How should the major types of injuries and medical conditions be managed in first aid situations?

- **management of injuries**
- **identify signs and symptoms, and primary management for each injury and medical condition**
- **apply bandages, slings and splints appropriately in the treatment of particular injuries**

No matter how experienced a first aider may be, they should never assume that an injury is minor and does not need to be referred on to medical advice. This means that the casualty needs to receive professional medical attention or advice by calling ‘000’ for assistance.

- **cuts and lacerations**

Management of many different types of wounds is similar. Wounds are injuries that can cause tissue to rupture in organs or the skin. In all cases any bleeding needs to be stopped and the wound then treated. Open wounds may become infected, so it is important that the skin of the first aider is intact or that gloves are worn for their protection. Examples of the types of wounds and appropriate injury management are given below.

<table>
<thead>
<tr>
<th><strong>Signs and Symptoms</strong></th>
<th><strong>Management of Condition</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacerations: generally the result of a piece of wire or animal claw tearing the skin and underlying tissue</td>
<td>Clean the wound thoroughly with saline or cool boiled water. Apply a non-adherent dressing and seek medical advice if necessary.</td>
</tr>
<tr>
<td>Abrasions: a shallow tearing or grating of the outer layer of skin exposing underlying blood vessels, generally the result of a fall on a hard surface</td>
<td></td>
</tr>
<tr>
<td>Cut (incision): a cutting of skin, tissues or muscles may be severed, which can be the result of a piece of glass or knife blade</td>
<td>DRABCD if needed and pressure to stop the bleeding. Clean the wound thoroughly with saline or cool boiled water. Apply a non-adherent dressing and seek medical advice if necessary. If the object is embedded in the wound, it should not be removed as it may start bleeding; seek medical advice immediately.</td>
</tr>
<tr>
<td>Puncture (penetration): a deep penetration of the tissue caused by a blunt or pointed object</td>
<td></td>
</tr>
</tbody>
</table>
Fractures are usually caused by either direct or indirect force to the bone and are classified according to the type and extent of the damage. A bone may break when it receives a direct blow from contact with another person, obstacle or the ground. This blow can also cause an indirect break in another bone; for example, a heavy landing on a hard surface can send a blow through the arm and cause the collarbone to crack. An indirect fracture is generally caused by a muscle pulling violently on a bone, which may separate a bone fragment.

It is very important that a first aider does not attempt to force a fracture back into place; and to ensure that movement is restricted as much as possible. Splints and slings (Figs. 2.3 to 2.6) can be used to immobilise the injury site to restrict movement. Classifications and management of fractures are given on the next page.
<table>
<thead>
<tr>
<th><strong>Signs and Symptoms</strong></th>
<th><strong>Management of Condition</strong></th>
</tr>
</thead>
</table>
| Closed: the bone is fractured but the skin is not broken at the injured site. Pain will be obvious, with swelling and deformity around the tender area. Any appearance of bruising will be the result of tissue damage under the skin. | DRABCD  
- Immobilise the injured site to reduce the pain  
- Observe and treat any signs of shock and seek medical advice immediately |
| Open (compound): the skin is broken or the bone is protruding. Casualty will experience pain and may go into shock. There will be a loss of function in the limb, and swelling and deformity will be obvious. The injured site may be bleeding and there is a great danger of infection. | DRABCD  
- Control bleeding  
- Immobilise the injured site to reduce the pain  
- Observe and treat any signs of shock and seek medical advice immediately |
| Complicated: open or closed fractures may be complicated fractures if there is associated injury to blood vessels, organs, such as the lungs, or major nerves. | DRABCD  
- Control bleeding  
- Immobilise the injured site to reduce the pain  
- Observe and treat any signs of shock and seek medical advice immediately |

\[\text{FIGURE 2.3}\]
Collar and cuff sling

\[\text{FIGURE 2.4}\]
(a) Finger splint
(b) Newspaper splint
(c) Body sling
FIGURE 2.5
Steps to apply an arm sling

FIGURE 2.6
Steps to apply an elevation sling
– dislocations

Dislocations occur at various joints in the body. The ligaments that connect the bones together are stretched and damaged from some form of force and the bones are forced out of position. It is important that the first aider does not try to relocate the bone, as this may cause further damage.

