symptoms suggesting hyperglycaemia and does not have a diabetes management plan, then immediately refer them to be assessed by professional medical personnel. If the casualty with diabetes has a diabetes management plan, then that plan should be followed.

- High blood sugar is a medical emergency and a prompt diagnosis and treatment is the only way to relieve the casualty's symptoms
- If the casualty is unresponsive and not breathing normally, commence resuscitation following DRSABCD and call 000 / 112 for an ambulance
- If the casualty is unconscious but breathing, lie the casualty on their side into the recovery position while ensuring that the airway is clear

Topic 4.3 - Diabetes

Recommendations (as per excerpt from ANZCOR Guideline 9.2.9 – First aid Management of a Diabetic Emergency)

As a first Aider:

- When available, and trained to do so, use a blood glucometer to check the victim's blood glucose level to confirm hypoglycaemia or hyperglycaemia.
- When available, glucose tablets are preferred over other sugars for the first aid management of suspected hypoglycaemia in conscious victims
- If unsure of the blood glucose, manage the casualty as having suspected hypoglycaemia.

Module 5 – Medical

In this lesson, you'll be learning about:

- 1) Choking – Adult/Child
- 2) Bleeding - Internal/External
- 3) Wound Management
- 4) Projectile Objects
- 5) Abdominal Injuries
- 6) Crush Injuries
- 7) Shock

Estimated Completion Time: 15 minutes

Topic 5.1 - Choking Adult or Child

In first aid, choking is defined as a mechanical obstruction of the airways by a foreign object such as food. Choking can lead to unconsciousness or even Cardio Respiratory Arrest if the obstruction is severe enough. The quick recognition and proper management of a casualty who is choking is of key importance.

Statistically Children 4 years and under are most at risk of choking by food and toy parts as they make up the highest number of deaths.

If the casualty is able to cough and talk, then this is not considered serious choking, as this is a **Mild Airway**

Obstruction. The casualty with an effective cough should be reassured and encouraged to keep coughing to expel the foreign material. Continue to monitor. If the obstruction is not relieved, the first aider should call an ambulance.

Severe Airway Obstruction choking occurs when the object is firmly lodged in the casualty's throat and they are unable to cough effectively, or make any sound.

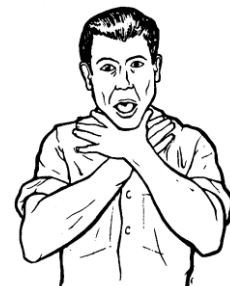
Certain foods can be a choking hazard to young children



Topic 5.1 - Choking Adult or Child

The danger signs of Severe Airway Obstruction (Choking) are:

- Inability to cry or make any sound
- Unable to cough, or weak, ineffective coughing
- Soft or high-pitched sounds while inhaling
- Difficulty breathing - ribs and chest retract
- Bluish skin colour or lips
- Loss of consciousness if blockage is not cleared
- The casualty may be clutching or pointing at their throat



Do Not use abdominal thrusts (Heimlich manoeuvre) in the management of choking as there have been reported cases of life threatening complications associated with the use of abdominal thrusts.

Topic 5.1 - Choking Adult or Child

First aid for Severe Airway Obstruction (choking):

- First ask “are you choking?” If the casualty can speak – do not interfere. Encourage them to cough and reassure them. Continue to monitor.
- If they cannot speak and it appears they have a **Severe Airway Obstruction**, bend the casualty forward and support the upper front of their chest while using your other hand to give back blows between the shoulder blades. Check to see if each back blow has relieved the airway obstruction. If the blockage hasn't cleared after 5 blows, try chest thrusts
- Place one hand in the middle of the casualty's back and the other arm across their chest. Using your hand on the chest, perform 5 chest thrusts like CPR compressions but slower and sharper. Check to see if the blockage has cleared between each chest thrust
- If the casualty is still choking, call 000 / 112 and alternate 5 back blows and 5 chest thrusts until emergency help arrives. If at any point the casualty becomes unconscious, follow DRS ABCD

Topic 5.1 - Choking Adult or Child

Choking Infants

Full blockage choking occurs when food or other small objects lodged in a child's throat or airway (trachea), which prevents oxygen from getting to the lungs and brain. Food is among the objects most likely to cause choking in a child. Children who begin to choke with a **Severe Airway Obstruction** typically cannot breathe, cry or make noise. As choking persists, a child's face may become initially red, then turn blue as the body runs out of oxygen.

DO NOT perform the following steps if the infant has a **Mild Airway Obstruction** and is coughing forcefully and effectively or is crying strongly – either of which can dislodge the object on its own.

Topic 5.1 - Choking Adult or Child

Choking Infants

For a Severe Airway Obstruction (Choking):

- Lay the infant face down, along your forearm
- Hold the infant's chest in your hand and support the jaw with your fingers
- Point the infant's head downward, lower than the body
- Give up to 5 sharp, forceful blows between the infant's shoulder blades
- Use the heel of your free hand
- Check to see if each back blow has relieved the airway obstruction
- The aim is to relieve the obstruction with each blow rather than to give all five blows



Topic 5.1 - Choking Adult or Child

Choking Infants

If object isn't free after 5 blows:

- Turn the infant face up. Use your thigh or lap for support. Support the head
- Place 2 fingers on the middle of the infant's breastbone
- Give up to 5 sharp thrusts down, compressing the chest 1/3 the depth of the chest
- Check to see if each chest thrust has relieved the airway obstruction
- The aim is to relieve the obstruction with each chest thrust rather than to give all five thrusts
- Continue this series of 5 back blows and 5 chest thrusts until the object is dislodged or the infant loses consciousness, in which case you commence CPR



Topic 5.1 - Choking Adult or Child

Choking Infants

If the infant loses consciousness, becomes unresponsive, stops breathing, or turns blue:

- Send for help. Call '000'
- Give infant CPR.
- Try to remove an object blocking the airway ONLY if you can see it
- DO NOT interfere if the infant is coughing forcefully, crying strongly, or is breathing adequately. However, be ready to act if the symptoms worsen
- DO NOT perform these steps if the infant stops breathing for other reasons, such as asthma, infection, swelling or a blow to the head



Topic 5.2 – Bleeding – Internal/External

Bleeding is a very common condition requiring first aid. Bleeding, also termed haemorrhage, occurs when there is a rupture of blood vessels causing a loss of blood. Bleeding can vary from minor to life threatening, depending on which vessels have been damaged.

In the most serious bleeds, arteries (which carry fast flowing blood from the heart) are damaged. An arterial bleed will typically be very fast, bright red and can result in a great loss of blood if not controlled. If damage occurs to the major arteries such as the aorta or femoral arteries, immediate attention is required to prevent death from blood loss. This is referred to as arterial bleeding.



Image by Crystal (Crystl)

Topic 5.2 – Bleeding – Internal/External

Types of Bleeding

- **External bleeding** means there is damage to the vessels and skin, and the blood is leaking outside the body. This is generally easy to see, however this can be hidden beneath clothing and should be checked for during your **DRS ABCD** check. First Aid measures for external bleeding should include controlling blood loss, using sterile, hygienic measures to reduce the risk of infection where possible and watching for signs of shock.
- **Internal bleeding** is the same process as external bleeding, the only difference being the blood is leaking **INSIDE** the body, hence this can be very difficult to detect unless specifically looking for it. When checking for bleeding during your **DRS ABCD** check, you should always include palpation touch of the casualty's abdomen and thighs so that any internal bleeding can hopefully be detected early.

Topic 5.2 – Bleeding – Internal/External

First Aid for Bleeding (minor)

For minor bleeding (cuts, scrapes, etc.) apply pressure with a dressing for about 30 seconds. Clean the wound if necessary, and cover with a sterile or clean dressing.



Topic 5.2 – Bleeding – Internal/External

First Aid for Bleeding (external) (R.I.D.)

First aid of serious bleeds should follow **3** basic steps as listed below:

Rest - Any movement of the injured body part can potentially increase the bleeding and make it harder to control. The body part should be kept still until bleeding is controlled.

Immobilise – Immobilise the bleeding part and restrict movement

Direct Pressure - This step is by far the most important and involves using an absorbent material, ideally a dressing such as sterile gauze. If you do not have this, then a clean towel, a piece of clothing or even just their hand can be used if there is nothing else available. Once the pressure is applied on the wound, a pressure bandage can be used to maintain the pressure by wrapping it firmly around the wound and dressing.



Topic 5.2 – Bleeding – Internal/External

Bleeding (embedded objects)

- This is an object that has punctured the skin and is physically stuck in the casualty. Examples include shrapnel, glass, or even being stabbed by a knife.
- NEVER attempt to remove an embedded object
- A donut bandage should be applied around the object, to reduce the bleeding and to keep the object as still as possible
- Carefully place the bandage over the object without moving the object
- Use a roller bandage to firmly wrap around the donut bandage to keep it in place. This will also apply firm pressure around the object to reduce any bleeding
- Seek medical aid



Topic 5.2 – Bleeding – Internal/External

Bleeding (internal)

Signs of Internal Bleeding:

- bruised, swollen, tender or rigid abdomen
- blood in vomit
- wounds that have penetrated the chest or abdomen

First Aid for Internal Bleeding:

- If the internal bleed is minor, such as some bruising, cold packs can be applied to the area to reduce the swelling and relieve pain
- If you suspect more severe internal bleeding, carefully monitor the casualty and call 000 / 112 immediately

Topic 5.2 – Bleeding – Internal/External

Bleeding (head/skull)

- If a casualty has sustained a significant head injury, then internal bleeding into the brain should be considered
- If the casualty complains of a severe headache, or seems confused, disorientated or loses consciousness after a head injury you should call 000 / 112 immediately
- If the casualty is bleeding from the head after a trauma, a first aider should not apply firm direct pressure on the wound if there is a risk of a skull fracture
- If the skull feels 'spongy' or you are not sure, indirect pressure can be applied by wrapping a bandage around the head with minimal risk of causing brain injury by pushing a fractured skull into the brain



