

Outdoor First Aid : UNIT 2

04.2023

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Welcome



MODULE 1

Incident management



PRIMARY SURVEY (RECAP)

- D** Dangers
- R** Response
- A** Airway
- B** Breathing
- C** CPR for a non-breathing casualty



CPR (RECAP)

D

R

A

B

C

If your casualty is **not breathing normally**, call the emergency services immediately and commence CPR without delay.

If your casualty is **breathing normally** and has no major physical trauma, then move on to your secondary assessment.



CASUALTY ASSESSMENT (RECAP)

- S** Signs and symptoms
- A** Allergies
- M** Medication
- P** Previous medical history
- L** Last oral intake
- E** Events leading up to the injury or illness

In order to make a diagnosis of your casualty's condition, a number of factors need to be considered. An easy way of remembering how to approach your secondary assessment is to use the mnemonic **SAMPLE**



TOP-TO-TOE SURVEY (RECAP)

You will need to conduct a top-to-toe survey to examine the casualty's condition so that you can offer them the appropriate treatment. As the term suggests, you should start at their head and work your way down to their feet.

- Head face and neck
- Chest and shoulders
- Arms
- Spine
- Abdomen
- Pelvis (visual only)
- Legs and extremities



CASUALTY IN THE RECOVERY POSITION (RECAP)

Call the emergency services if you haven't done so. Keep talking to them, keep them warm and continue to monitor their breathing.

If they have to be kept in the recovery position for more than 30 minutes, turn them to the opposite side to relieve the pressure on the lower arm.

Pregnant women: always put an unresponsive pregnant woman in the recovery position on her **left side**.

This prevents compression of the Inferior vena cava (vein) by the uterus, which could be **fatal** for both the mother and the child.



SCENE SURVEY (RECAP)

A scene survey involves assessing the situation to work out what has happened, how and why, before moving on to the primary survey. The scene survey begins as soon as you realise that there is an emergency and may include:

- Managing the incident
- Looking for potential hazards
- Assessing the situation
- Protecting against contamination





MONITORING (RECAP)

You will need to monitor the casualty's vital signs which will help you identify problems and indicate any changes to their condition. Vital signs are measurements of the body's most basic functions, which include:

- Level of response (verbal)
- Breathing
- Pulse
- Skin colour
- Body temperature



MANAGING A CASUALTY IN OUTDOOR CLOTHING

- When dealing with an incident that requires First Aid, you may need to loosen, remove, open or even cut the casualty's clothing to provide effective treatment
- Ideally, you should treat your casualty under a group shelter, or tent if practicable. This will protect your casualty from the elements whilst you are treating them, reducing the risk of conditions such as hypothermia. Sheltering your casualty will also provide a form of privacy in the outdoor environment
- It will prove useful to pack a pair of tough cut scissors which are perfect for cutting through thick clothing. If you need to cut your casualty's clothing to reach the injured area, be mindful of the scissor blades and try to lift away from your casualty when making the cut. Safety pins can be used to repair the clothing as a temporary measure



MOVING AND CARRYING A CASUALTY

- There may be a time when you need to move your casualty to a safer position so that you can provide the necessary treatment, set-up shelter and make the job of applying First Aid easier
- With non-critical injuries, it may be possible for your casualty to walk (with assistance) a short distance but it is important to weigh up the benefits and ask yourself, “will this make the situation better or worse?”
- A good example of needing to move your casualty could be if they slipped on a bank and fell into a shallow river – this scenario certainly justifies moving and carrying your casualty, if it is safe for you to do so, as they are at risk of drowning and making their injuries worse



MOVING AND CARRYING A CASUALTY

Items of equipment that can be used to move and carry your casualty may include:

- | | |
|-----------------|----------------------------|
| • Walking poles | • Jackets / spare clothing |
| • Rucksacks | • Tarpaulin |
| • Climbing rope | • Emergency bivi bags |
| • Group shelter | • Tent / tent poles |

This list is by no means exhaustive, but it gives you an indication of what may be used or needed.



MOVING AND CARRYING A CASUALTY WHEN YOU ARE ALONE

- **Walking with assistance** - Physically assisting them by offering your hand for support, or walking close by their side with their arm around your shoulders
- **Firefighter's carry** – Carrying the casualty over your shoulders. A technique used in firefighting to carry casualties to safety away from a danger source
- **Rucksack carry** – Where you support the casualty on your back using the rucksack shoulder straps as a seat. The casualty steps into the shoulder strap loops and you would stand up so the casualty is attached to your back, just like a rucksack
- **One person rope carry** – Similar to the rucksack carry but a rope is used to support the casualty and act as the seat



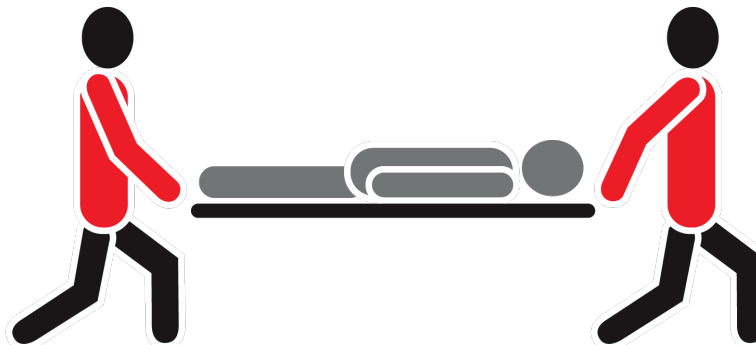
MOVING AND CARRYING A CASUALTY WHEN YOU HAVE ASSISTANCE

- **Rucksack with walking poles carry** – Using walking poles supported in the straps of two rucksacks side by side. The casualty would sit on top of the walking poles between you and the other person
- **Two person rope carry** – Using a rope as a seat between two people to carry the casualty. The rope is coiled into a figure '8' and each coil is slung over you and the other person's shoulder, so that the middle of the figure '8' acts as the seat to carry the casualty. Place padding over the knot to make it comfortable for the casualty



MOVING AND CARRYING A CASUALTY WHEN YOU ARE PART OF A GROUP

- **Basic sheet stretcher** – An improvised stretcher using sheet like materials as the stretcher base and walking poles (or branches, paddles etc) to act as the handles to carry the casualty
- **Clothing and walking poles stretcher** – Using items of clothing as the base of the stretcher and feeding the walking poles through the clothing to act as handles for lifting and carrying



MOVING AND CARRYING A CASUALTY

SUSPECTED SPINAL INJURY

4. On the lead First Aider's command, lift the casualty keeping them as straight and stable as possible, ensuring the head is supported in a neutral position throughout the lift and carry
5. Move very slowly and carefully in the direction of travel and keep the head, neck and spine as straight as possible



MODULE 2

Bones, joints and muscle injuries



BONES, JOINTS AND MUSCLE INJURIES

- **The Skeleton**

Supports the muscles, blood vessels and nerves of the body, and protects the organs

- **The Muscles**

Allows various parts of the body to move

- **Ligaments**

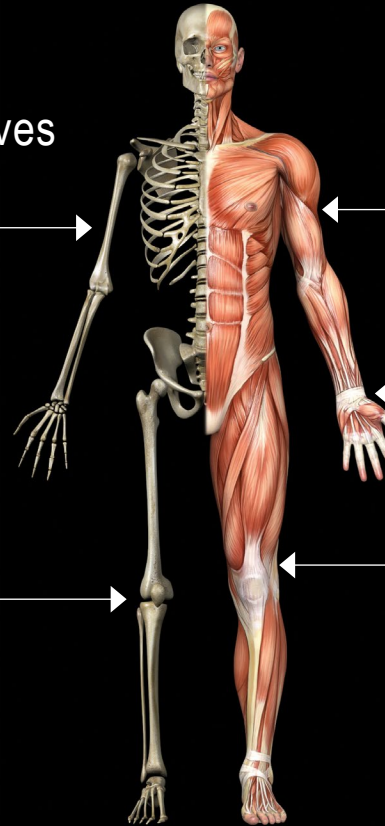
Hold moveable joints together

- **The Joints**

Where one bone meets the other

- **Tendons**

Hold muscle to the bone



CLOSED FRACTURE

The broken bone does not penetrate the skin.

