

St John
Ambulance



First aid reference guide

How to respond to emergency situations



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First aid

First aid is the immediate assistance given to someone who is ill or injured. In the vital few minutes before the emergency services arrive basic first aid can be the difference between life and death.

The five most common causes of needless death from a lack of first aid are:

- choking
- the heart not beating
- severe bleeding
- heart attack
- blocked airway.

This reference guide provides information about how to respond to each of these emergency situations. It also contains guidance about how to deal with many other injuries and conditions that you may encounter in your daily life. As well as specific treatments, you will also learn how to manage a first aid incident as a whole.

The essential advice and practical information contained here will help you to act in an effective, safe and prompt way, ensuring that, should an emergency occur, you can be the difference between a life lost and a life saved.

The first aider

Anyone can be a first aider. The skills are not difficult to learn, and their value cannot be overestimated. Whether you are busy shopping, looking after children, playing sport, out and about, or providing first aid as a volunteer or as part of your job, it is likely that at some point you will encounter someone who needs first aid.

As a first aider, you may be:

- working in a small organisation
- a childminder
- providing first aid in a public place
- the first at the scene of a car crash
- one of several first aiders in a large company
- a teacher.

If you are providing first aid at work or as a volunteer, it is important that you receive appropriate training so you have the knowledge and skills for your role. This reference guide aims to support your first aid training, giving you all the notes and guidance you need in one place.

First aid training is not a one-off process. It requires ongoing practice and regular refresher training to ensure your knowledge and skills are kept up to date.

As well as receiving first aid training, it is vital that your role is supported by clear policies and procedures. Whether you are a hotel receptionist or a graphic designer, it is important that you understand how the first aid role works in your setting.

The information in this guide is set out so you can:

- take an overview of the role of the first aider
- deal with a first aid incident
- treat specific injuries
- manage common medical conditions
- know what first aid equipment may be needed for your role
- understand how the setting can affect first aid needs.

General information on COVID-19 or pandemics

During a pandemic (such as COVID-19) it is important that you keep yourself safe. The Resuscitation Council will have up to date advice on treating casualties during such a time their web site can be found here www.resus.org.uk St John Ambulance will also update any guidance in line with the Resuscitation Council our advice can be found on our website here sja.org.uk

There is common advice that will help you keep safe during a pandemic or local epidemic they include

- good hand hygiene
- wearing a face mask or covering, in line with latest guidance
- avoid touching your eyes, nose, mouth or face covering
- good respiratory hygiene, cough or sneeze into a tissue and bin and wash your hands immediately, if you do not have a tissue use your elbow
- keeping physical distance from those you do not live with
- self-isolate, test and report in accordance with local government guidance.

Being a first aider

The role of a first aider

There is much more to being a first aider than patching up wounds. It is a diverse role that requires the skills and knowledge to provide effective, safe and prompt first aid, as well as the ability to work and communicate effectively with a variety of people.

An effective first aider

As a first aider you should:

- be calm in your approach
- be aware of risks to yourself and others
- build and maintain trust with all those involved in an incident
- give early treatment
- call for appropriate help
- remember your own needs.

All the skills you need to be an effective first aider are covered on your training course.

Health and safety and first aid

Much is made of the health and safety culture – most of it negative. However, health and safety is simply a common-sense approach to minimising the risk of harm or injury. It uses a methodical and logical procedure to do this which allows you to put in place appropriate measures to manage an incident, for instance, training first aiders and providing them with the appropriate equipment.

Health and safety requirements come from:

- legislation
- best practice
- the organisation's policies
- an assessment of the risks in the environment and the activities taking place there.

As a first aider, you need to be aware of these requirements and how they affect you.

Risk assessment

A risk assessment is a systematic way of looking at the potential risks that may affect a place or activity. A risk assessment can be one of the following:

- a process of identifying significant hazards and assessing risks at a specific workplace or event, such as a beauty salon or a school trip
- a process of planning for any emergencies that might occur, for example on a

sports field.

A risk assessment can look at many aspects of a workplace or event, including:

- previous accidents, injuries or emergencies
- special requirements for people with specific needs.

Both first aid cover and equipment must be determined from the risk assessment. St John Ambulance provides an online tool that allows you to develop a plan to ensure you have sufficient first aid cover. Visit [sja.org.uk/FA-calculator](https://www.sja.org.uk/FA-calculator) for more information – you simply need to input details about your workplace.

Ongoing process

Risk should be regularly assessed to ensure that any changes in the environment are addressed.

Health and safety policy

A health and safety policy must meet the specific needs of an individual organisation. It sets out:

- an organisation's strategy for managing health and safety for its personnel and visitors to its premises
- the arrangements the organisation has put in place to ensure this happens.

The policy must be supported by clear arrangements or procedures that make it clear:

- what actions are needed
- who is responsible for them
- the timescales that must be adhered to.

A larger organisation, perhaps with multiple sites, may have a corporate policy outlining a general approach, with detailed arrangements varying at individual sites.

Written policy

A business with five or more employees must have a written policy that is freely available to all staff. Smaller companies might want to issue a printed copy of the policy to individuals, while larger organisations may prefer to include it on a staff intranet site. However it is distributed, it is important that all staff are aware of the content of the policy and have access to it.

Content

A written health and safety policy should be easy to understand and not open to misinterpretation. There are no rules about how long it needs to be or how the information is presented. It must simply communicate:

- the management's commitment to health and safety

- how health and safety is implemented and monitored in the working environment.

The policy must state whose role and responsibility it is to ensure that health and safety standards and identified requirements are both checked and maintained.

The policy should include:

- the job title of the senior person in the organisation who is responsible for health and safety policies
- the names of the health and safety policy adviser and any safety representatives
- commitment to the basic requirements of the Health and Safety at Work etc Act 1974
- commitment to the management's additional requirements under the Health and Safety Regulations
- duties towards the wider public and others
- the principal hazards in the organisation
- specific policies of the organisation
- specific targets for the immediate and long-term future.

The Health and Safety Executive (HSE) provides comprehensive advice and a range of resources to enable organisations to produce a health and safety policy.

The role of risk assessment

The policy's objectives should address identified risks in an appropriate way, for instance by putting up a sign to highlight a trip hazard. The risk assessment determines the level of detail needed in the arrangements section.

Don't confuse a health and safety policy with a risk assessment. The HSE website states:

- policy: general vision and arrangements for the whole business
- risk assessment: a regular review of how you remove or control hazards, and whether you are doing enough, or require further controls.

A policy will only be effective if management and staff act on it, follow it through and review it on a regular basis.

Source: hse.gov.uk

Risk assessment can be a useful approach, particularly for an organisation with a number of sites where different activities are carried out. It allows you to tailor the organisation section of the policy to the individual managers at each site.

Monitor

Monitoring the policy to ensure it is both effective and relevant is crucial. This can

be done in a number of ways, such as carrying out spot checks or safety inspections. More formal monitoring can be achieved through audits and by reviewing management reports and accident investigations.

Review

Just as risk assessment is an ongoing process, so should the review of the health and safety policy. The policy and arrangements should be updated if:

- a specific incident shows a weakness, failure or omission
- a risk assessment identifies new risks that must be addressed.

Health and safety good practice

The acronym **APR** can help you remember health and safety good practise:

- **A**ssess: assess actions and the environment for risks
- **P**erform: put measures in place based on the assessment
- **R**eview: routinely review the assessment.

A lot of health and safety good practise information is available; visit hse.gov.uk to find out more.

Equipment

Specialist equipment can help you perform first aid more effectively. When providing first aid as part of an organisation, a risk assessment should be carried out to determine what equipment is needed.

It is also a good idea to have the right equipment on hand outside your usual first aid environment, such as in your car or at home. You never know when you might need to be the difference.

It is possible that you might have to perform first aid without any equipment at all. During your training course, ideas as to how you can improvise using items at the scene will be discussed.

First aid kits

There is a legal requirement for workplaces, schools and other publicly used buildings, such as libraries, shopping centres, leisure centres and stations, to have first aid kits. First aid kits must also be available for events and meetings, for example at Brownie camp, at Saturday morning football or at the village Christmas concert. Passenger-carrying vehicles are also required to carry a first aid kit. These first aid kits must:

- be clearly marked
- contain items appropriate to their environment.
- contain suitable Personal Protective Equipment
 - non-latex gloves

- a face shield
- hand sanitiser
- Type 2 fluid resistant surgical face mask (for the first aider)

It is good practice for first aid kits to be available:

- at home
- in cars and on motorbikes
- at any outdoor or sporting activity
- on holiday.

Again, these first aid kits should be clearly marked and contain appropriate items.

What should a first aid kit contain?

There are British Standards for workplace and motor vehicle first aid kits, to which the St John Ambulance workplace and motor vehicle first aid kits conform. They can be found at sja.org.uk/first-aid-supplies

As a first aider, you must regularly check your first aid kits to ensure that the contents are all in date and that used items are replaced. A full range of first aid kits and replacement supplies can be found at sja.org.uk/first-aid-supplies

Health and safety equipment

As a first aider, you might need to use health and safety equipment in an emergency, for instance, firefighting equipment to make an area safe before treating a casualty. Also, to ensure that a casualty gets the most effective treatment, you should be able to locate a first aid kit (and health and safety equipment) in public places.

Signs and directions

In public places and the workplace, there have to be clear signs showing:

- where the first aid kit is
- who the first aider is
- who the fire marshal is
- where the AED machine is
- escape routes and assembly points
- the location of fire alarms
- the location of firefighting equipment.

Evacuation equipment

In tall buildings or where people with specific mobility issues work, equipment like an evacuation chair should be provided.

Emergency evacuation plans

Every workplace or public building must have an emergency evacuation plan. Everybody working at that site should know how the plan affects them. This should

include:

- how the building or premises is evacuated
- where to assemble
- the procedure for calling the fire and rescue service.

Firefighting equipment

Public places and workplaces must have firefighting equipment available. In an emergency, you might need to use this equipment to be able to evacuate a casualty safely or to make an area safe. Only do this if you have received the necessary training and can do so without endangering yourself.

Reporting

Reporting is an important part of a first aider's role. It is always useful to keep a record of what happened to a casualty, for example:

- where the incident took place
- what you did to help the casualty
- who else was involved or helped you
- what advice you gave the casualty
- whose care the casualty was passed to.

Sometimes records need to be formal, such as an accident report book at work. Or they can be simple notes that you jot down after stopping to help at an incident on holiday. It is useful to make the record as soon as possible after the incident while your memory of the event is fresh. Any notes or records should stick to the facts and not include speculation or personal opinion; these notes and records can be used as evidence in legal action.

The information in these reports should be:

- taken into account during the ongoing risk assessment process
- used to review the organisation's health and safety policy and arrangements so that measures can be introduced to prevent similar accidents from happening again.

Accident report book

An accident report book is a place to record accidents and what treatment was provided. The record of each incident should be kept for three years from the date of the incident. The casualty's personal information must be protected.

An accident report book is required for all organisations employing more than 10 people but is a useful document for:

- volunteer groups
- for specific events, such as school trips for recording injuries to employees or visitors of a smaller organisation.

Anyone acting on behalf of the casualty can complete an accident report book. The first aider is normally the most appropriate person since they treated the casualty, though the injured person or someone acting on their behalf can also complete the accident report.

RIDDOR reporting

In the workplace, you must report certain incidents arising from accidents at work under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). This reporting must be done within specific times. Guidelines are set out on each page of the accident report book stating:

- which injuries, diseases or incidents need to be reported
- who to report them to and when.

Notifiable diseases

This guide gives details of when a disease must be reported to the local authority. This is done by a medical practitioner.

Early years settings such as nurseries must inform Ofsted when there is an outbreak of any notifiable diseases in their setting.

Keeping yourself informed

Both first aid and health and safety are evolving subjects. All first aiders need to keep themselves informed about changes.

The St John Ambulance website sja.org.uk provides useful first aid information. It also provides tools for you to use, such as a way to work out the first aid needs for your workplace.

Regular training

St John Ambulance recommends that you keep your skills and knowledge up to date by attending refresher and renewal training on a regular basis.

This is because:

- without regular use, skills and knowledge fade
- first aid certificates must be kept in date for them to be valid (this is a legal requirement in some instances)
- techniques, treatments, protocols and procedures change to keep up with medical developments and best practices.

The HSE strongly recommends that a workplace first aider attends a skills refresher course annually.

Online learning

etraining.sja.org.uk

First aid calculator

We recommend regularly reviewing training needs so our free online requirements calculator can quickly and easily assess your workplace requirements and let you know what is the right option for you and your business.

sja.org.uk/FA-calculator

Personal protection equipment

You should consider carrying these items with you at all times:

- disposable non-latex gloves for first aid use: nitrile gloves (often purple or blue) are recommended
- a face shield to cut the risk of infection when giving rescue breaths
- alcohol gel for use before and after giving treatment.

