# Content for the Modules

## Burns and Wounds

### Burns

Burns are common injuries caused on the skin due to exposure to extreme temperatures. Thermal burns are more common than ice burns and are commonly caused due to exposure to heat. Such injuries often occur while cooking, or while bathing when the water is extremely hot. Ice burns are caused due to prolonged exposure to freezing or below freezing temperatures, and are usually only seen in workers in cold storage facilities, outdoor labourers in cold climates, and outdoor enthusiasts.

**When to go to the Hospital?**

Burns are classified based on their depth and the extent of tissue damage. There are three major types of burns:

1. **First-Degree Burns (Superficial):** Such burns cause mild discomfort to the injured person and are usually red and slightly inflamed. They can be treated at home and typically heal with 7-10 days. Only take the person to the hospital if the burn is large or in a sensitive area, like feet, hands groin or a major joint.
2. **Second-Degree Burns (Partial Thickness):** The skin turns red, white or splotchy and has blisters. The injured person feels moderate to severe pain. While it is not necessary to take a person to the hospital, it is advised to do so if the person is in a lot of pain. If the burn is in a sensitive location or extremely large, it is necessary to take them to the hospital.
3. **Third-Degree Burns (Full Thickness):** The skin looks white, brown, or blackened and leathery and in often completely numb due to nerve destruction. This type of burn is very severe and it is important to get the injured person to the hospital as soon as possible to try and prevent loss of movement, or even life depending on extent of the injury.

How to treat it at home?

1. **Cool the Burn:** For first-degree and small second-degree burns, gently cool the area under cool (not cold) running water for about 10 minutes. This helps reduce pain and swelling.​ Avoid using ice or very cold water, as it can cause further tissue damage.​
2. **Protect the Burn:** After cooling, cover the burn with a clean, non-stick bandage or cloth. Avoid using adhesive bandages directly on the burn, as they can stick to the wound.
3. **Relieve Pain:** Over-the-counter pain relievers like ibuprofen or acetaminophen can help alleviate pain and reduce inflammation. Always follow the recommended dosages and consult a healthcare professional if unsure.

Recognising infection

If after a few days, the injured person continues to feel intense pain, there is redness around the injury, pus is formed around the injury, or the patient has fever, it is quite likely that the injured person’s burn has become infected and they need to be taken to the hospital.

Ice Burns or Frostbite

These are less common that thermal burns. Symptoms include pain, numbness, hard or waxy skin etc. If a person has been exposed to freezing or sub-freezing temperatures it is important to check if they have frostbite, regardless of whether you see anything at first glance. They are treated by gently warming the skin using a cloth soaked in warm water and covering the area. Avoid rubbing the area. Seek medical help if the injured person is not warming up, or if they are suffering multiple other problems due to exposure.

### Wounds

Wounds are injuries that result in the breaking of the skin or other body tissues, often caused by cuts, scrapes, or punctures. While many minor wounds can be treated at home, it's crucial to recognize when professional medical attention is necessary to prevent complications.​

When to Seek Medical Attention

Not all wounds require a hospital visit, but the following situations necessitate professional care:​

1. **Uncontrolled Bleeding**: If bleeding doesn't stop after applying direct pressure for 10-15 minutes, seek medical help.
2. **Deep or Large Wounds**: Cuts deeper than 1/4 inch, especially those exposing fat or muscle, may need stitches.
3. **Location Concerns**: Wounds on the face, hands, feet, genitals, or over major joints should be evaluated by a healthcare provider due to functional and cosmetic considerations.
4. **Foreign Objects**: If debris remains embedded after cleaning, medical assistance is necessary. ​
5. **Animal or Human Bites**: Such wounds have a high risk of infection and often require antibiotics. ​
6. **Tetanus Risk**: Wounds caused by dirty or rusty objects, especially if your tetanus vaccination isn't up-to-date, require medical attention. ​

First Aid Treatment at Home

For minor wounds that don't require professional care:

1. **Wash Your Hands**: Always clean your hands before treating a wound to prevent infection.
2. **Stop the Bleeding**: Apply gentle pressure with a clean cloth or bandage until bleeding stops.
3. **Clean the Wound**: Rinse under running water to remove dirt. Avoid using soap directly in the wound. ​
4. **Apply Antibiotic Ointment**: This helps prevent infection and keeps the wound moist. ​
5. **Protect the Wound**: Cover with a sterile bandage, changing it daily or when it becomes wet or dirty. ​
6. **Monitor for Infection**: Watch for signs like increased redness, swelling, or pus. ​

**Recognizing Infection After a Few Days**

Even with proper care, infections can develop. Indicators include:​

* **Increased Redness and Swelling**: Spreading redness or swelling around the wound. ​
* **Pus or Discharge**: Yellow or green fluid oozing from the wound. ​
* **Fever**: A temperature above 100.4°F (38°C) may signal a systemic infection. ​
* **Persistent Pain**: Worsening or unrelieved pain at the wound site. ​

If any of these symptoms occur, consult a healthcare professional promptly to prevent further complications.