- Pain
- Swelling
- Deformity
- Internal bleeding
- Bruising
- Shock



TREATMENT OF A CLOSED FRACTURE

- Insulate from the ground and provide shelter
- Immobilise the injured part to stop any movement
- Support the injured part
- Leave the casualty in the position found unless they can move the injured part to a more comfortable position
- For additional support, particularly if there is a delay in the emergency services arriving, you could consider strapping an uninjured leg to the injured one
- You must not try to realign the fracture. This should only be performed by medically trained professionals
- Treat for shock
- Call 999/112 if you are unable to self-evacuate



SUPPORT SLING

5. Secure the trailing bandage at the elbow with a safety pin, or by twisting it fairly tight and losing it by tucking it away within the sling

6. Ensure that there is still circulation in the fingertips by performing a capillary refill check. Press a fingernail which should go pale. When released it should go back to normal colouration. Transport them to the hospital or call 999 if they are unable to walk

7. Summon for professional medical assistance if they are unable to walk



RECOGNITION OF AN OPEN FRACTURE

- Pain
- Deformity
- Internal bleeding
- External bleeding
- Shock



TREATMENT OF AN OPEN FRACTURE

- Call the emergency services immediately
- Prevent any movement
- Reduce the risk of infection by wearing gloves
- Control the blood loss by dressing around the wound
- DO NOT apply any direct pressure on the protruding bone
- Use sterile non-fluffy dressings
- For additional support, particularly if there is a delay in the emergency services arriving, you could consider strapping an uninjured leg to the injured one
- You MUST NOT try to realign the fracture. This should only be performed by medically trained professionals
- Treat for shock, insulate from the ground and provide shelter whilst waiting for professional medical help to arrive. Monitor vital signs at regular intervals



COMPLICATED FRACTURE

Signs and Symptoms

- Pain
- Deformity
- Internal and external bleeding
- Shock

Treatment

- Call the emergency services immediately
- Apply the same treatment as mentioned before for an open or closed fracture
- Be aware of a possible secondary injury which may not be visible. An example of this could be a fractured rib which may have affected an internal organ
- Monitor them very closely and be prepared to resuscitate them



RECOGNITION AND TREATMENT OF A DISLOCATION

If the casualty does not want the limb strapped or supported with a sling, then allow them to support it themselves, if this is possible, and transport them to hospital.



ELEVATION SLING

5. Twist the point of the bandage at the elbow and tuck it in to secure it. If you have a safety pin, this can be used to fasten the point at the corner. Ensure the casualty feels comfortable and bandage is supporting the injured arm
6. Keep their fingers exposed so you can check their circulation at regular intervals. If it is too tight, loosen the bandage and tie again



PELVIC INJURIES

Treatment – assume the pelvis has been broken and treat as for a fracture.

- Call the emergency services immediately
- DO NOT touch the pelvis. Establish how the injury happened and note the casualty's symptoms to pass on to the emergency services
- Control any external bleeding and treat for shock
- Immobilise the injury by tying the casualty's legs together at the ankles
- Place padding in between their legs and under their knees for support
- Insulate the casualty from the ground, provide shelter and keep them warm
- Monitor vital signs whilst awaiting professional medical assistance



SOFT TISSUE INJURIES

Recognition

- Pain
- Swelling
- Bruising
- Inflammation
- Cramps (Strains)



TREATMENT OF SOFT TISSUE INJURIES

- P Protect** the injured area from further injury
- R Rest** and support the injury
- I Ice** Apply an ice pack or cold compress
- C Compress** the injury to reduce swelling
- E Elevate** the injured limb in order to reduce the swelling



IMPROVISED SLINGS AND SPLINTS

The key element of treatment for your casualty with a suspected fracture is to prevent any movement. It may be difficult to do this in a remote setting due to the lack of equipment, changes to the environment and adverse weather conditions. You may have equipment to hand which can be improvised into a support sling or a splint.

Splint - items may include:

- | | |
|--------------------|------------------------------|
| • Walking poles | • Clothing |
| • Tent poles | • Dressings, padding & tape |
| • Tree branches | • Towels |
| • Plastic sheeting | • Rope, string and shoelaces |



IMPROVISED SLINGS AND SPLINTS

Tent pole splint

- Tape an unassembled tent pole together to form the base of the splint, which provides a good surface area for their arm to rest
- Place padding on top of the tent poles
- Ask your casualty to gently rest their arm onto the padding
- Use a bandage (or similar) to tie around the splint and your casualty's arm to secure it in place
- Do not overtighten the splint as this could affect the casualty's blood flow and worsen their condition
- Leave a slight gap at the wrist so that you have access to check their pulse



MODULE 3

Head and spinal injuries



RECOGNITION OF CONCUSSION

- Evidence of a head injury (*blood or bruising*)
- Headache and nausea
- Dizziness and loss of balance
- Confusion, such as being unaware of your surroundings
- Feeling stunned or dazed
- Disturbances with vision, such as double vision or seeing “stars” or flashing lights
- Difficulties with memory



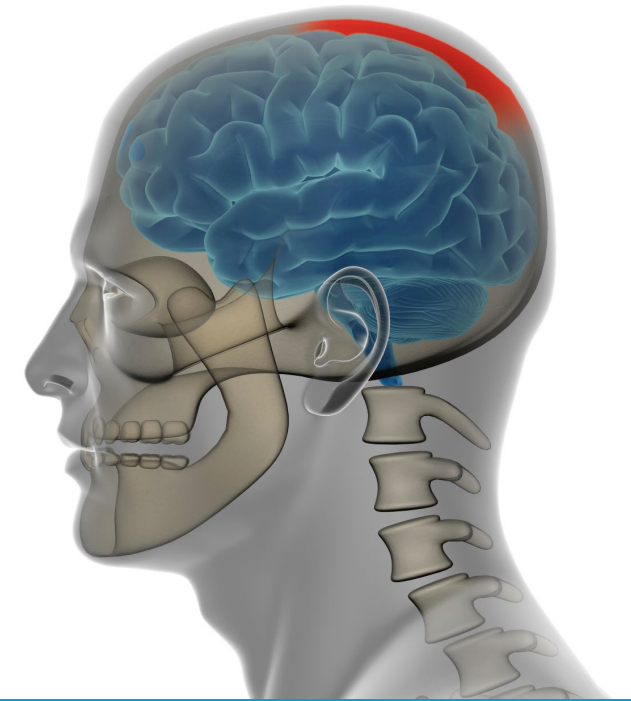
TREATMENT OF CONCUSSION

- If they are responsive, rest them by sitting them down or lying them down with their head raised and hold a cold compress against the injury
- Keep them warm and keep talking to them
- Ensure the cold compress stays on the injury for no longer than 20 minutes
- Monitor their airway, breathing and response levels
- If they are unresponsive, you must call the emergency services and support them in the position found
- You must recommend that they seek medical advice, particularly if they develop a headache, feel sick or they sleep more than would normally do