Gloves

Putting on disposable gloves

Only handle gloves by their cuff when putting them on. Avoid the outside of gloves coming in contact with your skin or any other surface.

Taking off disposable gloves

Pull the glove from the cuff over your fingers until it is inside out. Repeat with the other hand. Avoid contact with what was the outside surface at all times.

Disposing of used gloves

Used gloves should be treated as clinical waste and put in a yellow (biohazard) bag.

Face shield

A plastic face shield can be used when giving rescue breaths to a child or an adult. Once you have opened the airway, remove the shield from its packaging, being careful not to touch the side that will come in contact with the casualty. Place it over the casualty's face so the filter is over their mouth: a printed guide on the plastic will help you position it correctly. Pinch the casualty's nose through the plastic, and deliver rescue breaths through the filter with minimal interruption.

Alcohol gel

Use alcohol gel to wash your hands thoroughly the same way as using soap and water. Pay particular attention to:

- the palms and backs of both hands - use the palm of one hand to rub the back of the other
- between your fingers - interlock your fingers to work the gel between them
- the backs of your fingers - form a loose fist and rub the backs of your fingers against the palm of the other hand
- your thumbs - rub the entire thumb by encasing it with your other hand

- your finger and thumb tips – rub them against the palm of the other hand.

Hygiene

Good hygiene reduces the risk of infections passing between a first aider and a casualty.

Minimising the risk of cross infection

- Wash your hands, before and after treating a casualty
- Wear disposable non-latex gloves for first aid use: nitrile gloves are recommended. If gloves are not available, ask the casualty to dress their own wound, or enclose your hands in clean plastic bags
- Cover cuts and grazes on your hands with waterproof dressings
- If there are large quantities of body fluids, wear a plastic apron and plastic glasses to protect your eyes
- Dispose of all waste safely. Soiled material should be placed in a yellow (biohazard) bag for incineration. Used needles should go in a sharps container. The emergency services may take the waste with them for proper disposal, and your local council should have facilities
- Do not touch a wound with your bare hands
- Do not touch any part of a dressing that will come in contact with a wound
- Do not cough or sneeze over a casualty while you are treating them. In particular, avoid breathing, coughing or sneezing over an open wound.

Hand washing

Hand washing reduces the risk of infections passing between a first aider and a casualty

Self-care

Following a more serious first aid incident and depending on the outcome, some first aiders can experience a range of emotions. You may go through what happened again and again in your mind, so it may be useful to talk to someone else who may have been there at the incident or someone you know has been in a similar experience.

This is especially important if the outcome was not what you hoped for. Even with the correct treatment and however hard you try on some occasions a casualty will not recover from the injuries or illness. If you are finding it hard to deal with what has happened you should seek support, if your workplace has a mental health first aider they may be able to help signpost you to appropriate support and maybe a good person to talk to, other options include your GP, a counsellor or any support mechanisms that your company may have in place.

Assessing a casualty

When you encounter a casualty, you have to assess them so you can deliver effective, safe and prompt first aid. There are two procedures you must follow to help you determine what your response should be:

- The first process is called the primary survey which is an initial assessment to identify and deal with life threatening injuries or conditions
- This can be followed by the secondary survey which is a detailed and methodical examination of the casualty to look for injuries that may not be apparent.

Primary survey

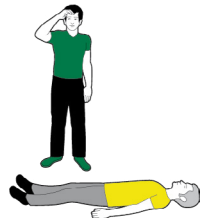
The primary survey is often referred to as **DRABC**. **DRABC** stands for the five main parts of the primary survey and is a good way to remember the procedure:

- **D**anger
- **R**esponse
- **A**irway
- **B**reathing
- **C**irculation.

You should apply **DRABC** to all first aid incidents, however small.

Danger

Before approaching any casualty, first, ensure that there is no danger to you. If possible, move any potential sources of danger so that you can carry out first aid without any risk of injury to you or the casualty. Only as a very last resort should you move the casualty. The emergency services are trained to do this and they usually arrive a few minutes after the emergency call is made.



Response

Check to see if your casualty is responsive:

- Call their name if you know it. Alternatively, shout a command, such as 'Open your eyes!' or ask a question, like 'Can you hear me?'
- Tap or flick the sole of a baby's foot
- Gently tap or shake the casualty's shoulders. If the casualty is a child or baby gently tap.



As you check the casualty, shout for help or ask bystanders to be ready to help. If help arrives, ask that person to wait until you have assessed breathing before dialling 999 or 112 for an ambulance.

Airway

When the airway is blocked, air cannot enter the lungs and breathing stops.

When a casualty is unresponsive their tongue can block their airway. However, it is very easy to keep an airway open.

Baby

1. Place one hand on the baby's forehead. Gently tilt their head back
2. Place one finger from the other hand on the point of the baby's chin, taking care not to press the soft tissues under the chin. Gently lift their chin.



Child and adult

1. Kneel by the casualty. Place a hand on their forehead. Gently tilt their head back so their mouth opens (don't put your other hand under their neck)
2. Place your index and middle fingertips under the point of their chin. Lift and hold the chin to keep the airway open.

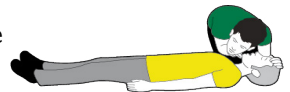


If you suspect the casualty has a spinal injury, use the jaw-thrust technique (see page 70).

Breathing

Once you have opened the airway, check whether the casualty is breathing normally through their nose.

1. Place your cheek just above the casualty's mouth and nose
2. Listen, look and feel for breath (for no more than 10 seconds). At the same time look down the casualty's chest for any movement.



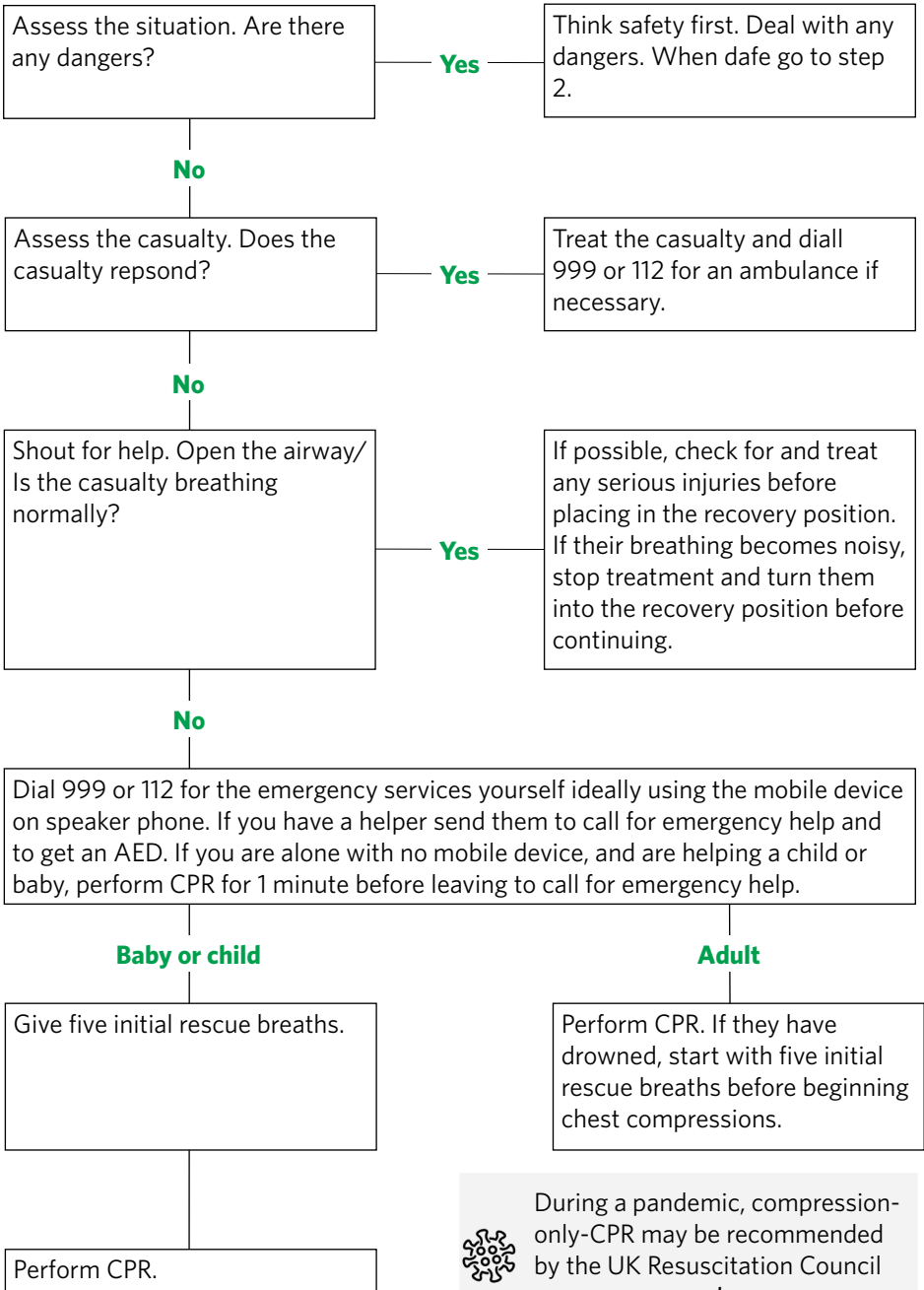
In the first few minutes after the heart has stopped it is common to see agonal breathing. This is short, infrequent gasps for breath and should not be mistaken for normal breathing.

- If the casualty is not breathing normally, perform cardiopulmonary resuscitation (CPR) immediately (see pages 23-28)
- If the casualty is breathing normally, treat any life threatening injuries and place them in the recovery position (see pages 21-22). If their breathing becomes noisy, stop treatment and turn them into the recovery position before continuing.

Circulation

Injuries or conditions that result in severe bleeding can be life threatening because of the risk of shock. However, only check for circulation once you are sure that the casualty is breathing normally: do not waste any time performing CPR.

Oxygen flow chart



Secondary survey

After providing any initial emergency treatment that the casualty needs, you should then find out what else is wrong with them. The procedure for this is called the secondary survey. It involves finding out the history, signs, symptoms and physically examining the casualty in a methodical way.

History - what has happened.

Signs - things you can see such as swelling, deformity, bleeding or any obvious injury.

Symptoms - these are things the casualty will tell you such as they are feeling sick or their arm hurts.

Some useful questions to ask are about

A - Allergies (are they allergic to anything?)

M - Medication (are they taking any drugs, prescribed or over the counter)

P - Previous medical conditions (such as asthma, heart disease or diabetes)

L - Last meal (what food or drink did they last have and when)

E - Event history (what happened in the lead up to them needing help)

Head-to-toe survey

Tell the casualty what you are doing and why. Listen carefully to what they tell you.

1. Run your hands over the casualty's scalp looking for bleeding, swelling or indentations. Try not to move their head or neck
2. Look into each ear for blood, fluid or objects
3. Open their eyes and check their pupils for size and reaction to light. The pupils should be an equal and normal size and react equally
4. Check their nose for blood, fluid or objects
5. Check the rate and depth of their breathing. Note any unusual odour on their breath
6. Check their mouth for anything that may block their airway. Do not remove dentures unless they are loose. Check for wounds
7. Look at their face for wounds or irregularities to the natural lines
8. Note the colour and temperature of their skin.
9. Loosen clothing around their neck. Look for wounds or swelling to their neck tissues
10. Check for a medic-alert talisman, which is usually worn around the neck or wrist
11. Move your hands down their chest to check for swellings, irregularities or wounds. If the casualty is responsive, ask them to take a breath to assess the chest for equal movements and to listen for unusual lung sounds
12. Check their collar bones for deformities
13. Check each arm in turn for wounds or irregularities. If the casualty is responsive, ask them to bend and straighten their fingers and elbows if it

doesn't cause pain

14. Check each hand and finger for injury
15. If there is a problem with movement or loss of feeling in their arms, do not examine their spine. If there is not, place your hands under the hollow of their back to check for swelling, tenderness or irregularity
16. Look at their abdomen for wounds or bruising, then place a hand on the casualty's abdomen. Press down gently, looking for tenderness or rigidity
17. Note any signs of incontinence or bleeding from the genital or anal areas
18. Examine each leg in turn for wounds and swelling. If the casualty is responsive, ask them to move each joint in turn
19. Check each foot and ankle for swelling, irregularity and movement.

When you have completed the survey treat any problems you have found. Note any abnormalities so that this information can be given to the emergency services.