<table>
<thead>
<tr>
<th>SIGNS AND SYMPTOMS</th>
<th>MANAGEMENT OF CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Deformity and tenderness will be obvious in the casualty.</td>
<td>• DRABCD</td>
</tr>
<tr>
<td>• Swelling, discoloration and bruising may be evident in the injured site.</td>
<td>• Immobilise the injured site to reduce the pain and use soft padding or bandages to support the joint</td>
</tr>
<tr>
<td></td>
<td>• Apply ice and elevate where possible</td>
</tr>
<tr>
<td></td>
<td>• Seek medical advice immediately</td>
</tr>
</tbody>
</table>

– head injuries and concussion

Head injuries include damage to any part of the skull or brain. As the brain is the controlling organ of the whole body, a head injury is potentially dangerous and should be managed with extreme seriousness and care.

<table>
<thead>
<tr>
<th>SIGNS AND SYMPTOMS</th>
<th>MANAGEMENT OF CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify any history of similar injury.</td>
<td>• DRABCD</td>
</tr>
<tr>
<td>• Casualty will suffer headache, loss of memory and show signs of confusion.</td>
<td>• If conscious lie in recovery (lateral) position and keep airways open</td>
</tr>
<tr>
<td>• Blurred vision and slurred speech may be obvious with the casualty unable to respond to commands.</td>
<td>• Be careful of the possibility of spinal injury</td>
</tr>
<tr>
<td>• Bleeding or clear fluid from the nose or ears.</td>
<td>• Control any external bleeding, but do not apply direct pressure to the skull</td>
</tr>
<tr>
<td>• Casualty's pupils may differ in size.</td>
<td>• If blood or fluid is coming from the ear, cover with a sterile dressing and lie casualty on injured side to allow fluid to drain</td>
</tr>
<tr>
<td></td>
<td>• Seek urgent medical assistance</td>
</tr>
</tbody>
</table>

– eye injuries

Eye injuries may be caused by foreign bodies, such as dust or pollen, a direct force or a penetrating object. It is important not to remove any embedded object as this may cause more damage and loss of sight if not removed correctly.

<table>
<thead>
<tr>
<th>SIGNS AND SYMPTOMS</th>
<th>MANAGEMENT OF CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Redness and watery eyes.</td>
<td>• DRABCD</td>
</tr>
<tr>
<td>• Casualty will show signs of pain, irritability and may have blurred vision.</td>
<td>• If injury is minor, wash eye with a gentle stream of saline or clean water</td>
</tr>
<tr>
<td>• Eyelids may be in spasm and eyes may not be able to open.</td>
<td>• Avoid rubbing of the eyes, lay casualty in recovery (lateral) position and reassure them</td>
</tr>
<tr>
<td></td>
<td>• Cover eyes and seek medical advice</td>
</tr>
</tbody>
</table>

*Fig 2.7 A dislocated finger*
– nasal injuries

Most common causes of nasal injuries are a force to the nose, causing a nose bleed or broken nose or a foreign object in the nose, which may occur more so in small children.

<table>
<thead>
<tr>
<th>SIGNS AND SYMPTOMS</th>
<th>MANAGEMENT OF CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Casualty may experience pain, swelling, deformity or bruising.</td>
<td>• DRABCD</td>
</tr>
<tr>
<td>• Bleeding from the nose.</td>
<td>• Ask casualty to breathe through their mouth, and not to blow their nose</td>
</tr>
<tr>
<td></td>
<td>• Keep casualty seated with their head tilted forward, and apply finger and thumb pressure to the soft area of the nostrils</td>
</tr>
<tr>
<td></td>
<td>• Apply cooling to the back of the neck and forehead for ten minutes</td>
</tr>
<tr>
<td></td>
<td>• If bleeding persists, seek medical advice</td>
</tr>
</tbody>
</table>

– burn injuries

Burn injuries are extremely painful, and as the outer layer of skin is damaged there is a high risk of infection. Burn injuries may be caused by extreme cold, heat, chemicals, corrosive substances, electricity, friction and radiation (sunburn). Scalds are burns caused by hot liquid or steam.

The severity of the burn depends on the extent of the burn or the surface area damaged, which parts of the body are damaged, the depth of the burn, the age and condition of the casualty and what other associated injuries the casualty may have.