Topic 5.2 – Bleeding – Internal/External

Bleeding (head/skull)

Treatment:

- If concussion, bleeding inside the skull, or a skull fracture is suspected, the casualty should be placed in a quiet and dark room, with the head and shoulders raised slightly on a pillow or blanket - (lying down the casualty will help reduce the risk of fainting)
- Try not to move the casualty unnecessarily, and avoid moving the casualty's neck. Call 000 / 112
- If a skull fracture is not suspected use firm direct pressure on the wound with a sterile dressing or clean cloth
- If the area feels spongy, do not apply direct pressure, as the casualty may have a skull fracture
- Seek medical aid, watch for changes, and apply DRS ABCD as required

Topic 5.2 – Bleeding – Internal/External

Bleeding (ear)

- Bleeding from the ear is a sign of internal bleeding within the skull
- Medical aid should be sought for all situations where this occurs

Treatment:

- If the casualty is conscious ask them to get comfortable (sitting up preferred) and lean towards the injured side, with the effected ear facing toward the floor
- Place an absorbent cloth underneath to collect the blood
- If the casualty is unconscious, then follow DRS ABCD, and if they are breathing, place the casualty into the recovery position with the effected ear facing down
- Call 000 / 112 and do not leave the casualty unattended

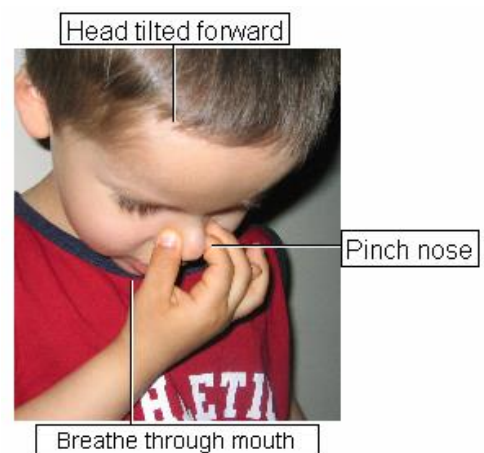
Topic 5.2 – Bleeding – Internal/External

Bleeding (nose)

Bleeding from the nose is fairly common and normally not serious, unless bleeding continues for more than 20 minutes

Treatment:

- Ask the casualty to sit down, with their head tilted forwards
- The casualty should pinch the soft part of their nose while keeping their head tilted forward to allow the blood to clot
- The casualty should breathe through their mouth and avoid speaking, swallowing, coughing, spitting or sniffing because this may disturb blood clots that may have formed in the nose
- Cold compressions applied to the back of the neck can also assist in reducing the bleeding
- If the bleeding does not stop within 20 minutes, seek immediate medical help



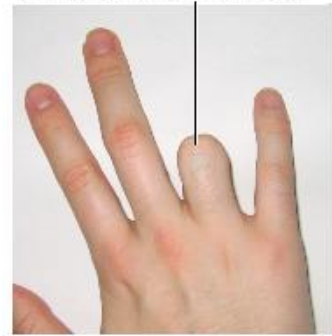
Topic 5.2 – Bleeding – Internal/External

Amputation (complete)

Amputation is the removal of any part of the body, either by surgery, disease or traumatic event.

Amputation accidents around the home or workplace normally involve a finger or a toe. More serious amputations include legs or arms and can occur in workplaces using industrial equipment.

Amputated 4th Digit



Topic 5.2 – Bleeding – Internal/External

Amputation (complete)

First Aid - Stop the bleeding: (R.I.D.)

- In the event of amputation of a body part first aid involves controlling the bleeding and looking after the casualty, finding the amputated part and transporting the casualty to hospital or calling 000 / 112.
- Lay the casualty down (REST)
- Apply DIRECT PRESSURE using a sterile gauze, or if unavailable, a clean cloth
- Continue direct pressure for at least 15 minutes
- IMMOBILISE the bleeding part and restrict movement
- If the bandaging soaks through with blood, apply another on top and continue direct pressure

Topic 5.2 – Bleeding – Internal/External

Amputation (complete)

Amputated Parts:

- Care should be taken for the amputated part, as it may still be possible to surgically reattach it. The most important thing would be to keep it cool and clean
- Cover and wrap the cleaned amputated part in sterile dressing then place it in a plastic resealable bag
- Place the sealed bag on ice or in a container of cold water
- Never place the amputated part directly on ice as that could damage the tissue
- Transport the amputated part with the casualty to the nearest hospital

Topic 5.2 – Bleeding – Internal/External

Amputation (Partial)

- Partial amputation is where a limb has been severely damaged, but is still partially attached to the body
- Wrap or cover the injured area with a sterile dressing or clean cloth
- Apply direct pressure to reduce the bleeding if necessary
- Remember not to cut off blood flow to the area by compressing the area too tightly
- Gently splint the injured area to prevent movement or further damage
- Transport the casualty to medical assistance or call 000 / 112

Topic 5.2 – Bleeding – If Severe or Life-Threatening:

(Following excerpt from ANZCOR Guideline 9.1.1)

Bleeding should be managed as severe, life-threatening bleeding in the following situations:

- Amputated or partially amputated limb above wrist or ankle
- Shark attack, propeller cuts or similar major trauma to any part of the body
- Bleeding not controlled by local pressure
- Bleeding with signs of shock, i.e. pale and sweaty plus pulse rate >100 and/or decreased level of consciousness



Topic 5.2 – Bleeding – If Severe or Life-Threatening:

(Following excerpt from ANZCOR Guideline 9.1.1)

Controlling the bleeding takes priority over airway and breathing interventions

- If available, use standard precautions, e.g. gloves, protective glasses
- If bleeding from a limb, & not controlled by pressure, apply an arterial tourniquet *
- If wound site is not suitable for tourniquet, or from a limb when a tourniquet is not available or has failed to stop the bleeding, apply a haemostatic dressing *
- For the majority of non-life-threatening cases, follow DRSABCD, where control of bleeding follows establishing airway and commencing CPR if required

* If trained in its use and one is available

Topic 5.2 – Bleeding – If Severe or Life-Threatening:

Arterial Tourniquet (Following excerpt from ANZCOR Guideline 9.1.1)

- Arterial tourniquets should only be used for life-threatening bleeding from a limb, where the bleeding cannot be controlled by direct pressure
- Commercially manufactured windlass tourniquets such as those based on military designs are more effective than improvised tourniquets. An example of a military tourniquet is shown
- Effective use of commercial tourniquets is optimal when first aid providers are trained in proper application techniques
- 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



CAUTION: A tourniquet **should not** be applied over a joint or wound, and must not be covered up by any bandage or clothing.

Topic 5.2 – Bleeding – If Severe or Life-Threatening:

Arterial Tourniquet (Following excerpt from ANZCOR Guideline 9.1.1)

- If a tourniquet does not stop the bleeding its position and application must be checked. Ideally the tourniquet is not applied over clothing nor wetsuits and is applied tightly, even if this causes local discomfort
- If bleeding continues, a second tourniquet (if available) should be applied to the limb, preferably above the first
- If a correctly applied tourniquet(s) has failed to control the bleeding consider using a haemostatic dressing in conjunction with the tourniquet
- The time of tourniquet application must be noted and communicated to emergency/paramedic personnel
- Once applied, the casualty requires urgent transfer to hospital and the tourniquet should not be removed until the casualty receives specialist care

NOTE: An elastic venous tourniquet (generally used to assist with drawing blood samples) is **not suitable** for use as an arterial tourniquet

Topic 5.2 – Bleeding – If Severe or Life-Threatening:

Arterial Tourniquet (Following excerpt from ANZCOR Guideline 9.1.1)

Improvised tourniquets are unlikely to stop all circulation to the injured limb without risk of tissue damage. Improvised tourniquets which do not stop all circulation can increase bleeding.

Nonetheless, in the context of life-threatening bleeding, an improvised tourniquet is likely to be better than no tourniquet. Tourniquets, ideally of a similar broad width to commercial types, can be improvised using materials from a first aid kit (e.g. triangular bandage, elastic bandage) from clothing, a surfboard leg rope or other available similar items.

Improvised tourniquets should be tightened by twisting a rod or stick under the improvised tourniquet band, similar to the windlass in commercial tourniquets.

Topic 5.2 – Bleeding – If Severe or Life-Threatening:

Haemostatic dressings (Following excerpt from ANZCOR Guideline 9.1.1)

- Haemostatic dressings are impregnated with agents that help stop bleeding.
- When available and the first aid provider is trained in their use, haemostatic dressings are of most value in the following situations:
 - Severe, life-threatening bleeding not controlled by wound pressure, from a site not suitable for tourniquet use
 - Severe, life-threatening bleeding from a limb, not controlled by wound pressure, when the use of a tourniquet(s) alone has not stopped the bleeding, or a tourniquet is not available
- Haemostatic dressings must be applied as close as possible to the bleeding point, held against the wound using local pressure (manually initially) then held in place with the application of a bandage (if available). Haemostatic dressings should be left on the bleeding point until definitive care is available

Topic 5.2 – Bleeding – If Severe or Life-Threatening:

Summary Statement (Following excerpt from ANZCOR Guideline 9.1.1)

The need to control the bleeding is paramount.

The risks associated with the first aid use of tourniquets and haemostatic dressings are less than the risk of uncontrolled severe, life-threatening bleeding.

These adjuncts provide temporary bleeding control and rapid transfer to hospital remains critically important.

Image: Kaolin impregnated gauze (an example of a haemostatic dressing)



Topic 5.3 - Wound Management

There are many different recommendations for wound management depending on the type, location and severity of the wound.

Basic Care of a Wound

Consists of the following fundamental steps:

- 1) Washing your hands
- 2) Cleaning the wound and around the wound
- 3) Protecting the wound
- 4) Changing the dressing
- 5) Monitor for infection

1 – Wash Your Hands

Thoroughly wash your hands with soap and running water. Rinse hands and dry completely. Wear disposable protective gloves. Always follow this process before administering first aid. This helps avoid cross-infection.