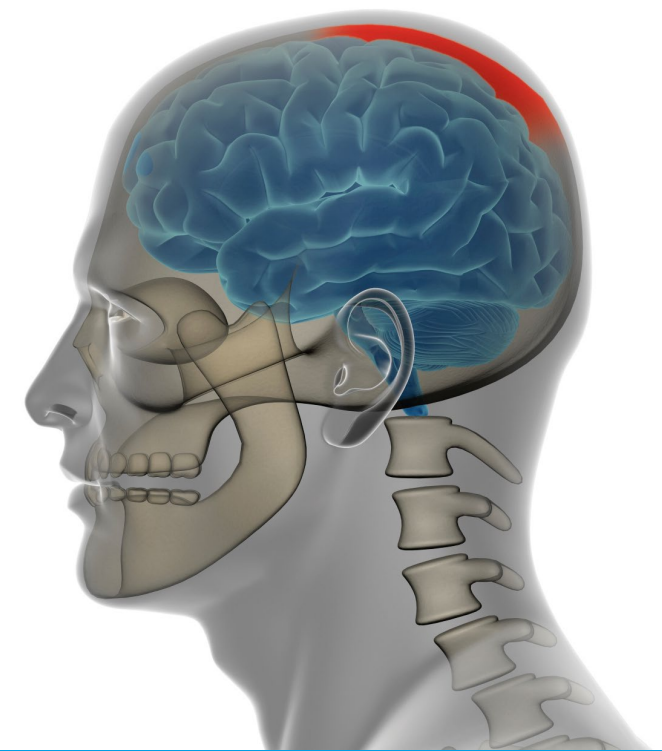
RECOGNITION OF CEREBRAL COMPRESSION

- Their response levels will deteriorate, possibly leading to unresponsiveness
- Signs of a recent head injury
- Severe headache
- Weakness and/or paralysis down one side of the face or body
- Flushed face and high temperature
- Drowsiness
- Behavioural changes
- Slow noisy breathing
- Unequal pupil sizes



TREATMENT OF CEREBRAL COMPRESSION

- Call the emergency services immediately
- If they are responsive, keep them supported in a comfortable position by lying them down with their head and shoulders raised, providing injuries allow, and keeping them warm
- Monitor their response levels
- If they become unresponsive, check their breathing and carry out your basic life support procedures dependant on the result



RECOGNITION OF A SKULL FRACTURE

- Evidence of trauma to the head
- Possible depression of the skull
- Bruising around the head
- Clear fluid or watery blood coming from the nose or ear
- Bloodshot eyes
- Deterioration of response levels



TREATMENT OF A SKULL FRACTURE

- If you suspect a spinal injury, do not move them
- Insulate the ground, lay them down, head and shoulders raised if you are able to move them
- Dial 999/112 for the emergency services
- Monitor vital signs
- Cover their ear with a sterile dressing
- Control the bleeding and fluid loss
- All head injuries must be advised to go to hospital



THE HUMAN SPINE

Sandwiched between our vertebrae are pads of tough, fibrous cartilage called inter-vertebral discs that cushion our vertebrae and absorb shock.

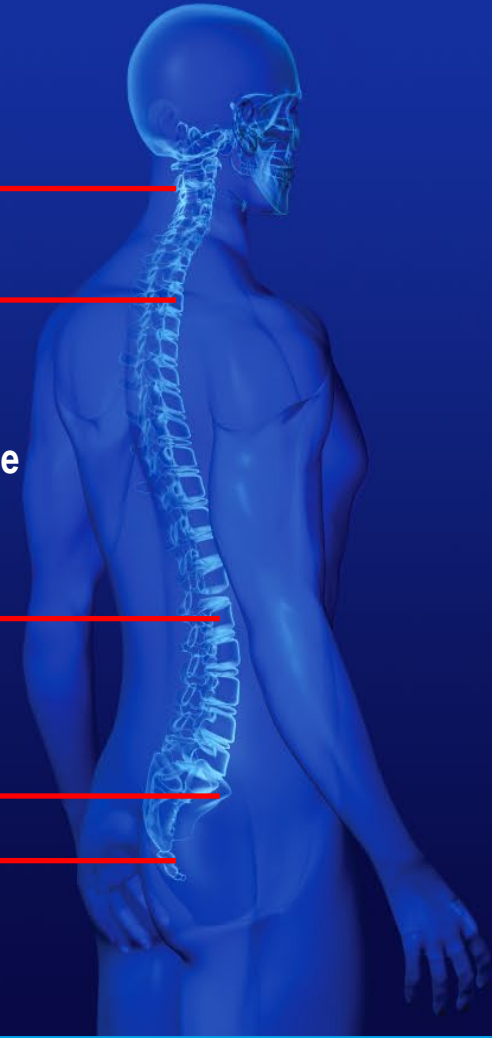
Spinal discs, 23 in total are located between the vertebrae

7 Cervical Vertebrae

12 Thoracic Vertebrae

5 Lumbar Vertebrae

Coccyx



RECOGNITION OF A SPINAL INJURY

If the spinal **cord** is damaged:

- No control over limb movement
- Loss of sensation, or abnormal sensations such as numbness, burning or tingling
- The casualty may say that the limbs feel heavy or clumsy
- Loss of bladder and bowel control
- Breathing difficulties



TREATMENT OF A SPINAL INJURY

Prevent any movement!

- Call the emergency services immediately
- Prevent any movement and support in the position found
- Support their head throughout but do not cover the ears with your hands, as this will impair their hearing
- Monitor their breathing and other vital signs whilst you are waiting for professional help to arrive
- Take a thorough history of what happened and ask your casualty about their levels of pain, if any. This can be passed on to the emergency services when they arrive
- Be prepared to resuscitate



MODIFIED RECOVERY POSITION FOR SPINAL INJURIES

- Support the casualty's head and neck by placing your hands either side of their head. The other person should gently raise one leg so it is bent at the knee
- Stretch the casualty's arm out so it is positioned at a right angle from the body. The opposite arm to the leg that is raised should be placed over the casualty's chest area
- The casualty should then be moved gently onto their side. Ensure that they are fully supported and their head is held in line with their spine
- Finally, you should move the top leg and settle the arm under the casualty's cheek. The other person should support the head and neck throughout

If you do not have help to hand, place your casualty into the normal recovery position, whilst trying to keep the spine as straight as possible. Be prepared to resuscitate if your casualty stops breathing normally.



MODULE 4

Chest and abdominal injuries



CHEST INJURIES

Definition:

‘A person with a chest injury has damage to a structure in the chest, caused by an injury. Minor injuries may cause a bruise to the chest, while severe injuries may also damage the lungs or heart.’



