ProTrainings.uk®

FIRST AID AT WORK

STUDENT MANUAL

VERSION 8.6

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Contents

ProTrainings First Aid at Work Course Manual

Welcome to your ProTrainings First Aid at Work First Aid Course. First Aid at Work courses can only be taken as a classroom course. This manual goes with all of our First Aid at Work courses (EFAW and FAW versions) and gives supporting information to your course. There may be subjects covered in this manual that were not on your course but you may find them interesting. If you are completing the Annual Refresher course, this is available also as a 100% online course at www.profaw.co.uk.

The classroom course must be conducted with a ProTrainings approved instructor. You can find approved instructors near you by searching on www.procourses.co.uk or by contacting us directly on support@protrainings.uk or 01206 805359.

This manual is designed to be used exclusively by students who have completed a ProTrainings First Aid Course or a course that has been certified by ProTrainings Europe Ltd. You can validate your certificate and receive a PDF version online from the bottom of www.profaw.co.uk or any of our websites.

On completion of a classroom course you will receive a certificate and wallet-sized card from your instructor in the post. You can also download a certified CPD certificate from your free ProTrainings login area, as well as other downloads, reminders and weekly refreshers. If you do not have a login, email support@protrainings.uk or call 01206 805359.

Make sure you register online for the latest updates; these are automatic for online students. Your instructor should have registered you already and if you are doing an online course you will have already received your login details if you have this book. Online you will have access to videos and resources as well as being able to print you Certified CPD certificate and to create your free training portfolio record.

For more information on first aid and medical issues register free at www.firstaidshow.com for the latest news and details of how you can view on iTunes, Roku, YouTube and many other formats.

If you have any problems with login or certificates, email or call us directly on support@protrainings.uk or 01206 805359. For more information on first aid and to see videos subscribe on The First Aid Show at www.firstaidshow.com.

Below are examples of the ProTrainings classroom certificate you will receive in the post after your course. Online course certificates are available online to print along with Certified CPD statements.

Before we start

Before we start it is worth giving you the definitions of some of the terms used in first aid.

Good Samaritan Law - states that a person acting in good faith, rendering reasonable first aid will not be held accountable for damages to the person they are assisting, unless gross wilful misconduct is used. This law is not valid in some countries, for example the UK, but other laws are there to protect the first aider.

Consent - a patient allowing you to give first aid. This is gained by asking the patient if you can help them. You can also ask a parent or family member.

Informed Consent - you informing the patient of the consequences, followed by the patient giving you permission to give first aid.

Implied Consent - when a patient is unconscious, it is given that, if the person were conscious, they would request first aid.

Abandonment - initiating care and then stopping without ensuring that the person has the same level or higher care being rendered.

Negligence - when you have a duty to respond and you fail to provide care or you give inappropriate care, and your failure to provide care or inappropriate care causes injury or harm.

Universal Precautions - using gloves, masks, gowns, etc., for every patient every time, when there is a possibility of coming into contact with any bodily fluids

Clinical Death - the moment breathing and heartbeat stop. Typically, a person has a high likelihood of being revived without much cellular damage when clinically dead for approximately 0-6 minutes. Within 6-10 minutes brain cell damage is highly likely.

Biological Death - irreversible damage to brain cells and tissues. If a person has been clinically dead for 10 minutes or more, there will be irreversible cell damage. Resuscitation is unlikely but not impossible. With first aid we always assume there is a chance of survival and continue to give help.

First Aid at Work

Many countries have specific rules and regulations for the provision of first aid in the workplace. In the UK, the Health and Safety Executive (HSE) lays down laws where employers have to provide adequate numbers of first aid trained staff, whether this is a one-day EFAW or a three-day FAW Course.

The HSE strongly recommends an annual refresher for first aid trained staff and this can be done using our online training course or as hands-on training with a certified instructor.

Other requirements in the UK workplace and other countries include the business' responsibility to keep a record of all accidents and illnesses involving treatment that occur in the workplace.

Under UK regulations, the completed pages of this accident book have to be removed and stored safely in accordance with the Data Protection Act.

There are additional laws that require the employer to report accidents to the HSE where the accident results in more than seven days' absence from work, death or serious injury, including near misses and industrial diseases.

Companies may also have their own in-house first aid records that a first aider in the workplace may need to complete.

Other duties of a first aider in the workplace may include re-stocking first aid kits, ensuring adequate provision of first aid kits and ensuring that any contaminated material is cleaned up and disposed of correctly following an accident at work.

Further information on Rules and Regulations in the workplace in the UK can be found on the HSE Website www.hse.gov.uk/firstaid.

Health and Safety (First Aid) Regulations (1981) - the main act that covers first aid in the workplace. This is worth having - you can get it from HMSO Books.

Management of the Health and Safety at Work Regulations 1999 - this ensures companies carry out risk assessments on all aspects of work carried out by their employees.

RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations.

COSHH - Control of Substances Hazardous to Health (2002).

Social Security Administration Act 1992 - covers how companies report information on incidents.

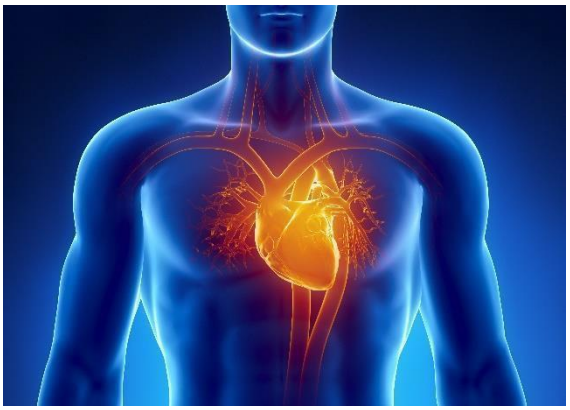
Health and Safety at Work Act 1974 - this requires businesses to make provisions available to ensure that they protect their staff against injury and disease. It covers companies' use of contractors and other people entering their premises.

Some important parts of the body

Heart

Consists of four chambers, about the size of your fist, located under the breastbone. The function of the heart is to pump blood to the brain, lungs and body.

Your body has about 5.6 litres of blood, which circulates through the body three times every minute. The cardiovascular system comprises the heart, arteries, capillaries and veins.



Lungs

There are two lungs and their function are to take in oxygen and release carbon dioxide. Room air contains 21% oxygen. Our bodies use about 4-6%.

When we breathe out, we exhale carbon dioxide and about 16% oxygen.

Brain

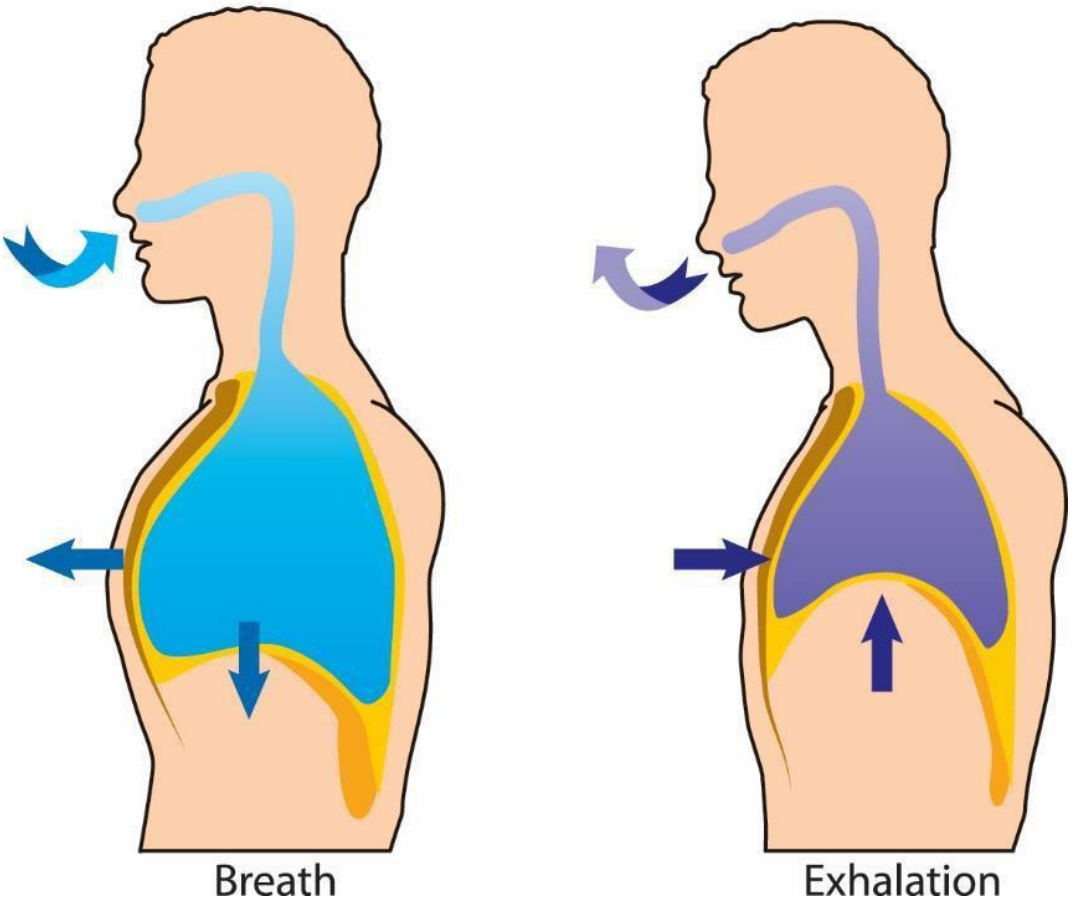
Tells the rest of the body what to do and needs oxygen on a regular basis. Brain cells will begin to die in 4-6 minutes without oxygen.

The average human brain weighs 1.36 kilos (three pounds) and uses 20% of the body's oxygen.

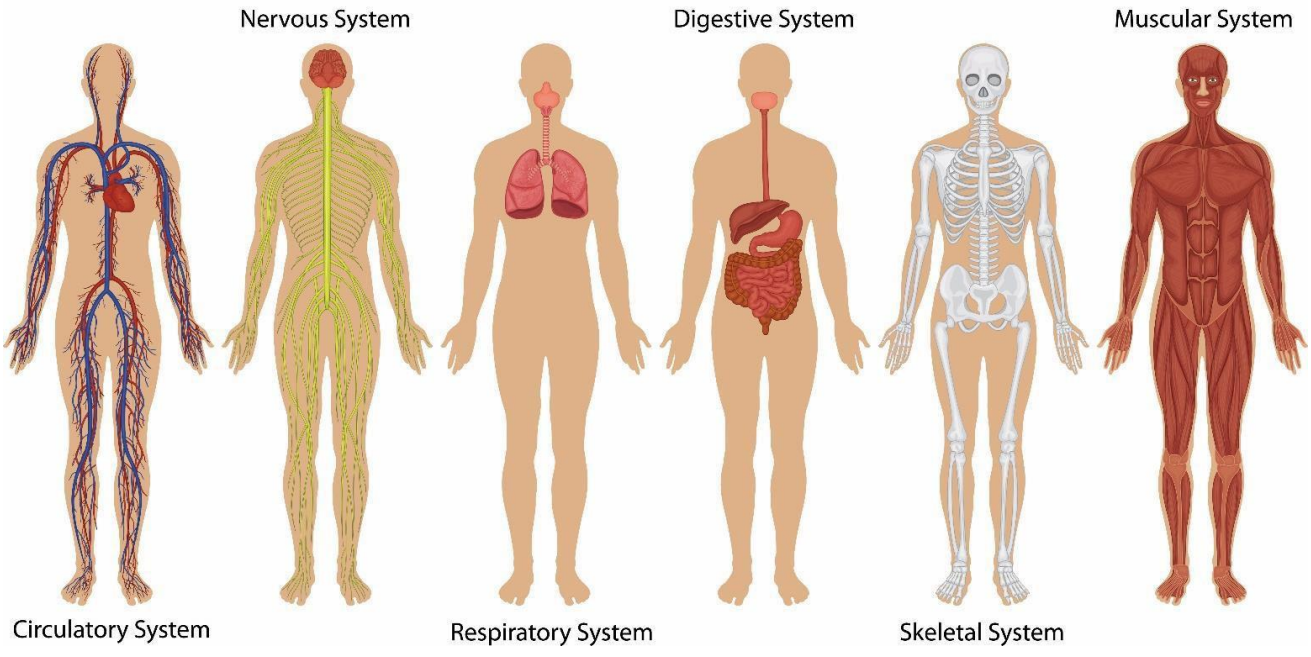
Cells

All cells of the body require oxygen continuously to carry out normal functions. Carbon dioxide is produced as a waste product and must be eliminated from the body through the lungs. Red blood cells transport oxygen to the tissue.

The movements of the chest during breathing



Human Body Systems



The Fears of First Aid

We have found that when people attend a first aid course, they are often reluctant participants because they have fears and concerns about administering first aid. Addressing these fears and showing that they are easily resolved makes the rest of the lesson much easier to understand and enjoy.

Fear of being sued - this is the first fear people have about administering first aid. Many countries have a "Good Samaritan Act" or similar law that protects first aiders of all levels from unnecessary lawsuits. The key points to remember are to act within your training, ask permission to help, don't leave the patient unless you have to alert the EMS and act as a normal prudent person would do.

Fear of infection - from blood and other body fluids. People are generally reluctant of close contact with body fluids, as well being concerned about infections such as HIV and hepatitis. This is addressed by the effective use of barriers, which will be covered later on in the lesson.

Fear of doing something wrong - or simply not knowing what to do. The worst medical condition you have to deal with is when someone has no heartbeat and is not breathing. In this situation, the person is dead and you must remember that you cannot make a person any worse if they are dead. Any help you provide to that person can only increase their chance of survival. The worst-case scenario is that they will remain dead.

Fear of hurting the patient - CPR is a really basic skill. Medical research tells us that any form of oxygen circulation is the most important first step in providing life support. The real problem is not in doing CPR wrong, it is in not doing CPR at all. There are some instances where you could do harm, but we will cover these as the lesson continues. Generally speaking, first aid is about caring for the person and getting the Emergency Medical Services (EMS) there as quickly as possible, and in many cases, this may mean just sitting with, and providing comfort to, the patient.

Fear for your own safety - ironically, in real rescues this often is not an issue. In fact, in many cases people automatically enter scenes without adequate consideration for themselves. We will be looking at scene safety and how you can use three simple steps to ensure that you keep yourself safe in a later lesson.

Asking Permission to Help

One simple way of protecting yourself against the fear of possible legal action is to obtain the patient's permission by saying: "Hi, my name is Keith. I am a first aider. May I help you?".