<table>
<thead>
<tr>
<th>SIGNS AND SYMPTOMS</th>
<th>MANAGEMENT OF CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Casualty may be in severe pain and shock.</td>
<td>• DRABCD</td>
</tr>
<tr>
<td>• Depending on the level of the burn, area will be red, blisters and swelling forming.</td>
<td>• Gently cool the burnt area with cold running water, and if clothes are stuck to the burn, do not try to remove them</td>
</tr>
<tr>
<td>• Raw skin will be evident if burn is severe.</td>
<td>• Cover the burnt area with a non-adherent dressing to prevent infection</td>
</tr>
<tr>
<td></td>
<td>• Minimise shock and seek medical advice</td>
</tr>
<tr>
<td></td>
<td>• DO NOT prick blisters or apply creams or lotions</td>
</tr>
</tbody>
</table>

– teeth injuries

Any injuries to teeth should be referred for dental advice immediately, because the sooner the tooth is put back into place, the less treatment will be required in the future. Teeth can become dislodged, or knocked out, broken or fractured through a force to the face or jaw. Many sporting associations require a mouthguard to be worn by participants to prevent injuries to the mouth.
Electrocution occurs when an electric current touches or runs through the body. A common cause of electrocution is through faulty electrical appliances in the home or work place. A small electric shock may cause a tingling sensation; however, a severe shock can cause death. When treating someone who has suffered an electric shock, always be aware of the danger area.

**Signs and Symptoms Management of Condition**

- Pain, bleeding from the mouth or a dislodged tooth.

  - If the tooth is loose, straighten the tooth, splint it with foil (covering it and the tooth either side), and seek dental advice immediately.
  - If the tooth has been dislodged, rinse the tooth in milk or a saline solution; replace it correctly in the socket; splint the tooth and seek dental advice immediately.

**Electrocution**

**Signs and Symptoms**

- Casualty may not be conscious, breathing and heartbeat may be irregular or stopped.
- Casualty may have burns and will be in shock.

**Management of Condition**

- DRABCD
- Treat burns with cool water and seek medical advice

**Chest Injuries**

Common injuries to the chest involve fractured ribs. It is important to be aware of associated damage that may have occurred to the lungs or heart, which may be life threatening.

**Signs and Symptoms**

- Casualty has breathing difficulties, gasping for breaths.
- Pain over the injury site, cramping in the ribcage, and the area may be tender to touch.
- Blood in the mouth which is coming from the lungs.

**Management of Condition**

- DRABCD
- Help casualty into a comfortable position
- Encourage shallow breathing, pad the injured area ensuring bandages are tied on uninjured side and seek urgent medical advice

**Abdominal Injuries**

Injury to the abdomen, from a force in particular, requires prompt medical attention as the injured person may be suffering from internal bleeding or damaged organs. Motor vehicle accidents, falls onto hard surfaces, or someone being crushed, are common causes of abdominal injuries.

**Signs and Symptoms**

- Pain, grunting breathing, nausea and/or vomiting, pallor, bruising and tenderness at injury site.
- Blood in the urine or escaping from the genitals or anus.
- Casualty will be in shock.

**Management of Condition**

- DRABCD
- Loosen clothing and lay the casualty on their back with head and shoulders slightly raised and a rolled up towel or blanket under their knees
- Ensure casualty does not eat or drink; if they are thirsty, moisten their lips
- Seek urgent medical advice

**Management of Medical Conditions**

**Explain the Nature of the Identified Medical Conditions**

Accidents and problems with associated medical conditions can arise at any time and in the most unexpected places. An incident can vary from a minor injury to life-threatening situations. It is often difficult for a first aider to determine the severity of the condition; however, it is always better to play it safe and call for an ambulance, particularly if the medical history of the injured person is uncertain. Some casualties may have medical alerts or treatment items on them (Figure 2.9) that will give an indication to the first aider the condition the casualty may be suffering.
– heart attack

A heart attack occurs when a blockage in a blood vessel prevents blood from reaching the heart. This may damage the heart muscle tissue and cause poor heart function.

**Signs and Symptoms**

- Casualty will show pain or discomfort (tightness) in the chest; the pain may also spread to the shoulder, arm, throat and jaw.
- Casualty may seem distressed and anxious with shortness of breath.
- Skin may appear cold, clammy and perspiring.
- An irregular pulse may be present and the casualty may develop shock and even collapse.