PENETRATING CHEST WOUNDS

Recognition

- Distended neck veins
- Tracheal deviation (*shifting of the windpipe*)

In addition, you may see evidence of the following:

- 'Bubbling' around the wound
- Coughed up red frothy blood
- The sound of air being sucked in when the casualty breathes



PENETRATING CHEST WOUNDS

Treatment

- Call the emergency services immediately to request professional medical assistance
- Insulate from the ground, help the casualty to sit down and lean them towards the injured side
- If the wound is bleeding, you must apply direct pressure to the wound and apply a non-occlusive dressing if it is necessary
- If your casualty has a 'sucking' chest wound where you can hear air escaping from the wound, leave the wound exposed to freely communicate with the open environment, or apply a non-occlusive dressing (as above)
- If there is something embedded, build up padding on either side of the object until it is high enough for you to be able to bandage over the top of the object without pressing it further into the wound
- Treat for shock and monitor vital signs until help arrives



RIBCAGE INJURY

Treatment

- Sit the casualty down and support them
- Lean them towards the injured side, but comfortably in a position that suits them
- If the casualty allows, apply an elevated sling to the arm on the injured side. Do not enforce this if the injury is so painful that they would prefer to support it themselves
- Call for an ambulance. If the casualty becomes unresponsive, support them in the position found unless you believe their airway is at risk, then you should place them in the recovery position injured side down, taking extreme care when rolling them over
- Monitor their airway and breathing



CRUSH INJURY

Treatment for a casualty who has been crushed for **LESS** than 15 minutes

- If it's possible, release the casualty from the crush as soon as you can
- Remember your First Aid priorities and treat appropriately:
 - Breathing
 - Bleeding
 - Burns and breaks
- Treat for shock
- Call 999/112 for the emergency services



CRUSH INJURY

Treatment for a casualty who has been crushed for **MORE** than 15 minutes

- Do not remove the item that is crushing your casualty
- Call the emergency services
- Monitor their response levels continuously
- Offer them plenty of reassurance
- Treat them for shock



ABDOMINAL WOUNDS

Recognition

- Evidence of blood loss
- Pain
- Possible entry and exit wound with a high velocity wound such as a gun shot
- Shock
- Possible embedded object
- Possible shortness of breath



ABDOMINAL WOUNDS – TREATMENT

- If they are responsive, lie them down with their knees raised and supported and loosen tight clothing
- Dress the wound/s with a sterile dressing and secure it with adhesive tape
- Call the emergency services
- If blood seeps through the first dressing, then remove it and apply a new one and secure it in place
- Treat for shock and monitor their breathing and responsiveness
- If the casualty becomes unresponsive, support them in the position found unless you believe their airway is at risk, then you should place them in the recovery position injured side down



MODULE 5

Major illnesses



RECOGNITION OF A HEART ATTACK

- Pale blue/grey, cold and clammy skin
- Chest pain. The pain is usually located in the centre of the chest and can feel like a sensation of pressure, tightness or squeezing
- Pain in other parts of the body. It can feel as if the pain is travelling from the chest to the arms (usually the left arm is affected, but it can affect both arms), jaw, neck, back and abdomen
- Shortness of breath
- Nausea
- An overwhelming sense of anxiety
- Feeling lightheaded
- Coughing
- Vomiting
- Wheezing



TREATMENT OF A HEART ATTACK



- Make the casualty comfortable and insulate from the ground
- Position them in the reclined sitting position (W)
- Monitor their vital signs and provide shelter if possible
- Call 999/112
- Calm and reassure them
- If they become unresponsive, you must open their airway and check for normal breathing and be prepared to resuscitate them
- You can assist the casualty in taking one aspirin tablet (300mg) and ask them to chew it slowly, providing you are confident that the casualty is not allergic to it



ANGINA PECTORIS

Causes

- Physical exertion
- Stress
- Excitement

Symptoms

- Pain, ache, discomfort or tightness in the middle of the chest
- Pain in the jaw, neck, stomach and one or both arms (left usually)
- The sound of air being sucked in when the casualty breathes

Possible

- Breathlessness
- Dizziness
- Nausea
- Restlessness



ANGINA PECTORIS

Treat as for a heart attack.

There are three main goals in treating angina:

- To relieve the symptoms during an angina attack by resting and re-assuring them
- To help them administer their own medication such as GTN spray, if they have it
- To call for professional medical assistance if there is no improvement

Insulate from the ground, set up shelter and monitor vital signs while awaiting rescue.

GTN – glyceryl trinitrate

GTN is used to relieve angina related symptoms. GTN relaxes and widens the blood vessels, which increases oxygen delivery to the heart. GTN can be administered using a spray, tablet or a patch for long term pain control.



RECOGNITION OF A STROKE

If you suspect a Stroke – Act **FAST** Call 999

Stroke is a medical emergency.

By calling 999 early, treatment can be given which can prevent further brain damage.

F**Facial weakness**

Can the person smile? Has their mouth or eye drooped?

A**Arm weakness**

Can the person raise both arms?

S**Speech problems**

Can the person speak clearly and understand what you say?

T**Time to call 999**

TREATMENT OF A STROKE

- If the casualty is responsive - lay them down and raise their head and shoulders
- Insulate from the ground and provide shelter
- Turn their head to one side
- If the casualty is unresponsive, place them in the recovery position injured side down
- Loosen tight clothing
- Reassure and **call 999/112**
- Monitor airway, breathing and response levels
- Be prepared to resuscitate



DIABETES

Signs & Symptoms	HYPERglycaemia	HYPOglycaemia
Deterioration	Gradual	Very quick
Hunger	Absent	Present
Vomiting	Common	Uncommon
Thirst	Present	Absent
Breath odour	Fruity/sweet	Normal
Pulse	Rapid and weak	Rapid and strong
Breathing	Rapid	Normal
Skin	Dry and warm	Pale, cold and sweaty
Seizures	Uncommon	Common
Responsiveness	Drowsy	Rapid loss



TREATMENT OF DIABETES

HYPOglycaemia

- Insulate from the ground and sit the casualty down
- Offer them 15 - 20gms of glucose, or a sugary drink, or a sweet food if glucose is not available
- Monitor, comfort and reassure them
- Call the emergency services if this is ineffective
- If they become unresponsive, place them in the recovery position and monitor vital signs



ASTHMA

Definition:

‘Asthma is a long-term condition that affects your airways - the tubes that carry air in and out of your lungs. You could say that someone with asthma has 'sensitive' airways that are inflamed and ready to react when they come into contact with something they don't like. Asthma tends to run in families, especially when there's also a history of allergies and/or smoking’.



SIGNS AND SYMPTOMS OF ASTHMA

- Difficulty in breathing
- Wheezing
- Distress and anxiety
- Difficulty in speaking
- Grey/blue skin tones
- May become exhausted
- Coughing



TREATMENT OF ASTHMA

- Calm and reassure them
- Make them comfortable and relaxed
- Allow them to use their own inhaler

Dial 999 if:

- The medication has no effect after 5 minutes
- If it's the first attack
- Breathlessness makes talking difficult



SEIZURES

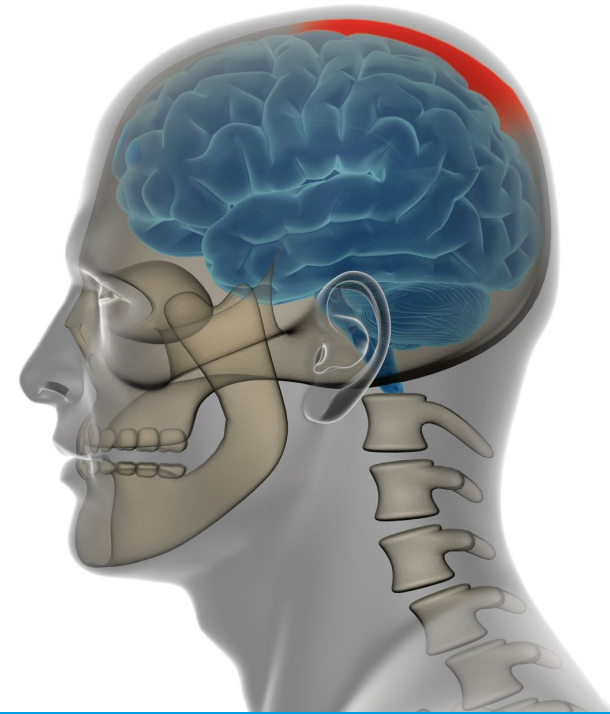
There are many different types of seizure. What happens to someone during a seizure depends on which part of the brain is affected.