## Fractures and Sprains

A fracture is a break in the bone, ranging from a small crack to a complete break. It occurs due to excessive force, falls, or direct impacts. A sprain, on the other hand, is the stretching or tearing of ligaments, which are the tough bands connecting bones at a joint. Sprains happen when a joint is twisted or overstretched, commonly affecting the ankles, wrists, and knees.

Identifying Fractures vs Sprains

While both injuries cause pain, swelling, and bruising, key differences help in identification. Fracture pain is sharp and worsens with movement or pressure, while sprain pain is more of an aching discomfort that increases with joint use. Fractures often cause deformity, with the limb looking out of place or, in severe cases, bone protruding. Sprains do not cause visible misalignment but may swell significantly. If movement is impossible or the injured area feels unstable with a grating sensation, a fracture is more likely. If the joint remains somewhat functional despite pain and swelling, it is more likely a sprain. If in doubt, seek medical attention.

Transport to the hospital

If the injured person has a fracture then their limb needs to be stabilised and they need to be taken to a hospital. If it is a sprain, but the injured person feels severe pain and can’t bear weight on the joint they need to be taken to the hospital.

How to Splint a Fracture

Splinting a fracture helps immobilize the injured limb, reducing pain and preventing further damage until medical help is available. First, keep the injured person still and support the affected area in the position it was found—do not attempt to realign the bone. Find a firm object like a padded board, folded newspaper, or rolled-up towel to act as a splint. Place it alongside the injured limb, ensuring it supports the joints above and below the fracture. Secure it with bandages or strips of cloth, tying them snugly but not too tight to avoid cutting off circulation. Check for swelling, discoloration, or numbness, which may indicate restricted blood flow. Seek medical attention immediately.

📺 **Reference Video:** https://www.youtube.com/watch?v=sxui3wU7WBM

How to Wrap a Sprain

Wrapping a sprain provides support, reduces swelling, and prevents further injury. Begin by positioning the injured limb in a comfortable, slightly elevated position. Use an elastic bandage, starting just below the injured joint and wrapping upward in a figure-eight pattern. Maintain firm but gentle pressure—tight enough for support but loose enough to avoid numbness or tingling. The wrap should cover the entire affected area while allowing for some movement. If swelling increases or the area becomes too tight, loosen the wrap slightly.

📺 **Reference Video:** https://www.youtube.com/watch?v=0jps5SZlTdo

Further Treatment for a Sprain

Most sprains can be managed at home using the **R.I.C.E. method**—Rest, Ice, Compression, and Elevation. Rest the injured joint and avoid putting weight on it for at least 48 hours. Apply an ice pack wrapped in a cloth for 15-20 minutes every 2-3 hours to reduce swelling. Keep the compression bandage in place but adjust it if swelling worsens. Elevate the injured limb above heart level whenever possible to prevent excessive swelling. Over-the-counter pain relievers like ibuprofen can help with discomfort. If symptoms persist beyond a few days, or if the joint remains unstable, consult a doctor for further evaluation and possible physical therapy.

## Cardiac Emergencies

Cardiac emergencies occur when the heart stops functioning properly, cutting off blood flow to vital organs. Without immediate action, this can lead to death within minutes.

Recognizing the signs and responding immediately can double or triple survival chances.

Recognizing a Cardiac Emergency

Someone experiencing a cardiac event may show the following symptoms:

* Sudden collapse and unresponsiveness
* No breathing or gasping for air
* No pulse or very weak pulse
* Clutching the chest (in cases of heart attack)
* Dizziness, confusion, or extreme fatigue

If you suspect a cardiac emergency, act immediately—every second counts.

Immediate Actions to Take

1. Check Responsiveness: Shake the person and shout their name. If no response, proceed immediately.
2. Call Emergency Services: Dial 911 (or your local emergency number) and report the situation. Stay on the line and follow instructions.
3. Start CPR
4. Use an AED

CPR on Adults

1. Place the person on a firm, flat surface.
2. Give hard, fast chest compressions (100-120 per minute). Push down at least 2 inches in the centre of the chest.
3. Allow the chest to fully rise between compressions.
4. Continue until emergency responders arrive.

📹 <https://www.youtube.com/watch?v=msRft-g-k_s>

CPR on children

The main differences between child and adult CPR are in compression depth, hand placement, and rescue breaths due to the size and fragility of a child’s body:

1. Compression Depth:
   * Adults: Compress the chest at least 2 inches (5 cm) deep.
   * Children (1 year to puberty): Compress about 2 inches (5 cm), but no more than that to avoid injury.
2. Hand Placement:
   * Adults: Use two hands, placing them on the center of the chest (lower half of the sternum).
   * Children: Use one or two hands, depending on the child’s size—one hand for smaller children and two for larger ones

How to use an AED

1. Turn it on and follow the voice prompts.
2. Attach the electrode pads to the person’s bare chest as shown in the instructions.
3. If advised, deliver a shock and immediately resume CPR.