Hygiene

Be aware of the risk of cross infection when carrying out the secondary survey. Follow hygiene guidance and in particular:

- Always wash your hands before and after touching a casualty, if this is not possible use hand sanitiser
- If possible, wear disposable non-latex gloves for first aid use: nitrile gloves are recommended
- Make sure that any open wounds you have are covered with a dressing or plaster
- Try not to touch a wound.

Monitoring a casualty

Once you have carried out any first aid emergency services, you may need to wait for emergency services to arrive. During this time you should monitor the casualties:

- breathing
- level of response using the **AVPU** scale.
 - A** - Alert (responding normally)
 - V** - Voice (responding to voice commands only)
 - P** - Pain (responds to pain only)
 - U** - Unresponsive (does not respond to anything)

Monitoring must be done regularly. If possible, record the results so they can be handed over to the emergency services; in particular note any changes.

Breathing

Check the casualty's breathing rate and listen for breathing difficulties or unusual noises:

- Baby and child rate is 20–30 breaths per minute

- Adult rate is 12-16 breaths per minute.

As well as listening for each breath, watch or feel the casualty's chest movements. Make a note of the factors below:

- Rate: how many breaths is the casualty taking per minute?
- Depth: are the breaths deep or shallow?
- Ease: does the casualty find it easy, difficult or painful to breathe?
- Noise: are there any unusual sounds made while breathing?

Please note if the casualty is unresponsive and not breathing normally start CPR (Cardiopulmonary resuscitation)

Unresponsive breathing casualties

Recovery position

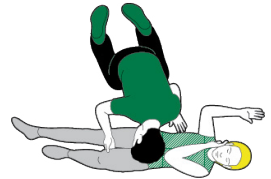
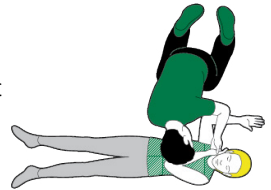
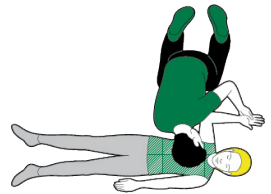
The recovery position is used to maintain an unresponsive casualty who is breathing normally in a safe position that allows them to breathe more easily.

All casualties

- Maintain an open airway throughout the procedure
- Monitor the casualty's level of response and breathing until the emergency services arrive. Be prepared to perform CPR (see pages 23-28).
- If you suspect a spinal injury keep the spine straight at all times.

Child and adult

1. Kneel beside the casualty. Remove their spectacles. Straighten their legs
2. Place the arm nearest to you at right angles to the casualty's body with their elbow bent and palm facing up
3. Take the casualty's far arm and place it across their chest so their hand is under their cheek nearest to you
4. With your other hand, grasp the casualty's far leg just above their knee. Pull it up until their foot is flat on the floor
5. Roll the casualty towards you, keeping their hand pressed against their cheek
6. Adjust the casualty's upper leg so that both their hip and knee are bent at right angles
7. Tilt the casualty's head back to keep their airway open and clear.



Baby

1. Cradle the baby with their head pointing down to prevent them from choking on their tongue or vomit
2. Support and protect the baby's head with your hand.



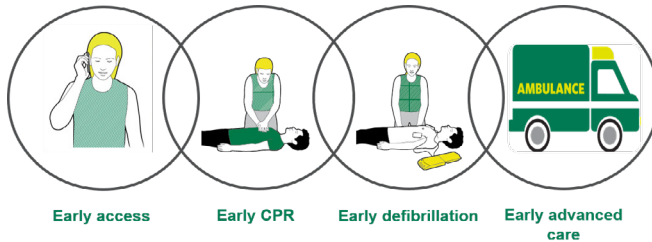
Unresponsive not breathing casualty

Cardiopulmonary resuscitation (CPR)

Chest compressions and rescue breaths performed together are called cardiopulmonary resuscitation (CPR). CPR is an important part of the chain of survival for a casualty whose heart has stopped. The quality of CPR is dependent on the correct depth and rate.

Chain of survival

- Recognising cardiac arrest
- Early request for help to the emergency services
- Early basic life support - CPR
- Early defibrillation
- Early advanced life support.



To provide the last two links in the chain you need to get help as soon as possible. Defibrillation is known to greatly improve the outcome for some casualties whose hearts have stopped. If a defibrillator is available, get it when calling the emergency services: a defibrillator should not be used on a baby.

In the first few minutes after the heart has stopped, it is common to see agonal breathing – short, infrequent gasps for breath. If the casualty is not breathing normally, perform CPR immediately.

Casualties might not recover while you are performing CPR but your actions will help to keep them alive until the emergency services take over.

Chest compressions

The heart pumps blood around the body. When it stops you can do this manually by performing chest compressions.

There is no need to remove the casualty's clothes to find the correct hand position when giving chest compressions.

Rescue breaths

Rescue breaths are given to an unresponsive casualty who is not breathing normally increasing oxygen in their lungs and bloodstream, increasing their chances of survival.

Rescue breaths should always be performed with chest compressions, and never by themselves.



During a pandemic, compression-only-CPR may be recommended by the UK Resuscitation Council www.resus.org.uk

If the chest does not rise:

1. Check that the casualty's head is in the correct position and that their airway is open
2. Check that you have a good seal around the casualty's mouth (mouth and nose for a baby)
3. Check that you are pinching the nose properly if the casualty is a child or adult
4. Check that there is no obstruction in the casualty's mouth. Do this visually - do not use your fingers to blindly sweep the mouth. If your attempts are unsuccessful carry on with the CPR sequence.

Hygiene

We recommend you use a face shield when performing rescue breaths.

Adult CPR

1. Follow the **DRABC** protocol as far as step 'B' (see pages 15-16):
 - check for **D**anger
 - check for a **R**esponse. Shout for help
 - open the **A**irway
 - check for **B**reathing for no more than 10 seconds

If they are unresponsive and not breathing normally, continue with the procedure below:

2. Dial 999 or 112 for an ambulance. Also, get a defibrillator if one is available
 - If there is someone to help you, ask them to call for the ambulance immediately and to get the defibrillator
 - If you are on your own, use the speakerphone function on your mobile device to call the emergency services. Do not leave the casualty to search for a defibrillator
3. Perform chest compressions using both hands; place the heel of one hand on the centre of the casualty's chest. Place the heel of your other hand on top. Interlock your fingers and keep them up, off the casualty's ribs



4. Perform 30 chest compressions, to a depth of 5–6cm, at a rate of 100–120 compressions per minute
5. Give two rescue breaths:
 - Ensure the casualty's airway is open
 - Carefully remove any visible obstruction from their mouth (do not do a blind sweep with your finger)
 - Keep supporting the casualty's chin with the fingertips of one hand
 - With the thumb and two fingers of your other hand, pinch the soft part of the casualty's nose
 - Take a breath and place your lips over the casualty's lips, making sure there is a good seal
 - Breathe steadily into the casualty's mouth for one second. Watch their chest rise
 - Keeping your hands in position, remove your mouth. Let their chest fall.
6. Continue giving 30 chest compressions followed by two rescue breaths until one of these things happens:
 - professional help takes over
 - the adult starts to wake up, move, open eyes and breathe normally
 - you become exhausted. If there is another trained first aider present, change over every two minutes with minimum disruption.

If you are unable or reluctant to give rescue breaths, perform only chest compressions at the same rate of 100–120 per minute.

Do not perform rescue breaths without giving chest compressions.



During a pandemic, compression-only-CPR may be recommended by the UK Resuscitation Council www.resus.org.uk

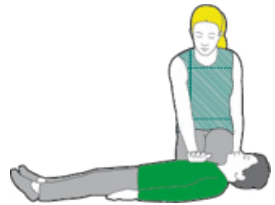
Child CPR

1. Follow the **DRABC** protocol as far as step 'B' (see pages 15-16):
 - check for **D**anger
 - check for a **R**esponse. Shout for help
 - open the **A**irway
 - check for **B**reathing for no more than 10 seconds

If they are unresponsive and not breathing normally, continue with the procedure below:

2. Ask a helper to dial 999 or 112 for an ambulance. If you are alone, start the sequence of rescue breaths and chest compressions below. Do not leave the child alone at this time
3. Get a defibrillator if one is available
4. Give five initial rescue breaths:

- Ensure the child's airway is open
 - Carefully remove any visible obstruction from their mouth (do not do a blind sweep with your finger)
 - Keep supporting the child's chin with two fingertips of one hand. Be careful not to damage the soft tissues under the chin
 - With your other hand, pinch the soft part of the child's nose
 - Take a breath and place your lips around the child's lips, making sure there is a good seal
 - Breathe steadily into the child's mouth for one second. Watch their chest rise
 - Keeping your hands in position, remove your mouth and allow their chest to fall.
- 5.** Start chest compressions using one hand; leaning over them, place the heel of one hand on the centre of the child's chest, press straight down to at least a third of the depth of the child's chest, keeping your elbow straight. Release the pressure fully, but do not take your hand off their chest at a rate of 100-120 compressions per minute
- 6.** Give two rescue breaths
- 7.** Continue alternating 30 chest compressions with two rescue breaths
- 8.** After one minute, if you have no helper, dial 999 or 112 for an ambulance. If you have left the child, check their airway and breathing when you return
- 9.** Continue giving 30 chest compressions followed by two rescue breaths until one of these things happens:
- professional help takes over
 - the child starts to wake up, move, open eyes and breathe normally
 - you become exhausted. If there is another trained first aider present, change over every two minutes with minimum disruption.



If you are unable or reluctant to give rescue breaths, perform only chest compressions at the same rate of 100- 120 per minute.

Do not perform rescue breaths without giving chest compressions.

Make no more than five attempts to give initial rescue breaths or two attempts to give the subsequent rescue breaths.

Baby CPR

- 1.** Follow the **DRABC** protocol as far as step 'B' (see pages 15-16):
- check for **D**anger
 - check for a **R**esponse. Shout for help
 - open the **A**irway
 - check for **B**reathing for no more than 10 seconds

If they are unresponsive and not breathing normally, continue with the procedure below:

2. Ask a helper to dial 999 or 112 for an ambulance. If you are alone, start the sequence of rescue breaths and chest compressions below for one minute before calling for help yourself. Use your mobile on speaker phone or take the baby with you to a phone. Do not leave the baby alone at this time
3. Give five initial rescue breaths:
 - Ensure the baby's airway is open. **Do not** tilt their head too far back as their airway may close
 - Carefully remove any visible obstructions from their mouth and nose (do not do a blind sweep with your finger)
 - Keep supporting the baby's chin with the fingertip of one hand. Take care not to press on the soft tissues under the chin
 - Take a breath and place your lips around the baby's mouth and nose, making sure there is a good seal
 - Breathe steadily into the baby's mouth and nose for one second and watch their chest rise
 - Keeping your hands in position, remove your mouth and allow their chest to fall.
4. Start chest compressions; place two fingertips on the centre of the baby's chest. Make sure your fingertips are placed so you do not apply pressure to the:
 - ribs
 - bottom end of the breastbone
 - upper abdomen
5. Press straight down to at least a third of the depth of the baby's chest. Release the pressure fully, but do not take your fingertips off their chest, perform 30 chest compressions, to at least a third of the depth of the baby's chest, at a rate of 100-120 compressions per minute
6. Give two rescue breaths
7. Continue alternating 30 chest compressions with two rescue breaths
8. Continue giving 30 chest compressions followed by two rescue breaths until one of these things happens:
 - professional help takes over
 - the baby starts to wake up, move, open it's eyes and breathe normally
 - you become exhausted.



If there is another trained first aider present, change over every one to two minutes with minimum disruption.

If you are unable or reluctant to give rescue breaths, perform only chest compressions at the same rate of 100- 120 per minute.

Do not perform rescue breaths without giving chest compressions.

Make no more than five attempts to give initial rescue breaths or two attempts to give the subsequent rescue breaths.

Automated external defibrillation (AED)

The heart is a muscular organ that pumps blood around the body. It is located behind the breastbone (sternum) and between the lungs. The heart's muscles are stimulated by tiny electrical impulses generated by a network of specialised tissue.

Cardiac arrest is when the heart stops beating. Not all causes of sudden cardiac arrest are known. One common cause is myocardial infarction (heart attack) which is when the heart's own arteries become blocked. Apart from not supplying the body with oxygenated blood, the heart muscle itself is starved of oxygen and becomes damaged so does not respond properly to the natural electrical signals:

- The electrical impulses may no longer cause rhythmical pumping and the muscle contractions become uncoordinated
- The muscle may quiver or tremble, due to chaotic impulses
- The heart stops pumping.