A conscious patient may answer verbally, by nodding or maybe offering up his injured limb to you. All of these can be taken as gaining the person's consent.

With an unconscious casualty, they cannot give you permission to help. However, consent can be assumed to have been given as the patient is likely to have asked for help if they were conscious. You should still ask the person and introduce yourself, but when they cannot answer you can still help. Keep talking the whole time you are helping, as the hearing is the last thing to go and the first to come back.

If someone refuses your help and you are not able to help them, you can still assist by calling the EMS, referring to bosses or family members and trying to reassure them.

As a first aider in the workplace, you may have a duty of care. In these cases, the casualty will usually have to come to you for your help.

The chain of survival concept is designed to show you your role in an emergency procedure. Following each link in the chain in the correct order can greatly increase the patient's chances of survival.

Remember the links in the chain are **Early Activation of the Emergency Services**, **Early CPR**, **Early Defibrillation** and **Early Advanced Life Support**. The first aider carries out the first two links and often the third AED link, but if help is not called for then the final link will not arrive.

Scene Safety

Make sure you keep yourself, bystanders and the patient safe when approaching the scene of an accident. Always remember to stop, think, then act. Check for anything that may be a danger, such as broken glass, body fluids, electricity, gas or traffic. Remember that scene safety is your primary concern.

Check the Scene

Key questions to ask:

- Is it safe for me to help?
- What happened?
- How many patients are there?
- Am I going to need to call EMS?
- Do I have any personal protective equipment on and ready to use?
- Is there an AED available?

Check the patient

If it is safe to help, check the patient.
Tap the patient and introduce yourself. If there is no response, activate EMS. To activate EMS, Call 999 or 112.

IF PATIENT NOT BREATHING AND YOU ARE ALONE, PHONE FIRST – Then start CPR, do not leave patient to go looking for an AED, the EMS will bring one.

IF PATIENT NOT BREATHING AND YOU ARE NOT ALONE - send someone to call the EMS and get the AED, make sure they know the location, what has happened and how many people are involved.

Tell them to come back to you and tell you what the EMS has advised.

When you call the EMS, they will be able to give you any advice and support that you need. Work out how to use speakerphone or hands free with your phone so you can deal with the patient while getting advice.

The ABCD's

The ABCD's concept is designed to give the first aider a guide to what to do first in a first aid emergency, and to show all the primary care and life-threatening conditions.

A - Airway - open the patient's airway by moving the tongue from the back of the throat, which often blocks breathing.

B - Breathing - check for breathing for up to 10 seconds.

C - Circulation - if they are not breathing, administer CPR.

D - Defibrillation - where there is no circulation, use defibrillation to administer an electric shock. This interrupts a cardiac arrest and should allow the heart to start again.

S - Serious bleeding, Shock and Spinal injury - once ABCD's are ok, we move on to these. All these will be covered in our course.

Before entering into a rescue scene, the rescuer should perform an initial assessment to ensure that the scene is safe. Next, personal protective equipment should be worn to protect the rescuer before beginning to help. If alone, the rescuer may need to put the patient in the recovery position, if they are breathing, while leaving to contact EMS. If the patient is not breathing, then perform CPR. The recovery position allows the patient to breathe easily, stay safe, and it takes away the risk of them choking if they vomit.

Barriers – Gloves and Face Shields

The fear of infection may deter some people from providing emergency first aid. Effective use of barriers, including gloves and face shields, protect both you and the patient from the risk of infection. There are special rules in some workplaces for the correct disposal of gloves and other infected materials, so it is best to check your local guidelines.

There are many types of face mask, such as pocket masks or key fob masks. They come in different packages but are all basically the same. The BSi HSE first aid kits in the work place now contain a face mask.

Always use a barrier when dealing with any first aid emergency

Putting Gloves On

Always use disposable gloves when providing first aid care. If you have a latex allergy, use a latex alternative such as nitrile or vinyl. Before providing care, make sure the gloves are not ripped or damaged. You may need to remove rings or other jewellery that may rip the gloves.

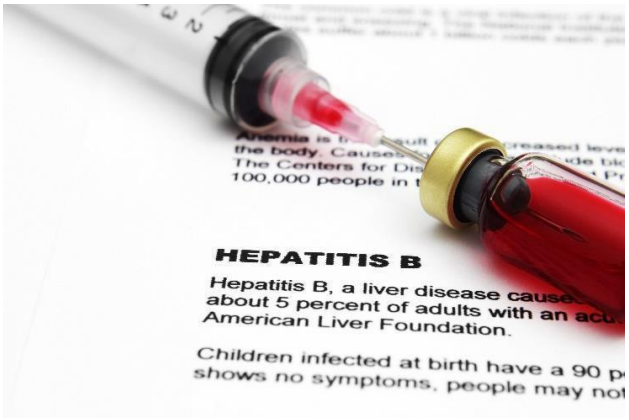
Remember to use skin-to-skin and glove-to-glove. Pinch the outside wrist of the other gloved hand. Pull the glove off, turning the glove inside-out as you remove it. Hold it in the gloved hand. Use the bare hand to reach inside the other glove at the wrist to turn it inside-out, trapping the other glove inside. Dispose of gloves properly. If you have done this correctly, the outside of either glove will never touch your exposed skin.

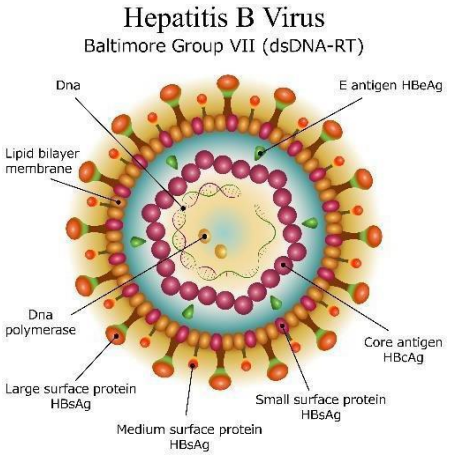
How Bloodborne Pathogens are Spread

Bloodborne pathogens can be spread in a number of ways:

- Sexual contact is the primary mode of transmission
- When a contaminated sharp object cuts or punctures the skin. Parenteral examples include: needle stick, illegal drug usage, cuts from broken glass, bites
- When an infected body fluid gets into an open cut or mucous membrane, for example inside eyes, mouth, ears or nose
- When a contaminated object touches inflamed skin, acne or skin abrasion

Intact skin is wonderfully created as our first defence against disease. Bloodborne pathogens cannot soak through normal, intact skin.





Recovery Position

Check that there are no injuries that could be made worse by moving the patient and place them carefully on their side using the recovery position. Monitor their vital signs and keep them warm and comfortable until the EMS arrive.

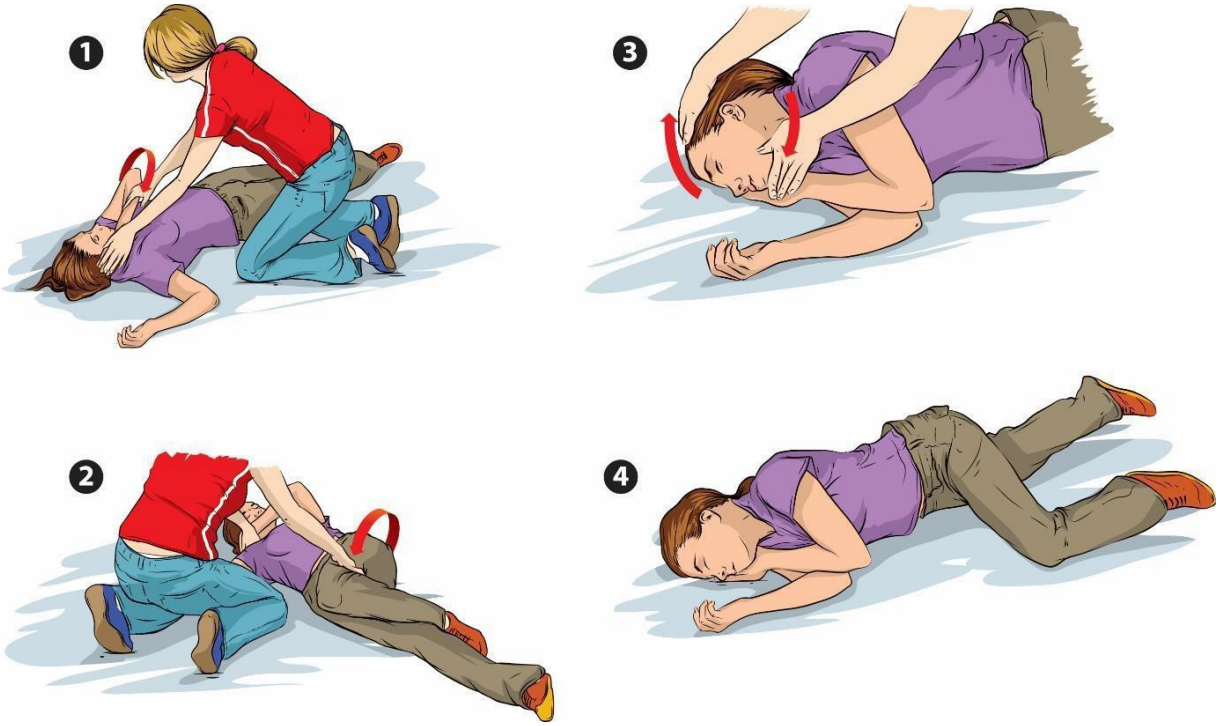
If you suspect spinal injury and the patient is in no immediate danger, do not move them. If you have to move them on to their side, as you have to leave them to get help or they start to vomit, then use the recovery position.

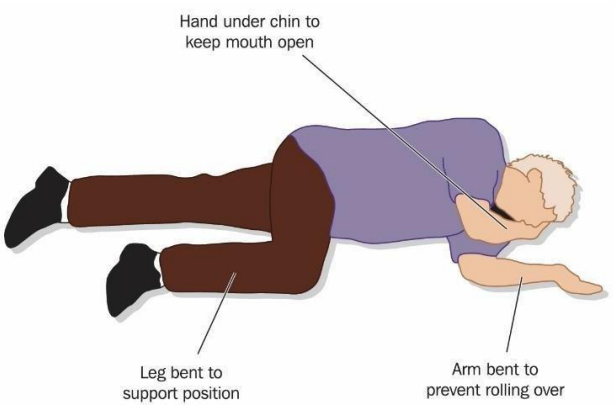
First aid is to prevent the patient getting worse and this can be done with some simple easy skills that will be learnt on the course.

P - Preserve Life

P - Prevent Deterioration - stop the situation getting worse

P - Promote Recovery





Heart Attacks

Heart attacks are caused by a blockage in the heart, starving it of blood and oxygen. The blockage can be in the form of narrowing, plaque, clots or a muscular spasm, and can be fatal. Heart attack is the most common form of death in the UK.

Sudden cardiac arrest is when the heart stops, but a heart attack is when the heart is in major trauma. It could stop at any time.

A big problem is that the patient often will not accept that they are having a heart attack and this delays the treatment.

Symptoms

- Crushing pain in the centre of the chest, with pain radiating between the abdomen and jaw, possibly down one arm
- Laboured breathing
- Rapid or irregular pulse
- Nausea/vomiting
- Pale, cold and clammy skin
- Grey/blue appearance
- Feeling of chronic indigestion

Treatment

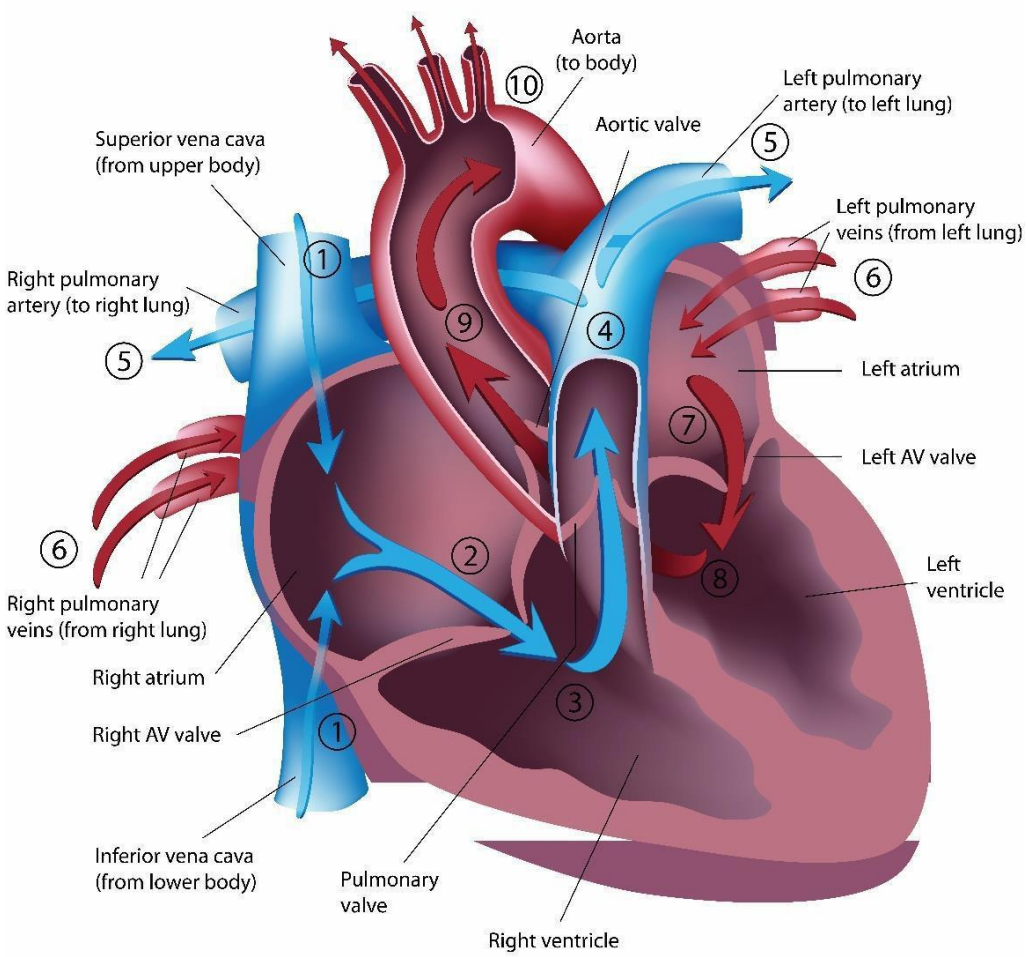
- Calm the patient and place them in the "W" position, with head and legs raised
- Alert EMS
- Monitor the patient's ABCs
- Loosen clothing
- Be prepared to begin CPR if the patient's condition worsens