Topic 5.3 - Wound Management

2 - Cleaning the Wound and Around the Wound

Use clear running water under moderate pressure to rinse the wound. Washing the wound removes much of the dirt, debris, and bacteria as possible which helps to reduce the risk for infection.

Also, clean around the wound with soap and a washcloth. If after washing, some dirt or debris remain, use sterile tweezers to remove the particles.

Gently pat the wound site and surrounding area dry by using non fluffy material such as a pad of tissues or a clean towel.



Topic 5.3 - Wound Management

3- Protecting the Wound

- A **dressing** refers to the material that is placed directly over the wound
- It is preferably sterile to reduce the chance of infection, and a material that will not readily stick to the wound and cause difficulty removing
- The main aim is to provide a fairly sterile environment for wound healing to occur, and to assist in reducing the risk of infection
- A **pad** is an absorbent material placed over the dressing. It assists in controlling bleeding and absorbing any pus or fluids that may seep from the wound
- A **bandage** is placed over the pad, and can be used for compression to reduce bleeding, and to keep the pad in place



Topic 5.3 - Wound Management

4 – Changing the Dressing

Change the dressing regularly at least once a day or whenever the dressing becomes soiled or wet. Especially for sensitive skin use hypoallergenic dressings.

Once the wound has healed enough to make infection unlikely, the wound can be left uncovered as exposure to air will aid in the healing rate of the wound.



Topic 5.3 - Wound Management

5 - Monitor for Infection

If the casualty experiences any of the following signs in their wound a medical opinion should be advised as infection is likely:

- Redness
- Swelling
- Pus or discharge from the wound
- Pain that is not improving
- Fever, or not feeling well generally

Topic 5.3 - Wound Management

Additional Risks

Certain wounds are at a high risk of infection, and require further medical assessment and supervision.

These include:

- Animal and human bites
- If the wound was caused by a particularly dirty or rusty object
- If the casualty has pre-existing conditions that put them at a high risk, such as diabetes or if they are in any way immuno-suppressed (their immune system is compromised), such as with chemotherapy treatment
- Burn wounds are also at a high risk of infection, especially partial and full thickness burns

Topic 5.4 - Projectile Objects (Embedded)

There are many types of projectile objects that can cause injury – from glass or shrapnel, knives, metal objects such as rods to bullet wounds. If a projectile object becomes embedded in the skin, you should follow the first aid principles of embedded objects. This involves forming a donut bandage to secure the object (reducing any movement that can potentially cause more injury and damage) and assist in reducing the bleeding by providing indirect pressure to the area.

NEVER attempt to remove an embedded object. If the object is large and deep, the casualty will likely require surgery to remove it. The main thing is to reduce bleeding, keep the object secure and keep the casualty calm until the ambulance arrives.

Topic 5.5 - Abdominal Injuries

There are many types and causes of abdominal injury. Basic first aid principles should be followed depending on the type and cause of the injury, for example:

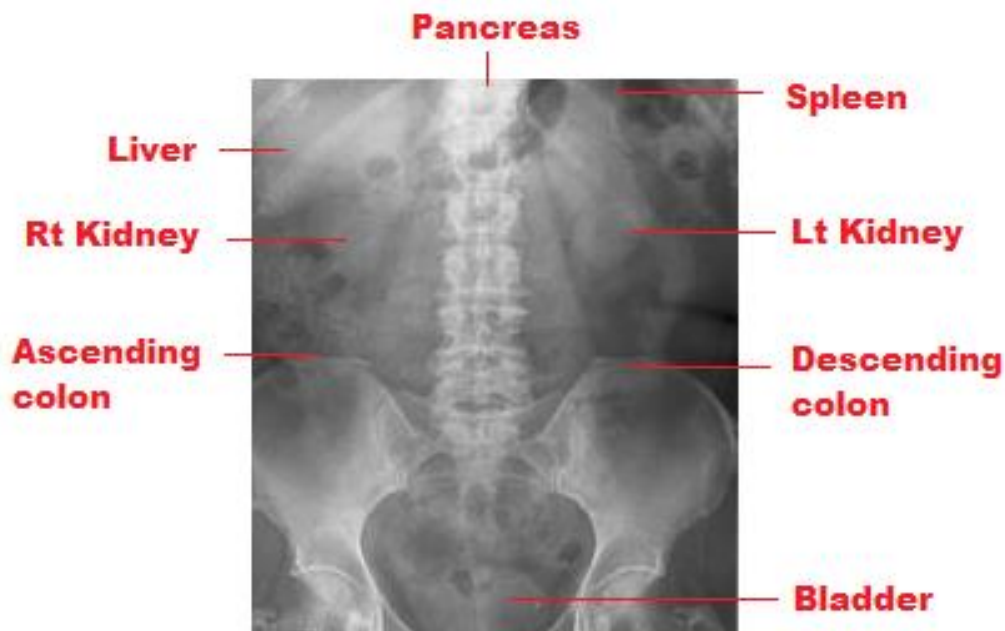
Penetrating Wounds

- Follow guidelines for treatment of an embedded object. Use doughnut bandage to avoid movement of the object and to control bleeding

Note: If any internal organs are protruding from the body, DO NOT push them back in. Apply a damp dressing to prevent them from drying out and call 000 / 112 immediately

Topic 5.5 - Abdominal Injuries

Locations of some major abdominal organs



Topic 5.6 – Crush Injuries

This is an injury that occurs because of pressure from a heavy object onto a body part. A crush injury may also arise from squeezing of a body part between two objects. Depending on their severity, crush injuries can be complicated by bleeding, bruising, broken bones, open wounds, poor circulation, or breakdown of muscle as above.

- If physically possible and safe to do so, remove any crushing forces as soon as possible
- Call 000 immediately and keep the casualty calm. Do not leave the casualty unattended
- Control any bleeding using light to moderate pressure (avoid placing firm pressure on the abdomen unless required to stop serious bleeding)
- The casualty should be monitored and if they become unconscious follow **DRS ABCD**

CAUTION: A tourniquet should not be used for first aid treatment of a crushed limb

Topic 5.7 - Shock

Shock is a life threatening condition that occurs when the body is not getting enough blood flow. Shock can damage multiple organs, and requires immediate medical treatment as it can worsen rapidly.

There are many specific types of shock including:

- Hypovolemic shock
- Cardiogenic shock
- Anaphylactic shock
- Neurogenic shock
- Obstructive shock

Topic 5.7 - Shock

Shock may be caused by any of the following:

- Loss of blood through internal or external bleeding
- Loss of plasma or fluids, i.e. burns, vomiting, dehydration
- Allergic reactions (Anaphylaxis)
- Infections
- Heart trouble, heart attack, or stroke
- Poisoning by chemicals, gases, alcohol, or drugs
- Snake and animal bites
- Respiratory problems, chest trauma
- Lack of oxygen
- Obstructions caused by choking
- Injuries of all types, both severe and minor

Topic 5.7 - Shock

Signs & Symptoms

The signs and symptoms will vary slightly with the specific types of shock. The most important thing is for a first aider to recognise the signs and symptoms of a casualty going into shock so that they can assist the casualty and call 000 / 112 when appropriate.

Symptoms may include:

At first:

- Rapid pulse
- Pale grey blue skin
- Capillary test will be slower
- Sweating and cold clammy skin



Topic 5.7 - Shock

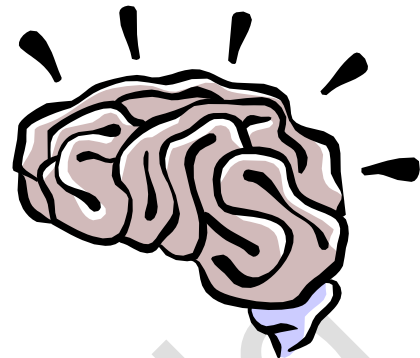
Symptoms may include:

As shock develops:

- Weakness and giddiness
- Nausea, and possibility vomiting
- Thirst
- Rapid shallow breathing
- A weak thready pulse

As the brain's O₂ levels drop:

- Restless, anxious and even aggressiveness
- Yawn and gasp for air
- Unconsciousness
- Finally, the heart will stop



Topic 5.7 - Shock

First Aid

- If unconscious and breathing, place into the recovery position
- If conscious – lay the casualty down flat onto their back
- Promptly control any bleeding. Manage and treat all other injuries
- Call 000 for professional assistance
- Make the casualty comfortable, i.e. loosen clothing
- Keep the casualty warm. Cover with a blanket if cold
- Reassure and keep the casualty calm
- You may moisten the casualty's lips – but be sure that they do not eat or drink
- If casualty becomes unresponsive and not breathing normally, follow **DRS ABCD**

Module 6 - Burns

In this lesson, you'll be learning about:

- 1) The Skin
- 2) Burns

Estimated Completion Time: 15 minutes

Topic 6.1 -The Skin

The skin is a waterproof cover designed to protect the body's cells from damage, drying out, infection and from temperature changes.

The Epidermis Layer

- This is outermost layer of the skin and is especially thick on the palms of the hands and the soles of the feet
- There are no blood vessels in the epidermis but its deepest layer is supplied with lymph fluid

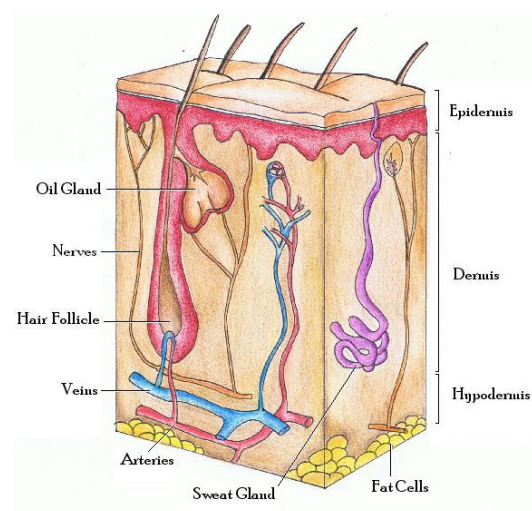
Topic 6.1 -The Skin

Dermis or Corium Layer

The dermis is a tough, elastic layer containing white fibrous tissue interlaced with yellow elastic fibres

Many structures are embedded in the dermis including:

- Blood vessels
- Lymphatic capillaries and vessels
- Sensory nerve endings
- Sweat glands and their ducts
- Sebaceous glands
- Hair follicles, hair bulbs and hair roots



Topic 6.1 -The Skin

Hypodermis or Subcutaneous Skin Layer

- This is the deepest skin layer. It connects or binds the dermis above it to the underlying organs
- This layer is mainly composed of loose fibrous connective tissue and fat (adipose) cells interlaced with blood vessels
- Females have a hypodermis that is generally about 8% thicker than in males
- The functions of the hypodermis include storing of lipids, insulation, cushioning of the body and temperature regulation

Topic 6.2 - Burns

Burns are body tissue injuries caused by contact with dry and/or wet heat. When a burn occurs, the heat destroys the epidermis (top layer of skin). If the burn progresses, the dermis (second layer) is injured or destroyed. Burns break the skin and can cause infection, fluid loss and loss of temperature control. Deep burns can damage muscle, tissue and bone.