- **Tonic-clonic seizures** are the type of seizure most people recognise. Someone having a tonic-clonic seizure goes stiff, loses responsiveness, falls to the floor and begins to jerk and convulse
- **Focal seizures** can also be called partial seizures. Someone having a focal seizure may not be aware of their surroundings or what they are doing. They may have unusual movements and behaviour such as plucking at their clothes, smacking their lips, swallowing repeatedly or wandering around



EPILEPTIC SEIZURES

- When someone has epilepsy, it means they have a tendency to have epileptic seizures. Epilepsy is usually only diagnosed if someone has had more than one seizure and doctors think it is likely they could have more
- A seizure happens when there is a sudden burst of intense electrical activity in the brain. This causes a temporary disruption to the way the brain normally works
- Possible causes of epilepsy include stroke, a brain infection such as meningitis, severe head injury or trauma and problems during birth which caused the baby to get less oxygen. But in over half of all people with epilepsy, doctors don't know what caused it



TREATMENT : TONIC-CLONIC SEIZURE

- Protect them from injury
- Look for an epilepsy identity card
- Time how long the jerking lasts
- When the jerking has stopped, place them in the recovery position
- Stay with them until they recover

Dial 999 or 112

- If** You know it's their first seizure
- or** Seizure lasts for longer than 5 minutes
- or** The seizures are repeated
- or** They are injured during the seizure
- or** They need urgent medical attention



TREATMENT : FOCAL SEIZURE

- Protect them from injury
- Guide them away from danger such as roads or open water
- Stay with them until recovery is complete
- Be calm and reassuring
- Explain anything that they have missed

Dial 999 or 112

- If** You know it's their first seizure
- or** Seizure lasts for longer than 5 minutes
- or** The seizures are repeated
- or** They are injured during the seizure
- or** They need urgent medical attention



MODULE 6

Anaphylaxis



ANAPHYLAXIS

An anaphylactic reaction is caused by the sudden release of chemical substances, including histamine, from cells in the blood and tissues where they are stored.

Common triggers include:

- | | | |
|-------------|------------------|--------------------------|
| • Peanuts | • Fish | • Wasp and bee stings |
| • Tree nuts | • Shellfish | • Natural latex (rubber) |
| • Sesame | • Dairy products | • Penicillin |



SIGNS AND SYMPTOMS

The symptoms of anaphylaxis usually start between 3 and 60 minutes after contact with the allergen.

- | | |
|---|-------------------------------------|
| • Swollen eyes, lips, hands, feet and other areas | • Sore, red, itchy eyes |
| • A strange metallic taste in the mouth | • Itchy skin or nettle-rash (hives) |
| • Changes in heart rate and a sudden feeling of anxiety | • Abdominal cramps |
| • Unresponsiveness due to very low blood pressure | • Vomiting or diarrhoea |



TREATMENT

Anaphylaxis is a medical emergency that requires immediate treatment.

People with potentially serious allergies are often prescribed adrenaline auto-injectors to carry at all times. Adrenaline is the gold standard in the treatment of anaphylaxis, and its administration should not be delayed.

Adrenaline auto-injectors should be used as soon as a serious reaction is suspected, either by the person experiencing anaphylaxis or someone helping them. When treating a potential anaphylaxis casualty, it should be noted that there are no contraindications for the use of adrenaline.



TREATMENT

- Use an adrenaline auto-injector if the person has one
- Call 999 for an ambulance immediately (even if they start to feel better)
- Lie the person down flat – unless they're unresponsive, pregnant or having breathing difficulties
- Give another injection after 5 minutes if the symptoms don't improve and a second auto-injector is available. This should be given in the opposite thigh
- If they are unresponsive, place them in the recovery position and be prepared to resuscitate them if they stop breathing normally for themselves



MODULE 7

Effects of extreme heat and cold



BODY TEMPERATURE CONTROL

The body's 'thermostat' (hypothalamus) is the processing centre in the brain that controls our body temperature. It enables the body temperature to be maintained at a level of around 37 degrees celsius.

The body loses heat by:

- **Conduction** – losing heat through physical contact with another object or body
- **Convection** – losing heat through the movement of air or water across the skin
- **Radiation** – a form of heat loss through infrared rays. The heat is lost from the body to its surroundings
- **Evaporation** – the process of losing heat through the conversion of water to gas (evaporation of sweat)
- **Respiration** – when we breathe, cold air is inhaled from the atmosphere into our lungs. As oxygen is transferred in to the bloodstream and carbon dioxide is transferred out, our body warms the air. When we exhale, warm air is then released into the surrounding environment



BODY TEMPERATURE CONTROL

The body produces heat by:

- **Eating** - When we consume food, our body temperature will increase due to a variety of chemical reactions taking place in our digestive system
- **Exercise** – during exercise, a series of chemical reactions take place within our muscles which causes them to warm up. The heat produced from exercising our muscles causes our blood vessels to dilate, increasing the blood flow to the skin. Excess heat is lost at the surface area of the skin and released into the surrounding air
- **Shivering** – Receptors in our skin can detect a drop in core body temperature. Once detected, it triggers our body to shiver. This shivering motion produces heat in an attempt to restore our core body temperature



HEAT EXHAUSTION

Heat exhaustion is brought on when the temperature inside the body, known as the core temperature, rises from the normal 37°C up to 40°C (98.6 – 104°F).

At this temperature, the levels of water and salt in the body begin to drop. This causes symptoms such as pale, clammy skin, heavy sweating, nausea, headaches and dizziness. If it is left untreated, it can sometimes lead to heatstroke.



HEAT EXHAUSTION TREATMENT

- **Get them to rest in a cool place**, ideally in a shaded area with a cool breeze
- **Give them plenty of fluids to drink**. This should either be water or a re-hydration drink such as a sports drink. Avoid alcohol or caffeine as this can increase dehydration
- **Cool their skin with cold water**. If available, use a shower or cold bath to cool them down. If not, then apply wet towels to their skin
- **Loosen any unnecessary clothing** and make sure that the person gets plenty of air



HEATSTROKE

- Heatstroke happens when a person's core temperature rises above 40°C (104°F)
- Cells inside the body begin to break down and important parts of the body stop working
- Symptoms can include; hot and dry skin, not sweating even while feeling too hot, mental confusion, hyperventilation and loss of responsiveness
- Heatstroke is a medical emergency. If left untreated it can cause multiple organ failure, brain damage and death



HEATSTROKE TREATMENT

- Move the casualty to a cool area and give them water to drink
- Shower the skin with cool water, or cover with damp towels, or immerse in cool water
- If their muscles are cramped, gently massage the skin to encourage circulation
- If seizures start, clear the immediate area
- If they become unresponsive or start to vomit, place them in the recovery position
- Call the emergency services and monitor vital signs until professional help arrives



DEHYDRATION

Dehydration occurs when your body loses more fluids than it can take in. During exercise, fluid is lost predominantly through sweating, so you will need to ensure you drink plenty of fluids before, during and after exercising.