**Management of Condition**

- DRABCD, and call ‘000’
- If the casualty is conscious, loosen clothing and offer reassurance
- Place casualty in recovery position (lateral) and monitor closely until help arrives
- Do not leave the casualty

– stroke

A stroke is caused by a sudden disruption of blood to parts of the brain. Oxygen supply in the blood is cut off to areas of the brain cells, or a blood vessel may have burst (haemorrhage) and as a result the affected areas of the brain that control bodily functions will be affected.

**Signs and Symptoms**

- Casualty is unconscious.
- Partial paralysis and slurred speech.
- Warning signs: sudden blurred or decreased vision, numbness in either face, arms and legs, dizziness, headache, and difficulty swallowing.

**Management of Condition**

- DRABCD, and call ‘000’
- If casualty is conscious, loosen clothing and offer reassurance
- Place casualty in recovery position (lateral) and monitor closely until help arrives
- Do not leave the casualty

– diabetes

Diabetes is a condition where the body is unable to properly maintain the body’s blood sugar (glucose). Insulin is a hormone made in the pancreas and circulates in the blood to help glucose get into the body’s cells to produce energy to function, just like a heart muscle that makes the heart beat.

Without insulin the glucose cannot enter the body’s cells, and if too much is produced it builds up and passes out into the urine, causing constant urination and thirst from dehydration. Complications from diabetes can include blindness, kidney failure, heart disease, stroke and limb amputation.

A hypoglycemic (low blood glucose) attack can be brought on by:

- skipping or delaying meals and snacks
- not eating enough carbohydrate (starchy) food
- too much insulin or tablets
- drinking alcohol without food
- extra physical activity without eating extra food.
A hyperglycemic (high blood glucose) attack can be brought on by:
- sickness
- infection
- stress
- too much carbohydrate food at once
- not enough insulin or diabetes tablets
- other tablets or medicines, such as cortisone.

A diabetic can lead a normal life if they ensure that they eat meals at regular intervals, maintain a healthy diet which includes simple carbohydrates and fewer fats, participates in regular exercise and administers their medication at the scheduled times.

**Signs and Symptoms**

<table>
<thead>
<tr>
<th>Hypoglycemia (low blood glucose)</th>
<th>Hyperglycemia (high blood glucose)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaking, dizziness, hunger, fast heart beat, tingling around the mouth and lips, feeling tired or weak, sweating and a headache.</td>
<td>Feeling constantly thirsty, passing large volumes of urine frequently, feeling tired, rapid pulse, dizzy or faint, and the smell of acetone (like nail polish remover) on casualty's breath.</td>
</tr>
<tr>
<td>If not treated the casualty may become confused, have slurred speech, behave as if drunk, and suffer drowsiness which may lead to unconsciousness.</td>
<td>If not treated, sufferer will have blurred vision, suffer drowsiness, which may lead to unconsciousness.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management of Condition</th>
<th>Management of Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give sufferer a sugary substance quickly, such as:</td>
<td>Apply DRABCD</td>
</tr>
<tr>
<td>- 5–7 jelly beans</td>
<td></td>
</tr>
<tr>
<td>- glass of soft drink (not diet)</td>
<td></td>
</tr>
<tr>
<td>- glass of fruit juice</td>
<td></td>
</tr>
<tr>
<td>- 2–4 teaspoons of sugar or honey</td>
<td></td>
</tr>
<tr>
<td>- If sufferer is not feeling better in 5–10 minutes, give them some more sugar</td>
<td></td>
</tr>
<tr>
<td>- After sugar intake, offer sufferer some carbohydrate (starchy) food, such as:</td>
<td></td>
</tr>
<tr>
<td>- piece of fruit</td>
<td></td>
</tr>
<tr>
<td>- glass milk</td>
<td></td>
</tr>
<tr>
<td>- a sandwich</td>
<td></td>
</tr>
<tr>
<td>- 2–4 dry biscuits</td>
<td></td>
</tr>
<tr>
<td>- If the sufferer becomes unconscious, apply DRABCD, and call ‘000’</td>
<td></td>
</tr>
</tbody>
</table>

**Epilepsy**

Epilepsy is a condition of reoccurring seizures due to a disturbance of the electrochemical activity in the brain. Sudden bursts of this electrochemical activity can upset the brain’s normal function and disrupt the brain’s messages to the body. These disruptions can vary from a brief loss of consciousness (petit mal) to muscular spasms and convulsions (grand mal). It is important from the first instance of seizure that the first aider protects the sufferer from hurting themselves against any objects, such as furniture.