Burns are classified by the source, such as heat, cold, chemical, electricity, or radiation. They are also classified by depth. Due to the increased risk of infection with burns you should attempt not to touch it with your hands or apply lotions or creams.

The three classifications of superficial burns, partial thickness burns and full thickness burns will help you determine emergency care.

Image by Kronoman



Topic 6.2 - Burns

Superficial Burn

- The least serious burns are those in which only the outer layer of skin (epidermis) is burned. The skin is usually red, with swelling and pain sometimes present
- The inner layer of skin hasn't been affected
- Treat a superficial burn as a minor burn unless it involves substantial portions of the hands, feet, face, groin, buttocks, or a major joint

Image by QuinnHK



Topic 6.2 - Burns

Partial Thickness Burn

- When the first layer of skin has been burned through and the second layer of skin (dermis) is also affected, the injury is termed a partial thickness burn
- Blisters develop and the skin takes on an intensely reddened, splotchy appearance
- Partial thickness burns produce severe pain and swelling
- If the partial thickness burn is no larger than 2 to 3 inches in diameter, treat it as a minor burn

Image by Snickerdo



Topic 6.2 - Burns

Full Thickness Burns

- The most serious burns are painless and involve all layers of the skin
- Fat, muscle and even bone may be affected
- Areas may be charred black or appear dry and white
- Difficulty inhaling and exhaling, carbon monoxide poisoning or other toxic effects may occur if smoke inhalation accompanies the burn

Image by Craig0927



Topic 6.2 - Burns

Treatment for a Burn (Heat, Thermal or Contact):

- Always monitor a burn victim for signs and symptoms of shock, seek emergency assistance
- Immediately cool burns with cool running water for 20 minutes
- If possible, without causing further tissue damage, remove all rings, watches, jewellery or other constricting items from the affected area
- Remove wet, clothing soaked with hot liquids if non-adherent
- Cover the burnt area with a sterile, non-stick dressing
- Prevent the casualty from the risk of hypothermia by covering unburnt areas



Topic 6.2 - Burns

Note:

The objective of first aid treatment of burns should be to **stop** the burning process, **cool** the burn and **cover** the burn. This will provide pain relief and minimize tissue loss.

- Do not use ice or iced water to cool burns – these may cause further injury
- Do not break blisters
- Do not apply ointments, creams or powders other than hydrogel
- Do not peel off clothing or burning materials that is stuck to the casualty
- Where possible elevate burnt limbs to minimise swelling

CPR First Aid

Module 7 – Head Injuries and Illnesses

In this lesson, you'll be learning about:

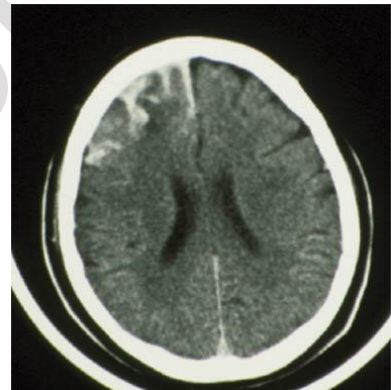
- 1) Head Injuries
- 2) Spinal Injuries
- 3) Altered Conscious States – The Brain
- 4) Drugs and Alcohol
- 5) Poisoning and Chemical Exposure
- 6) Eye Injuries
- 7) Stroke

Estimated Completion Time: 15 minutes

Topic 7.1 - Head Injuries

Head injuries are a common cause of hospitalisation, especially in children. In adults these can occur from motor vehicle accidents, a fall or assault, an occupational accident, sport injury etc.

- If the casualty becomes unconscious, **DRS ABCD** should be followed, and bleeding from the skull should be controlled
- If bleeding occurs from the ear the casualty should be placed in the recovery position with the affected side down, to allow blood to drain out of the skull
- All casualties who have suffered a head injury (including a minor head injury) should be referred onto further medical aid to fully assess and monitor the casualty



Topic 7.1 - Head Injuries

What to look out for

- Any loss of consciousness
- Signs of injury or face such as bleeding or bruises
- Any change – such as becoming groggy or drowsy
- Blurred vision
- Headache
- Dizziness or vertigo
- Confusion or memory loss
- Seizures
- Bleeding from the ears, nose or mouth

Topic 7.1 - Head Injuries

Management

- The casualty should be closely monitored. Call an ambulance immediately if the casualty becomes unconscious or consciousness is altered at any time
- Follow **DRS ABCD**, and ensure that the airway is clear while protecting the neck
- Any bleeding from the head should be controlled, being careful not to place pressure onto the skull if a fracture is suspected
- If the skull feels 'spongy' DO NOT place any direct pressure, but rather use pads and indirect pressure to control bleeding

Topic 7.2 - Spinal Injuries

The SPINAL COLUMN consists of a series of interconnected bones, called vertebrae, which enclose the SPINAL CORD, an integral part of the central nervous system

The spinal column is divided into:

- the **cervical spine** (neck), 7 vertebrae
- the **thoracic spine** (chest), 12 vertebrae
- the **lumbar spine** (back), 5 vertebrae
- fused vertebrae of the **sacrum**
- a small vertebra called the **coccyx**

Spinal injuries should be suspected after any serious trauma, such as vehicle accidents, a fall from height greater than 1.5m, assault, a workplace accident (such as falling from a ladder) or sport injury (such as falling from a horse, or heavy rugby tackle).



Topic 7.2 - Spinal Injuries

Signs and Symptoms:

- Such as pins and needles or numbness in the upper or lower limbs may indicate the spinal cord is already damaged
- Weakness or inability to move limbs
- Pain around the neck or spine
- Headache, dizziness, altered conscious state
- Nausea
- Breathing difficulties
- Shock
- Loss of bladder or bowel control
- If you notice any of the above, an ambulance should be contacted immediately

Topic 7.2 - Spinal Injuries

The **priorities of management** of a suspected spinal injury are:

1. Calling for an ambulance
2. Management of airway, breathing and circulation
 - If unconscious, follow **DRS ABCD**. Management of the casualty's airways takes precedence over any suspected spinal injury
 - Remember, **DRS ABCD** and CPR should not be avoided when a spinal injury is suspected
3. Spinal care
 - If conscious but complaining of pain, weakness or altered sensation in the neck and/or limbs, instruct the casualty to remain as still as possible
 - Avoid moving the casualty unless necessary (if they are in immediate danger or become unconscious)
 - If movement is necessary, take additional steps to immobilise the neck and spine to avoid movement in any direction such as manually holding the head or neck

Topic 7.3 - Altered Conscious States / The Brain

There are a large number of conditions that can lead to acute disruption of a casualty's cognitive function. These can include a direct blow to the head, drug or alcohol abuse, and low blood sugar caused by diabetes.

The Human Brain

The human brain is a uniquely complex and powerful organ. At any one time, the brain is registering sensations such as eyesight, hearing and smell, computing and filtering data and sending appropriate responses.

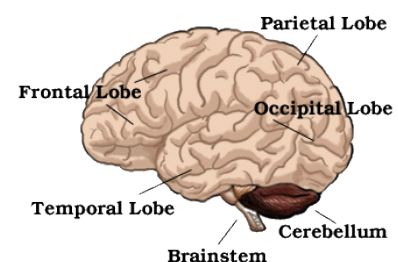
In basic terms, the brain can be divided into 4 main parts:

- Cerebrum
- Diencephalon
- Cerebellum
- Brain Stem

Topic 7.3 - Altered Conscious States / The Brain

The **Cerebrum** is the largest part of the human brain and is associated with higher function such as conscious thought, intellect and action. It is divided typically into 4 sections called lobes.

- **Frontal Lobe:** Reasoning, problem solving, emotions and movement
- **Parietal Lobe:** Movement, recognition,
- **Occipital Lobe:** Visual Processing
- **Temporal Lobes:** Auditory, memory and speech



The **Cerebellum** or literally 'little brain' is predominantly responsible for coordination of movement, balance and posture.

The **Brain Stem** is responsible for the vital life functions such as heartbeat, breathing, blood pressure etc.

Topic 7.3 - Altered Conscious States / The Brain

Levels of Alertness

Another way to assess the extent of injury to the brain is to ask questions about the following:

- TIME (Does the casualty know what the time is? What the date is? What year is it?)
- PERSON (Does the casualty remember their own name?)
- PLACE (Does the casualty know where they are?)
- EVENT (Does the casualty know how they got here? What they are doing here?)

All casualties who seem to have suffered a head injury (even a minor head injury) should be assessed by a health care professional before continuing with sport or other activity.

Topic 7.4 – Drugs, Alcohol Poisoning and Illicit Drug Use

Alcohol presents a very common cause for altered mental status and can be very serious and even life-threatening if not properly managed.

In short, someone under the influence has a decreased ability to:

- Recognise danger and react appropriately
- Control their emotions or violent tendencies and feel physical pain
- Rationally consider a situation and choose a logical course of action
- Evaluate decisions and consequences of the decisions they make



Topic 7.4 – Drugs, Alcohol Poisoning and Illicit Drug Use

Alcohol

Alcohol is typically a depressant and impairs judgment, vision, speech, co-ordination, reflexes, balance and cognitive function.