The unrhythmical and chaotic attempts to beat are called arrhythmia. There are several forms of arrhythmia, and not all of them are shockable with an AED. However, the most common type, which occurs in about 80% of cardiac arrests, is shockable. This is called ventricular fibrillation (VF). If treated quickly, VF may be converted back to a working rhythm.

An AED should be applied to a casualty with a suspected heart attack who is unresponsive and not breathing normally.

It is a good idea to familiarise yourself with the AED you are likely to use as this can save vital seconds in an emergency.

Procedure

This procedure is for children and adults: an AED should not be used on a baby. A child can be defibrillated if paediatric pads are available for the AED.

When you arrive at the scene, quickly establish:

- where the casualty is in the chain of survival
- what, if any, emergency first aid has been administered.

Using an AED

1. If necessary, perform a primary survey. If a trained first aider has already done this there is no need to repeat the survey, though check the area for flammable liquids and gases, such as oxygen

2. Ask a helper to dial 999/112 for emergency help. If you are alone make the call yourself using your mobile device on speakerphone
3. If the casualty is unresponsive and not breathing normally prepare to use the AED. If possible, ensure someone is performing CPR as you do this. They should continue to perform CPR even as you attach the pads to the casualty's chest, only stopping when you reach step 8
4. Position the AED beside the casualty, ideally to their left as this makes the pad placement easier and means you don't need to reach over the casualty. If you cannot position the AED on the casualty's left do not worry as its position does not affect its operation
5. Remove medication patches and metal jewellery from the casualty but this should not delay the application of the AED
6. Turn on the AED and follow the voice prompts
7. Remove the electrode pads from their sealed packets. Place them on the casualty's bare chest following the instructions given with the pads. Attach the pads without delay; do not wait to complete chest compressions.
8. Instruct everyone to stand clear. Any CPR being performed should stop. Check that no one is touching the casualty. The AED now analyses the casualty's heart rhythm
9. If the casualty needs to have shocks, the AED will charge and issue a voice prompt. Perform CPR while this happens
10. Before giving the shock, double-check that everyone (including you) is clear of the casualty by giving a second command to stand clear. Look to make sure everyone is clear. Press the 'Shock' button on the AED
11. When the shock is delivered the casualty may twitch – this is normal
12. Keep following all voice prompts issued by the AED. Do not give up if the first shock seems ineffective.

Make sure that the electrode pads remain securely in place and the casualty's skin is still dry before each shock is administered (see below) Before each new shock is administered, make sure that everyone (including you) is clear of the casualty. Give the command to stand clear and check that this has been followed.

There is no maximum number of shocks the AED will deliver. It may advise you to continue CPR, this is usually because the heart is in a nonshockable rhythm. It is vital that CPR is performed until emergency services arrive and tell you to stop. Leave the pads in place while waiting for the emergency services in case the casualty has another cardiac arrest.

Safety

- Containers with flammable liquids or gases should be removed to a safe distance before the AED is switched on
- In a confined space with a high concentration of flammable gases in the air,

sparks from the electrode pads can cause a fire.

Placing the pads

Placing the pads correctly is critical. The electric current needs to travel from one pad to the other directly through the heart to provide the maximum amount of energy.

If the pads are not stuck firmly to the skin they may cause electrical sparks and skin burns.

Attaching the AED pads

1. Remove or adjust the casualty's clothing as necessary. Check the casualty's skin
2. The casualty's skin must be free from sweat and other moisture. Wet skin must be dried thoroughly:
 - where the pads will be placed to ensure there is good contact with the skin
 - between the two pads, to prevent the current from running over the surface of the skin, rather than through the chest

Use a paper towel or anything else you have that is absorbent and free from grease

3. If the casualty has very hairy skin use the disposable razor or scissors in the AED pack to remove excess hair from the pad sites
4. Each pad has a clear visual instruction showing where to place it. One pad goes on the right side of the casualty's upper chest, directly under their collar bone. The other one is placed on the left side of the casualty's chest, about 10cm below their armpit. If the casualty has a pacemaker fitted, the pads must be placed 12–15cm from it. An implanted pacemaker appears as a bump under the skin. It is usually under the armpit and can be felt with your fingers
5. Apply the pads using a sweeping motion while smoothing the edges in place by running your fingers around them
6. If the AED tells you to check the pads, or if they become loose, smooth them in place with your fingers. If this does not help, apply a new set of pads
7. Before each shock, make sure that the pads remain firmly in place. Smooth the edges down, if necessary. Consider replacing the pads with fresh ones if they are not sticking properly.

To use an AED requires that the casualty's upper clothing is partly removed. It is important to respect the casualty's right to dignity.

Possible issues that can arise

Both CPR and using an AED can be complicated by:

- specific environments
- the cause of the cardiac arrest
- the casualty's medical condition.

Electrocution

The casualty must be removed from the source of the electricity before you touch them.

Electrocution can cause:

- abnormal heart rhythms that may be either shockable or nonshockable
- muscle paralysis, which can make CPR difficult to perform
- other injuries including burns and bone fractures.

Only treat these once the casualty has been successfully resuscitated.

Oxygen

If oxygen is being used in resuscitation, the mask should be removed while the AED is analysing or shocking. Make sure the area is well ventilated so that there is no risk of fire.

Pregnancy

Using an AED on a pregnant woman carries no extra risks. CPR is also performed as normal. If she is in the early stages of pregnancy, follow the normal procedures following cardiac arrest when performing CPR and using an AED.

If she is in the later stages of pregnancy, there may be additional considerations:

- The woman's abdominal organs may be pushed upward due to the pregnancy
- Her neck may appear shorter and obese, though this shouldn't affect how you open and maintain her airway
- During pregnancy a woman's oxygen consumption increases, so her brain experiences oxygen starvation faster than usual. The unborn baby is also starved of oxygen. It is vital to provide effective rescue breaths
- The unborn baby can press on the woman's blood vessels reducing her circulation. Place a small cushion or other wedge under her right buttock to move her uterus and reduce the pressure. If you have been trained, manually move the uterus upwards and to the woman's left. Maintain this throughout the resuscitation process, except when the casualty is receiving shocks
- The casualty's increased breast size may mean you need to move one or both of her breasts to place the electrode pad. This must be carried out with respect and dignity.

Trauma

Most resuscitation attempts following a trauma produce a non shockable heart rhythm. Follow the voice prompts given by the AED.

Handover to emergency services

Continue to resuscitate the casualty until the emergency services are ready to take over from you. Clearly and concisely, tell them:

- the casualty's present state
- how many shocks were delivered: this may be displayed on the AED screen
- the total time since the casualty collapsed
- any relevant medical history that is known.

Post-use procedure

Dispose of any used materials as clinical waste and replace used items.

Some AEDs, especially those that are part of the national defibrillator programme, have a memory log that needs to be downloaded and stored. The memory can then be cleared ready for the AED to be used again. You need to confirm how this is done in your organisation.

An accident report and, if required, a defibrillation report need to be completed.

Consider the emotions that you have experienced as a result of carrying out the procedure, whether or not the casualty has survived. Consider what support you need and ensure that you receive it.

CPR after drowning

Do not put yourself in danger when trying to rescue a casualty. When the casualty is rescued from the water, you should first perform a primary survey. If this establishes that they are unresponsive and not breathing

- Give 5 initial rescue breaths
- Give 30 compressions
- Continue 30:2 until help arrives

If they are breathing but unresponsive place them into the recovery position and monitor until help arrives.

During a pandemic

As with all adult resuscitation during a pandemic, rescue breaths may not be recommended, but compression-only-CPR, for the majority of first aiders.

Rescue breaths would be given in the following circumstances during the COVID-19 pandemic;

- In all paediatric CPR situations (by those employed to work with those under 18 years of age)
- When someone has drowned (by those employed as lifeguards, lock-keepers or in an employed role where there is a significant risk of a drowning incident).

Response problems

Seizures

Seizures (child and adult)

Seizures happen when some of the body's muscles contract involuntarily. They are caused by a disturbance in the brain's activity and some seizures can be violent. The casualty may not be aware of what is happening or might be unresponsive. There are two main types: absence seizures and major seizures.

Recognition (absence seizures)

An absence seizure is when the casualty loses general awareness for a few seconds. This can go unnoticed by people around them. Sometimes unusual movements are apparent, such as repeated swallowing or other gestures. Children who are thought to be accident-prone might in fact be suffering from absence seizures. People who know that they experience seizures often wear a medic-alert talisman, usually around their neck or wrist.

Treatment

Aims - To protect and monitor the casualty until they are fully recovered.

- There is no immediate treatment for this other than reassurance. Advise the casualty to get medical advice.
- Be aware that an absence seizure may be followed by a major seizure.

Recognition (seizures)

- Sudden loss of response
- Becoming rigid, arching their back
- Breathing may become noisy and difficult
- Convulsions begin (jerky movements)
- Saliva from the mouth can be blood-stained if they have bitten their lips or tongue
- Loss of bladder and bowel control.

Treatment

Aims - To protect and monitor the casualty and to get medical help.

1. Clear space around the casualty and protect them by padding sharp or dangerous objects with coats or cushions. If possible, protect the casualty's head from the floor with a cushion or some other similar item
2. Loosen tight clothing around the neck, chest and waist. Do not put anything into the casualty's mouth
3. When the seizure stops, check the casualty's breathing:
 - If they are breathing normally, place them in the recovery position (see pages 21-22)

- If they are not breathing normally, be prepared to perform CPR (see pages 23-28). Do not attempt to force or keep their jaw open
- 4. Stay with the casualty. Monitor their breathing and level of response
- 5. Dial 999 or 112 for an ambulance if the casualty:
 - has continuous seizures
 - sustains an injury that requires urgent medical attention
 - has never had a seizure before
 - has a seizure that lasts for more than five minutes
 - is unresponsive for more than 10 minutes.

Following the seizure the casualty will relax, their breathing will return to normal and they become responsive within a few minutes. They may be unaware of their surroundings and feel very tired. They can fall into a deep sleep.

Febrile convulsions

Both babies and children can have convulsions (seizures) between the ages of six months and five years caused by high body temperature. It does not mean they will have seizures throughout their life.

Recognition

- Vigorous shaking with an arched back
- Possible vomiting
- Loss of bowel or bladder control
- Red, puffy face and neck
- High temperature with hot, flushed skin and, perhaps, sweating.

A high temperature (fever) is normally a sign of illness. However, a baby's temperature may also rise if they are teething.

Treatment

Aims - To protect and monitor the baby/child and to get medical help.

1. Let the convulsion happen naturally, but protect the baby/child from hurting themselves on hard or sharp objects:
 - If they are on the floor, try to protect their head with a cushion or similar item
 - **Do not** put anything into their mouth
2. Cool the baby/child by removing any bedding and clothes. You may only be able to do this once the seizure has stopped. Ensure a good supply of fresh air. Do not overcool
3. Dial 999 or 112 for an ambulance
4. Place the baby/child in the recovery position once the convulsion has ended (see pages 21-22). Do not give them anything to eat or drink until they are fully recovered
5. Reassure the baby/child and monitor vital signs.

Hygiene

We recommend you use a face shield when performing rescue breaths.

Dispose of any waste, including body fluids, properly.

Stroke

A stroke is caused by a portion of the brain being starved of oxygen. This can be due to:

- a bleed
- a clot

The lack of oxygen causes damage to the brain. The long-term effects of a stroke depend on what part of the brain and how much tissue is affected.

Recognition

There may be some or all of the following:

- Sudden and severe headache that doesn't go away
- Confusion and emotional instability
- Deterioration in the level of response (this may be sudden or progressive)
- Signs of weakness or paralysis usually affecting one side of the body
- Slurring or loss of speech
- Unequal pupils
- Possible loss of bladder control.

To help with the recognition of a stroke, the **FAST** test can be used:

- **F**acial weakness: look at the casualty's face. Can they smile? Is the face uneven?
- **A**rm weakness: can the casualty raise both of their arms?
- **S**peech problems: can the casualty speak clearly? Do they understand what you say?
- **T**ime to dial 999 or 112 for an ambulance.

Treatment

Aims - To protect and monitor the casualty and to get medical help.

Responsive casualty

1. Keep the casualty comfortable and supported
2. Dial 999 or 112 for the emergency services
3. Loosen any tight clothing and continue to reassure the casualty
4. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to perform CPR (see pages 23-28).

Unresponsive casualty

1. Open their airway and check their breathing:

- If they are breathing normally, place them in the recovery position (see pages 21-22)
 - If they are not breathing normally, perform CPR (see pages 23-28)
2. Dial 999 or 112 for an ambulance
 3. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to perform CPR (see pages 23-28).