Signs and symptoms

- Increased thirst
- Dry mouth and lips
- Dizziness and confusion
- Having dark coloured, strong smelling urine
- Passing urine less often than usual

Treatment

- Stop physical activity
- Rest in the shade with a cool breeze
- Drink plenty of fluids (water)
- Avoid alcohol or caffeine
- Loosen or remove unnecessary clothing
- Continue to rehydrate throughout the day



HYPOTHERMIA

- Hypothermia occurs when a person's normal body temperature of around 37°C (98.6°F), drops below 35°C (95°F)
- It is usually caused by being in a cold environment. It can be triggered by a number of things, including prolonged exposure to cold, rain, wind, sweat, inactivity or being in cold water



HYPOTHERMIA

In mild cases, symptoms include:

- Shivering
- Feeling cold
- Low energy
- Cold, pale skin



HYPOTHERMIA

The symptoms of moderate hypothermia include:

- Being unable to think or pay attention
- Confusion
- Loss of judgement and reasoning
- Difficulty moving around or stumbling
- Feeling afraid
- Memory loss
- Fumbling hands and loss of coordination
- Drowsiness
- Slurred speech
- Listlessness and indifferent
- Slow, shallow breathing and a weak pulse



HYPOTHERMIA

The symptoms of severe hypothermia include:

- Loss of control of hands, feet and limbs
- Uncontrollable shivering that suddenly stops
- Shallow or no breathing
- Weak, irregular or no pulse
- Stiff muscles
- Dilated pupils
- Unresponsiveness



HYPOTHERMIA TREATMENT

- Provide shelter and insulate your casualty from the ground
- Once insulated and sheltered, remove any wet clothing and dry them
- Wrap them in blankets, towels, coats (whatever you have), protecting the head and torso first
- Increase activity if possible, but not to the point where sweating occurs, as that cools the skin down again
- If possible, give them warm drinks or high energy foods, such as chocolate, to help warm them up
- Once their body temperature has increased, keep them warm and dry



HYPOTHERMIA

Things you should NOT do:

- Do not apply direct heat (hot water or a heating pad, for example) to the arms and legs, as this forces cold blood back to the major organs, making the condition worse
- Do not give them alcohol to drink, as this will decrease the body's ability to retain heat
- Do not rub or massage their skin, as this can cause the blood vessels to widen and decrease the body's ability to retain heat. In severe cases of hypothermia there is also a risk of heart attack





FROSTBITE TREATMENT

- **Frostnip**

Basic re-warming of the affected area using one's own body heat. Tuck hands under armpits. Cover ears, nose and face with dry hands or an item of clothing. Breathe onto the affected area through cupped hands

- **Mild frostbite**

Insulate from the ground and provide shelter. Treat your casualty for hypothermia. Re-warm the affected area slowly for at least 30 minutes. If you have warm water available, immerse the affected body part in warm water for at least 30-minutes, until the affected area becomes red-purple in colour and can be easily moved.

- **Deep frostbite**

Insulate from the ground and provide shelter. DO NOT attempt any re-warming. Remove any jewellery from the affected area. Dry the area and apply a non-absorbent dressing. DO NOT try to thaw the injury. Treat your casualty for hypothermia. Summon for professional medical help.



MODULE 8

Burn injuries



DEPTH OF BURNS

Superficial burn

- The outer layer of skin is burnt causing redness, tenderness and inflammation. Typical factors causing this would be sunburn or touching a hot iron. The skin is not broken or blistered.

Partial thickness burn

- The outer layer of the skin is burnt and broken causing blistering, swelling, pain and rawness.

Full thickness burn

- All the layers of skin have been damaged causing the skin to look pale, charred and waxy with fatty deposits. There may also be damage to the nerves.



TYPES OF BURNS

- **Contact burn** - As the name suggests, this type of burn occurs when the skin makes contact with a hot object or surface, such as a hot kettle or wood from a burning fire
- **Flame burn** - This type of burn occurs when naked flames make contact directly with the skin, or where clothing is ignited resulting in the flames and burning material melting on to the skin

- **Scald** - A scald is caused by hot liquids being spilt onto the skin, such as boiling water from a kettle. The resulting burn injury is usually much worse when it has been caused by steam, as it is hotter than the boiling water itself
- **Ice burn** - This is where something that is very cold comes into contact with the skin. Prolonged exposure to cold weather conditions can cause ice burns, and even very cold, high velocity wind can cause the skin to burn



TYPES OF BURNS

- **Sun burn** - Sunburn is a form of radiation burn that damages the skin through ultraviolet (UV) rays. The skin becomes red in colour, sore and tender to touch, but it can also be more severe, resulting in the skin blistering and swelling, and can contribute towards heatstroke

- **Friction burn** - A friction burn is a form of abrasion caused by the friction of the skin rubbing against a hard surface. Friction burns can occur in activities such as rock climbing, where the rope is ran quickly through the hands causing heat to build
- **Chemical burn** - Chemical burns can occur when an acid or alkali makes contact with the skin or eyes. Chemicals can cause adverse reactions on the body and can even damage internal organs if ingested



TREATMENT OF BURNS

- Ensure the area is safe, particularly from the source that created the burn or scald
- Wear disposable gloves
- Hold the burned area under running cool water for a minimum of 20 minutes using a source of clean water, such as bottled drinking water or clean running water from a watercourse
- If it's possible, remove clothing, watches and jewellery if it is covering or close to the affected area
- Cover the burn with a suitable sterile dressing or with cling film if you have no appropriate dressing
- Treat your casualty for shock

If the burn injury is very serious, call the emergency services for assistance, insulate your casualty from the ground, provide shelter and monitor vital signs whilst awaiting rescue.



TREATMENT OF BURNS

DO NOT Apply any form of cream, ointment or fat to the affected area

DO NOT Burst any blister that may form*

DO NOT Apply any form of adhesive dressing

DO NOT Remove anything that is stuck to the affected area

**See slide 106 for the treatment of blisters.*



ELECTRICAL BURNS

Electrical burns can be caused by lightning or from a man-made source involving either, a high-voltage supply e.g. overhead power lines, or from a low-voltage supply as found in the home. In all cases, an electrical injury can be life-threatening.

Once your casualty is free from the supply:

- Carry out your basic life support procedures
- Call for the emergency services
- Be aware of any potential serious burns to deal with
- Insulate from the ground, provide shelter and monitor vital signs



LIGHTNING

Only when it is safe to do so:

- Call the emergency services
- Carry out your basic life support procedures
- If they are not breathing normally, commence CPR
- Be aware of any potential serious burns to deal with
- Insulate from the ground, provide shelter and monitor vital signs



BLISTERS

Blisters are small pockets of fluid that form on the skin in order to protect the underlying tissue from further damage. The friction motion causes the outer layer of skin to separate from the inner layers, leading to a sack of fluid building up in between to protect the area.



- For a **small blister**, it is best practice to leave it alone and do not attempt to drain the fluid, as it should repair itself relatively quickly and will not impede on the activity
- For a **medium-sized blister**, you should apply a blister plaster which will offer protection to the area and provide a 'cushion' to reduce friction for when you continue with the outdoor activity
- For a **large blister** that is preventing you from continuing with the activity, apply a large gauze pad or general first aid dressing and tape in place. On occasions it may be necessary to drain the blister (see slide 106)



DRAINING A HEEL BLISTER

- Wear disposable gloves
- Clean the blistered area thoroughly using a sterile wipe
- Sterilise the needle by heating it with a naked flame until it is glowing red and then let it cool
- Once cooled, insert the sterile needle into the outer edge of the blister
- Gently apply pressure on the blister using a sterile dressing or gauze pad to drain the fluid
- Once the fluid has been drained, apply a sterile blister plaster or dressing to protect the area
- Leave the 'roof' of the blister intact which will act as an additional layer of protection for the affected area



MODULE 9

Eye injuries



A BLOW TO THE EYE

Signs and symptoms:

- Pain
- Swelling
- Bruising
- Possible bleeding
- Redness of the eye
- Blurred vision
- Headache



Treatment:

- Gently apply an instant ice pack around the eye to soothe the pain and reduce swelling
- Offer your casualty a form of pain relief such as paracetamol or ibuprofen
- Treat your casualty for shock



A BLOW TO THE EYE

Send your casualty to **hospital** if:

- They have two black eyes (this could suggest a skull fracture)
- They have double vision
- They cannot move the eye
- They think something has pierced the eye
- There is a cut to the eye or blood inside the eye
- Fluid is leaking from the eye or the eye looks deformed
- They are taking blood-thinning medication such as aspirin, or have a bleeding disorder such as haemophilia



FOREIGN OBJECTS IN THE EYE



Sit the casualty down and stand behind them.
Lean their head back and gently separate their eyelid.