Management of Acute Alcohol / Drug Poisoning

- If you notice a change in a person's conscious state, you should not leave them unattended
- If a casualty's conscious level is dropping, it can continue to drop very quickly as more alcohol is absorbed in the brain
- If the casualty is violent you can monitor them from a distance
- Be prepared to call an ambulance if the casualty's condition changes
- Remember: Do not force yourself on the casualty as they may become violent. Use assistance of friends if possible

Topic 7.4 – Drugs, Alcohol Poisoning and Illicit Drug Use

If an Intoxicated Casualty Becomes Unconscious

- Follow **DRS ABCD**
- Position casualty in recovery position to protect airways
- Remember: Vomiting is a very likely outcome, and if unattended, this can compromise their airways by causing aspiration or blockage
- Call 000. Emergency medical care is required to prevent further absorption of alcohol and to monitor the casualty until they regain consciousness

Topic 7.4 – Drugs, Alcohol Poisoning and Illicit Drug Use

Drugs

Some common types of drugs:

Marijuana

This is one of the most frequently used illicit drugs in society, and has similar effects as stimulants, depressants and hallucinogens.



Cocaine

This is a very strong stimulant to the central nervous system, and is very addictive. It can be taken via injection, smoking or snorting.



Topic 7.4 – Drugs, Alcohol Poisoning and Illicit Drug Use

Ecstasy

This is taken as a capsule or tablet. This affects the serotonin system which plays a large role in regulating mood, sleep, aggression and sensitivity to pain, and as such can affect all of these



LSD

This is a synthetic hallucinogen that is found in tablet, capsule or liquid form (added to paper, sugar cubes etc.)

General signs and symptoms of substance misuse include:

- Increase in pulse
- Increased respiration
- Raised temperature
- Sweating
- Irritability
- Nausea and vomiting
- Odd behaviour

Topic 7.5 – Poisoning and Chemical Exposure

A Poison is any substance that causes injury, illness or death. In terms of risk, it is estimated that up to 80% of all poisonings occur at home, particularly in the kitchen or bathroom. Hence the old saying 'precaution is better than cure' is very relevant.



Common Poisons

- Paracetamol, this is the most common pharmaceutical overdose leading to hospital admission and a common cause of poisoning in children
- Household products including glues, hair spray, aerosol paints, nail polish, petrol
- Household chemicals including dishwasher detergent
- Some varieties of fungi (such as certain mushrooms and toadstools)
- Cyanide



Topic 7.5 – Poisoning and Chemical Exposure

Signs and Symptoms

These can be very variable, as they depend on the nature of the poison and the amount consumed.

- Difficulty breathing, wheezing or shortness of breath
- Burning in the throat and mouth
- Nausea
- Vomiting
- Altered mental state (including hyperactivity, drowsiness, confusion, headache)
- Unconsciousness, or even cardiac arrest

Topic 7.5 – Poisoning and Chemical Exposure

Management

- The first step is to identify the suspected poison and ensure that it is not a danger to yourself or others
- If safe to do so, attempt to separate the casualty from the substance
- If the poison is swallowed and the casualty is conscious give them a sip of water to wash out their mouth. DO NOT ask them to swallow or attempt to make them vomit
- Once separated from the poison, contact the Poisons Information Centre on 131126. This is a 24-hour national hotline, and operators can instruct you on what to do. They will need to know what type of poison is involved, and approximately how much has been ingested/inhaled
- Some poisons have specific antidotes – if possible, attempt to identify the poison (i.e. check for any nearby containers or bottles) as this will significantly assist diagnosis and treatment

Topic 7.5 – Poisoning and Chemical Exposure

You will need to:

- Identify the poison
- DO NOT give anything by mouth to the casualty unless instructed
- DO NOT attempt to make the casualty vomit unless instructed
- Call the Poisons Information Centre (PIC) and follow their instructions
- You may be advised by PIC to call 000
- While waiting, closely monitor the casualty – do not leave them unattended



Topic 7.5 – Poisoning and Chemical Exposure

Chemical Exposure - Capsicum spray (OLEORESIN SPRAY)

Capsicum spray is an extract of hot peppers consisting of capsaicin and derivatives. It is a lachrymatory agent, meaning that it is designed to irritate the eyes to cause tears and pain. It acts within seconds of being sprayed in a person's face causing stinging, tearing and blepharospasm (uncontrolled muscle spasm), causing the eyes to shut.

It also has an effect on the respiratory system, causing bronchoconstriction and coughing as well as mucous secretion, shortness of breath and laryngeal paralysis (causing inability to speak). The effects can last for up to 30 to 40 minutes.



Topic 7.5 – Poisoning and Chemical Exposure

Chemical Exposure - Capsicum spray (OLEORESIN SPRAY)

Treatment:

- Assess airway, breathing and circulation
- Continuously rinse with copious amounts of water or saline until the symptoms subside
- Irrigate eyes with copious amounts of water
- Encourage blinking, this will help flush out the spray from the eyes
- Treat bronchospasm with an asthma inhaler
- If at any stage the casualty becomes unconscious, follow **DRS ABCD**



Topic 7.6 – Eye Injuries

Blunt Trauma to the Eye

The eye is susceptible to direct knocks e.g., sporting balls, fistfight, finger poke, traffic accident, workplace tools, etc.

First Aid Treatment

- Follow DRS ABCD – Call 000
- Rest casualty in semi-sitting position and reassure
- Ask casualty to keep injured eye closed
- Place a cool damp cloth onto injured eye
- Cover the injured eye with a sterile eye pad and gently secure into place using a bandage or hypoallergenic tape
- Monitor casualty until arrival of medical personnel

Topic 7.6 – Eye Injuries

Foreign Body in the Eye

Flicking sand, sawdust, flying slivers of wood, metal particles, glass shards, stone, grit and other material are notorious for causing eye injuries when projected into the eye.



First Aid Treatment

- Follow DRS ABCD
- Use a clean wet cloth to remove any particles from the area surrounding the eye
- If the small foreign object is visible, use damp cotton swab to remove
- If not removed, flush the eye with a steady constant stream using saline or clean water. Tilt the casualty's head, while gently pulling the eyelid as you flush the eye
- If the lodged object can't be removed, cover the injured eye with a sterile eye pad and gently secure into place using a bandage or hypoallergenic tape
- Seek medical attention

Image - A small piece of iron has lodged the margin of the cornea by E van Herk - E van Herk, CC BY-SA 3.0,

Topic 7.7 - Stroke

A **stroke**, otherwise called a cerebrovascular accident (CVA), is an acute disruption to the blood supply within the brain.

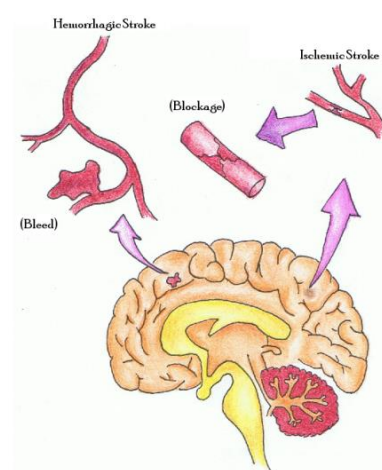
A stroke is a medical emergency and is the second most common cause of death after heart disease. Without prompt medical intervention, there can be substantial neurological damage or even death.

Ischaemic Stroke

- This is by far the most common cause of stroke
- In ischaemic stroke, a blood vessel becomes either partially or totally blocked by either a blood clot or debris

Haemorrhagic Stroke

- This occurs when a blood vessel ruptures and bleeds into the brain



Topic 7.7 - Stroke

**Signs of Stroke can easily be remembered by:
F.A.S.T.**

- **Facial Weakness:** Has their mouth or eye drooped? Can they smile?
- **Arm weakness:** Can the person raise both arms?
- **Speech difficulty:** Is their speech clear and easily understood?
- **Time to act fast:** Immediately call 000 for an ambulance

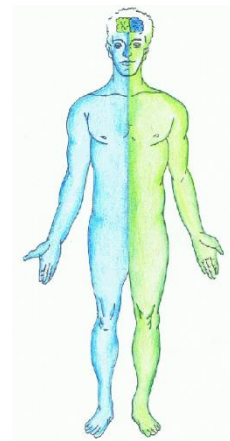


Topic 7.7 - Stroke

The most well-known symptom of a stroke is one-sided weakness or numbness, and is generally on the opposite side of the body as the stroke (depending on which part of the brain is affected).

Other Signs and Symptoms

- Difficulty in swallowing
- Dizziness, an unexplained fall or loss of balance
- Loss of vision, sudden blurred or decreased vision in one or both eyes
- Abrupt onset of a headache, unusually severe
- Sleepiness, drowsiness
- Confusion
- Level of consciousness is reduced



Topic 7.7 - Stroke

There are 3 basic tasks you can get the casualty to perform if you believe they are having a stroke:

- Ask the casualty to smile
- Ask the casualty to raise both their arms, and to keep them raised
- Ask the casualty to repeat a simple sentence after you, (e.g. "The train was late today")

Difficulty performing any of these tasks may indicate an early stroke.

At times the signs are not very clear. The casualty may be able to talk but is incoherent and not making much sense.

Prompt transportation to a hospital is vital by calling 000/112. With early diagnosis and intervention, the severity of the stroke can be drastically reduced, and the casualty's outcome can be improved.