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Management of Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petit mal: this may go unnoticed as the sufferer may tend to stare, have temporary memory loss or odd movements.</td>
<td>Ensure the casualty’s safety by clearing the immediate area</td>
</tr>
<tr>
<td></td>
<td>Reassure and comfort the sufferer once the seizure has passed, and seek medical help</td>
</tr>
<tr>
<td>Grand mal: sufferer suddenly cries out and falls to the ground; their body is rigid with jerking movements; excess saliva flows from mouth; and sufferer will experience possible loss of bladder and/or bowel control. Afterwards, sufferer is tired, confused and agitated, and may become unconscious.</td>
<td>Do not restrain the casualty or place anything in their mouth</td>
</tr>
<tr>
<td></td>
<td>Ensure the area is clear of objects that may cause further injury. If the sufferer is conscious after the seizure has passed, place them in the recovery (lateral) position to rest and monitor their breathing</td>
</tr>
<tr>
<td></td>
<td>Be aware that they may feel uncomfortable about moving if they have had a loss of bladder control. Seek medical advice</td>
</tr>
<tr>
<td></td>
<td>If the sufferer becomes unconscious, apply DRABCD and seek urgent medical help, but do not leave them</td>
</tr>
</tbody>
</table>
### – Asthma

Asthma is a respiratory condition as a result of the bronchi going into spasms and becoming narrower. Excess mucus may be produced causing the difficulty in breathing. Factors that may trigger an asthma attack include:

- Exercise
- Respiratory infections
- House dust and smoke
- Exposure to sudden change in weather condition, especially cold air
- Allergies, such as pollens, foods or bee stings
- Certain food additives or preservatives.

### Signs and Symptoms

- Sufferer will have tightness in the chest and have difficulty in breathing (particularly exhaling).
- Wheezing, pale and sweaty skin.
- Shortness of breath or rapid shallow breathing.
- Blue around the lips, ear lobes and fingertips.
- Coughing.

### Management of Condition

- Reassure sufferer and assist them into an upright position.
- Help them to administer 4 puffs of the prescribed asthma medication (reliever inhaler).
- Encourage them to relax and control their breathing.
- If breathing does not appear to improve after about 4 minutes, repeat medication.
- Seek medical advice if breathing does not appear to improve.

### – Anaphylaxis

Anaphylaxis is a potentially deadly allergic reaction that is rapid in onset. It is often triggered by food, medication and insect sting; however, there are many other possible triggers.

Anaphylaxis is an unpredictable condition. Many people who experience it have a known allergy and some have had one or more milder allergic reactions previously. Other people, who are not even aware that they have an allergy, can suddenly experience severe anaphylaxis. Even the first episode of anaphylaxis can be fatal.

### Signs and Symptoms

- There will be swelling and redness of the casualty’s skin, itchy, raised rash (like hives).
- Swelling of the throat, wheezing and/or coughing.
- Rapid, irregular pulse, tightness in the chest, headache, vomiting and diarrhea.
- Dizziness or unconsciousness.

### Management of Condition

- DRABCD, and call ‘000’.
- If the casualty is carrying an EpiPer® for the allergy, it should be used at once.
- Keep casualty in lying or sitting position and observe and record their pulse and breathing.
- If casualty is conscious, help them sit in a position that assists their breathing.
- If casualty is unconscious, check for signs of life and prepare to give CPR if necessary.

### – Poisoning

A poison is a substance that is dangerous to normal bodily functions. Poisons enter the body through being either swallowed, absorbed through the skin, inhaled or injected. The majority of casualties from poisoning are young children who do not understand the dangers of these substances. Poisons can be household products, medicines, naturally occurring animal or plant products and industrial chemicals. The severity of the condition from poison-taking varies depending on the strength of the poison and the amount that entered into the body.
Childhood poisoning can be prevented by:
- disposing of out-of-date and unwanted medicines on a regular basis
- buying products with child-safe packaging
- storing medicines and household products in locked cupboards
- keeping all medicines and cleaners in their original containers
- returning poisons to their safe storage place immediately after use
- keeping the Poisons Information Centre details close to the telephone.

**Signs and Symptoms**
- Condition may vary depending on the substance taken in: dizziness or drowsiness, headache, nausea, reduced or blurred vision, rapid pulse, vomiting, dilated pupils, abdominal pain, difficulty in breathing, burns or discoloration of the skin, odours on the breath or skin and signs of shock.