Try flushing it out with a sterile eye wash solution or clean tap water.
If this hasn't worked, then use the moistened point of a handkerchief or tissue to remove it.



If this hasn't worked, cover the eye with a sterile dressing and seek medical help.

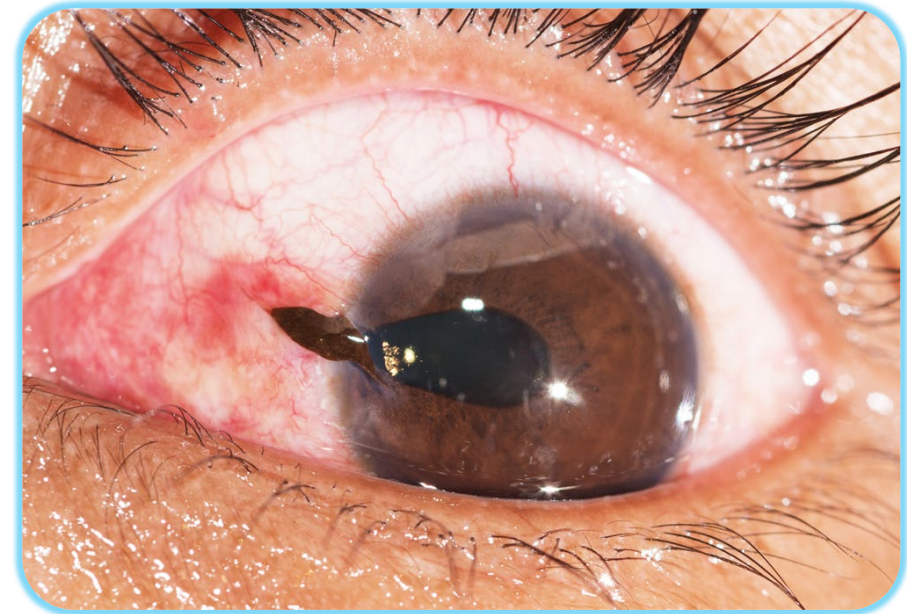
If there is something embedded, then you must leave it in place.
Cover the eye with a sterile dressing, being extremely careful not to make any contact with the foreign body that is embedded.
Transport them to hospital immediately, or summon for the emergency services.



LACERATIONS OF THE EYE

Treatment

- Lie the casualty down and support their head in order to rest them
- Try to keep both their eyes still
- Cover their injured eye with a sterile eye dressing, or ask them to hold a sterile dressing in place
- Take them to the hospital if you are able to transport them. Failing that, call the emergency services for assistance



ULTRAVIOLET LIGHT

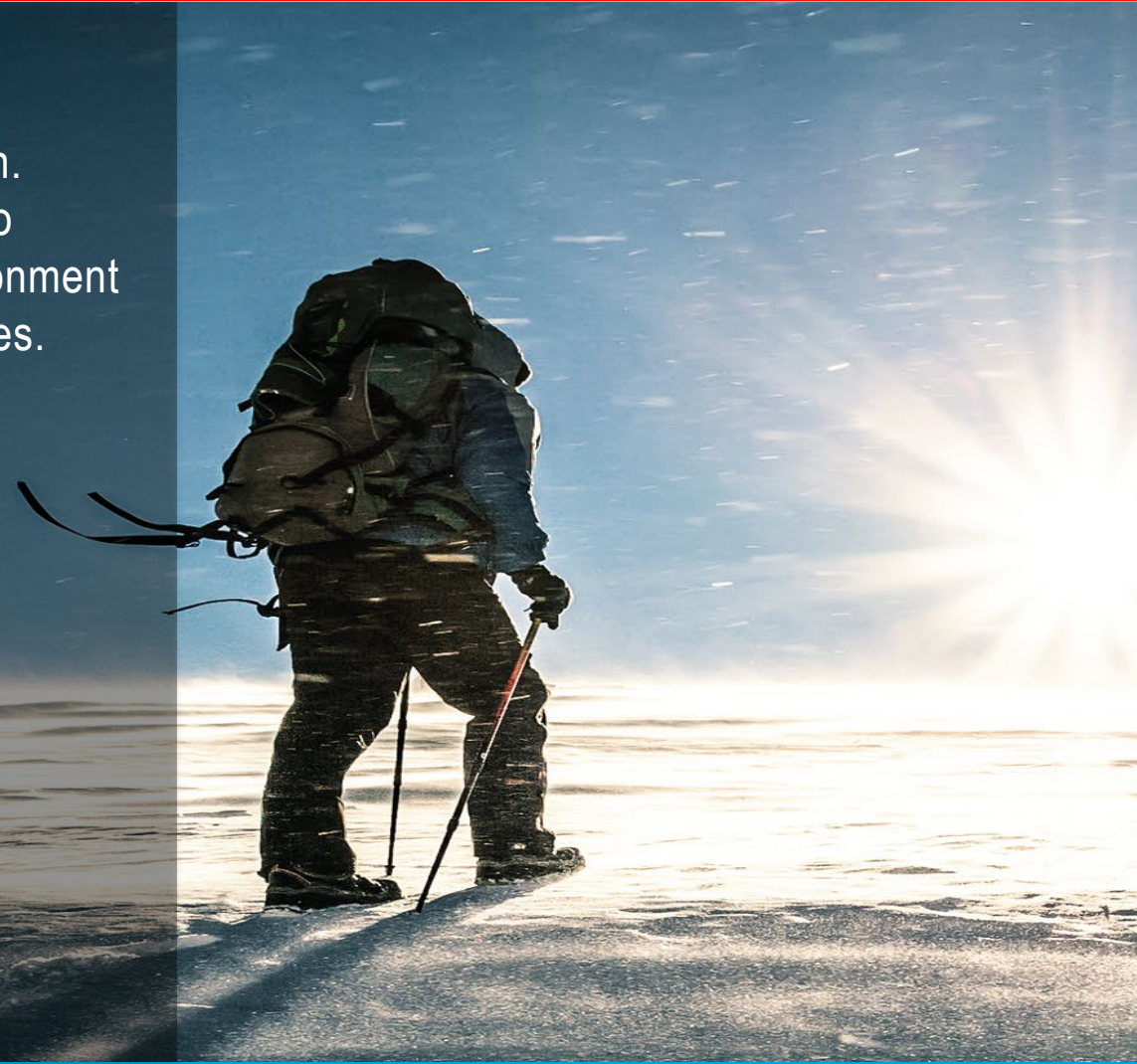
Ultraviolet (UV) light can lead to an eye injury called corneal flash burn. Exposure to the sun can cause radiation damage to the eye, leading to flash burn. Damage is most likely to occur if you are in an arctic environment where the sun glares off snow and ice, or when you are at high altitudes.