Topic 7.7 - Stroke

Management

- Call 000 **immediately** if a stroke is suspected or in doubt. Time is critical
- Keep the casualty comfortable until the ambulance arrives
- Do not give anything to drink or to eat
- Raise and support their head and shoulders and monitor the casualty's airway
- Do not leave the casualty unattended, as their condition may become worse very quickly
- Administer oxygen if available and trained to do so
- Provide reassurance if casualty is conscious
- If the casualty becomes unconscious but is breathing normally, place into the recovery position
- If the casualty becomes unconscious and is not breathing normally, commence CPR

Module 8 – Skeletal and Soft Tissue Injuries

In this lesson, you'll be learning about:

- 1) Fractures
- 2) Dislocations
- 3) Sprains and Strains
- 4) Bruises

Estimated Completion Time: 15 minutes

Topic 8.1 - Fractures

A **fracture** is the medical term used to describe any break in the cortical surface of a bone. It should be clarified that a break and a fracture are the same thing. Fractures can occur through a variety of mechanisms, such as a direct blow to a bone (motor vehicle accident or being punched in the face).

Types of Fractures

There are 3 main classifications of fractures that first aiders need to be concerned with and be aware of.

- Closed fracture
- Open Fracture
- Complicated fracture



Topic 8.1 - Fractures

A **closed fracture** - refers to a break with no penetration through the skin. This is the simplest type of fracture.

An **open fracture** - is penetration of the bone through the skin (e.g. a bone sticking out of a casualty's arm). These fractures have a greatly increased chance of infection to both the wound and the bone.

A **complicated fracture** - refers to any fracture that has caused additional complications to organs. A fractured rib can be a simple closed fracture, but if it punctures the lung or an abdominal organ such as the spleen this becomes complicated as there are secondary injuries which can be extremely severe.

Topic 8.1 - Fractures

Signs and Symptoms

There are however some signs and symptoms to look out for. Not all of these listed are specific to fractures, but a combination of the following may indicate a fracture.

- A loud snap or crack heard by yourself or the casualty
- An obvious deformity will most likely indicate a fracture
- A shortening of the injured limb
- Loss of movement, or extreme pain on touching the injured area or when attempting to move the part
- Unable to put weight on an injured leg

Topic 8.1 - Fractures

Signs and Symptoms (Continued)

- The amount of swelling is not always an indication of the severity of the injury. However, it should be assumed that when there is significant swelling, there is an underlying injury
- It can be very difficult to judge the extent of an injury based purely on the level of pain indicated by the casualty. In some cases, a person can walk away with a fractured ankle, whereas in other cases a casualty may be in hysterical pain with no significant damage to the part
- In any event, if a fracture is suspected, then prompt, correct first aid can prevent further injury and assist healing, as well as help reduce pain by immobilisation

Topic 8.1 - Fractures

Fracture Treatment

First aid of a suspected fracture involves 3 basic principles:

- 1) Immobilisation, support and elevation of the injured part
- 2) Assessing and treating the casualty's condition e.g. for shock, bleeding or other injuries.
- 3) Obtaining a prompt medical opinion for diagnosis and further treatment

Remember: As a first aider, we don't fix problems. That is the job of the professionals. (*Refer to image*)



Topic 8.1 - Fractures

Tips for First Aid

- NEVER attempt to reposition a deformity
- If the limb appears to be numb, or pale or blue, this could signify damage to the blood supply. This is a medical emergency and you should call 000 immediately
- Although an obvious statement, you should handle the injured part carefully. Careless handling of a fractured limb can cause extreme pain and could also send the casualty into shock

Topic 8.2 – Dislocations

A dislocation involves the bones of a joint being displaced from their normal position. As the bones move out of position the attached ligaments are also overstretched and hence a strain can also commonly accompany a dislocation.

A casualty with a dislocation will present with the symptoms of a strain but will also have a deformity of a joint and loss of movement.

- A first aider should NEVER attempt to re-position the joint – some GP's won't even attempt this
- A trained, experienced emergency specialist will utilise x-rays to characterise a dislocation, and then use specific techniques to minimise the dislocation
- These steps minimise the chance of causing further injury while reducing the dislocation



Topic 8.2 – Dislocations

Management

- Sit the casualty down, and make them as comfortable as possible
- Support the injured limb in a comfortable position
- Ice packs can be applied to the area to help reduce swelling
- Seek medical assistance immediately. The longer the joint is out of place, the more significant the injury will be to the blood vessels and nerves

Topic 8.3 - Sprains and Strains

Sprains involve the *over extension of a joint*, usually with partial rupture of the ligaments. There may also be blood vessel, nerve and tendon damage.

Strains involve *over-stretching of the major muscles* of the limb. Muscles are attached to bones by tendons, which tear if a muscle is forced to stretch excessively. This injury is usually less severe than a sprain, but can still have complications if not managed correctly.



Topic 8.3 - Sprains and Strains

As you can see below, the symptoms are also quite similar.

Signs and Symptoms

Sprain	Strain
Pain	Pain
Swelling	Swelling
Bruising	Cramping
Instability	Muscle Spasms

Topic 8.3 - Sprains and Strains

Treatment: R.I.C.E.R.

- **Rest** - Resting the injured part will encourage healing and prevent further injury.
- **Ice** - Apply for 20 minutes maximum at a time then remove for 2 hours. Never apply ice directly to the skin, (place on top of compression bandage) but rather wrap it in a towel or t-shirt.
- **Compression** - A crepe bandage should be applied moderately tight to help reduce the swelling. Be careful not to apply too tight, as this can cut off the blood supply excessively.
- **Elevation** - This again helps to reduce swelling by firstly making it more difficult for blood to travel to the part, and secondly helping fluids to drain away from the injured area.
- **Referral** - Refer the casualty to professional medical advice.



Topic 8.3 - Sprains and Strains

In addition to the RICER treatment, there are also factors that can hinder healing or even cause further injury. The following should be avoided for the first 48 - 72 hours after injury:

H.A.R.M.

- **Heat** -This has the opposite effect to cold as it causes blood vessels to dilate, which increases swelling.
- **Alcohol** - This also causes dilation of blood vessels, and hence increases the swelling of the injured area.
- **Running or Exercise** -Just like bones, ligaments and tendons need time to heal and recover their strength.
- **Massage** – Although this can be beneficial for longstanding ailments, it should not be performed to the injured part in the first 48 hours following the injury.

Topic 8.4 - Bruises

A bruise is a skin discolouration that results from the breakage of tiny blood vessels leaking close under the skin after an injury. Blood from damaged blood vessels beneath the skin collect near the surface of the skin to appear as a black and blue mark. Medically, a bruise is referred to as a contusion.

Treatment

- **Rest** - Resting the injured part will encourage healing and prevent further injury.
- **Ice** - Apply for 20 minutes maximum at a time then remove for 2 hours. Never apply ice directly to the skin, but rather wrap it in a towel or t-shirt.



Module 9 – Environmental Illnesses

In this lesson, you'll be learning about:

- 1) Body Temperature
- 2) Heat illnesses
- 3) Cold Illnesses
- 4) Seizures – Epilepsy
- 5) Seizures – Febrile Convulsions

Estimated Completion Time: 15 minutes

Topic 9.1 – Body Temperature

Normal body temperature is between 36 - 37.5 degrees celsius. In normal circumstances, this remains fairly constant regardless of the temperature of our environment through a process called thermoregulation.



The following is a list of temperature variation effects.

Topic 9.1 – Body Temperature

Effects of Body Temperature Variation

Too Hot:

- 37° Normal body temperature
- 38° Sweating, uncomfortable feeling
- 39° Severe sweating, skin becomes flushed and red - exhaustion and possible convulsions, especially if the casualty is prone to seizures
- 40° Fainting, weakness, vomiting, headache, dizziness, profuse sweating
- 41° Fainting, vomiting, severe headache, altered mental state such as hallucinations, delirium and drowsiness, sweating stops, breathlessness can occur. At this stage, this is a medical emergency
- 42° Casualty may become pale. Severe delirium, vomiting and seizures may be experienced. Heart rate will become very fast, and casualty may collapse
- 43° Serious brain damage may occur, or even death. Shock and continuous convulsions may also occur. The casualty may go into cardiac arrest
- 44° (and above) Death is almost certain at this point

Topic 9.1 – Body Temperature

Effects of Body Temperature Variation

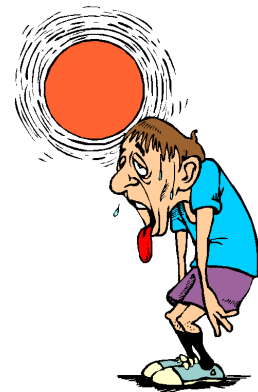
Too Cold:

- 37° Normal Body temperature
- 36° Mild to moderate shivering, however this can be within normal limits
- 35° Intense shivering and numbness. Skin will become bluish/grey
- 34° Severe shivering, loss of movement of fingers. Altered mental status may occur, including confusion
- 33° Shivering will progressively decrease and confusion will get worse. The level of consciousness will be altered and casualty may become groggy. Heart rate will become slower and breathing will become shallow
- 32° Severe alteration in mental status will occur, including hallucinations and delirium. Sleepiness will increase, possibly even to unconsciousness. Shivering will stop
- 31° Most likely unconscious. Heart rate will be very slow, and breathing very shallow
- 28° Casualty may appear dead. Cardiac arrest may take place
- 26° (or below) generally death due to respiratory arrest will take place

Topic 9.2 – Heat Illnesses

Heat Exposure

Overexposure to the sun is a very common cause of injury due to excessive heat. When the temperature is too high for the body's cooling mechanism to sufficiently cope the body becomes stressed and injury occurs. **Heat cramps**, **heat exhaustion** and **heat stroke** are three specific stages that the body undergoes during this time.



Heat Cramps

- Heat cramps can be extremely painful, and can occur anywhere in the body such as the arms, legs, back and abdomen
- Dehydration or excessive exercise can exacerbate the problem
- Generally, a casualty will show signs of heat exhaustion and cramps

Topic 9.2 – Heat Illnesses

Heat Exhaustion

Heat exhaustion occurs as the casualty's body temperature increases, which can lead to heat stroke. Heat exhaustion can occur very quickly, especially if the casualty has been over-exerting oneself such as working or exercising in the heat.