Aspirin

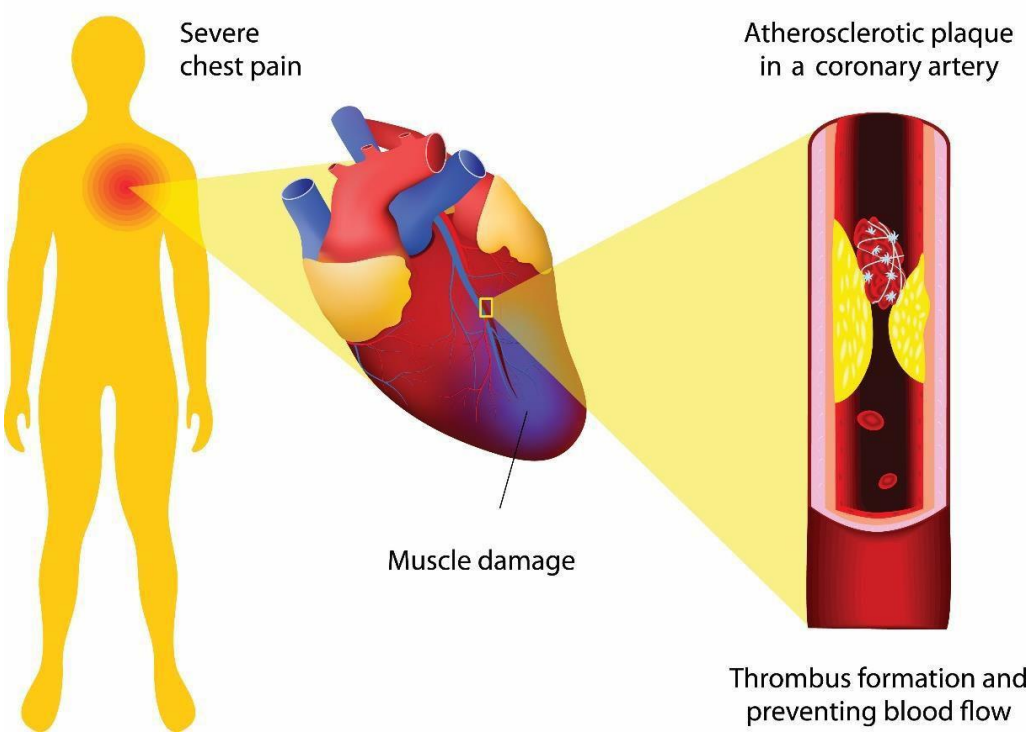
Give 300mg tablet to the patient for them to take. They must chew the tablet, not swallow it, as this helps the body to absorb it more quickly. The Aspod holds two Aspirin safely anywhere you go and is available from your ProTrainings dashboard.

ASPOD®
There when it matters

The pathway of blood flow through the heart



Heart Attack



Angina

An Angina attack is not a heart attack, and Angina is usually controlled by drugs but can develop into a more serious condition. Angina is caused by a build-up of cholesterol plaque on the lining of the coronary artery or a collapsed arterial wall, which makes it hard for the blood to flow freely to the heart. An attack can often follow physical exertion or stress. Medication relaxes the walls of the blood vessels to allow blood to flow.

Symptoms

It will seem like a heart attack at first. Patient will experience sudden weakness, anxiety and fear, and there will be evidence of stress or physical activity.

Treatment

Position the patient in the same way as for heart attack patients. Locate and ensure they take their medication. Usually with medication and rest, the pain will ease. If it does not, or if this is their first attack, alert EMS.

Controllable Risk Factors

There are many things that can increase the risk of heart disease. Some of them are controllable and others not. Factors include: cigarette smoking, high blood pressure, obesity, lack of exercise, high blood cholesterol levels, uncontrolled diabetes, high fat diet and high stress levels.

Signs and Symptoms

- Chest discomfort
- Pressure, tightness that lasts longer than two minutes
- Nausea
- Sweating shortness of breath
- Denial
- Feeling of weakness

Uncontrollable Risk Factors

Race, heredity, sex and age.

Women present more with shortness of breath, extreme fatigue or flu like symptoms. About a third of women experience no chest pain.

Treatment

Recognise the signs of a heart attack and **activate EMS by calling 999 or 112**.

- If possible, place the patient in the "W" position with head and legs raised.
- Give nothing to eat or drink
- Keep the patient calm and quiet
- Prepare in case they go into cardiac arrest.

Adult CPR

Adult CPR is performed once you have checked for patient responsiveness and checked for breathing for up to 10 seconds. If the patient is not breathing, activate EMS, perform 30 compressions at a rate of 100 to 120 compressions per minute at a depth of 5-6cm in the centre of the chest. Compressions should be the same speed on the push and the release and in a regular interval. Full recoil of the chest is vital to allow the heart to fill with blood.

These 30 compressions should be followed by two rescue breaths. Before carrying out the rescue breaths, make sure the airway is open by titling the head back, lifting the chin and squeezing the soft part of the nose. Then seal your mouth over the patient's and blow gently for about one second, you will see the chest rise. Breaths can be delivered as mouth to nose by sealing the mouth or mouth to tracheostomy if they have a Stoma in their neck.

Repeat the cycle until an AED or EMS arrives. Do not waste time between the compressions and the breaths. There should be only a 5-10 second break in giving the compressions with a maximum of 10 seconds to avoid delays in compressions. It is vital to keep the oxygen-rich blood pumping around the body, which is why compressions are so important.

CPR Handover to a Second Rescuer

Providing CPR can be exhausting and it may become less effective as you grow more tired. Where possible, it is best to share the work with another rescuer. It is not important if the other person is CPR trained as you can tell them what to do. The rescuer tells the other person what to do while he is doing the chest compressions and then while he does the breaths the second rescuer gets ready. On completion of the breaths, the second rescuer takes over.

It's a good idea to try to swap over every two minutes. If you become tired and no one is there, consider just doing chest compressions to have a rest from the breaths.

Hands-only CPR

Hands-only CPR helps encourage lay rescuers to get involved who may not otherwise help. Many people are reluctant to give the breaths and this is one reason why people do not perform CPR. With this new technique, blood is circulated around the body, oxygenating the body's tissues and organs.

The rescuer delivers 5-6cm deep compressions at a rate of 100 to 120 compressions per minute without the need to deliver rescue breaths. Hands-only CPR eliminates the fear of transmitting disease by removing the mouth-to-mouth component of CPR.

It is still advised that you hand over to a second rescuer every two minutes to ensure that the best possible compressions are given before the AED or EMS arrives.

First Aid Flowchart

Unresponsive and not breathing normal

↓

Call 999 or 112 and ask for an ambulance

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30 Chest Compressions

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2 Rescue Breaths

↓

Continue CPR 30:2

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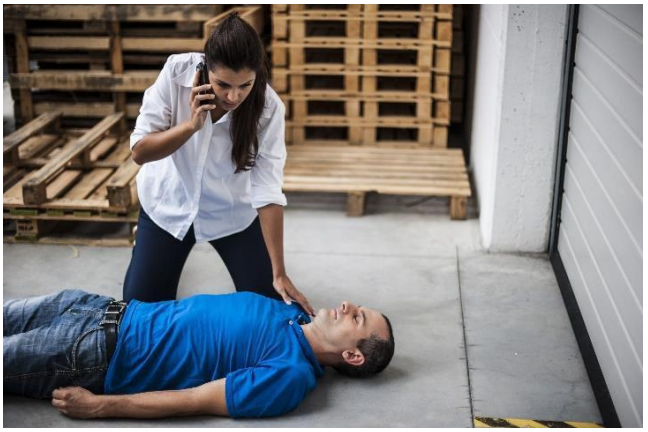
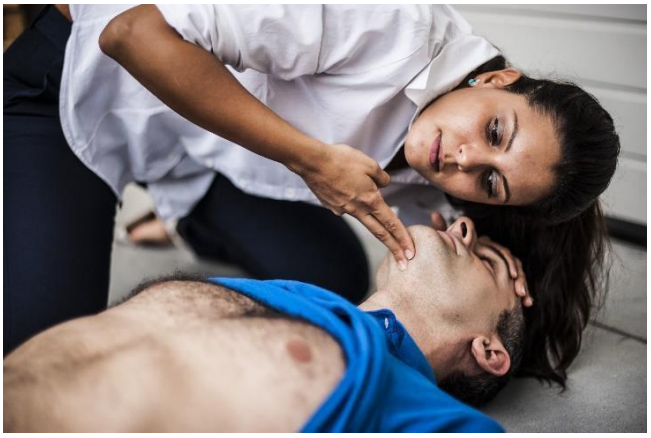
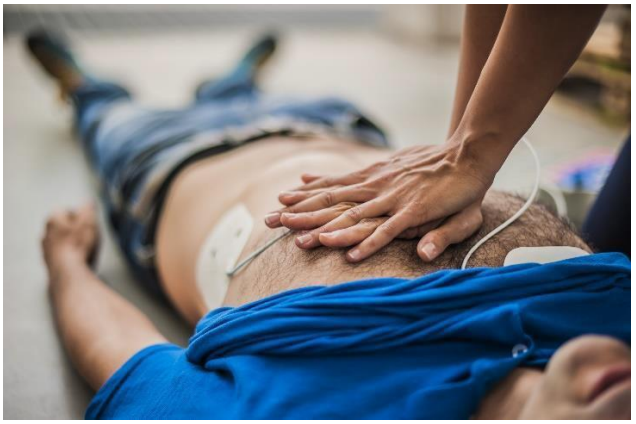
As soon as the AED arrives switch it on and follow instructions







Child CPR

Child CPR is a very sensitive and worrying thing to think about, let alone to have to do. Children normally need CPR because of a respiratory problem rather than a cardiac (heart) condition, which is more common with adults. This is why we first give five rescue breaths and then 30 compressions, followed by two further breaths. You then repeat 30:2 until youare relieved, the EMS arrives, the child shows signs of recovery or you are too tired to continue.

When doing the breaths, cover your mouth over the child's and pinch the nose closed or use a face shield. You need to gently blow for about one second, you will see the chest rise.

To do the 30 compressions, place one hand in the centre of the chest and push down at least one-third of the depth of the chest at a rate of 100 to 120 compressions per minute. If you cannot do this then use both hands. One third is about 5cm on a child.

If possible, send a bystander to call the EMS immediately. If you are on your own, you should use the "call fast" approach and carry out one minute of CPR, then make the call yourself.

Infant CPR

Infant CPR is again a very sensitive and worrying thing to have to do. Infants, like children, would normally need CPR because of a respiratory problem. First give five rescue breaths and then 30 compressions, followed by two further breaths. You then repeat 30:2 until you are relieved, the EMS arrives, the infant shows signs of recovery or you are too tired to continue.

When doing the breaths, cover your mouth over the infant's mouth and nose or use a face shield. Blow gently for about one second, you will see the chest rise.

To do the compressions, place two fingers in the centre of the chest and push down at least one-third of the depth of the chest. Do 30 compressions at a rate of 100 to 120 compressions per minute. One third is about 4cm on an infant.

With an infant you may be able to carry him carefully to meet the paramedic while continuing CPR, although CPR is best done on a firm surface.

If there is a bystander, send them to call the EMS immediately. If you are on your own, you should use the "call fast" approach and carry out one minute of CPR, then make the call yourself.

Drowning

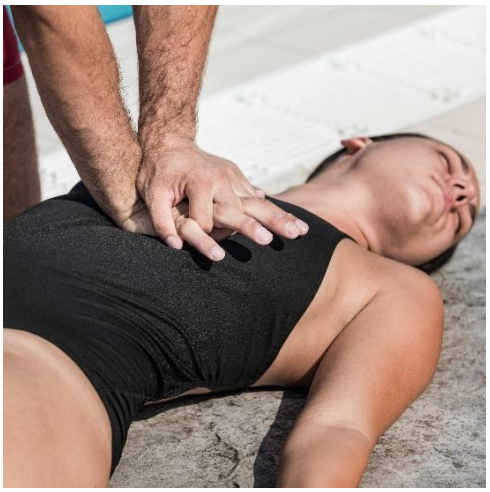
You do not inhale a lot of water in most cases of drowning. Any water consumed is generally swallowed and often vomited when resuscitation takes place.

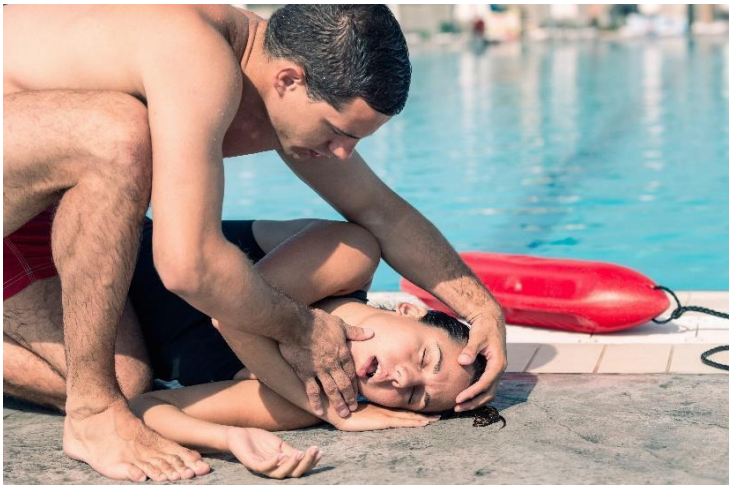
Make sure the scene is safe. Use the "call fast" approach and do one minute of CPR before going for help if alone.

Give five rescue breaths before starting chest compressions. The reason for this is that the person is not breathing because of a respiratory problem rather than a cardiac problem.

CPR with a drowning case can be more successful than with a sudden cardiac arrest.

Secondary drowning is a problem that can occur hours after a drowning or a near drowning case, so professional medical advice should always be taken.





Cardiac Arrest Survival Rates

Some data on CPR has been released by Zoll Medical. When a cardiac arrest occurs, only half of victims will need a shock. The other half will require high-quality cardiopulmonary resuscitation (CPR). A general figure is that for every one-minute delay in the AED arriving, the patient's chance of survival drops by 10%. This figure is based on no one doing CPR.

If effective CPR is delivered, the chance of survival drops by just 3-4% per minute. To clarify these figures, it assumes that the person has 100% chance of survival at point of sudden cardiac arrest.

This evidence highlights that effective and prompt CPR is vital for the patient's chance of survival. As such, effective training in these skills is essential.