Head injuries

Any head injury must be treated seriously as it is potentially life threatening and can cause impaired responsiveness. A head injury can result in:

- damage to brain tissue
- a bleed inside the skull
- a fracture of the skull

Always assume that a casualty with a head injury also has a neck injury and treat accordingly.

Recognition

- Recent blow to the head
- Wound to the head
- Brief loss of responsiveness
- Increased drowsiness
- Worsening headache
- Confusion, memory loss, strange behaviour and nausea
- Weakness to a limb
- Speech difficulties
- Dizziness, seizures or balance problems
- Sight problems, including double vision
- Clear fluid or watery blood leaking from the nose or ear

Treatment

Responsive casualty

1. Help the casualty to sit down in a comfortable position
2. Apply a cold compress to their head injury
3. Monitor breathing and level of response regularly. Keep a close eye on the level of response in case it deteriorates
4. When they have recovered ask a responsible adult to look after them
5. If they were playing a sport when it happened do not let them return to play until they have been fully assessed by a medical practitioner
6. Seek medical help if any of the following apply:
 - worsening headache
 - difficulty in speaking or walking
 - vomiting

- double vision
- seizure
- over 65 years old
- previous brain surgery
- they are taking anti clotting medication
- they are intoxicated with drugs or alcohol
- there is no responsible adult to look after them.

Unresponsive casualty

1. If the casualty is breathing, maintain an open airway using the jaw-thrust technique (see page 70)
2. Dial 999 or 112 for an ambulance
3. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to perform CPR (see pages 23-28).

A casualty who becomes unresponsive (however briefly) after a blow to the head must see an appropriate health care professional.

Diabetes

Diabetes mellitus affects up to one in ten of the population, and people from all age groups. It is caused by a deficiency of or a resistance to insulin. This impairs the body's ability to store and use glucose so untreated the blood sugar levels are higher than normal.

Hyperglycaemia (all casualties)

Hyperglycaemia is caused by having too much sugar in the blood stream. Its onset is slow, over a period of hours or days. Its causes include poor management of medication, infection, illness or trauma.

Recognition

- Warm, dry, red skin
- Deep and sighing breathing
- Sweet smell on the breath
- Restless, drowsy or lethargic behaviour.

Treatment

Aims - To monitor the casualty and to get medical help.

1. Dial 999 or 112 for an ambulance
2. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to perform CPR (see pages 23-28).

Low blood sugar (all casualties)

Low blood sugar levels (hypoglycaemia) are caused by having too little sugar in the bloodstream. It is due to poor intake, treatment or other medical conditions.

Recognition

- Weakness, faintness or hunger
- Palpitations or muscle tremors
- Strange actions or behaviour; confused, belligerent or even violent
- Sweating
- Pale, cold and clammy skin
- Strong, bounding pulse
- A medic-alert talisman which is usually worn around the neck or the wrist.

Treatment

Aims - To return blood sugar levels to normal and to get medical help, if necessary.

Responsive casualty

1. If they have their own glucose gel, help them to take it. If not give them up to the equivalent of 15-20g of glucose, eg. a 150ml glass of non-diet fizzy drink or fruit juice, three teaspoons of sugar or sugary sweets
2. If they improve, let them rest and give them more sugary food or drink until they feel better. Encourage them to test their blood with their glucose testing kit and monitor them until they feel completely well
3. If they don't improve look for other causes, dial 999 or 112 and monitor breathing and level of response

Unresponsive casualty

1. Open their airway and check their breathing:
 - If the casualty is breathing normally, place them in the recovery position (see pages 21-22)
 - If the casualty is not breathing normally, perform CPR (see pages 23-28)
2. Dial 999 or 112 for an ambulance
3. Monitor the casualty's breathing and level of response until the emergency services arrive.

Airway and breathing problems

Choking

Food or other objects stuck in the mouth or throat can cause choking. If the object isn't cleared, it can lead to death. Even though most choking incidents are minor, they can be frightening.

Child and adult recognition

- Unable to cough or speak
- Difficulty or absence of breathing
- Grasping at the neck or throat
- Pointing to the mouth or throat

Treatment

Aims - To clear the obstruction and to get medical help.

1. Ask the casualty, 'Are you choking?'
2. Encourage the casualty to cough
3. If they cannot clear the object themselves, or they cannot cough or breathe, support them with one hand while leaning them forwards. Give up to five back blows between their shoulder blades. Visually check the casualty's mouth and remove any obstruction with your fingertips (do not sweep blindly with your finger). If choking persists, go to step 4
4. Give up to five abdominal thrusts. Stand behind the casualty and link your hands below their rib cage. Pull sharply inwards and upwards. Check their mouth
5. If the obstruction still hasn't cleared dial 999 or 112 for emergency help.
6. Continue the cycles of back blows and abdominal thrusts while waiting for help to arrive.

If the casualty becomes unresponsive at any point during the procedure, open their airway and check their breathing:

- If the casualty is breathing normally, place them in the recovery position (see pages 21-22)
- If the casualty is not breathing normally, perform CPR (see pages 23-28).

Baby recognition

- Unable to cry or make any noise
- Difficulty in coughing or breathing

Treatment

Aims - To clear the obstruction and to get medical help.

1. Lay the baby face down on your thigh while supporting their head. Give the baby up to five back blows

2. Turn the infant over so they are lying on your other thigh, along your arm with their head supported and check their mouth for obvious obstructions (do not sweep blindly with your finger). If choking persists go to step 3
3. Give up to five chest thrusts. Place two fingers on the breastbone, one finger's breadth below the nipple line, and push with a downwards motion. If you have cleared the object stop before you reach five
4. Check the mouth
5. If the obstruction still hasn't cleared dial 999 or 112 for emergency help. Take the baby with you if necessary
6. Continue the cycles of back blows and chest thrusts while waiting for help to arrive or the baby becomes unresponsive.

If the baby becomes unresponsive at any point during the procedure, open their airway and check their breathing: If the baby is breathing normally, place them in the recovery position (see pages 21-22).

If the baby is not breathing normally, perform CPR (see pages 23-28).

Hygiene

We recommend you use a face shield when performing rescue breaths.

Asthma

Asthma is a potentially life threatening condition. It affects the air passages, which are the tubes that carry air into and away from the lungs. The air passages in someone with asthma are sensitive to particular irritants. These irritants, commonly known as triggers, include pollen, animal fur, feathers, exercise, smoke and house dust mites. Infection can make asthma worse, people with asthma may have more difficulty breathing at night.

Once diagnosed with asthma, the person is given support to help them through their illness. This can include medication, breathing exercises and details of support groups.

Medication is usually delivered by inhaler. There are two main types of inhalers:

- Reliever inhalers (usually blue or with a blue cap) are used immediately to relieve symptoms
- Preventer inhalers (often brown or with a brown cap) are used each day to help prevent asthma attacks, not for relief when an attack starts.

Anyone with asthma may use a spacer fitted to their inhaler so they can breathe in the medication more effectively.

All casualties

Recognition

- Difficulty breathing and/or talking
- Wheezing
- Distress and anxiety
- Coughing
- Grey-blue skin (cyanosis)
- May only be able to speak in one word or short sentences.
- In a severe attack, the casualty may experience exhaustion, become unresponsive and stop breathing

Treatment

Aims - To ease breathing and to get medical help, if necessary.

1. Keep calm and reassure the casualty. Get them to take a dose of their reliever inhaler, using a spacer if they have one. This should relieve the asthma attack within a few minutes. Encourage the casualty to breathe slowly and deeply
2. Let the casualty find a position that they find comfortable. This is often sitting down. Do not make them lie down
3. A mild attack should ease within a few minutes of them using their inhaler. If it doesn't the casualty may take 1-2 puffs of their inhaler every 30-60 seconds for up to 10 puffs. If they have a personal plan this should be followed and seek medical aid if necessary.
4. Dial 999 or 112 for an ambulance if any of these things happen:
 - the casualty's condition gets worse or their inhaler has had no effect
 - the casualty becomes exhausted or finds talking difficult
5. Monitor and record the casualty's vital signs until help arrives. If there is a delay of more than 15 minutes repeat taking 1-2 puffs every 30-60 seconds up to 10 puffs.
6. If the casualty becomes unresponsive, open their airway and check breathing:
 - If the casualty is breathing normally, place them in the recovery position (see pages 21-22) Monitor the casualty's breathing and level of response until the emergency services arrive
 - If the casualty is not breathing normally, perform CPR (see pages 23-28).

Hygiene

We recommend you use a face shield when performing rescue breaths

Salbutamol inhalers in schools

From 1 October 2014 UK schools have been allowed to purchase a salbutamol inhaler without a prescription for use in emergencies when a child with asthma cannot access their own inhaler.

The emergency salbutamol inhaler should only be used by children, for whom written parental consent for use of the emergency inhaler has been given, who have

either been diagnosed with asthma and prescribed an inhaler, or who have been prescribed an inhaler as reliever medication. More information on the rules and regulations surrounding their storage, supply and use can be found at www.gov.uk

Allergic reactions

An allergic reaction is an abnormal sensitivity to a trigger. A trigger is a substance that is usually harmless to most people, such as food, chemicals, pollen and multiple other agents.

Minor allergic reaction (all casualties)

Recognition

A casualty may experience one or more of the following depending on the nature of their allergy:

- red, itchy rash or raised areas of skin
- wheezing and difficulty in breathing
- abdominal pain
- vomiting and diarrhoea.

Treatment

Aims - To relieve symptoms and to get medical help, if necessary.

1. Assess the casualty's signs and symptoms and ask if they know whether they suffer from an allergy
2. Treat any symptoms and help the casualty take any medication
3. Advise the casualty to get medical advice.

Severe allergic reaction (all casualties)

Anaphylactic shock is a severe allergic reaction that can develop within seconds of contact with a trigger. Possible triggers include:

- skin or airborne contact with certain materials
- injection of a specific drug
- stings of certain insects
- ingestion of food, such as nuts or milk products.

Recognition

The following may be present alongside minor allergic reaction symptoms (opposite)

- Anxiety
- Red, blotchy skin eruptions
- Red and watery eyes
- Swelling of the tongue and throat
- Pale or flushed skin
- Impaired breathing
- Signs of shock leading to becoming unresponsive.

Treatment

Aims - To get medical help and to help administer emergency medication.

1. Dial 999 or 112 for an ambulance
2. Check whether the casualty has the necessary medication. If they do, help them to use it
 - If the casualty is responsive, sit them in a position that helps them breathe
 - If the casualty is unresponsive, open their airway and check their breathing. If they are breathing normally, place them in the recovery position (see pages 21-22). If they are not, perform CPR (see pages 23-28)
3. Be aware of the possibility of shock (see page 46).

Auto-injector

An auto-injector is a preloaded 'syringe' carried by people with known medical conditions. The auto-injectors you may need to use as a first aider are the ones prescribed to people who experience severe allergic reaction. These are used to deliver a single dose of adrenaline to the casualty when the casualty feels a reaction starting. The casualty should administer their own auto-injector unless their condition has deteriorated so far that they are unable to do so. If you have been trained, do not be afraid to administer their auto-injector.

Auto-injectors come in adult and child doses.

Auto-injectors in schools

Following a lengthy campaign and public consultation, an amendment was passed in parliament to the Human Medicines Regulations. This amendment allows schools from 1 October 2017 to purchase adrenaline auto-injectors without a prescription and keep these for emergency purposes. These should be stored and delivered in line with the 'Supporting pupils with medical conditions at school' guidance which requires appropriate training to be provided to staff expected to administer the auto-injectors.

Pre-use checks

Before using an auto-injector:

- Have you correctly identified the casualty's condition as anaphylaxis?
- Is the auto-injector in date?
- Is it prescribed to the casualty?

Basic rules

- Never practise with a real auto-injector
- Never remove the safety caps unless you are going to use the auto-injector
- Never inject into veins, buttocks, hands or feet
- Never put your fingers or hands near the needle end of the auto-injector
- Never leave the casualty until the emergency services arrive
- When an auto-injector is used, the casualty must always receive medical

treatment even if they appear to have made a full recovery.

Using an auto-injector

1. Arm the auto-injector by taking it from the hard case and removing the safety cap
2. Help the casualty to administer the auto-injector into the middle of their outer thigh. Firmly push the tip against their outer thigh until it clicks (it can be delivered through clothing)
3. Hold in place for 3 seconds or as instructed on the autoinjector
4. Repeated doses can be given at 5 minute intervals if there is no improvement, symptoms return and the casualty carries a second auto-injector
5. Give any used auto-injectors to the emergency services as proof of administration.
6. Advise the casualty to get a new auto-injector as soon as possible.