Signs to look out for include:

- Fatigue
- Profuse sweating
- Rapid, weak heartbeat
- Feeling faint
- Headache
- Nausea, vomiting
- Heat cramps



Topic 9.2 – Heat Illnesses

Management involves predominantly treating the heat exhaustion, by:

- Move the casualty to a cool, shaded area and recommend they lie down
- Loosen and remove excessive clothing such as jackets or heavy tops
- Moisten the skin with an atomizer spray or with a damp cloth
- Cool by fanning
- Encourage clear fluid intake such as water if fully conscious
- Call 000 for an ambulance if casualty does not quickly improve



Topic 9.2 – Heat Illnesses

Heat Stroke

Heat stroke is a medical emergency as it may lead to unconsciousness and death. All the body organs may be affected. It occurs generally when the body temperature has reached 40 degrees or above.

Symptoms include:

- Headache
- Skin may become dry and hot, but in some casualties profuse sweating is common
- Altered mental state – grogginess, confusion, dizziness etc.
- Collapse
- As temperature increases, their mental state will be increasingly affected, and unconsciousness can occur



Topic 9.2 – Heat Illnesses

Heat Stroke

Heat stroke is a medical emergency and the following steps should be taken:

- Immediately call 000 for an ambulance
- If the casualty becomes unconscious, follow **DRS ABCD**. Do not attempt to administer fluids if the casualty is unconscious
- Move the casualty to a cool environment
- Remove further clothing such as shoes and socks, even jeans (it is not necessary to remove underwear)
- Repeatedly moisten the skin with an atomizer spray or with a damp cloth
- If available, apply ice packs or cool packs wrapped in towels directly to the casualty's neck, armpits and groin



Topic 9.2 – Heat Illnesses

Some useful differences between Heat Exhaustion and Heat Stroke are as follows:

Heat Exhaustion	Heat Stroke
Skin is moist and clammy	Skin is hot and dry
Pupils dilated	Pupils constricted

Topic 9.2 – Heat Illnesses

Remember to keep safe in the sun!

- Drink plenty of water
- Sports drinks are also useful as they contain 3-8% carbohydrate electrolyte fluids, which are lost as the body sweats especially in exertion related dehydration
- Wear protective clothing – a hat, t-shirt, sunglasses
- Wear sunscreen, and remember to reapply
- Take breaks – don't go overboard if the temperature is too hot
- Be sensible in the sun



Topic 9.3 – Cold Illnesses

Cold Exposure

It does not have to be freezing for cold exposure to develop.

Wind and moisture during humid weather or during rainy season can also rapidly decrease the body's temperature.



Topic 9.3 – Cold Illnesses

Mild Hypothermia

Signs and Symptoms:

- Uncontrollable shivering
- Numbness of fingers and hands
- Loss of function of extremities
- Skin may become bluish/grey and cool
- Impaired coordination



Management of mild hypothermia includes:

- Move the casualty to a warmer location
- Give them a warm drink
- Remove any wet clothing and encourage physical activity to increase body temperature
- Heat packs or hot water bottles can also be used to assist this process

Topic 9.3 – Cold Illnesses

Moderate to Severe Hypothermia

Signs and Symptoms:

- Decrease in shivering, and then loss of shivering altogether
- Increase of muscle stiffness
- Altered mental status – disorientation, grogginess, confusion etc.
- Decreased pulse and respiration rate
- May lead to unconsciousness
- Low blood pressure



Topic 9.3 – Cold Illnesses

Management of moderate to severe hypothermia Includes:

- Requires urgent medical aid, contact 000 for an ambulance
- Remove casualty from the cold environment
- Follow principles of **DRS ABCD** where appropriate
- Do your best to warm the casualty
- Remove all wet clothing. Dry casualty if wet
- Place casualty in a dry sleeping bag or blanket
- Give warm oral liquids but not alcohol and only if the casualty is fully conscious

Topic 9.3 – Cold Illnesses

Management of moderate to severe hypothermia Includes (Continued):

- If the casualty is not shivering and in a remote location, the first aider should commence active rewarming measures:
 - Carefully apply external heat. Use either body heat or another heat source (e.g. heat packs) to increase their body temperature
 - To avoid burns, ensure that the external heat source is warm/tepid but not hot
 - If frostbite has occurred, DO NOT attempt to rub warmth into the affected area as this can cause severe injury to the already damaged tissues
 - Do not place the casualty in a warm bath
- If unconscious, follow **DRS ABCD**

Topic 9.4 - Seizures (Epilepsy)

A seizure is a sudden interruption to the brain's normal function when an abnormal level of electrical activity of the neurons takes place.

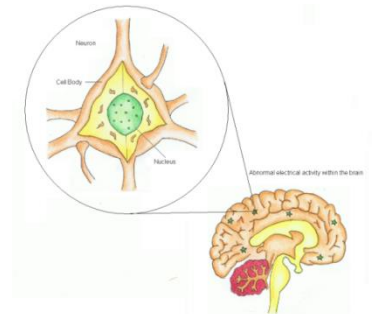
Epilepsy is the term given to describe a condition where someone is predisposed to recurrent, unprovoked seizures. However, anyone can have a seizure given the circumstances, not just people with epilepsy.



Topic 9.4 - Seizures (Epilepsy)

Causes of Seizures other than Epilepsy:

- Head Injury
- Drug or alcohol intoxication
- Fever (febrile convulsions)
- Tumour
- Certain prescribed drugs, such as some anti-depressants
- Infection
- Photo-sensitive epilepsy can be triggered by certain TV shows or video games
- Seizures during or shortly after pregnancy can be a symptom of eclampsia



Topic 9.4 - Seizures (Epilepsy)

Management – DO:

- ✓ Most Important is to stay calm
- ✓ Stay with the casualty
- ✓ Look at the time to see how long the seizure lasts for
- ✓ Move any bystanders and any objects out of the way which could injure the casualty, especially the head
- ✓ Once the seizure has stopped, follow **DRS ABCD**
- ✓ If unconscious and breathing, or if fluid/vomit/food in the mouth, roll the casualty into the recovery position
- ✓ Maintain casualty's privacy and dignity
- ✓ They will likely be very tired, so let them rest and stay with them for reassurance
- ✓ If the casualty has injured themselves during the seizure, attend their injuries once it has finished

Topic 9.4 - Seizures (Epilepsy)

Management – DO NOT:

- ✗ Do not put anything into their mouth
- ✗ Do not restrain the casualty
- ✗ Do not move the casualty unless they are in danger
- ✗ Do not give them anything to eat or drink until they have fully recovered

FIRST AID FOR SEIZURES

TONIC CLONIC SEIZURE

Convulsive seizures where the body stiffens (tonic phase) followed by general muscle jerking (clonic phase).

- DO**
- ✓ Stay with the person
 - ✓ Time seizure
 - ✓ Protect from injury especially the head
 - ✓ Roll onto side after jerking stops OR immediately if food/fluid/vomit in mouth
 - ✓ Observe and monitor breathing
 - ✓ Gently reassure until recovered
- DO NOT**
- ✗ Put anything in the person's mouth
 - ✗ Restrain the person
 - ✗ Move person unless in danger

FOCAL DYSCOGNITIVE SEIZURE (complex partial)

Non-convulsive seizures with outward signs of confusion, inappropriate responses or behaviour.

- Stay with the person
- Time seizure
- Gently guide away from harm
- Reassure until recovered
- DO NOT restrain the person unless in danger

CALL 000 FOR AN AMBULANCE IF:

- You are in any doubt
- Injury has occurred
- There is food/fluid/vomit in mouth
- Seizure occurs in water
- Person has breathing difficulties after jerking stops
- Another seizure quickly follows
- Seizure lasts longer than 5 mins
- The person is non-responsive for more than 5 mins after the seizure ends



This is not medical advice nor an exhaustive list of responses to seizures. This is a guide to help you consider your response to seizures. If you are in any doubt about what to do, do not hesitate to call an ambulance. For more information or advice about epilepsy, contact Epilepsy Action Australia on 1300 37 43 37 or visit www.epilepsy.org.au

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Topic 9.4 - Seizures (Epilepsy)

You need to seek medical assistance (Call 000) if:

- The casualty injures themselves badly during seizure
- The casualty is having difficulty breathing after the seizure (this should be distinguished from normal laboured breathing because the casualty is puffed out)
- If a second seizure follows the first
- If the seizure lasts longer than 5 minutes (if the normal time is not known), or if the seizure lasts longer than usual (the casualty may have a bracelet or card in their wallet which outlines the usual time they last)
- If the casualty is not known to have epilepsy



Topic 9.5 - Seizures (Febrile Convulsions)

A high fever in a child may trigger a convulsion/seizure known as a febrile convulsion. This may occur in children aged from six months to five years. The convulsion can last a few seconds or up to 15 minutes and is often followed by a brief period of drowsiness.