Why do we need AED Units and why are they important?

The CPR efforts of a first aider are the most important step in saving a patient's life. However, when traditional CPR does not succeed in keeping the patient alive, an AED unit will be of huge value to the first aider, while they wait for the EMS to arrive.

Early use of an AED unit saves lives as it interrupts the abnormal twitching of the heart (VF), often shocking the heartbeat back into a normal rhythm.

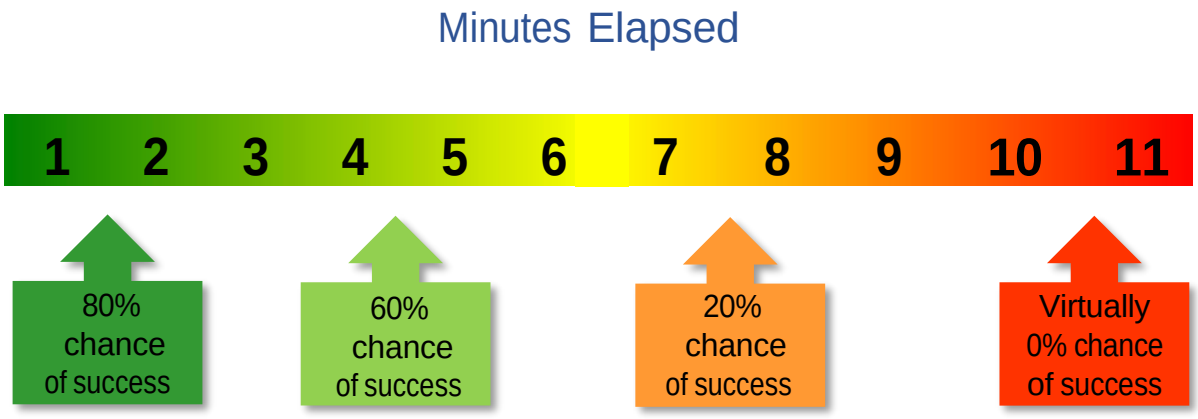
AED units are incredibly effective, and very easy to use as they have voice prompts to tell the first aider what to do and when. However, training first aiders in the use of AED units can significantly increase the chances of a patient's survival through confident and competent use of the equipment.

The only problem with AED units is that there are not enough of them. The cost of them often puts companies off buying them, but this is changing and more units are being placed where they are needed.

Survival rates of when the AED arrives

For about every one minute the AED unit takes to arrive, the patient's chance of survival drops by 10%. The target time is to get the AED unit to the patient within four minutes, but this is not always possible if there is not one on site.

It is vital to ask if there is an AED unit when you call for help, so that someone can look to see if there is one that could arrive sooner than the EMS.

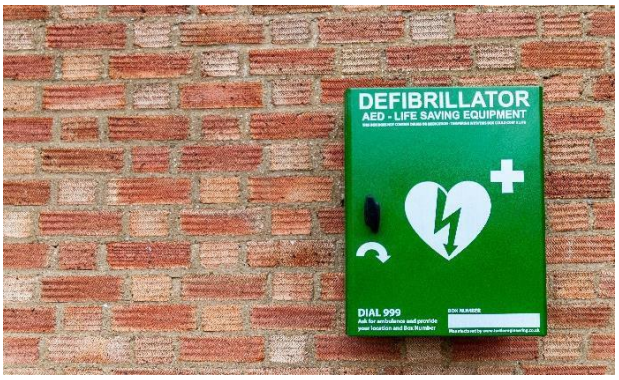


Where can you find AED Units?

AED units can be found in many places, so you need to ask and be observant. Some workplaces have AED units and these will usually be in a central location. You will also find them in public places, such as airports, railway stations, doctors' surgeries, dentists, shopping centres or sports clubs.

When you are dealing with a cardiac arrest, as well as calling for help you need to ask if there is an AED unit, as someone may know where one is and time is critical.

Have a look around when you are out and about and you will be surprised how many AED units there are.



Universal AED Sign

There is a universal sign for an AED unit and it can be found anywhere there is an AED unit placed.

The sign may be placed on the AED box or above it, so it can easily be seen from a distance.

This sign is also used to direct you to the nearest AED unit.

Different types of AED

Choking

Conscious Choking

Mild airway obstruction – they can still breath.

Serious airway obstruction – no air can pass into or out of lungs, they cannot breathe.

Ask, "Are you choking?". If a person is unable to breather or speak, treat the patient as below. If they can talk or cough, allow them to continue until they clear the obstruction or you feel you need to call the EMS

Treatment

Activate EMS.

For Adult and Child

Stand behind the victim with one foot in-between the victim's feet and your other foot behind you.

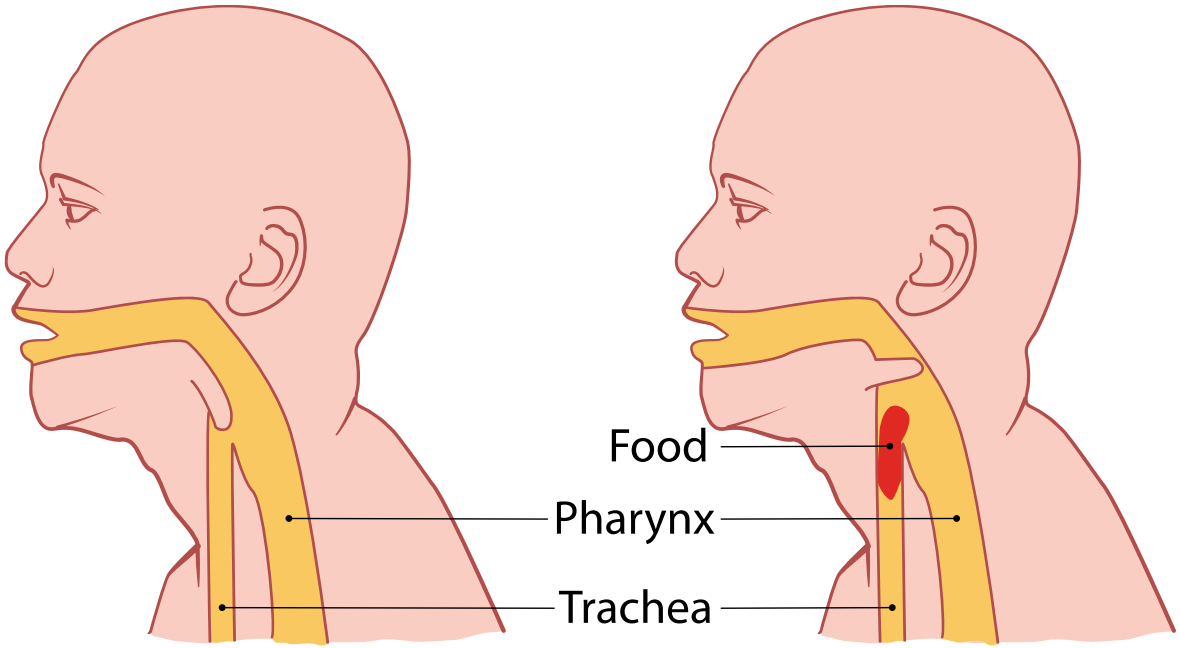
Perform five back slaps between the patient's shoulder blades. Place the flat side of your fist just above the patient's belly button. Grab the back of your fist with the other hand and pull inwards and upwards.

Continue back slaps and abdominal thrusts until the object is cleared or the patient becomes unconscious. In the event that the patient becomes unconscious, you would perform CPR.

Advise the patient to seek medical help afterwards, even if the object has been successfully cleared.

Infant

Administer five back blows and chest thrusts using your two fingers, until the obstruction is cleared or the patient becomes unconscious.


Food
Pharynx
Trachea

Unconscious Choking

This is where someone is:

- Unconscious
- No signs of life
- Absent breathing
- Patient may have collapsed after you have been performing back slaps and abdominal thrusts

Treatment

Activate EMS if you have not already done so. If you know the patient is not breathing, start CPR.

Give 30 chest compressions as per CPR, 100-120 compressions per minute, 5-6cm in depth.

Check the mouth for a foreign body. If something is visible, sweep it out with a finger.

Never do blind finger sweeps

Attempt two rescue breaths - if the first breath does not make the chest rise, reposition the head and re-attempt breaths. If the chest still does not rise, repeat the cycle of compressions, foreign body check and breathing attempts until the chest rises.

After rescue breaths make the chest rise, continue cycles of 30 compressions to two breaths until EMS personnel or another trained person takes over, signs of life are evident, the scene becomes unsafe, AED becomes available or you are too exhausted to continue.

Types of Bleeding

There are different types of bleeding and in the next module we will look at controlling serious bleeding.

The four main types of bleeding are:

1. **Capillary**
2. **Venus**
3. **Arterial**
4. **Internal**

Your heart pumps blood from one side into the lungs and then sucks it back from the lungs into the other side of the heart where it is pumped out through your arteries to your body's organs and capillaries. The blood then returns to the heart via the venous systems through your veins.

The types of bleeding can easily be identified by the colour and the way the blood leaves the body.

Capillary Bleeding – is the least serious bleed and this is where blood oozes through the skin from a small cut or graze. Capillary bleeding usually stops with little or no effort and can easily be controlled by cleaning the wound and applying gauze dressing or adhesive dressing, if necessary.

Venus Bleeding – can be identified by a steady non-pulsing flow of very dark red blood. It is dark red because it has a low level of oxygen and is returning to the heart, this is a serious bleed.

Arterial Bleed – this is the most serious type of bleed. Blood is bright red and pulsing as it comes through the skin. It is bright red because it has come from the heart and lungs and is oxygenated.

Internal Bleeding - this can occur for various reasons, including illness and impact, and can be identified by bruising and signs of shock. Controlling internal bleeding will require EMS and the first aid treatment is the same as for shock, which will be covered later.

Controlling Serious Bleeding

Where possible, ask the patient to apply direct pressure to the wound while you are putting on your gloves. Direct pressure will reduce blood loss and can be delivered using a hand or a pressure dressing.

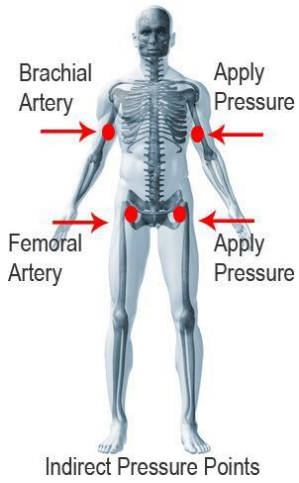
Inspect the wound and look for the exact point where the bleeding is coming from and activate the EMS.

Use direct pressure, by applying a gauze pad or pressure bandage. Starting at the furthest point away from the heart, bandage towards the heart.

If the blood seeps through your first dressing, remove it and apply a new one, ensuring that pressure is applied accurately at the point of bleeding.

Use your own judgment: if there is only a tiny amount of blood coming through, it may not be necessary to remove the dressing.

Place injured limbs in an elevation sling to further reduce bleeding and rest the limb.



Indirect Pressure Points

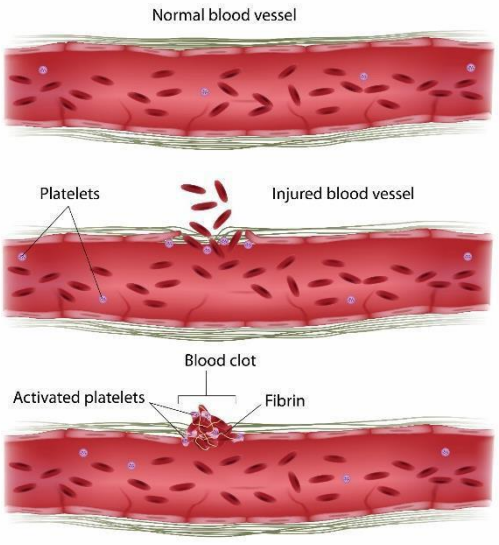
Pressure points are where you crush the artery where it passes over bone. The use of pressure points was advised in the past as it can slow down bleeding but in the 2015 ERC recommendations, their use is not recommended as an effective method of controlling life-threatening bleeding.

A Tourniquet is a strap that is placed around a limb to stop all blood flow past that point. Additional training is required on their use.

Haemostatic dressings are designed to accelerate clotting in catastrophic bleeding. Additional training is required on their use.

In all cases of bleeding, monitor the patient for shock. Sit or lay patient down.

How the Body Stops Bleeding



Shock

There are many types of shock. The first is caused by blood loss or trauma, where either blood leaves the circulatory system internally or externally, or the circulatory system fails causing blood pooling in the circulatory system. With shock, this causes a lack of oxygen to the body's tissues.

Signs and Symptoms
Restlessness, dizziness, confusion, cool moist skin, anxiety, delayed capillary refill time and weakness.
Another type of shock is where the body has an allergic reaction to a substance that has been eaten, injected or inhaled and this is called anaphylactic shock and will be covered later.

Treatment
Treatment for shock is simple. Because there is not enough blood in the circulatory system you can temporarily adjust the balance of blood by elevating the persons legs 15-30cm to allow blood flow back to the vital parts of the body.

- Make sure the patient is comfortable
- Elevate the legs 15-30cm
- Activate EMS

Never elevate the legs if you suspect spinal injury or other limb damage

Hypovolaemic shock is when there is not enough blood circulating in the body's circulatory system. This can be a result of bleeding or other damage.
Neurogenic shock is where the body does not have control of the circulatory system.
Cardiogenic shock is a poorly functioning heart.

Fainting

Fainting is a mild form of shock and is not often deemed to be serious enough to activate EMS. Fainting occurs due to a lack of oxygen to the brain and a drop in blood pressure.

While in themselves these are not serious occurrences, their underlying cause may be; therefore, you should alert the EMS if someone faints. People can faint for a number of reasons such as overheating, emotional stress or pregnancy, as well as more serious conditions like epilepsy, diabetes, anaphylaxis or other serious medical conditions.

When someone has fainted, you need to ensure that they are breathing and the airway is open, and then raise the legs to increase the blood pressure within the body's vital organs. It is important with fainting (regardless of the cause) for the patient to stay down until the EMS arrives. Standing up will cause the blood to flow from the body's vital organs, risking causing a more serious situation to arise.

Injury Assessment

With injury assessment, we are dealing with someone who has had an accident and although some injuries may be obvious, some may not.

So, we do a head to toe survey to make absolutely sure exactly what is wrong with the patient prior to treating them or possibly moving them.

It is important to tell the patient not to move. If you suspect a spinal injury do not move them, activate EMS and stabilise the neck and head (covered in the next chapter).