Hyperventilation

Hyperventilation is unnaturally fast or deep breathing; normally caused by anxiety or emotional upset. They may have a history of panic attacks

Recognition

- Abnormally fast or deep breathing
- Anxiety
- A fast pulse rate
- Trembling/tingling in hands and feet
- Sweaty and a dry mouth
- Dizziness and faintness
- Cramping in hands, feet and around the mouth

Treatment

1. Be kind and reassure them
2. Take them somewhere quiet, if possible
3. Encourage them to seek medical advice

Hyperventilation due to anxiety is rare in children, look for other possible causes. Be aware that serious illness can also cause rapid breathing and anxiety.

Circulation problems

Chest pains

Heart attack

A heart attack is often caused by the blood supply to the heart suddenly being blocked, usually by a clot. The main risk to the casualty is that they then experience cardiac arrest, which is when the heart stops beating.

Recognition

A casualty may experience one or more of the following:

- persistent, dull and heavy, vice-like pain in the centre of their chest. This pain may spread down their left arm and up their neck and jaw. The pain does not go away with rest and may even occur while they are at rest
- abdominal pain or discomfort, like indigestion
- breathlessness
- ashen skin with a blueness to the lips
- rapid pulse that may have an irregular rhythm and become weaker
- feeling faint or giddy
- an overwhelming feeling of terror
- possible sudden and unexpected collapse.

Some people will have very few symptoms, especially those with diabetes mellitus.

Treatment (responsive casualty)

Aims - To keep the casualty at rest and to get medical help as quickly as possible.

1. Dial 999 or 112 for an ambulance and tell the emergency services that you suspect a heart attack
2. Make the casualty as comfortable as possible by putting them in a half sitting position. Make sure that their head and shoulders are supported. If possible, place a coat or a blanket under their knees for additional support.
3. Encourage the casualty to rest
4. If possible get the casualty to chew and swallow 300mg of aspirin (one full dose)
5. If the casualty has medication for angina, encourage them to take it
6. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to start CPR (see pages 23-38)

Treatment (unresponsive casualty)

Aims - To maintain an open airway, resuscitate and defibrillate, if necessary, and get urgent medical help.

1. Open the casualty's airway and check their breathing
2. If they are breathing normally, place them in the recovery position (see pages 21-22)
3. Dial 999 or 112 for an ambulance and tell the emergency services that you

- suspect that the casualty is having a heart attack and they are unresponsive
4. Monitor the casualty's breathing and level of response until the ambulance services arrive. If the casualty is not breathing normally, perform CPR (see pages 23-38).

Angina

This condition has similar recognition features to a heart attack. However, an angina attack often starts as a result of exercise or exertion and normally goes away with rest.

1. Help the casualty to sit down
2. If they have angina medication, such as tablets or spray, help them to take it
3. If the pain is not relieved in five minutes advise them to take a second dose
4. If they are still in pain five minutes after their second dose call 999/112 for an ambulance
5. If the pain subsides within 15 minutes after rest and/or medication, the casualty should be able to resume what they were doing. If they or you are concerned, seek medical advice

Shock

This life threatening condition occurs when the body cannot get blood to its vital organs, such as the brain and heart. It is usually caused by severe blood loss, but there are other causes.

Shock requires immediate emergency treatment to prevent permanent organ damage and death. Shock can be made worse by fear and pain. If there is a risk of shock developing, reassure the casualty and make them comfortable; this may be enough to stop the casualty deteriorating.

All casualties

Recognition

- Rapid pulse
- Pale, cold, clammy skin Sweating.

As shock develops:

- grey-blue skin, especially inside the lips (cyanosis)
- weakness and dizziness
- nausea, and possibly vomiting
- thirst
- rapid, shallow breathing
- weak pulse.

Eventually, the casualty may become restless or aggressive and may yawn or gasp for air before becoming unresponsive.

Treatment

Aims - To treat any obvious causes of shock, to improve blood supply to the brain and to get medical help.

1. Treat any possible causes of shock first, like serious burns or bleeding (see pages 48-54)
2. Lay the casualty down on a blanket. Constantly reassure them
3. Raise and support their legs to improve blood supply. If the leg is bleeding and the casualty is comfortable you can raise both legs, if there is a suspected fracture to the pelvis, hip or either leg, both legs should stay down
4. Dial 999 or 112 for an ambulance
5. Loosen tight clothing at the neck, chest and waist
6. Keep the casualty warm and reassure them. Do not let them eat or drink. If the casualty is obviously pregnant lean her to her left side to prevent the baby restricting blood flow back to the heart
7. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to perform CPR (see pages 23-28).

Fainting

Fainting is usually a short-lived condition with the casualty making a quick and full recovery. It is caused by the brain not receiving enough blood for a short time. There are a number of different reasons this can happen, such as standing for a long period, lack of food or emotional stress.

Recognition (all casualties)

- A brief period of unresponsiveness causing the casualty to fall to the floor
- Pale, cold, clammy skin.

Treatment for a casualty feeling faint

Aims - To improve blood flow to the brain and to provide reassurance.

1. Ask the casualty to lie down. Raise their legs
2. If possible, open a door or window to provide fresh air
3. As the casualty recovers, reassure them
4. Allow them to sit up slowly. If they sit up too quickly, they may feel faint again. If they do feel faint, lay them down again and raise their legs.

Treatment for a casualty who has fainted

Aims - To improve blood flow to the brain and to get medical help, if necessary.

1. Raise the casualty's legs
2. If they do not become responsive quickly:
 - reassess **DRABC**
 - place them in the recovery position if they are breathing
 - dial 999 or 112 for an ambulance.

If they show signs of becoming responsive, follow steps 2 to 4 for a casualty feeling faint (see above).

Bleeding

A break in the surface of the skin or body is known as a wound. Wounds can be described as open or closed:

- Open wounds are when the skin is broken; most commonly, they are cuts and grazes. Open wounds can be serious and involve severe bleeding
- Closed wounds are when the skin is not broken and the most common one you will deal with is a bruise. There are some injuries, such as broken bones, where a bruise can be an indication of something more serious.

Internal bleeding may happen as the result of an injury or because of a medical condition like a stomach ulcer bursting. You should always consider the risk of a casualty having internal bleeding, especially if they display the symptoms of shock without any obvious fluid loss.

All bleeding must be taken seriously as uncontrolled severe bleeding can lead to shock, collapse and even death. Controlling the bleeding is always your priority. For details of the symptoms of shock and how to treat it, [see page 46](#).

Minor bleeding

Treatment

Aims - To clean the wound and reduce the risk of infection.

1. If it is dirty, clean the wound under running water or with an alcohol-free wipe. Pat the wound dry using sterile materials, like a gauze swab
2. Cover the wound completely with a sterile material, such as a gauze square or dressing
3. If possible, elevate and support the injured area above heart level
4. Clean the surrounding area, remove the wound covering and apply a sterile adhesive dressing to the wound
5. Advise the casualty to see their own doctor if there is a special risk of infection.

Splinters

Splinters from wood, glass, or metal can enter the skin and can carry a risk of infection. Splinters can be easily removed from the skin using tweezers. However, if the splinter is deep in the skin it can be difficult to remove and should be left in place. Advise the casualty to seek medical help.

1. Clean the area around the splinter carefully with warm water and soap.
2. Grasp the splinter with the tweezers as close to the skin as possible and draw it out in a straight line keeping it at the same angle as it goes into the skin.
3. Squeeze the wound carefully to encourage slight bleeding as this will help to remove any dirt.

4. Clean and dry the wound and cover with a dressing.
5. If appropriate ask about tetanus immunisation

Tetanus

Tetanus is a dangerous infection, caused by bacterium that lives in soil. If it enters a wound it can multiply and release toxins. Tetanus can be prevented by immunization, normally given in childhood but may need to be repeated in adulthood.

Ask the casualty about tetanus immunisation. Seek medical help if:

- They have a dirty wound
- They have not been immunised
- They are unsure of the number or timing of immunisation.

Bruising

Bruising is the result of blood entering the skin or bleeding in the tissues under the skin. A bruise can appear moments or days after an injury and can be a sign of a deep injury.

Elderly people or those taking some medications can bruise easily.

All casualties

Treatment

1. Raise the injured limb and support it in a comfortable position
2. Use a cold compress to cool the area. Apply it firmly and keep it in place for at least 20 minutes.

Nosebleed

Bleeding from the nose most commonly occurs when tiny blood vessels inside the nostrils are ruptured. A nosebleed can be serious if the casualty loses a lot of blood. It may indicate a more serious head injury.

All casualties

Treatment

Aims - To control bleeding and maintain an open airway.

1. Sit the casualty down and tilt their head forward to allow the blood to drain from the nostrils
2. Ask the casualty to breathe through their mouth and to pinch the soft part of their nose
3. After 10 minutes, tell the casualty to release the pressure. If the bleeding has not stopped tell them to reapply the pressure for two further periods of 10 minutes
4. If the bleeding stops and then restarts, help the casualty to reapply pressure
5. If the nosebleed is severe, or if it lasts longer than 30 minutes, arrange medical advice such as 111.

Hygiene

There is a risk of cross infection when dealing with an open wound. Follow the hygiene guidance on page 14, and in particular:

- Always wash your hands before and after treating any wound
- If possible, wear disposable non-latex gloves for first aid use: nitrile gloves are recommended
- Make sure that any open wounds you have are covered with a dressing or plaster
- Try not to touch a wound or the surface of a dressing that will come in contact with a wound
- Dispose of any waste properly.

The casualty is at risk of tetanus if the wound has come into contact with the tetanus bacterium, which is carried in soil, dust and manure. If you suspect that this has happened, advise the casualty to check that their immunisation is up to date.

Severe bleeding

Treatment

Aims - To control the bleeding, get medical help and treat for shock

1. Control the bleeding by applying direct pressure to the wound
2. Dial 999 or 112 for the emergency services
3. Apply an appropriate dressing firmly to control the bleeding and minimise the risk of infection. It should not be so tight that it restricts the casualty's circulation
4. Treat for shock by lying the casualty down with their feet raised. If possible, lay the casualty on a blanket or some other item to insulate them from the cold ground.
5. If blood comes through the dressing, remove the dressing and reapply direct pressure over the wound with a new dressing or pad to control the bleeding.
6. Secure the dressing with the bandage once the bleeding is controlled, tie the knot over the pad to help maintain pressure
7. It may be that the call handler instructs you how to improvise a tourniquet to control life-threatening bleeding if you are not trained or do not have a tourniquet in your first aid kit, using items such as a triangular bandage, belt or tie
8. Monitor the casualty's breathing and level of response while waiting for the emergency services to arrive.

Foreign objects in a wound

- Small pieces of debris in a wound should be carefully removed before it is treated. If they are left in place they can cause infection or prevent the wound from healing properly
- Objects firmly embedded in a wound should be left in place to be removed

by medical experts. Trying to remove them can cause further damage and bleeding.

Treatment for embedded objects

Aims - To control bleeding without causing further injury, to minimise the risk of infection and to get medical help.

1. Control the bleeding by applying pressure on either side of the object. Be careful not to push the object further into the wound. Do not try to remove the object
2. Cover both the injury and object with sterile gauze. Pad around the object, then bandage the wound. Make sure there is no pressure on the object. Check the casualty's circulation beyond the bandage every ten minutes; loosen and reapply the bandage, if necessary
3. Dial 999 or 112 for the emergency services

Penetrating chest wound

Any object that penetrates the chest can damage the organs and major blood vessels that are protected by the ribcage and breastbone. These include the liver and spleen, as well as the heart and lungs.

A lung can collapse (pneumothorax) even if the object does not fully penetrate the lung itself. Each lung is protected by two membranes and if air or blood gets between them the resulting pressure on the lung can make it collapse.

A collapsed lung can put pressure on the other lung and the heart:

- The heart may not manage to refill with blood properly (tension pneumothorax) which leads to reduced blood circulation and shock
- Pressure on the other lung leads to breathing difficulties.

All casualties

Recognition

- Breathing difficulties, often painful, rapid, shallow and uneven breaths
- Acute sense of alarm
- Lack of oxygen reaching tissues (hypoxia)
- Grey-blue skin (cyanosis)
- Coughing up blood
- Skin around the wound crackles
- Blood bubbling from the wound
- Sound of air entering through wound as casualty breathes in
- Neck veins become prominent.

Treatment

Aims - To maintain breathing, treat shock and get medical help.

1. Help the casualty to sit down and to lean toward the wound
2. If the wound is bleeding ask them to press on it using the palm of their hand or

- if necessary apply a dressing
3. Dial 999 or 112 for the emergency services
 4. Maintain the casualty's position. Monitor the casualty's breathing and level of response until the emergency services arrive
 5. If the casualty becomes unresponsive, perform DRABC and maintain an open airway. Place them in the recovery position on their injured side to minimise the pressure on their healthy lung.