Topic 9.5 - Seizures (Febrile Convulsions)

Signs and Symptoms:

- Loss of consciousness
- Muscles may stiffen, jerk or twitch
- Face may go pale or blue
- Difficulty in breathing
- Moaning, crying
- Vomiting
- Foaming at the mouth



Topic 9.5 - Seizures (Febrile Convulsions)

Management – DO:

- ✓ Most Important is to stay calm and remain with the child
- ✓ Look at the time to see how long the seizure lasts for
- ✓ Lay the child onto a soft surface or the floor with a blanket underneath
- ✓ Remove any object which could injure the child
- ✓ Move the child only if they are in a dangerous location
- ✓ Loosen tight clothing and if possible, remove or open clothes from the waist up

Management – DO NOT:

- ✗ Do not put anything into their mouth
- ✗ Do not restrain the child
- ✗ Do not put the child into a bath
- ✗ Do not give them anything to eat or drink

Topic 9.5 - Seizures (Febrile Convulsions)

Once convulsion has stopped:

- Roll the child into the recovery position whilst drowsy
- Place cool washcloths to the neck and forehead
- Using tepid water (not cold), sponge the rest of the child's body
- Contact professional medical help (Call 000) if:
 - Convulsion lasted more than 5 minutes
 - Child does not wake up
 - Child had more than one convulsion in a short period of time
 - Child has been injured or appears quite ill
- Contact local family doctor if:
 - Convulsion lasted less than 5 minutes
 - Child had a previous illness before the convulsion

Module 10 – Bites and Stings

In this lesson, you'll be learning about:

- 1) The Lymphatic System
- 2) Bites and Stings

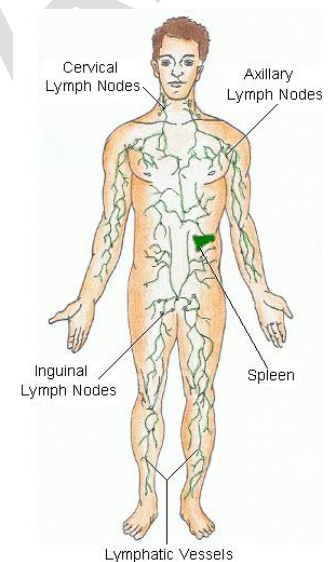
Estimated Completion Time: 15 minutes

Topic 10. 1 - The Lymphatic System

The **Lymphatic System** is a network of vessels, nodes, ducts and organs that produce and transport lymph fluid. The lymphatic system plays a large part in the following:

- Removing fluid from tissues
- Production of immune cells, such as lymphocytes
- Absorbs fat from the intestines

The lymphatic system does not have a pump like the circulatory system, but rather it utilizes muscle movement in order to transport fluids. The lymphatic system is predominantly responsible also for the transportation of venom from snake bites. This is why it is critical to keep the casualty as still as possible and immobilise the bitten limb. Muscle contractions cause increased lymph movement and hence help spread the venom.



Topic 10. 2 - Bites and Stings

Bites and stings from certain creatures can be potentially dangerous, and Australia has no shortage of such creatures. There are many different varieties of snakes, spiders and jellyfish which carry venom that can cause pain and swelling, and in extreme cases, death (most commonly through neurotoxic muscle paralysis causing breathing failure).

Other insect bites can be potentially fatal when a person is allergic to the insect, such as with bee stings.



Topic 10. 2 - Bites and Stings

Snake Bites

Symptoms

Symptoms that would indicate the need to call an ambulance immediately include:

- Immediate intense pain in bitten area
- Headache
- Altered mental status – including confusion, irritation, or even unconsciousness
- Abdominal pain
- Hypertension
- Respiratory weakness / difficulty breathing
- Muscle paralysis. This generally takes around 3 hours to develop, and may affect the lungs and send the casualty in respiratory arrest



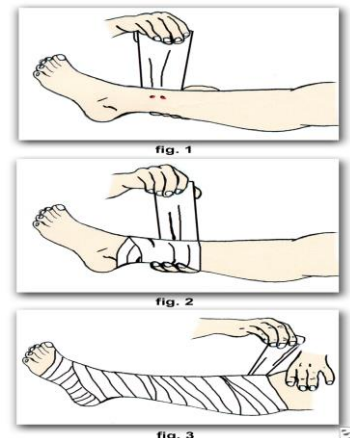
Topic 10. 2 - Bites and Stings

Management

You should take care to firstly rest the casualty, and reassure them as best as possible while you investigate for a possible snake bite. If found, follow the pressure immobilisation technique immediately and seek emergency medical assistance.

Pressure Immobilisation Technique (PIT):

- Ideally use a broad pressure bandage (elasticised bandages are preferred over crepe bandages)
- If bandages are unavailable, anything can be used such as clothing, tea towels etc.
- Start by applying local pressure over the wound with some padding



Topic 10. 2 - Bites and Stings

Pressure Immobilisation Technique (PIT) (Continued):

- Bandage should be firm and tight (i.e. tight enough to prevent easily sliding a finger between the bandage and the skin) but not uncomfortable or painful
- Next, bandage the entire limb (using additional bandage or same bandage if long enough)
- Start distally (furthest from body) and work proximally (closer to body) to reduce swelling
- Once limb is bandaged, use a splint to restrict any movement of the limb (i.e. a stick or pole, or if upper limb, use a sling)
- Keep the casualty as still as possible and ideally bring assistance to them rather than attempt to move them



Topic 10. 2 - Bites and Stings

DO NOT:

- ❌ Do not cut, suck or treat the bitten area
- ❌ Do not wash the bitten area
- ❌ Do not apply an arterial tourniquet

The **Pressure Immobilisation Technique** is recommended for the following bites and stings:

- All venomous snakes
- Funnel web spiders
- Blue-ringed octopus and cone shell



Remember: As a first aider, we don't fix or diagnose, we only preserve life until more advanced care can be provided.

Topic 10. 2 - Bites and Stings

Spider Bites

Of the numerous species of spiders found in Australia, only two are capable of causing death; the funnel web and the red back spider.

It can be difficult to identify a funnel-web, so any bite from a big, black spider should be considered potentially dangerous.



Topic 10. 2 - Bites and Stings

Red Back Spider

- Apply **cold compress** to the affected area to help reduce swelling and pain for periods of 20 minutes
- Rest the casualty and monitor
- These are generally not fatal however the casualty should be directed to obtain a medical opinion
- If pain is persistent, or the casualty experiences headache, nausea, vomiting, an altered level of consciousness, then they should be taken to hospital, or call 000 for an ambulance



Topic 10. 2 - Bites and Stings

Stings

Most stings should be treated with ice. If the casualty is allergic to the sting, there is a risk of anaphylaxis, which is a medical emergency. If an anaphylactic reaction occurs, follow the Anaphylaxis Guideline and **DRS ABCD**. Contact 000 immediately.

Bee Sting

- Never pull or squeeze the sting out as more venom will be injected. Try to scrape it sideways away from the entry point.
- Apply **cold compress** to the affected area to help reduce swelling and pain for periods of 20 minutes (do not apply ice to the eye area).
- If the person has an allergy to bee stings, they can fall into a life-threatening state of anaphylactic shock. The only treatment is an injection of adrenaline. Seek medical attention immediately



Topic 10. 2 - Bites and Stings

Stings

Most stings should be treated with ice. If the casualty is allergic to the sting, there is a risk of anaphylaxis, which is a medical emergency. If an anaphylactic reaction occurs, follow the Anaphylaxis Guideline and **DRS ABCD**. Contact 000 immediately.

Wasp

- Clean the affected area with soap and warm water
- Apply **cold compress** to the affected area to help reduce swelling and pain for periods of 20 minutes
- Be alert for signs of anaphylaxis
- Prolonged swelling at the site of the sting may respond to antihistamines - refer the casualty on for further advice



Topic 10. 2 - Bites and Stings

Blue Ringed Octopus

Basic Treatment:

- Treatment for a Blue Ringed Octopus bite is the same as a snake bite
- Apply the **Pressure Immobilisation Technique (PIT)** and call 000 for an ambulance
- If the person stops breathing, follow **DRS ABCD** and commence CPR immediately



Topic 10. 2 - Bites and Stings

Box Jellyfish

Signs and symptoms of someone who has been stung by a Box Jellyfish include a variety of skin markings, severe pain around the lymph nodes (armpits, groin etc.), nausea, vomiting, sudden cardiac arrest or respiratory distress



Basic Treatment:

- Observe **DRS ABCD**. Call 000 for an ambulance
- If stung, flood the affected area with **vinegar** to neutralise the tentacles, then pick off the tentacles
- Rest the casualty, reassure and keep under observation

Topic 10. 2 - Bites and Stings

Blue Bottle Jellyfish

Most stings from a Blue Bottle are painful and allergic reactions are possible. Blue Bottle stings leave a whip-like, red, wavy line on the skin from the tentacle and a rash may occur.



Basic Treatment:

- Rest the casualty, reassure and keep under observation
- Clear away the tentacles using sea water, then pick off any remaining tentacles
- Immerse in **hot water** for 20 minutes to relieve pain
- The water should be as hot as the casualty can handle it
- Remember, your tolerance to heat may be different to the casualty's. Seek medical advice if pain continues
- Call 000 if pain persists, stung area is quite large or is in a sensitive area such as the eye

Topic 10. 2 - Bites and Stings

Cone Shell

The Cone Shell is found in shallow water, sand flats and reefs around Australia. They are a brightly coloured shell shaped like an ice-cream cone. The sting can ultimately lead to respiratory distress and death



Basic Treatment:

- Treatment for a Cone Shell sting is the same as a snake bite
- Apply the **Pressure Immobilisation Technique (PIT)** and call 000 for an ambulance
- If the person stops breathing, follow **DRS ABCD** and commence CPR immediately

Topic 10. 2 - Bites and Stings

Ticks

Ticks can inject a toxin that may cause local skin irritation or a mild allergic reaction, however most tick bites cause few or no symptoms. In susceptible people, a tick bite may cause an allergic reaction or even anaphylaxis, which can be life threatening.



Basic Treatment:

- In the case of tick bite, if there is no history of tick allergy, immediately remove the tick
- If the victim has a history of tick allergy, the tick must be killed where it is, rather than removed
- If an anaphylactic reaction occurs, follow the Anaphylaxis Guideline
- Follow **DRS ABCD**. Contact 000 immediately for an ambulance
- Apply **cold compress** to the affected area to help reduce swelling and pain for periods of 20 minutes
- Rest the casualty, reassure and keep under observation
- If the casualty has no history of tick allergy, take casualty to a doctor to remove the tick

Topic 10. 2 - Bites and Stings

Ticks

To kill the tick where it is:

- For small ticks (larvae & nymphs), use permethrin cream (available at pharmacies)
- For adult ticks, freeze them with an ether-containing spray (available at pharmacies).
- Wait for the tick to drop off or remove it taking the utmost care to not compress the tick (as this will squirt allergen, toxin and possibly infection into you)



Note: Do not use tweezers

Note:

If you require the assessment questionnaire and the Assessment Answer sheet to record your answers, please contact us by phone, or send us an email.

Phone: 1300 642 427

Email: admin@cprfirstaid.com.au

Our telephone assistance is available on the following days:

Monday - Friday: 8:00am - 6:00pm

Saturday: 8:30am - 10:30am

Sunday: 8:30am - 10:30am

CPR First Aid