There is a formal way of performing an injury assessment but in the real world you may do it slightly differently, if, for example, there are obvious signs that the person can move limbs and is not seriously hurt. However, work through this process in your mind to make sure that you have not missed anything.

With the majority of accidents, your role as a first aider is simply to stabilise the patient until the EMS arrives. In these instances, you may not have to do this assessment.

Head to Toe Survey

In order to work out what is wrong with someone we can carry out a head to toe survey. We work down the body to look for signs and, if possible, for symptoms.

Head - soft spots, check for blood and cuts, look at the eyes, teeth, blood or fluid from the nose or ears, bruising of the eyes and behind the ears.

Neck - check for bleeding, jugular vein distension, tracheal deviation, open wounds, and check collar bones and shoulder blades.

Chest - check for wounds, laboured breathing, possible broken ribs.

Arms - bleeding, bruising, deformity, open wounds, distal sensation and movement.

Abdomen - bleeding, abdominal tenderness, bruising, guarding.

Pelvis - bleeding, unstable, if the legs look out of line this could indicate a broken pelvis.

Legs - bleeding, bruising, deformity, open wounds, distal sensation and movement.

Take your time and talk to the patient the whole time you are carrying out the survey, even if you think they may be unconscious

The Spine and Neck

The spine must be flexible to allow for movement. This is why it is not composed of one solid bone but 33 separate vertebrae, which are set one on top of the other and are connected by a system of muscles and ligaments.

In order to maintain a stable centre of gravity, back muscles should be strong so they can act as a counterweight, and they should be able to contract in order to compensate for body movements.

Good posture should be maintained on a daily basis to prevent back pain.

The 33 vertebrae that form the human spine are:

- 7 cervical vertebrae
- 12 thoracic vertebrae
- 5 lumbar vertebrae
- 5 sacrum vertebrae (fused together and connect the spine to the hip bones)
- 4 coccyx pieces (fused together and provide attachment for ligaments and muscles of the pelvic floor

Only the top 24 bones are movable and they are separated by 23 intervertebral discs.

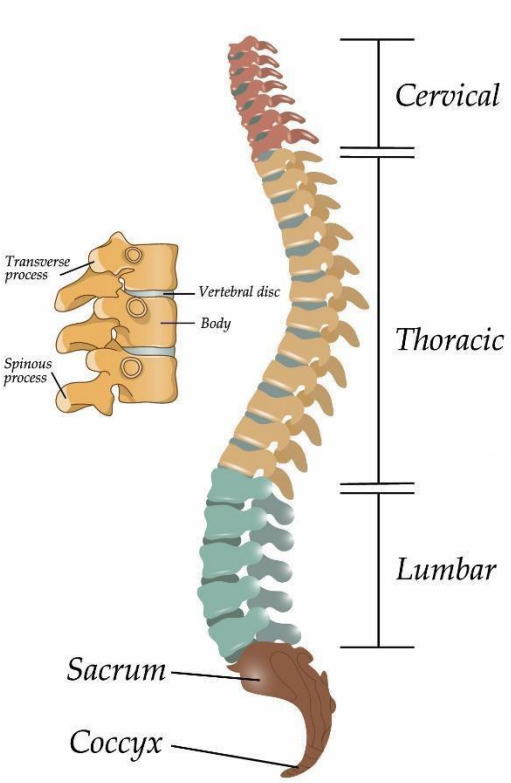
Taking a front view of the vertebrae, they are perfectly aligned in vertical form. However, from a side view the alignment is curved. The upper (cervical) area and the lower (lumbar) area are curved backward. This is referred to as lordosis (cervical or lumbar lordosis). The middle area is curved forward, and is referred to as dorsal kyphosis.

This positioning permits the spine to be very resistant to vertical weight, since its curves allow flexibility. If weight is considerable, the spinal curve may increase temporarily, cushioning the pressure exerted on the vertebrae. This is why transporting weight on the head is a traditional practice in certain countries. By carrying weight this way, the centre of gravity is kept at the spinal axis and back muscles are relieved from much of the strain.

The spinal cord is the main pathway of communication between the brain and the rest of the body. It is a long, fragile, tube-like structure that extends downward from the base of the brain. The cord is protected by the back bones (vertebrae) of the spine (spinal column). The vertebrae are separated and cushioned by disks made of cartilage.

Spinal Injury Management

Spinal precautions



Suspect spinal injuries with:

- Motor vehicle accidents
- Pedestrian-vehicle collisions
- Falls
- Blunt trauma
- Diving accidents
- Any trauma leaving the patient unresponsive.

One of the fears of providing first aid is maybe doing more harm to the patient. With spinal injuries this can occur if you don't follow some basic rules. The spine itself contains the spinal cord, which is where all of the messages from your brain are sent to control your entire body.

When damaged, the spinal cord cannot be repaired and, depending on where it is damaged, will affect the level of paralysis that occurs. Damaging the spinal cord in the lower lumber region of your back can result in the loss of the use of your legs, and damage in the higher part of your spine can result in the loss of control to vital systems such as respiration.

If you suspect a spinal injury but you need to place the patient in the recovery position because you cannot maintain an open airway, try to keep the spine straight.

- If alone use the recovery position taught earlier
- With one helper, one of you steady the head while the other turns the patient
- With two helpers, you steady the head, one helper turns the patient and the other keeps the back straight
- If there are four of you, use the log roll

It may be that the person has not done any serious damage to their back, but it is better to be safe than to do them further harm. There is only one place that can determine actual spinal damage and that is a hospital so when they arrive the EMS will use extreme caution, leaving them in the same position where possible to transport them to hospital.

Treatment

- Activate EMS
- Do not move patient (unless life threatening danger arises)
- Maintain spinal stabilisation
- Check ABC's

Head Injuries

Head injuries can occur very easily by a blow to the head, falling or car accidents. You can even damage the brain by falling and landing on your feet, as the impact can transfer up your body and damage the base of the brain.

There are different types of head injury:

Concussion - where the brain is shaken

Compression - where there is pressure on the brain caused by swelling or bleeding, fractures due to direct or indirect force

Fracture - where the skull is cracked

Patients with head injuries do not always lose consciousness, although this is common.

Signs and symptoms

Signs and symptoms of a head injury can include watery blood coming from the ears and nose, nausea, sickness, dizziness, confusion, personality change, difficulty speaking, headache and pain.

Head injuries need to be checked out by medical professionals, so your job as a first aider is to monitor the patient's ABCs and deal with any serious bleeding.

Treatment

- Recognise and activate EMS
- Manually stabilise the head and spine
- Check and correct ABC's

Try to get the patient to lie down and keep the airway open, if possible, support the head and neck in case of spinal injury.

A recognised scale for assessing if someone is unconsciousness is the AVPU scale:

A - **Alert** - are they alert?

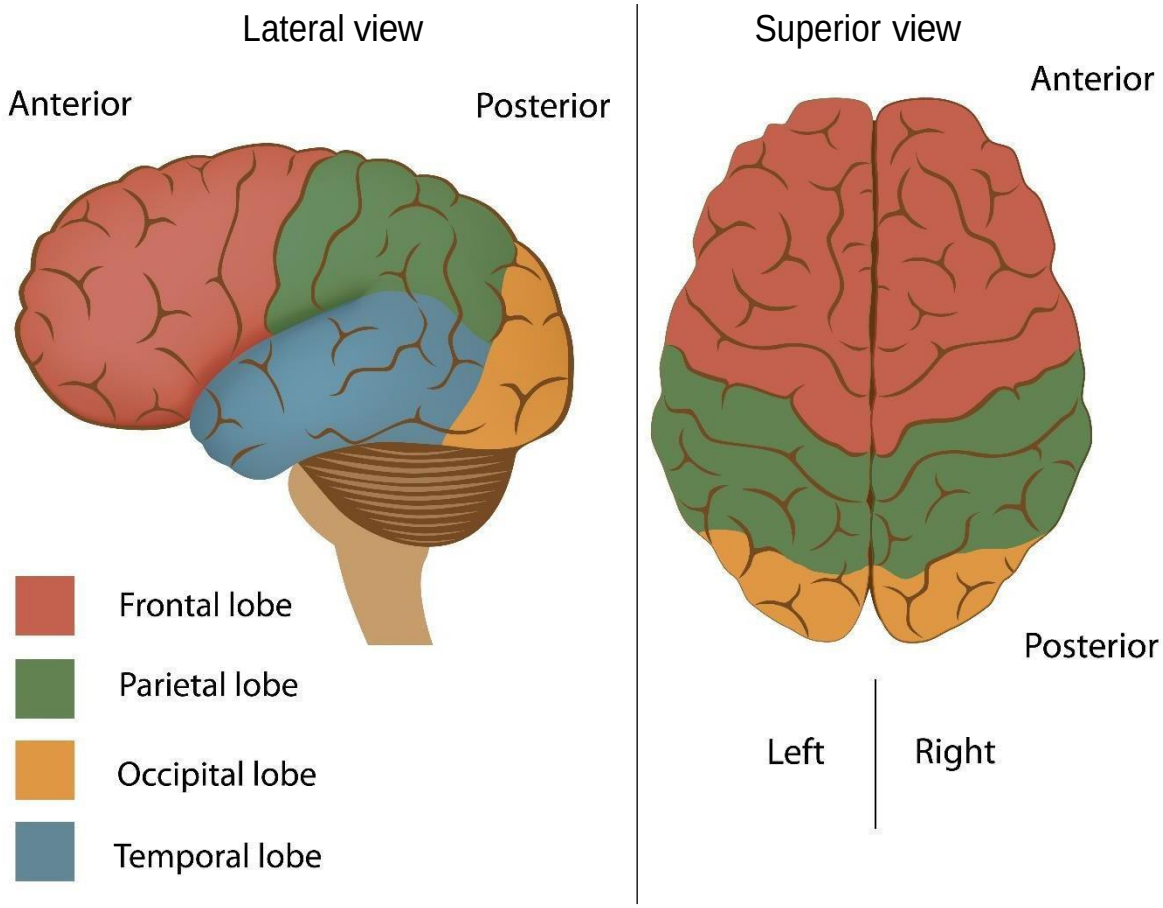
V - **Voice** - do they respond to voice?

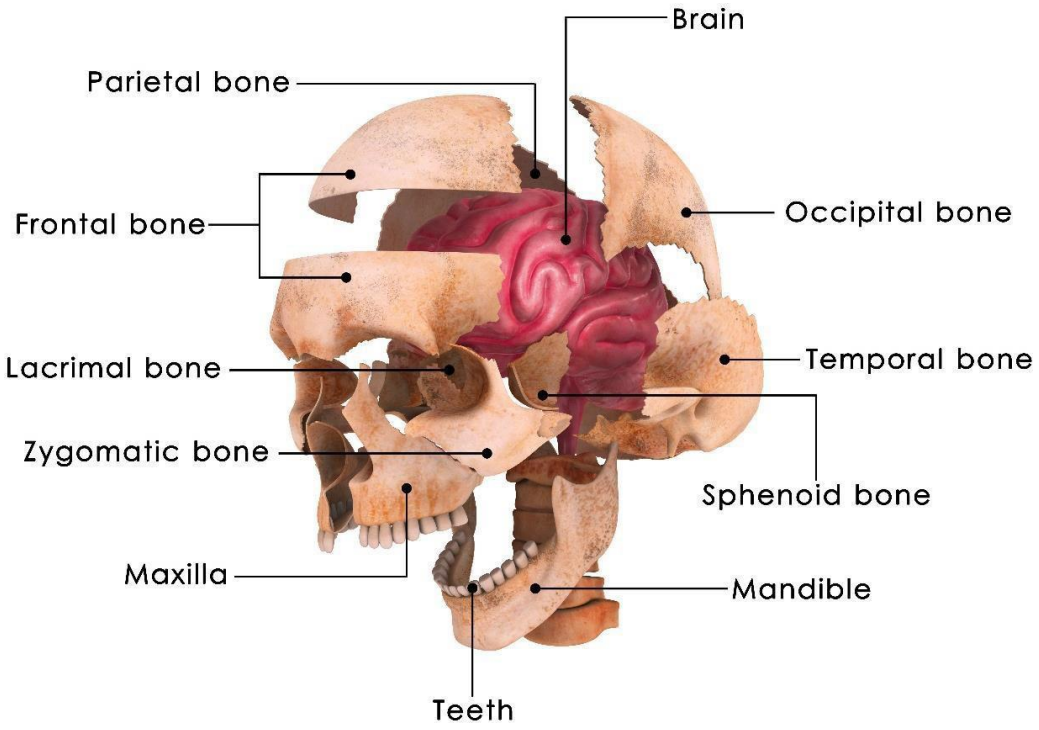
P - **Pain** - do they respond to pain?

U - **Unresponsive** - patient is unconscious

A brain haemorrhage is bleeding in or around the brain, which may be caused by a traumatic brain injury (TBI) or happen spontaneously as a result of a ruptured aneurysm, which is a form of stroke, also known as a haemorrhagic stroke.

Lobes of the Brain



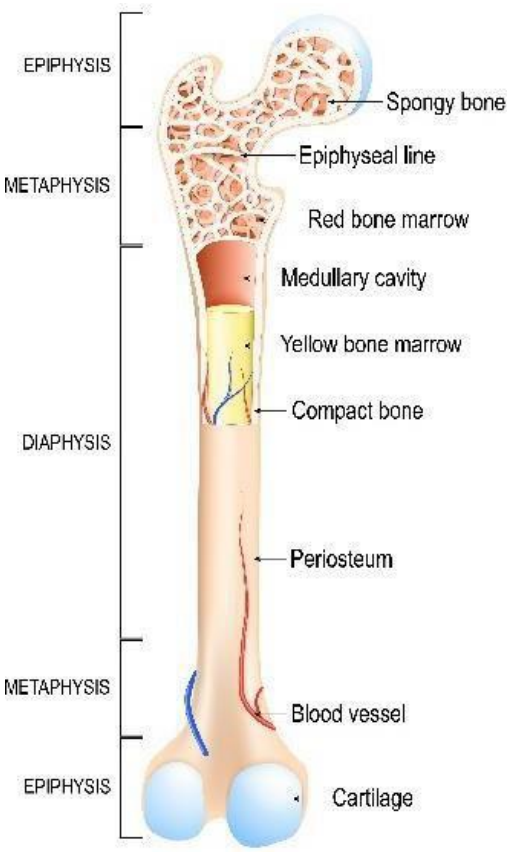


Fractured Bones

Fractured bones or suspected fractured bones should be immobilised and this does not mean always strapping the bone. Care must be taken to avoid moving the limb when putting any dressing on. You can use a folded magazine as a makeshift splint or a commercial splint. Tie the splint either side of the break and place the limb in a low sling, not an elevation sling.