Signs and symptoms:

- Pain
- Redness and watering
- A gritty feeling
- Sensitive to light

Treatment:

- Wear disposable gloves
- Cover the eye with a sterile dressing
- Take them to the hospital if you are able to evacuate the area and transport them
- Failing that, call the emergency services for assistance



CHEMICAL BURNS TO THE EYES

- The surface of the eye can be severely damaged with any type of chemical burn. It can lead to the loss of sight if it is not treated quickly
- Chemicals can be transferred to the eye by splashing, spraying or simply from your own finger should it be contaminated
- Substances such as insect repellent, fertilisers, pesticides, fuels and natural chemicals from plants can burn and damage our eyes

Signs and symptoms:

- | | | |
|---------------------|----------------------------|------------|
| • Watery of the eye | • Redness | • Swelling |
| • Pain | • Evidence of the chemical | |



CHEMICAL BURNS TO THE EYES - TREATMENT

- You must wear gloves to prevent yourself being contaminated by the chemical
- Irrigate the eye for 20 minutes under running cool water, or by flushing the eye with clean bottled water or saline solution
- Ensure that the irrigation does not flow into the other eye
- Try to identify the chemical so that the emergency services know what chemical they are treating
- Cover the injured eye with a sterile eye dressing
- Take them to the hospital if you are able to evacuate the area and transport them. Failing that, call the emergency services for assistance



MODULE 10

Poisoning



WHAT IS A POISON?

Poisoning happens when you take into your body, a substance that damages your cells and organs, and injures your health.

Poisons can be swallowed, absorbed through the skin, injected, inhaled or splashed into the eyes.



HOW CAN POISON ENTER THE BODY?

- **Swallowed** Food, alcohol, drugs, chemicals, etc.
- **Absorbed** Chemicals, vapours, etc. through the skin
- **Injected** Drugs, medicine, stings, etc.
- **Inhaled** Gases, fumes, etc.
- **Splashed** into the eyes. Chemicals, etc.



DRUG POISONING

Signs and symptoms of:

- Aspirin

Abdominal pain

Nausea

Vomiting which may contain blood

Ringing in the ears

Confusion

- Paracetamol

Little effect at first, abdominal pain and tenderness

Nausea and vomiting which may damage the liver

- Tranquilisers

Shallow breathing

An irregular pulse

Sleepy

Lethargy - leading to unresponsiveness

- Narcotics

Slow shallow breathing

Slow pulse

Constricted pupils

Needle marks or syringes

Lethargy - leading to unresponsiveness





DRUG POISONING TREATMENT

- Protect yourself
- If responsive, place them in a comfortable position and try to establish the drug that has been taken
- Call the emergency services immediately
- Monitor vital signs
- Keep samples of vomited material and try to find evidence of the drug that was taken
- Be prepared to resuscitate them



PLANT POISONING

- Most plants that grow in the UK are harmless and, if eaten, may only cause a mild stomach upset
- If a potentially poisonous plant has been eaten, try to identify it so you can inform the emergency services, or take a sample with you to the hospital so that it can be identified
- The plants to look out for include, Wild Arum, Foxglove, Laburnum, Death Cap mushrooms, Ivy and Mistletoe - to name a few

Recognition:

- Nausea
- Abdominal pains
- Diarrhoea
- Seizures
- Impaired responsiveness

The same treatment can be applied as you would for drug poisoning (see slide 119).



FOOD POISONING

Treatment

- Encourage the casualty to rest
- Offer them plenty of bland fluids to drink
- Try to establish the source of the poisoning in case medical assistance is required
- Call the emergency services if their condition deteriorates



ALCOHOL POISONING

Treatment

- Place them in the recovery position to maintain an open airway
- Monitor vital signs, particularly their breathing
- Keep them warm
- Summon for professional medical help if there is another condition, such as a head injury to deal with



MODULE 11

Bites and stings



ANIMAL AND HUMAN BITES

Animal and human bites are a relatively common type of injury.

Serious bites can get infected if they're not checked and treated quickly.

Always seek medical advice if you have been bitten and the bite has broken the skin.

Treatment:

- Make the area safe and wear disposable gloves
- Clean the wound immediately by running warm water over it for a couple of minutes
- Inspect the wound for embedded objects such as teeth and remove if you are able to. Control any bleeding
- Dry the wound and cover it with a sterile dressing
- Treat for shock and call for an ambulance if it's necessary



SNAKE BITES

- Remain calm and do not panic. Snake bites, particularly those that occur in the UK, are rarely serious and very rarely fatal
- Try to remember the shape, size and colour of the snake
- Keep the part of your body that has been bitten as still as possible because this will prevent the venom spreading around your body. You may want to secure the bitten body part with a sling or a splint. However, do not make the sling or splint so tight that it restricts your blood flow
- Remove the watch and any jewellery from the bitten limb because they could cut into your skin if the limb swells



SNAKE BITES

If you or someone else is bitten by a snake you should never:

- Suck the venom out of the bite
- Cut the venom out of the bite wound with a knife or other instrument
- Rub anything into the wound
- Apply any tight bandage around the bitten limb to stop the spread of venom, such as a tourniquet or ligature



INSECT BITES AND STINGS

- Remove the sting immediately
- Wash the affected area with soap and water
- Apply a cold compress to any swelling for at least 10 minutes
- Raise the part of the body that has been stung to prevent swelling
- Avoid scratching the area because it may become infected
- Visit your GP if the redness and itching does not clear up after a few days



INSECT BITES AND STINGS

Seek emergency medical treatment if, immediately after being stung or bitten, you experience any of the following:

- Swelling or itching anywhere else on your body
- A skin reaction anywhere else, particularly pale or flushed (red or blotchy) skin
- Wheezing, hoarseness or any difficulty breathing
- Headache, nausea, vomiting, diarrhoea and dizziness
- A swollen face or mouth and difficulty swallowing



TICK BITES

- Ticks are tiny, eight-legged creatures that survive by feeding on the blood of animals and humans
- Ticks can be found in areas with good vegetation, woodland and moorland areas across the UK and because of their tiny size, they can easily go unnoticed, even after they have bitten you
- Ticks are capable of transmitting infections such as Lyme disease, which, if left untreated, can cause severe, long term health problems
- Ticks can attach themselves anywhere on the human body, but mainly warm, moist areas such as the armpit or groin are targeted
- Once a tick has found its way onto the body, it will bite into the skin and begin to feed. If the tick is not removed properly, the head and mouth parts can remain embedded and become infected



TREATMENT OF TICK BITES

Remove the tick as soon as possible.

- Wear disposable gloves
- Gently grip the tick using fine-tipped tweezers or a tick removal tool, getting as close to the skin as possible
- Pull upwards very slowly and carefully without crushing the tick. If the head and mouth parts remain, the body will be susceptible to infection
- Once you have successfully removed the tick, wash the affected area with clean water

- Apply an antiseptic cream to the skin around the bite if available
- Keep an eye on the bitten area for several weeks afterwards and if you begin to feel unwell, visit your GP

DO NOT rotate or turn the tick using a tick removal tool, unless the manufacturer's instructions tell you to do so.



LYME DISEASE

- Lyme disease is an infectious disease which can be carried by ticks
- Bacteria from an infected tick can enter our blood stream which can lead to Lyme disease
- Lyme disease can affect any part of the body and can cause a variety of symptoms, including:

Early stages

- Tiredness and fatigue
- Nausea
- Muscle and joint pain
- High temperature
- Chills and neck stiffness

Later stages

- Distinctive circular rash (may appear 3-30 days after being bitten)
- Pain and swelling in the joints
- Numbness and pain in the limbs
- Paralysis of facial muscles
- Memory and heart problems



MODULE 12

Written assessment and course closure



WRITTEN ASSESSMENT PAPER

- Time allowed for the assessment is 45 minutes
- The pass mark for the paper is 27 out of 38 marks
- Please remove any written notes and books from view
- Please switch off your mobile phone and other devices



COURSE CLOSURE

- Any questions?
- Completion of registration form and course evaluation
- Certificate delivery and time frames
- Congratulations and have a safe journey home!



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