Catastrophic bleeding

- A catastrophic bleed is extreme bleeding likely to cause death in minutes
- Blood is pumping from the wound
- The bleeding cannot be stopped or slowed with pressure
- Blood is quickly soaking through bandage after bandage

A severe bleed is likely to be slowed with pressure and usual bleeding treatments. A catastrophic bleed will not and may have a higher priority than the airway does to the speed it can threaten life.

In these cases, you may need to stop the flow of blood using a Haemostatic dressing, tourniquet or improvise a tourniquet following the instruction of Ambulance control if you do not have a haemostatic dressing or tourniquet available.

Injuries requiring such treatment are most likely following a gunshot, stabbing, power tool accident or serious road traffic incident.

Haemostatic dressings

A haemostatic dressing can be used on a catastrophic wound to the head, neck, chest or abdomen, there are some cautions but remember you will be on the phone with ambulance control so take their guidance.

1. Place the pad over the wound and hold it tightly in place for a minimum of 5 minutes, in some instances the dressing may need to be packed tightly into the wound.
2. Secure the dressing in place with the bandage, this may be attached or may be separate. They often have Velcro strips to help you secure it tightly in place
3. Recheck the dressing and monitor the casualty until the ambulance arrives

Amputation

On occasions limbs, fingers, toes or ears can be partly or completely severed. In many cases, surgery can be used to reattach the part. It is important that the casualty and the severed part are got to the hospital quickly.

1. Control the bleeding, apply direct pressure with a dressing or clean cloth and raise above the casualty's heart.

2. Secure the dressing in place with a bandage, tight enough to apply pressure, not too tight to impair circulation.
3. Treat the casualty for shock.
4. Call 999/112.
5. Wrap the severed part in kitchen film or a clean plastic bag. Then wrap in gauze or soft material and place in a container of crushed ice.

Do not

- Wash the severed part
- Let the severed part touch the ice

Amputation of a limb

1. Place the tourniquet around the limb close to the amputation or partial amputation site. If you can place it below the elbow or knee this is best. It should never be placed on a joint.
2. Pull the strap tight, you should not be able to get three fingers under the band once it is tight. Wrap the tail of the strap around the limb.
3. Tighten the rod, by twisting it, until the bleeding stops and secure it in place using the rod clip. If needed a second tourniquet can be applied alongside and above the first one.
4. Record the time on the time tab (if available) and monitor your casualty until the ambulance arrives.
5. Place the amputated part in a clean plastic bag. Then wrap in soft material and place in crushed ice.

Tourniquets

A Tourniquet should be used on catastrophic injuries such as limb amputation, a blast injury to a limb, power tool injury, a stabbing or a gunshot to a limb, they must only ever be used on a limb.

You should consider their use carefully as it is likely to be painful for the casualty and you should inform them that it will be painful, as with the haemostatic dressings if you are in any doubt you should ask the advice of the call handler. Once a tourniquet is applied it should not be loosened as the bleeding will start again.

1. Place the tourniquet around the limb close to and above the injury. If you can place it below the elbow or knee this is best. It should never be placed on a joint.
2. Pull the strap tight, you should not be able to get three fingers under the band once it is tight. Wrap the tail of the strap around the limb.
3. Tighten the rod, by twisting it, until the bleeding stops and secure it in place using the rod clip. If needed a second tourniquet can be applied alongside and above the first one.
4. Record the time on the time tab (if available) and monitor your casualty until the ambulance arrives.

Improvised Tourniquets

If you do not have a tourniquet, you can use items such as a triangular bandage, a scarf or a tie and use a pen, a fork or a Tourni-Key (if you have one) for the rod. A belt pulled tight can also work.

You should consider their use carefully as it is likely to be painful for the casualty and you should inform them that it will be painful, as with the haemostatic dressings if you are in any doubt you should ask the advice of the call handler. Once a tourniquet is applied it should not be loosened as the bleeding will start again.

1. Ensure the casualty knows you are applying a tourniquet and that it will hurt when you tighten it
2. Wrap the material around the limb, cross over the ends
3. Tie in the rod/Tourni-Key with a knot
4. Twist the rod to stop the bleeding
5. Secure the rod or hold it in place.

Burns, poisons and foreign objects

Burns

It is always important to assess the severity and cause of a burn. Depending on the size and depth of the area burned, shock is likely to develop. There is also a high risk of infection. If toxic smoke, hot gases or corrosive chemicals have been inhaled, the airway is also at risk. Always get medical advice when a child or baby is burnt.

All casualties

Recognition

Burns are classified according to the depths of damage to the skin. There are three depth, superficial, partial thickness and full thickness. There may be one or more depths with a single injury.

- Superficial burn: affects only the outermost layer of skin. You would expect to see redness, swelling and tenderness.
- Partial thickness burn: affects the epidermis (top layer) and dermis (middle layer) of skin. The skin becomes red and raw, blisters form due to fluid being released from the damaged tissue.
- Full thickness burn: all layers of the skin are affected and there may be some damage to nerves, fat tissue, muscles and blood vessels.

Treatment

Aims - To cool the burn.

1. Do not touch the burned area
2. Leave in place any clothing stuck to the burn unless it is contaminated with chemicals
3. Leave any blisters intact
4. Hold the burn under cool or lukewarm running water for a minimum of 20 minutes, or until the pain eases
5. Remove any jewellery or other constrictions while cooling
6. Cover with a clean plastic bag, kitchen film or a sterile dressing
7. Seek medical help if they have:
 - full thickness burns of any size
 - partial thickness burns larger than 1% (an area the size of the casualty's palm and fingers)
 - superficial burns larger than 5% of the body surface
 - burns on the hands, face, feet or genitals
 - burns with a mixed pattern and/or depth or that extend all around a limb
 - all electrical and chemical burns
 - if the casualty is a child or is elderly (however small the burn appears).

Burns to the face and mouth (all casualties)

Recognition

- Breathing difficulty
- Soot around the mouth and nose
- Damaged skin around the mouth.

When treating burns:

- Do not remove anything that is sticking to the burn
- Do not over cool the casualty as there is a risk of lowering their body temperature too much
- Do not use lotions, ointments or creams
- Do not use adhesive dressings
- Do not break blisters.

Hygiene

Wear disposable gloves throughout, if possible, and dispose of any waste properly.

Chemical burns

If it is a chemical burn, cool the burn with cool or lukewarm running water until the ambulance arrives. Avoid splashing any contaminated water on yourself or the casualty and make sure the contaminated water will not become a danger. As you pour cold water over the burn, carefully remove any contaminated clothing. If the clothing is stuck to the skin, leave it in place and continue cooling while waiting for the ambulance.

Chemical burns to the eye (all casualties)

Recognition

- Intense pain in the eye
- Unable to open the eye
- Redness, swelling and burning around the eye
- Eye watering profusely.

Treatment

Aims - To flush any chemicals out of the eye and get medical help.

1. Ask the casualty to remove their contact lenses if they can
2. Irrigate the casualty's eye under cool or lukewarm running water for a minimum of 20 minutes. Make sure both sides of their eyelid are well rinsed
3. Ensure that water drains away from the face. Avoid splashing any contaminated water on yourself or the casualty
4. Dial 999 or 112 for an ambulance.

Smoke inhalation

- Redness, swelling or burning of the tongue
- Hoarse voice.

Treatment

Aims - To maintain an open airway, monitor the casualty and get medical help.

1. Dial 999 or 112 for an ambulance
2. Maintain an open airway, loosening clothing around the casualty's neck if needed
3. Give the casualty ice or cold water to sip to relieve the pain and any swelling
4. Monitor the casualty's breathing and level of response until the emergency services arrive.

Hygiene

Wear disposable gloves throughout, if possible.

Clothing on fire

If the casualty's clothes or hair are on fire:

- **Stop** the casualty panicking or running
- **Drop** the casualty to the ground
- if possible, **Wrap** the casualty tightly in a curtain, blanket or large coat (not one made of nylon) trying to make sure the burning areas are covered
- **Roll** the casualty along the ground until the flames are smothered.

Hygiene

Wear disposable gloves throughout, if possible.

Poisons

Swallowed poisons (all casualties)

Recognition

- Vomiting, sometimes including blood
- Burning or pain sensation
- Loss of response.

Treatment

Aims - To monitor the casualty and to get medical help.

1. Try to find out what the casualty has swallowed. Keep any containers or packages with information about the possible poison, handling them with care. Reassure the casualty
2. Dial 999 or 112 for an ambulance.
3. If the casualty is unresponsive, open their airway and check their breathing:
 - If they are breathing normally, place them in the recovery position (see pages 21-22)
 - If they are not breathing normally, be prepared to perform CPR (see pages 23-28)
4. When the emergency services arrive, pass on any details of the poison including the container or package.

Safety

If the casualty stops breathing normally and has burning around their lips and mouth, use a barrier device when carrying out rescue breaths.

Skin contact (all casualties)

Recognition

- Pain, often very intense
- Skin may blister, peel and swell
- Skin colour may change.

Treatment

Aims - To monitor the casualty and to get medical help, if necessary.

1. Try to find out what the casualty has been in contact with. Keep any containers or packages with information about the possible poison, handling them with care
2. Do not touch the affected area with your bare hands
3. Flush away any residual poison with running water for at least 20 minutes. Avoid splashing yourself or the casualty
4. If the casualty is unresponsive, open their airway and check their breathing
 - If they are breathing normally, place them in the recovery position (see pages 21-22)
 - If they are not breathing normally, be prepared to perform CPR (see pages 23-28).

Dial 999 or 112 for an ambulance.

Hygiene

We recommend you use a face shield when performing rescue breaths.

Poisonous gases

Poisonous gases can be inhaled and enter the bloodstream. Once in the bloodstream, poison is carried around the body, so can affect all the organs as well as tissues. This can cause temporary or permanent damage to a casualty.

Poisonous gases and fumes come from a range of sources, including DIY and cleaning products; also, the combination of certain household or gardening chemicals can create poisonous fumes. Fires can be a source of poisonous gases, and industrial chemicals can emit fumes.

All casualties

Recognition

- Specific symptoms depend on the poison
- Difficulty breathing

- Lack of oxygen reaching tissues (hypoxia)
- Grey-blue skin (cyanosis)
- Symptoms may develop over time, depending on the poison and the rate at which it is inhaled – from minutes to days
- Poisons reaching the brain can cause confusion, seizures or unresponsiveness.

Treatment

Aims - To aid breathing and to get medical help.

1. If it is safe to do so, help the casualty to fresh air, either outside or to an open window. If possible, find out what the casualty has inhaled and look for clues, such as cleaning products
2. Dial 999 or 112 for emergency services. Pass on any information you have about the poison
3. If the casualty stops breathing normally, perform CPR (see pages 23-38).

Hygiene

We recommend you use a face shield when performing rescue breaths.

Foreign objects

In the eye

Foreign objects floating on the surface of the eye can be easily rinsed out. Never attempt to remove anything that is sticking to the eye or is embedded in the eye.

Recognition

- Blurred vision
- Discomfort
- Eyelids in a spasm
- Redness and watering of the eye.

Management

1. Ask the casualty not to rub their eye
2. Stand beside them, gently separate their eyelids with your thumbs or finger and thumb. Ask them to look right, left, up and down. Examine the eye as they do it
3. Keep the eye open and wash out any foreign object on the white of the eye by pouring clean water from a glass or jug. Pour the water from the inner corner of the eye
4. If this doesn't work, try and lift the object out with the damp corner of a clean handkerchief
5. If you still can't remove the object, seek medical help.

In the ear

Management

Do not try to remove a foreign object lodged in the ear; seek medical help.

If there is an insect in the ear gently flood the affected ear with tepid water to float the insect out. If this does not work seek medical help.

In the nose

Recognition

- Difficult or noisy breathing through the nose
- Swelling of the nose
- Smelly or bloodstained discharge.

Management

- Try to keep the casualty calm. Tell them to breathe through their mouth at a normal rate
- Do not try to remove a foreign object lodged in the nose; arrange to take or send the casualty to the hospital.

Effects of heat and cold

Hypothermia (all casualties)

Recognition

Shivering

- Cold, pale, dry skin
- Irrational or uncharacteristic behaviour, such as apathy or stubbornness
- Disorientation
- Lethargy or impaired response
- Slow, shallow breathing
- Slow, weak pulse
- In extreme cases, cardiac arrest.

Treatment

Aims - To stop further heat loss, reheat the casualty and get medical help, if necessary.