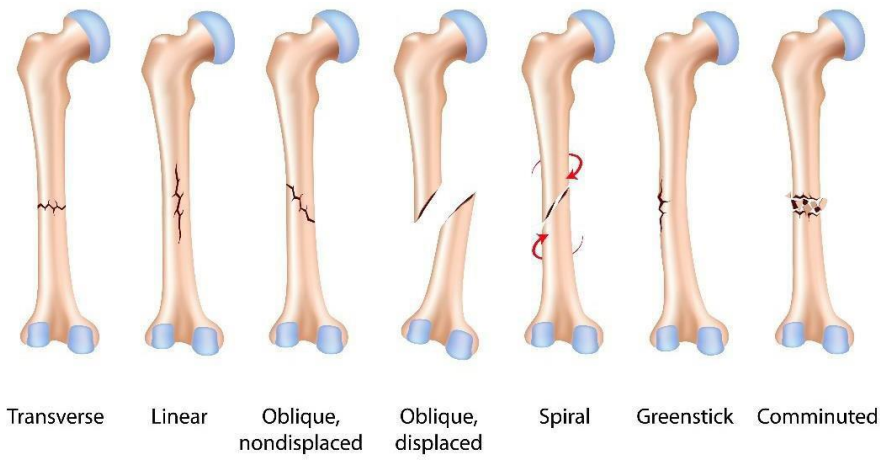
With a dislocated shoulder you can place the arm in a low sling and use another sling, made into a long bandage, over the arm and round the body to stop the arm from moving.

Fingers can be splinted using a pen or ruler, or secured to the next finger. Broken legs should be left and the EMS activated.



- Fractures are cracks in the bones
- Closed breaks or fractures are where the bone is broken completely
- Compound fractures are where the bone punctures the skin
- Complicated breaks are where nerve damage has also occurred
- Dislocations are where a joint comes apart

Types of Bone Fractures



Soft Tissue Injuries

Ligaments hold joints together and tendons attach the muscles to the bone. Strain is an injury to muscles and tendons. Sprain is an injury to the ligaments surrounding a joint.

All are treated the same way and the way to remember is the pneumonic RICE

R - Rest the limb

I - Apply Ice to reduce swelling

C - Comfortable – comfort and support the injured part

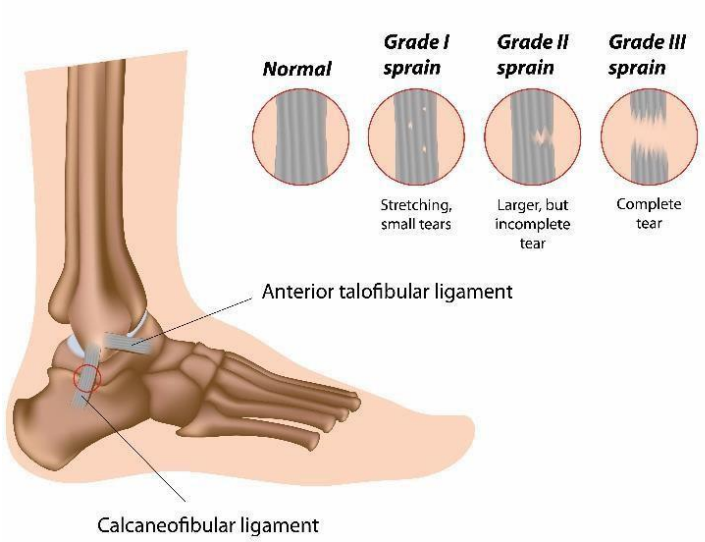
E - Elevate the limb to reduce swelling

Consider the mechanism that caused the injury, look for deformity, open wounds, tenderness, swelling, discolouration, bruising and loss of movement.

Stabilise and immobilise fractures in the position found.

Cover any open wounds with dry clean dressings but do not apply pressure over possible fractures. There are many ice packs available, some you simply break in half and they provide instant ice, others are gel packs and they are put in the freezer.

Lateral ankle sprain



Other Injuries

Types of wound

- Laceration
- Incision
- Puncture - where there is a hole in the body
- Contusion - bruise
- Bite - where an animal or insect punctures the skin
- Velocity - where the item has gone right through and out the other side
- Amputation - where a body part has been cut off
- De-gloving - where all skin is pulled away from the body

When dressing a wound, start at the furthest part from the heart if on arms and legs

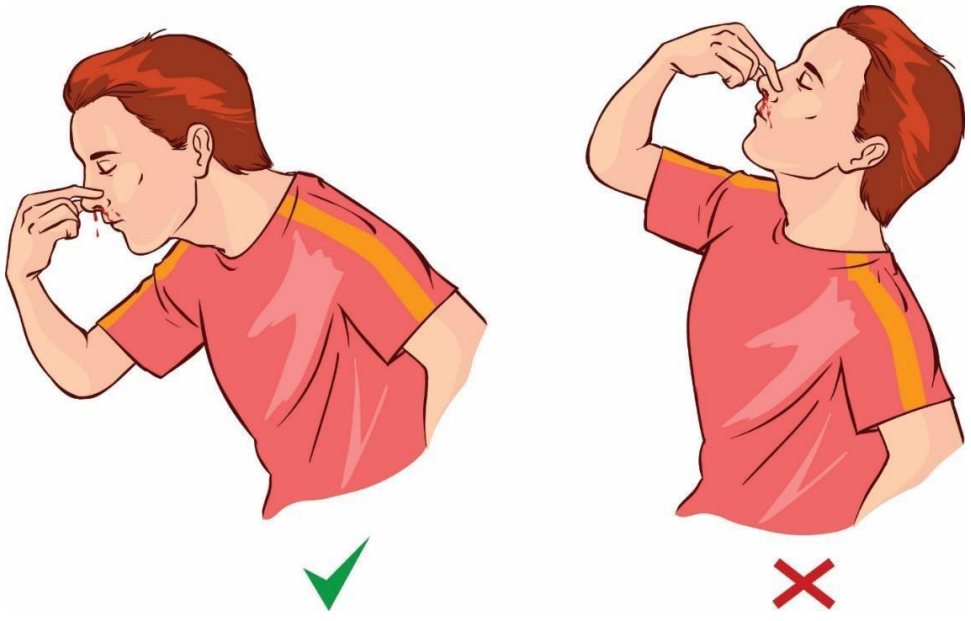
To check whether there is normal circulation, after applying the dressing use the capillary refill test. Squeeze the fingertips for five seconds, the tip/nail bed should turn white, releasethe pressure and the colour should return in five seconds - this can be done on any part of the skin.

Injuries and Bleeding

Elevate where possible, apply direct pressure using a pressure bandage or gauze pad, add more padding if necessary. Activate EMS if severe bleeding is present. If the wound appears contaminated, irrigate with clean or sterile water. Minor wounds - clean and apply dressing.

Nose Bleeds (Epistaxis)

Pinch nose, tilt the head forward and apply a cold pack to the bridge of the nose.



Other Injuries

Evisceration (Disembowelment)

Activate EMS, cover with sterile or clean **moist** dressing. Do not attempt to push bowel or organs back into place. Keep the patient warm, care for shock, check and correct ABCs.

Amputation

Activate EMS, control bleeding with direct pressure, immobilise partial amputation with bulky dressing. If the amputated part can be found, wrap in a clean or sterile dressing and place in a plastic bag. Put bag in container of ice and water. Care for shock, check and correct ABCs. Do not soak amputated part in water or allow it to freeze by putting it directly on ice.

Dental Emergencies

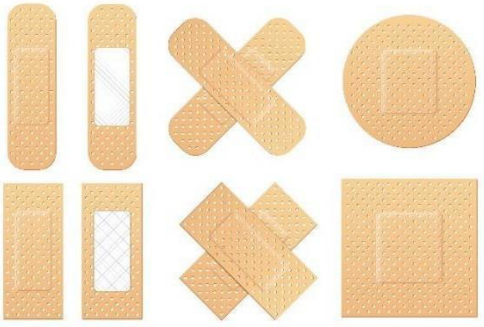
For bleeding, apply a moistened piece of gauze with direct pressure to the area until the bleeding stops. Be careful not to block the airway or cause a choking hazard. If teeth are knocked out, avoid handling them by the root end, rinse with water, and store in milk. Apply a cold compress to the outside of the mouth, cheek or near the injury, to keep any swelling down and relieve pain. If any life-threatening conditions exist, such as breathing difficulty, shock or severe bleeding, call 999 or 112 and provide appropriate care. Otherwise seek medical treatment and see a dentist as soon as possible.

Graze

This is where the skin is slightly damaged and requires minimal care to clean the wound with water and cover with a gauze pad, if required to protect the wound. A graze will heal very quickly and they sometimes look worse than they are.

Small cuts and plasters

With small cuts and blisters, the area can be covered with a plaster. Try to avoid the sterile pad coming in to contact with anything that could contaminate it.



Abdominal Injuries

There can be many causes of abdominal emergencies. These may include, but are not limited to, internal bleeding, appendicitis, bowel obstruction, etc.
Recognise and activate EMS, care for shock, check and correct ABCs.

Crush Injuries

The general rule is that you leave the item in place if you cannot remove it within 15 minutes of the injury occurring. The build-up of toxins can be better controlled by the EMS.

Embedded Objects

The main rule is do not remove an object as it will do more damage and expose the wound. Use dressings to pad either side of the object but take care not to apply any pressure to the item in the body. It can be best not to do anything if there is not a problem with serious bleeding.

De-gloving

This is where the skin is pulled away. It can occur in different accidents, from serious burns, to a limb getting stuck and removing it pulls the skin off. Care has to be taken as infection easily enters and it is very hard to treat. Shock often occurs.

Internal Bleeding

This is not something the first aider can stop, but they can treat the shock and reassure the patient. Lay the patient with their legs raised 15-30cm to allow blood flow to the vital organs.

Chest Injury

Broken or even cracked ribs are very painful. In some cases, chest injuries can cause problems like collapsed or punctured lungs, which can be life threatening and the patient can deteriorate very quickly as oxygen levels reduce to dangerous levels.
Broken ribs in some cases can puncture the skin or wound the lungs. If the lungs are damaged then fluid can escape to the chest cavity.

Coughed up blood could indicate a problem in the lungs. If the lung is punctured, you may hear air passing through the wound and the blood will be bright red. Sucking chest wounds like this should be left open and without a dressing (ERC2015). When the lungs are not working correctly the body becomes starved of oxygen and this causes hypoxia.

Flail chest

This is where the ribs have been broken in many places causing the chest to appear as if floating. Try not to move them await EMS.

Pneumothorax

This is where the lung collapses. Very painful and breathing difficulties. Await EMS.

Burns

Superficial Burns

Pain, red skin, swelling.

Partial Thickness Burns

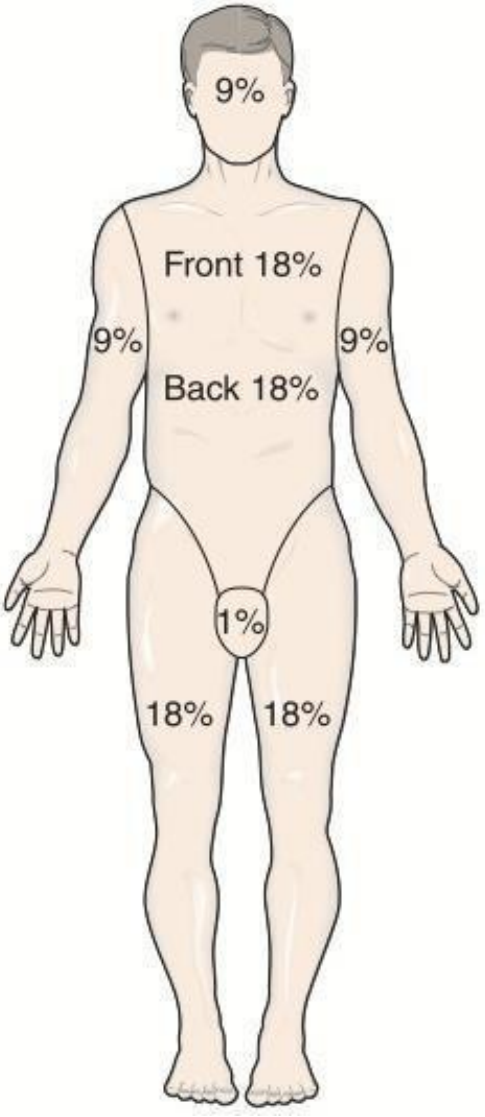
Pain, blistering, white or red skin, body fluids leaking from the burn site.

Full Thickness Burn

Minimal pain at the burn site, multi-coloured skin (black/white/grey/red), severe body fluid loss.