**Management of Condition**
- **Inhaled poison:** move yourself and the casualty to fresh air, loosen tight clothing, consider oxygen therapy if necessary
- **Absorbed poison:** where possible, protect yourself by using gloves, goggles and protective clothing. Remove contaminated clothing carefully to avoid any further skin contact and flush the skin with running water
- **Ingested poison:** do not induce vomiting or give the casualty anything to eat or drink. Wash corrosive substance off mouth and face with water, or wipe off
- **In all situations:** apply DRABCD, and call ‘000’ or necessary emergency services if necessary and seek medical advice

**How poisons enter the body**
- Absorbed through eyes (e.g. chemicals).
- Inhaled—gases, solvent, vapours, fumes.
- Ingested (swallowed) through digestive tract walls.
- Injected—drugs (e.g. narcotics), venoms from snakes, fish, insects, spiders - can be absorbed into the circulation very quickly.
- Absorbed through the skin—corrosives, pesticides, other strong chemicals.

**How poisons affect the body**
- Brain—poisons can cause confusion, delirium, seizures, unconsciousness.
- Eyes—can cause burns and irritation, scarring.
- Lips, mouth, oesophagus—swallowed poisons can burn.
- Respiratory tract—respirator distress, poisons causing unconsciousness can slow breathing and cause airway blockage.
- Heart—some poisons interfere with functioning (e.g. anti-depressant drug overdose, oleander poisoning).
- Liver, kidneys—can be seriously damaged by overload of toxins (e.g. paracetamol overdose, mushrooms).
- Digestive system—poisons can cause vomiting, abdominal pain, diarrhoea.
- Blood—poisons can prevent red cells carrying oxygen to tissues (e.g. carbon monoxide, cyanide).
- bites and stings

Insect stings and animal bites are painful with some being potentially lethal. Bites and stings often occur at the beach, in the garden, at playgrounds or around the home. Most stings and bites are generally minor, but are often painful. However, some can be lethal, such as stings from bees, wasps or ticks, which can produce an anaphylactic reaction.

A venom from the sting or bite that is injected directly into the bloodstream may work rapidly as it circulates around the body. If injected just beneath the skin, the venom will move more slowly as it spreads in local tissue fluids and moves into the lymphatic system, before entering the bloodstream. If the casualty remains still, the general effects are slower.

**Signs and Symptoms**

**Management of Condition**

| Bee and wasps: painful burning feeling with some swelling. Difficulty in breathing will occur if the casualty has an allergic reaction. |
|---|---|
| DRABCD | Remove the sting by scooping it with a fingernail. Do not squeeze the sting out |
| Appear and monitor the casualty in case of allergic reaction |
| Seek urgent medical advice if allergic reaction occurs |

| Redback spider: stinging feeling, followed by swelling and intense local pain. Maybe an onset of weakness, excess sweating, nausea, or skin discoloration. |
|---|---|
| DRABCD | Keep bite site clean and apply ice |
| Reassure the casualty and seek medical advice |

| Funnel-web spider: Extreme pain, nausea, vomiting, excessive sweating, muscle twitching, breathing difficulties, numbness around the mouth, confusion leading to unconsciousness. |
|---|---|
| DRABCD | Apply a firm pressure immobilisation bandage (beginning from the extremities; if bitten on the limbs, ensure casualty does not move |
| Seek urgent medical advice |

| Tick (buries itself in the skin): headache, blurred vision and weakness in the limbs. |
|---|---|
| Grasp any part of the tick and try to pull it out in one piece with tweezers |
| Seek medical advice |

| Snake: puncture marks or scratches, headache, nausea or vomiting, blurred or double vision, drooping eyelids, voice change, bleeding from the bite, difficulty breathing, drowsiness, slurred speech, pain or tightness in the chest or throat, dark urine (blood or muscle breakdown products). |
|---|---|
| DRABCD, and call '000' | Rest and reassure the casualty |
| Apply a firm pressure immobilisation bandage, and ensure the casualty does not move |
| Seek urgent medical advice |
| Record the time of the bite, when the bandage was applied and any identifications of the snake |
| Do not elevate the injury site |

| Bluebottle: immediate pain usually lasting about 30 minutes; lines of welt marks form with surrounding redness of the skin. |
|---|---|
| DRABCD | Calm casualty and prevent them from rubbing the injured site |
| Gently pick off adherent tentacles and immerse the casualty in hot water for 20 minutes to relieve the pain. It is important to check the water temperature is not too hot |
| Seek medical advice if the pain persists |

- exposure to heat and cold

The temperature of a healthy human body is about 37°C. If the body is exposed to extreme temperatures the body may suffer from either hyperthermia (exposure to hot, humid conditions causing the body temperature to rise) or hypothermia (extreme cold conditions causing the body temperature to drop).