Treating the casualty when outdoors

1. Move the casualty to a sheltered place
2. Remove wet clothing. Provide them with dry clothing or blankets and cover their head. Do not give them your clothes
3. Provide a layer of insulation between the casualty and the ground. Shield the casualty from the wind. If possible:
 - put them in a dry sleeping bag cover them in blankets or newspapers
 - enclose them in a space blanket
4. Dial 999 or 112 for help - this may be an ambulance or mountain rescue depending on your situation. If you need to send for help, make sure that someone remains with the casualty at all times
5. If alert and possible, give warm non-alcoholic drinks and high energy food such as chocolate.

Treating the casualty when indoors

1. Rewarm the casualty with layers of blankets but do not use direct heat sources such as hot water bottles or fires as they can cause burns
2. If alert and possible, give warm non-alcoholic drinks and high energy food such as chocolate
3. Seek medical help; hypothermia can mask the symptoms of a stroke, heart attack or an underactive thyroid gland in an elderly casualty
4. Monitor the casualty's breathing and level of response until the emergency services arrive. Be prepared to perform CPR (see pages 23-28). Do not stop until emergency help arrives because survival may be possible even after prolonged periods of resuscitation.

Always obtain medical help if the casualty is elderly or a baby.

Heat exhaustion (all casualties)

Recognition

- Headache
- Dizziness
- Confusion
- Loss of appetite and nausea
- Pale, clammy skin and sweating
- Muscle cramps
- Pulse and breathing become rapid and weakening.

Treatment

Aims - To rehydrate and cool the casualty and to get medical help.

1. Help the casualty to a cool shady place
2. Lay the casualty down. Raise and support their legs
3. Encourage them to drink water. If available, rehydration salts given with water help with salt replacement, and an isotonic sports drink can help restore glucose
4. If they recover quickly, advise the casualty to see their doctor
5. If the casualty worsens or becomes unresponsive:
 - check their breathing and level of response
 - be prepared to perform CPR (see pages 23-28)
 - place them in the recovery position (see pages 21-22)
 - dial 999 or 112 for an ambulance

Heatstroke (all casualties)

Recognition

- Headache and discomfort
- Dizziness
- Dry skin that is also hot and flushed
- Confusion
- Restlessness
- Response levels rapidly decline
- High body temperature.

Treatment

Aims - To cool the casualty quickly and to get urgent medical help.

1. Help the casualty to a cool place. Remove as much of their outer clothing as possible
2. Dial 999 or 112 for an ambulance
3. Wrap the casualty in a cold, wet sheet. Use cold water to keep the sheet wet until their temperature seems to return to normal. If no sheet is available, fan

the casualty or sponge them with cold water

4. Once the casualty's temperature appears to have returned to normal, replace the wet sheet with a dry one
5. Monitor their condition until the emergency services arrive. If their temperature rises again, repeat steps 3 and 4.

Sunburn (all casualties)

Recognition

- Reddened skin
- Skin painful to touch or against clothes
- Blistering of affected skin
- Pain and redness can develop once out of the sun.

Treatment

Aims - To prevent further burning and to relieve pain

1. Help the casualty to move out of the sun - indoors or to a shady spot
2. Cover their skin with light clothing or a towel
3. Sponge their skin with cold water for 10 minutes. Alternatively, soak the affected area in cold water or in a cold bath for 10 minutes
4. Encourage the casualty to sip cold water frequently
5.
 - If the burn is mild, an after-sun preparation may soothe it
 - If the burn is severe, get medical help.

Other conditions

Meningitis

Meningitis is not common but, if suspected, it needs urgent attention. The symptoms can be easily confused with flu or a bad cold, especially in babies and young children. If you are concerned, get medical advice.

Recognition (child and adult)

- Constant headache
- High temperature
- Vomiting
- Aversion to bright lights
- Stiff neck
- Rash of red or purple spots that does not fade when pressed.

Recognition (baby)

- A high-pitched, moaning cry - different to their normal cry
- Difficult to wake
- Repeated vomiting, not just after feeds
- Refusing feeds
- Pale, blotchy skin with red or purple spots that does not fade when pressed
- Soft spot on head may be tight or bulging.

Management (all casualties)

Urgent medical attention is vital as meningitis and septicaemia can develop very quickly. Dial 999 or 112 for an ambulance.

Even with medical attention, a proportion of casualties with meningitis die.

Sepsis

Sepsis(also known as blood poisoning) is the immune system's overreaction to an infection or injury. Normally our immune system fights infection - but sometimes, for reasons we don't yet understand, it attacks our body's own organs and tissues. If not treated immediately, sepsis can result in organ failure and death.

Recognition (adult)

Seek medical help urgently if you (or another adult) develop any of these signs:

- **S**lurred speech or confusion
- **E**xtrême shivering or muscle pain
- **P**assing no urine all day
- **S**evere breathlessness
- **I**t feels like you're going to die
- **S**kin mottled or discoloured

Recognition (child)

- Rapid breathing
- Seizures
- The child is very lethargic or difficult to rouse
- Feels abnormally cold to touch
- A rash that does not fade when pressed
- Passing no urine all day
- Mottled blue or pale skin

Recognition (under 5's)

- Is not feeding
- repeated vomiting
- No recent wet nappies/not passing urine all day

Treatment

1. Call 999/112 for urgent help and ask could it be sepsis?
2. Monitor, keep cool and reassure until help arrives

Bites and stings**Animal and human bites**

A bite can cause deep puncture wounds that damage the skin and introduce germs. Any bite that breaks the skin needs prompt first aid because of an increased risk of infection.

All casualties**Treatment**

Aims - To control bleeding and obtain medical help if necessary.

1. Minimise the risk of infection by washing the bite wound thoroughly with soap and water
2. Raise and support the wound and pat dry with clean gauze swabs
3. Cover the wound with a sterile dressing
4. Take or send the casualty to hospital if the wound is large or deep or you are concerned about infection.

Stings**All casualties****Recognition**

- Site of the sting is painful
- Redness and swelling of the skin around the sting.

Treatment

Aims - To relieve swelling and pain

1. Reassure the casualty.

2. If the sting is visible, brush or scrape it off sideways with the edge of a credit card or your fingernail, as soon as possible. Do not use tweezers
3. Raise the affected part and apply a cold compress to minimise swelling
4. Keep the compress in place for at least 20 minutes
5. If pain and swelling persist tell the casualty to seek medical advice
6. Monitor vital signs and watch for signs of an allergic reaction

Tick bite

Treatment

1. Using a pair of tweezers or a tick remover, grasp the tick's head as close as you can to the skin and gently pull the head upwards.
 - Use a steady and even pressure.
 - Do not jerk the tick as this may leave parts of it embedded in the skin.
 - Do not burn or freeze the tick, or try to remove it with butter or petroleum jelly.
2. Collect the remnants of the tick together and put it in a sealed plastic bag. Give it to the casualty as it may need to be identified.
3. Advise them to seek medical advice.

Bone, muscle and joint injuries

Sprains and strains

These injuries are frequently related to sports and physical activities:

- Sprains occur when ligaments around joints are overstretched or completely torn by violent or sudden movements
- Strains are the result of overstretching or tearing muscles.

All casualties

Recognition

- Difficulty moving the affected part
- Severe pain and tenderness
- Distortion
- Swelling Bruising.

Treatment

Aims - To reduce pain and swelling and to get medical help, if necessary.

Sprains and strains should be treated initially by following the **RICE** procedure.

- **R**est the injured part
- **I**ce pack or cold compress for 20 minutes
- **C**omfortable support should be applied
- **E**levate the injury, if possible. Advise the casualty to get medical advice, if necessary.
- If the pain is severe or the casualty is unable to use the injured part seek medical advice.

Dislocations

A dislocated joint happens when bones are partly or completely pulled out of their normal position.

Recognition

- Complain of a severe, sickening pain
- Unable to move the joint
- Swelling and bruising around the joint
- The area may look shorter, bent or deformed.

Dislocation treatment

1. **Do not** try to put the joint back into place
2. Support the joint in a comfortable position
3. Stop it from moving by supporting it with a sling or padding
4. Seek medical help

5. Treat for shock if necessary
 - **Do not** raise an injured leg. Only raise the uninjured leg
6. Check the circulation to the extremities (fingers and toes)

Fractures

There are two main types of fracture, called open and closed:

- A closed fracture is where the skin is unbroken, but internal damage to surrounding tissue can be seen as swelling
- An open fracture has a wound; the bone may or may not be protruding. There is also internal damage to surrounding tissue.

A casualty with a fracture needs to keep still and not move the injured part.

All casualties

Recognition

There may be some of the following:

- pain
- swelling
- unnatural range of movement
- immobility
- grating noise or feeling
- deformity
- loss of strength
- shock
- twisting, shortening or bending of a limb

Treatment (closed fracture)

Aims - To reduce the risk of further injury by preventing the casualty from moving the fracture and get medical help.

1. Support the injured limb
2. Immobilise the affected part
3. Seek medical advice as they may need to go to hospital

Treatment (open fracture)

Aims - To prevent blood loss and movement at the site of the fracture, and to get medical help.

1. Cover the wound with a sterile dressing. Control the bleeding without pressing on any protruding bones
2. Support and immobilise the injured limb
3. Dial 999 or 112 for an ambulance
4. Treat for shock (see page 46).

Hygiene

Wear disposable gloves throughout, if possible.

Spinal injuries

You should always consider the possibility that the casualty has sustained a spinal injury if they experience:

- severe back pain
- a fall from a height
- a direct blow to the head.

All casualties

Recognition

A casualty may present with either or both of the following:

- pain to the neck or spine
- an unnatural shape or curve to the back.

Do not move a casualty with a suspected spinal injury to see if their spine is misshapen or injured.

A casualty with a spinal cord injury may experience one or more of the following:

- poor control of their limbs or paralysis
- poor sensations or unusual sensations, like tingling or burning
- breathing difficulties
- loss of bowel or bladder control.

Treatment (responsive casualty)

1. Reassure the casualty. Advise them not to move, but to maintain their head and neck in a stable position
2. Call 999/112 or ask a bystander to
3. If the casualty cannot maintain a stable head position, kneel or lie behind their head, rest your elbows on the ground to keep your arms steady. Hold the sides of the casualty's head, spreading your fingers so you do not cover their ears.
4. Ask a helper to place rolled-up blankets, clothing or towels on either side of the casualty's head, while you keep it in a natural position. Continue to support the casualty's head until the emergency services arrive.
5. Monitor and record vital signs until help arrives

Treatment (unresponsive casualty)

1. Kneel or lie behind their head, rest your elbows on the ground to keep your arms steady. Hold the sides of the casualty's head, spreading your fingers so you do not cover their ears.
2. Open the airway using the jaw thrust method
3. Check the casualty's breathing whilst supporting the head
4. Ask a bystander to call 999/112

5. If they are not breathing start CPR
6. Monitor and record vital signs until help arrives

Jaw-thrust technique

If a spinal injury is suspected in an unresponsive casualty, the jaw-thrust technique can be used to maintain an open airway.

This technique must only be used if you have:

- received appropriate training
- practised the technique.

If you have not had training or practice in the jaw-thrust technique, you must use the standard procedure to open the airway.

1. Kneel behind the casualty. Support their head so it is aligned with their neck and spine
2. Place your hands on either side of the casualty's face, with your fingertips at the angle of their jaw
3. Gently lift and support the jaw to open the airway. Take care not to tilt the casualty's neck.



If you are unable to maintain the airway, the casualty should be placed in the recovery position (see pages 21-22).

Crush injuries

Crush injuries can involve fractures, internal injuries and swelling. The force of the object can also restrict the casualty's circulation causing numbness below the injured area.

Crushing for a long period can cause two problems:

- damage to tissues, especially muscles, which leads to shock once the object is removed and blood flows rapidly to the injury site
- the potentially fatal 'crush syndrome' where toxins build up in tissues around the crush site. The toxins, if they enter the casualty's bloodstream quickly, can cause kidney failure.

All casualties

Recognition

All or part of the casualty is trapped in or beneath an object, most commonly in

traffic or building site accidents.

Treatment

Aims - To release the casualty and treat injuries (if possible), and get medical help.

- 1.**
 - If the casualty has been trapped for less than 15 minutes, try to free them as quickly as possible. Use safe lifting and handling techniques. Do not try to lift objects if there is a risk of further injury to the casualty or yourself
 - If the casualty has been trapped for 15 minutes or more, or you are unable to free them, leave them in position
- 2.** Dial 999 or 112 for an ambulance; if the casualty has not been freed the fire and rescue service may also be needed
- 3.**
 - Treat any injuries you can, for instance: control bleeding (see pages 48-54)
 - immobilise a suspected fracture (see page 68)
 - treat for shock (see page 46)
 - Reassure the casualty
- 4.** Monitor the casualty's breathing and level of response until the ambulance services arrive. Be prepared to perform CPR (see pages 23-28).



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