Treatment

- Stop the burning by cooling the burn with cold running water for a minimum of 20 minutes as soon as possible
- Use a gel burn dressing if available
- Use cling-film or burn dressing film by laying over the burn, do not wrap around the injured part to avoid damage by swelling



Chemical Burns

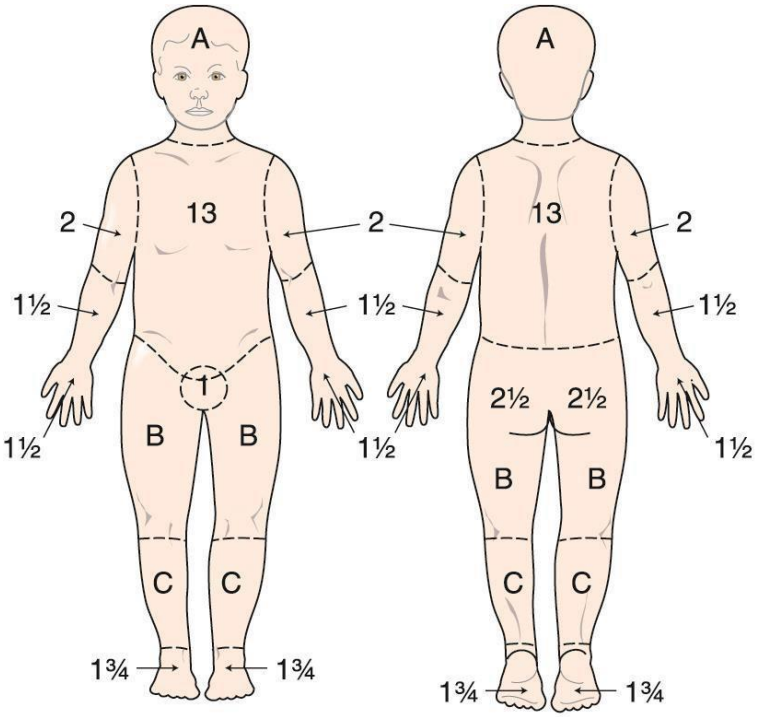
- Flush with water
- Activate the EMS if severe conditions exist

For all full thickness burns, activate the EMS immediately

Electrical Burns

- Make sure the scene is safe
- Look for entrance and exit burns
- Care for shock

Lund diagram (estimate percentage of paediatric burn)

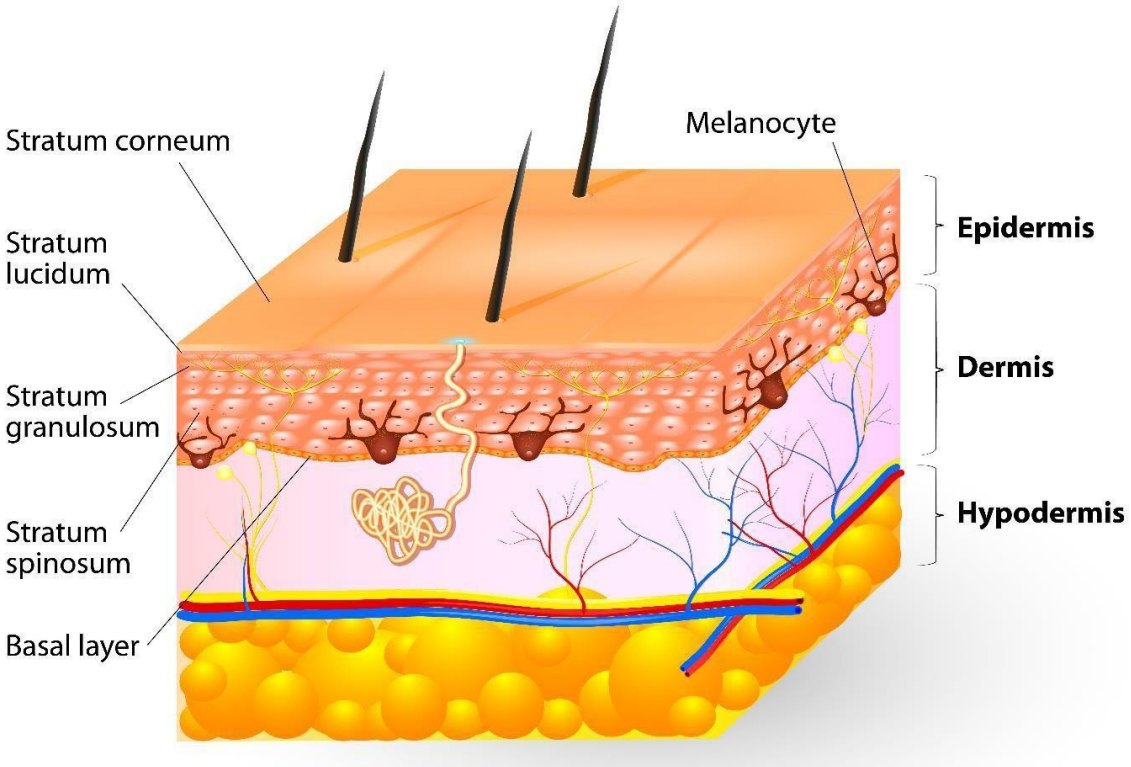


Relative percentages affected by growth

Age (years)	Area A	B	C
0	9½	2¾	2½
1	8½	3¼	2½
5	8½	4	2¾
10	5½	4½	3
15	4½	4½	3¼
Adult	3½	4¾	3½

A = ½ of head
B = ½ of one thigh
C = ½ of one leg

The Layers of Human Skin



Eye Injuries

Burns

- Remove patient from source of injury
- Bandage both eyes

Chemicals

- Flush with warm water away from the un-affected eye for 20 minutes
- Bandage both eyes
- Reassure patient and stay with them whenever possible

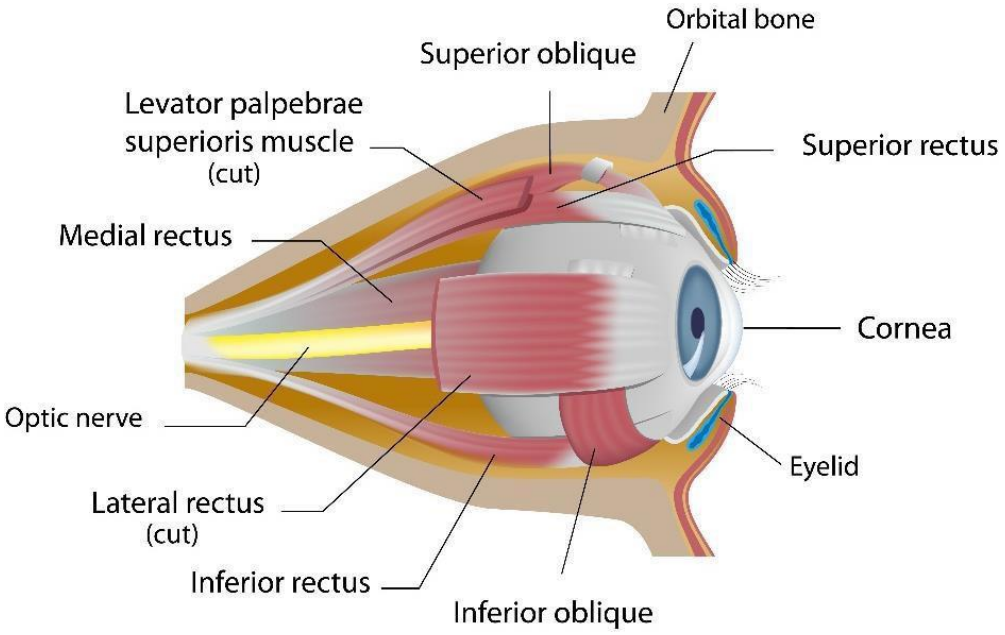
Penetrating Trauma

- Do not remove the penetrating object
- Bandage the object into place taking care not to press it further into the eye
- Use a cup or similar object, bandage into place and cover both eyes

Active EMS if severe conditions exist. Seek professional medical treatment for all forms of eye injuries.

Patients wearing contact lenses may have to remove them. We bandage both eyes to avoid further injury because both eyes track together even if one is covered or closed.

Lateral View of the Right Eye



Poisoning

Firstly, ensure the poison that hurt the patient cannot hurt you. It is important to identify the poison and, if possible, obtain the COSHH data sheets for the poison. Poisons can be eaten, inhaled, injected, instilled and absorbed (through the skin).

There are two main types of poisoning:

1. The type where it is best to cause vomiting - such as poisoning caused by swallowing tablets
2. The type is where the poison is best left in the stomach - such as poison that could be corrosive when mixed with vomit and cause major respiratory problems

Signs and Symptoms

- Altered level of consciousness
- Burning sensation in the chest and throat
- Excessive sweating
- Difficulty breathing
- Nausea and vomiting
- Hallucinations
- Headache
- Burns/stains around the mouth
- Severe abdominal cramping

Treatment

Activate EMS and call Poison Control Services - follow their directions.

Bites and Stings

Firstly, with a bite or sting, is what hurt them going to hurt you?

Many first aiders have ended up being hurt by not making sure the area is safe.

Bites

These can be caused by animals, including humans. Remember the ABCs, check to see if serious bleeding is going to be a problem. Treat cuts using the best method previously described.

Stings

With some stings, take care not to leave the stinger or a part of it in the body. Use a credit card to scrape the stinger out rather than tweezers as if you squeeze the stinger it may inject more toxin into the body.

Stings can be life threatening - if the patient has a severe allergic reaction

Embedded Objects

The main rule is not to remove an object embedded in the body. Doing so may do more damage, will expose the wound and can increase blood loss. It will be very frightening for the patient and for the first aider, but try and follow some basic steps.

Use dressings to pad either side of the object, but take care not to apply any pressure to the item in the body. The best thing might be to do nothing, provided there is not a problem with serious bleeding.

You can use a sling made in to a doughnut, using it to go around the item. However, the slings in most first aid kits are not suitable for this.

If you cannot apply pressure to the wound then consider using indirect pressure on the pressure points. Talk to the patient the whole time.

Allergic Reactions

The body can suffer various reactions to stings, chemicals, food or gases.

In most cases the reaction is mild, although uncomfortable. For example, if a bee stung you on your hand, your hand would hurt and swell. For someone who suffers from an allergic reaction or anaphylaxis shock, their body would react violently, causing severe anxiety, red blotchy skin especially around the neck and face, swelling of the mouth, tongue, face and neck, and a rapid pulse.

As the reaction becomes more severe, they would suffer from breathing difficulties and, in some cases, respiratory arrest.

Food substances such as peanuts commonly cause allergic reactions in children and adults. Even a very small trace of nut can cause a patient to have an anaphylactic reaction and this will come on very quickly. If this happens you need to activate the EMS immediately.

Make the patient sit down, keep them calm and, if they have it, get their medication. Anaphylaxis sufferers often carry an Epi-Pen, Emerade or Jext. and some may just have tablets. The auto injectors are single dose, automatic injectors that deliver a pre-dosed amount of drug into the body and are normally administered by the patient.

Allergic reactions can happen because of drugs, poisons, plants, inhalation or insect stings.

Signs and Symptoms

- Altered level of consciousness
- Hallucinations
- Burning sensation in the chest and throat
- Excessive sweating and difficulty breathing
- Nausea and vomiting
- Severe abdominal cramping and rashes/hives

Treatment

- Activate EMS, place patient in a position of comfort
- Look for obvious bites and stings
- Locate the patients prescribed medicine, inhaler or auto injector
- Assist the patient to utilise the device

Once the drug has been administered, the patient usually starts to feel better within minutes; however, it is still an EMS emergency.

Heat and Cold Emergencies

The body is very effective in maintaining our correct temperature in conditions of heat and cold. We can go skiing in freezing cold conditions or lay on a hot sunny beach.

We control our temperature by various means: we remove or add clothing, we move into shade or swim to cool down, or go inside to sit by a heater to warm up. These are conscious actions, choices we make.

Our bodies also have an automatic thermostat, which maintains our temperature by adjusting circulation and heartbeat. It causes us to shiver to warm us up and perspire to help us cool down. Problems can occur when this thermostat does not function correctly due to extremes in temperature.

Heat Cramps
Faintness, dizziness, exhaustion, stiff, board-like abdomen, possible nausea and vomiting, abnormal mental status, severe muscle cramps/pain.

Treatment
Get the patient out of the hot environment, cool the patient, remove tight clothing and give sips of water if tolerated.

Heat Exhaustion
Moist, clammy, pale skin, weakness, faintness/dizziness, headache, nausea and vomiting.

Treatment
Get the patient out of the hot environment, gently cool the patient, remove tight clothing and give water if tolerated. If the patient does not improve contact EMS and monitor ABCs.

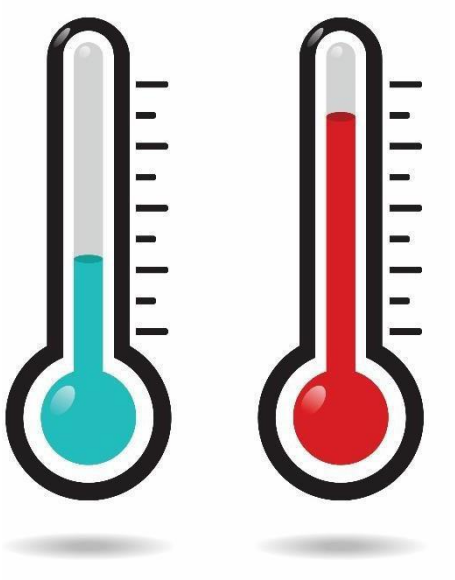
Heat Stroke
This is a LIFE-THREATENING CONDITION, where the body's thermostat fails due to extreme temperature. With heat stroke, do not give the patient anything to drink. The most obvious sign of heat stroke is that the patient no longer sweats and their skin is dry.

- Dry or wet skin, usually red
- Very high body temperature
- Coma or near coma

Treatment
Contact EMS immediately, get patient out of the hot environment, monitor ABCs at all times until the EMS arrives, remove clothing as necessary, give nothing to drink, gently cool the patient using wet towels or a hose.
An important factor with any heat-related problem is often dehydration; so always make sure you drink plenty of water to hydrate your body to enable it to control its own temperature.

Factors that affect the Onset of Cold Emergencies

- Weather
- Age
- Pre-existing medical condition
- Alcohol or drug consumption
- Clothing



Hypothermia

Shivering, feeling of numbness, slow breathing, slow pulse, slurred speech, decreased levels of consciousness, hard, cold, painless body parts, death

Treatment

- Remove the patient from the cold environment
- Gently re-warm by removing wet clothing and covering the patient with a dry blanket
- If patient does not improve and shows a decreased level of consciousness or becomes unconscious, activate EMS

It is important to warm the patient gently and slowly, do not expose them to extreme heat

Frost Nip

This is where the skin freezes and becomes red, white and painful. This can usually be helped by getting the patient to put their fingers under their arms to warm them.

Frost Bite

- Waxy looking skin
- Discoloured skin
- Numbness
- Swollen extremities (usually fingers and toes) caused by prolonged exposure to the cold

Treatment

Seek immediate professional medical help. Do not rub the affected area. Re-warm with warm water, NOT hot. Do not re-warm the area if chance of refreezing exists.

Illness Assessment

When doing an illness assessment, remember an illness is defined as an unhealthy condition of the body and you may be dealing with someone who is feeling slightly unwell or someone with an underlying medical condition.

There is a simple process of assessing somebody that we can follow, which is remembered using the pneumonic S.A.M.P.L.E

S - Signs and symptoms - look for signs such as temperature, skin colour and pulse rate. Ask the patient questions to determine their symptoms, such as if they feel unwell, have nausea, pain or discomfort.

A - Allergies - ask the patient if they are allergic to anything, such as types of food, stings and antibiotics.