Hypothermia is generally an over-exposure to cold conditions, such as being immersed in cold water or snow conditions without adequate protective clothing, and the body is unable to maintain its normal body temperature.

Hyperthermia can occur due to extreme hot conditions, even if the body is at rest. This condition is generally called heat stroke and can be fatal for young children and the elderly. When moving to a hot climate it is important to increase the daily water intake to balance out the required amount of water the body needs to carry out its normal functions. Heavy sweating removes water from the body at a faster rate.
Exercise-induced heat exhaustion usually occurs when the body generates heat from exercise metabolism and the core body temperature rises unless exercise is restricted. Heat exhaustion is more common in trained athletes who usually push themselves to the limit, marathon or fun run participants, defence force personnel and firefighters.

**Figure 2.13**
How the body loses heat

- Radiation from the body especially the head, into the air around it
- Breathing: cold air is inhaled, warmed by the body, and exhaled
- Evaporation: body heat is used to evaporate liquid (sweat) on the skin
- Conduction: heat moves from the warm body to a cold object that the body is in contact with

**Figure 2.12**
Production and transfer of heat

- Sun radiation
- Work
- Convection
- Conduction
- Metabolic storage
- Respiratory evaporation
- Radiation
- Radiation from the body especially the head, into the air around it

Source: St John Ambulance, p. 372
Signs and Symptoms management of condition

Hypothermia can progress through various stages:
- Shivering; loss of concentration; loss of control over the small muscles such as the muscles of the fingers; facial skin turns grey or blue in colour; drowsiness; lethargy; confusion; loss of physical coordination; lack of shivering; slowed breathing; slurring speech; yearning for sleep; coma; death.

Hyperthermia: feeling hot; exhausted; weak and fatigued; headache; thirst and nausea; rapid breathing and pulse; flushed; irritable and mental confusion; and in developed cases, altered mental state which may progress to seizures and unconsciousness.

Management of Condition

- DRABCD
- Move casualty to a warm dry place for protection
- Avoid excessive movement
- Remove wet clothing and wrap casualty in blankets or sleeping bag
- Place in recovery (lateral) position, cover the head to maintain heat, give warm drink, use body-to-body to provide warmth
- It is important to stabilise the body’s core temperature, rather than attempt rapid rewarming
- Seek medical advice

Activity 1 (Page 147)
Outline in your workbooks, and then work in pairs to demonstrate the appropriate first aid management to the following injuries:
- Steve’s front tooth that has been knocked out in a football tackle
- Marina’s glass cut across the palm of her hand (the glass is still embedded in her hand)
- Jessica’s sunburnt shoulders
- Luke’s bleeding nose from an accidental head clash in his soccer game
- Sand in Rachael’s left eye
- Damien’s bleeding wound on his head, and blood is coming out of his left ear
- Craig being winded in a football tackle.

Activity 2 (Page 147)
Outline in your workbooks, and then work in pairs to demonstrate the appropriate first aid management to the following injuries:
- Tony’s open fracture to his ulna
- Darren’s dislocated middle finger
- Rochelle’s closed fracture of her big toe
- Mahli’s sprained wrist
- Lisa’s broken collar bone.

Activity 3 (Page 153)
Outline a summary table of medical conditions, which is to include a description of the condition, signs and symptoms and the management of the condition.
1. **Explain** why it is important to raise the legs of an injured person above the level of the heart in the case of a bleeding laceration.

2. **Describe** the importance of using a splint for a broken bone.

3. **Justify** a procedure for managing a soccer player who has rolled over on their ankle, but insists on continuing to play the match.

4. **Explain** how you would manage an unconscious casualty suffering burns from a mild explosion.

5. **Outline** preventive strategies that can be used to prevent heat exhaustion in a 14-kilometre fun run.