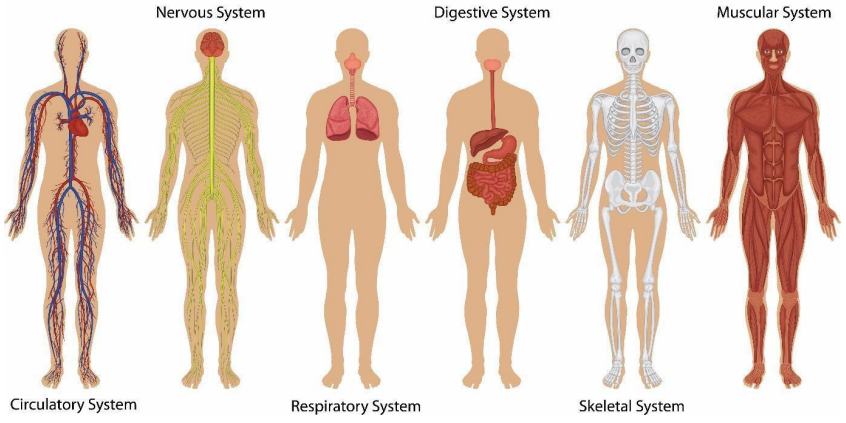
M - Medication - ask the patient if they are taking any medication, if so, have they taken it today.

P - Pre-existing medical conditions - ask the patient if they have any medical conditions such as asthma, diabetes, angina or anaphylaxis.

L - Last meal - ask the patient when they last ate and what they ate. This will give you an idea about why they feel unwell or can indicate whether something they have or haven't eaten recently could have affected their diabetes.

E - Events - ask what the events were leading up to the patient becoming unwell. For example, a diabetic who had been feeling unwell for a number of hours or days could be suffering from **hyperglycaemia**, or if the diabetic patient had said that feeling unwell had come on rapidly.

Human Body Systems



Stroke

A Stroke can occur when a blood vessel in the brain becomes blocked or ruptures, causing part of the brain to become starved of oxygen.

If you suspect a stroke, you must call EMS immediately.

Signs and Symptoms

Sudden headache, confusion, weakness and numbness, seizures, loss of bowel/bladder control, altered level of consciousness, double or blurred vision, inability to speak or garbled speech, difficulty breathing, paralysis affecting one side of the body, difficulty co-ordinating the body, nausea and vomiting.

Treatment

Recognise stroke signs and symptoms using the pneumonic FAST, activate EMS, check and correct ABCs. Give nothing to eat or drink.

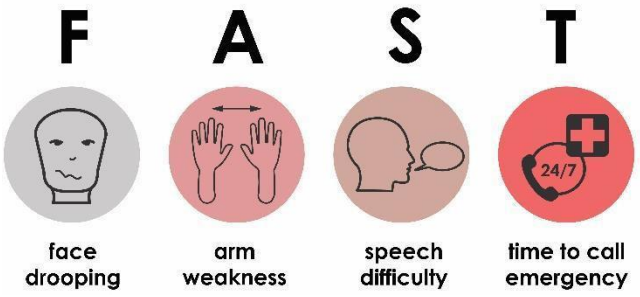
Place the patient in the recovery position if they are unconscious, but breathing effectively and there is no suspected head, neck or back injury.

F - Face - has their face dropped on one side?

A - Arms - can they lift their arms together?

S - Speech - is their speech slurred?

T - Time - call the EMS quickly



The quicker you identify that someone is having a stroke and the sooner they receive medical treatment, the more of the brain can be saved, allowing the patient to have a much fuller recovery.

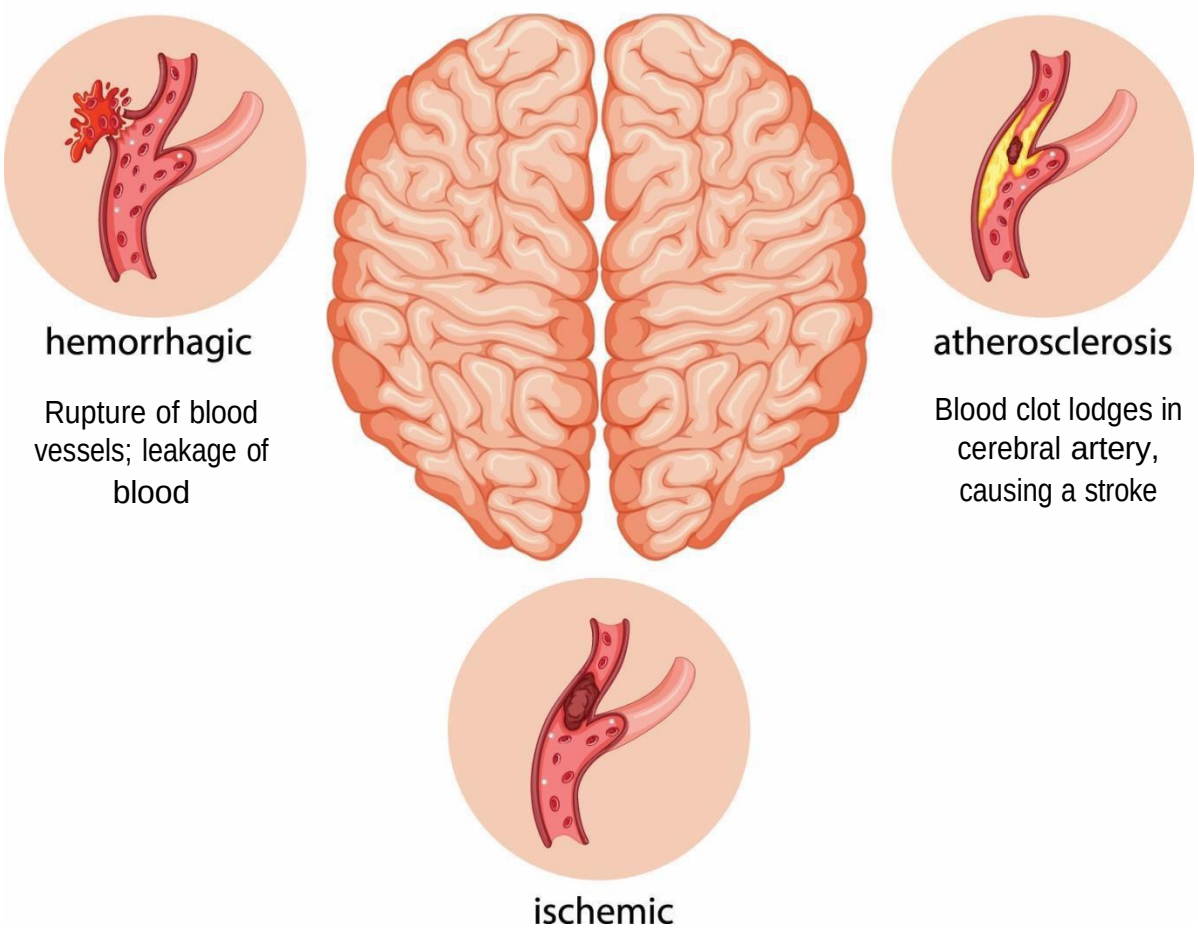
A stroke can happen with no obvious cause, to people of any age, but there are factors known to increase the likelihood of it happening. Some of these factors are things that can't be changed, others may be reduced by lifestyle changes or medication.

Notes

An estimated 150,000 people have a stroke in the UK each year and over 10,000 of these are under retirement age. There are over 67,000 deaths due to stroke each year in the UK. Stroke is the third most common cause of death in England and Wales, after heart disease and cancer. Stroke accounts for 9% of all deaths in men and 13% of deaths in women in the UK. Stroke has a greater disability impact than any other chronic disease.

Over 300,000 people are living with moderate to severe disabilities as a result of stroke. Stroke patients occupy around 20% of all acute hospital beds and 25% of long-term beds.

Types of human brain stroke



Asthma

Asthma is a condition that affects the airways, the small tubes that carry air in and out of the lungs.

When a person with asthma comes into contact with something that irritates their airways (an asthma trigger), the muscles around the walls of the airways tighten so that the airways become narrower and the lining of the airways becomes inflamed and starts to swell. Sometimes sticky mucus or phlegm builds up, which can further narrow the airways.

All these reactions cause the airways to become narrower and irritated - making it difficult to breath and leading to symptoms of asthma. 5.4 million people in the UK are currently receiving treatment for asthma. 1.1 million children in the UK are currently receiving treatment for asthma.

There is a person with asthma in 1 in 5 households in the UK, and sometimes no matter how careful people are in taking their asthma medication and avoiding triggers they may still have an asthma attack. Exercise, dust, allergy or changes in temperature are common triggers.

All these reactions cause the airways to become narrower and irritated - making it difficult to breath and leading to symptoms of asthma.

Asthma sufferers usually carry two types of inhaler:

- Blue - which is for the treatment of an attack
- Brown - which is preventative

Signs and Symptoms

Shortness of breath or wheezing, leaning forward to breathe, unable to make noise or speak, blue lips and fingernails, moist skin, rapid shallow breathing.

Treatment

Activate EMS and keep the patient calm. Place in a position of comfort. Ask about allergies, asthma or any other medical conditions. Look for obvious bites and stings.

Ask if the patient has asthma and find their medication. If the patient has an inhaler or auto injector, assist them to locate and utilise the device, monitor ABC's.

In cases of asthma attack, the inhaler (bottom right picture) may relieve the symptoms in a few minutes, but always be ready to call the EMS if needed. A spacer may be used with an inhaler as shown on the bottom left of this page.

Diabetes

Diabetes Mellitus is a condition where the amount of glucose in the blood is too high because the body cannot use it properly. Glucose comes from the digestion of carbohydrate-containing food and drinks, and is also produced by the liver. Carbohydrate comes from many different sources, including starchy foods such as bread, potatoes and chapattis, fruit, dairy products, sugar and other sweet foods.

Insulin is vital for life. It is a hormone produced by the pancreas and helps glucose to enter the cells where it is used as fuel for energy so we can work, play and generally live our lives.

Signs and Symptoms

Altered level of consciousness, personality changes, irritability, weakness, dizziness, difficulty breathing, cool and clammy skin, coma.

Type 1 Diabetes

Type 1 diabetes develops if the body is unable to produce any insulin. This type of diabetes usually appears before the age of 14 but can occur later in life. Type 1 diabetes is the least common of the two main types and accounts for around about 8% of all people with diabetes (data from Diabetes UK). You cannot prevent type 1 diabetes; it is not caused by diet and it is usually controlled by testing and injecting regularly with Insulin along with exercising to carb counting and eating a healthy, balanced diet, making lifestyle changes. Type 1 diabetes is an autoimmune disease and the pancreas cannot make insulin because the immune system attacks it and destroys the cells that produce insulin.

Type 2 Diabetes

This is a condition where the cells fail to use insulin properly. Sometimes this is combined with an insulin deficiency. Type 2 is the more common form and can affect sufferers in later life. It can be controlled by diet and/or drugs.

Hyperglycaemia

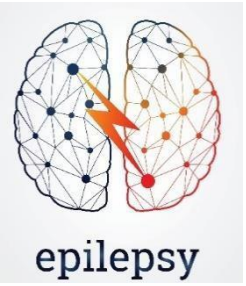
Activate EMS. If unconscious, place patient in the recovery position. Monitor ABC's.

Hypoglycaemia

Sit the patient down and give them a sugary drink or sweet food. Monitor and reassure them. Activate EMS if problem persists. If unconscious, place patient in the recovery position. Monitor ABC's. Give 15 to 20 grams of glucose to a patient with Hypoglycaemia.

There are currently over 3.2 million people with diabetes in the UK, 2.7 million with type 2 diabetes and there are more than half a million people with type 2 diabetes who have the condition and don't know it.

Seizures and Epilepsy



Epilepsy is currently defined as a tendency to have recurrent seizures (sometime called fits). A seizure is caused by a sudden burst of excess electrical activity in the brain, causing a temporary disruption in the normal message passing between the brain cells. This disruption results in the brain's messages becoming halted or mixed up.

The brain is responsible for all the functions of your body, so what you experience during a seizure will depend on where in your brain the epileptic activity begins and how widely and rapidly it spreads. For this reason, there are many different types of seizure and each person will experience epilepsy in a way that is unique to them.

Basic First Aid for Seizures

Do

Protect the person from injury (remove harmful objects), cushion their head, look for an epilepsy identity card or identity jewellery, aid breathing by gently placing them in the recovery position. Once the seizure has finished, be calmly reassuring and stay with the patient until recovery is complete.

Don't

Restrain the person, put anything in the person's mouth, try to move the person unless they are in danger, give the person anything to eat or drink until they are fully recovered, attempt to bring them round.

Call an ambulance if...

You know it is the person's first seizure. The seizure continues for more than five minutes. One tonic-clonic seizure follows another without the person regaining consciousness between seizures. The person is injured during the seizure. You believe the person needs urgent medical attention.

Notes

There are around 40 different types of seizure and a person may have more than one type. Epilepsy can affect anyone, at any age and from any walk of life. 600,000 or one in every 103 people in the UK has epilepsy. Epilepsy is a neurological condition. Only 52% of people with epilepsy in the UK are seizure free.

It is estimated that 70% of people with epilepsy could be seizure free with the right treatment. One in 20 people will have a single seizure at some time in their life. Many people who develop epilepsy below the age of 20 will grow out of it in adult life. Many people with epilepsy are still discriminated against due to ignorance about the condition. In the UK, the Disability Discrimination Act covers people with epilepsy. The vast majority of people with epilepsy can take part in the same activities as everyone else, with the help of simple safety measures where appropriate. Sudden Unexpected Death in Epilepsy is the explanation for 500 deaths per year in the UK.

Glossary Terms

ABCDs - refers to the priority sequence for assessing the order of primary care. **Airway**, **Breathing**, **CPR/Chest Compressions**, **Defibrillator** and then the **"s"** for **Serious** bleeding, **Shock** and **Spinal** injury

AED - Automatic External **Defibrillator**

BP - Blood Pressure

BPM - Beats Per Minute

Child - Aged from one year old to puberty

COSHH - Control of Substances Hazardous to Health

CPR - Cardio Pulmonary Resuscitation

DRAB - refers to the priority sequence for primary care. **Danger**, **Response**, **Airway** and **Breathing**. Often also with a **"C"** for **CPR/Chest Compressions**

EMS - Emergency Medical Services

ERC - European Resuscitation Council

FAST - used in stroke identification, **Face**, **Arms**, **Speech** and **Time**

HSE - Health and Safety Executive

Infant - From birth to one year old

ILCOR - International Liaison Committee of Resuscitation

PPE - Personal Protective Equipment

RIDDOR - Reporting of Diseases and Dangerous Occurrences Regulations 1995

SAMPLE - used to remember the things to look for when assessing illnesses. **Signs/ Symptoms**, **Allergies**, **Medications**, **Pre-existing** medical conditions, **Last** meal and **Events**

Sign - something you see on a patient

SCA - Sudden Cardiac Arrest

Symptom - something the patient tells you

VF - Ventricular Fibrillation

VT - Ventricular Tachycardia

Summary

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