Working with other by standers

If others are present, assign specific tasks:

1. One person should call emergency services.
2. Another should locate and bring an AED.
3. A third can assist with CPR rotation to prevent fatigue.

## Choking

Choking occurs when an object, usually food or a small item, blocks the airway, preventing normal breathing. If not treated immediately, choking can lead to suffocation.

Recognizing Choking

A person who is choking may:

1. Be unable to speak, cough, or breathe
2. Clutch their throat (universal choking sign)
3. Have blue-tinted lips or face (due to lack of oxygen)
4. Make high-pitched wheezing sounds or be completely silent

If the person is coughing forcefully, encourage them to keep coughing to clear the obstruction. If they cannot cough, speak, or breathe, act immediately using the Heimlich manoeuvre (abdominal thrusts).

The Heimlich Manoeuvre

The Heimlich manoeuvre is a lifesaving technique used to dislodge an obstruction from the airway. It varies slightly depending on the individual’s age and condition.

Video: https://www.youtube.com/watch?v=2dn13zneEjo

Heimlich Manoeuvre for Adults

1. Stand behind the person and wrap your arms around their waist.
2. Make a fist with one hand and place it just above their belly button.
3. Grab your fist with your other hand and perform quick, inward and upward thrusts.
4. Repeat until the object is expelled or the person becomes unresponsive.

Heimlich Manoeuvre for Children (Ages 1-8)

1. The technique is the same as for adults but adjust the force to avoid injury.
2. Kneel behind the child if necessary.
3. Perform gentler abdominal thrusts using less force than on an adult.
4. Stop when the object is dislodged or if the child becomes unconscious.

Heimlich Manoeuvre for Infants (Under 1 Year Old)

1. Lay the baby face-down along your forearm, supporting their head and neck.
2. Give 5 firm back blows between the shoulder blades using the heel of your hand.
3. If the object is not dislodged, turn the infant onto their back and place two fingers on the centre of the chest.
4. Give 5 chest thrusts, pushing down about 1.5 inches.
5. Repeat until the object is expelled or the infant becomes unresponsive.

Heimlich Manoeuvre for Yourself (Self-Heimlich)

If you are choking and no one is around to help:

1. Make a fist and place it above your belly button.
2. Grab your fist with your other hand and press inward and upward sharply.
3. If this doesn’t work, lean over a sturdy object (chair, counter, railing) and push your abdomen forcefully against it.
4. Repeat until the object is expelled.

When to Seek Medical Help

1. If the person becomes unconscious at any point.
2. If choking persists despite Heimlich attempts.
3. After successful removal of the object, especially in infants or children, as internal injury may have occurred.

## Exposure

### Heat

Exposure to extreme heat can lead to serious health conditions, including heat exhaustion and heatstroke. Knowing the symptoms can help prevent life-threatening situations.

Heat Exhaustion

Symptoms of heat exhaustion are heavy sweating, weakness or dizziness, cool, clammy skin, nausea or vomiting, fast but weak pulse, muscle cramps and headache

Treatment

* Move the person to a cool, shaded area or indoors.
* Loosen tight clothing and apply cool, damp cloths to the body.
* Encourage slow sipping of water or electrolyte-rich fluids.
* Rest until symptoms improve.

If symptoms persist for over an hour or worsen, seek medical help.

Heatstroke (Medical Emergency)

Symptoms of heatstroke are high body temperature (above 104°F / 40°C), hot, dry skin (no sweating), confusion, dizziness, or seizures, rapid, strong pulse, loss of consciousness

Treatment:

* Call emergency services immediately! Heatstroke can be fatal.
* Move the person to shade and remove excess clothing.
* Cool the body rapidly using water, ice packs, or fanning.
* If conscious, offer small sips of cool water.
* Avoid caffeine or alcohol, which can worsen dehydration.

Finding Help & Improvising in a Remote Location

1. Locate Shade & Shelter
   * Seek natural shade (trees, caves, or large rocks).
   * Improvise a sun shelter with clothing, branches, or emergency blankets.
2. Hydration & Water Sources
   * Conserve sweat, not water—rest in the shade.
   * Look for dew, rivers, or underground water (dig in dry riverbeds).
   * If needed, filter and purify water using boiling, filtration, or solar disinfection.
3. Cooling Strategies
   * Use evaporation: Wet clothes with any available water and let the breeze cool the body.
   * Bury water bottles partially in sand to keep them cooler.
   * Rest during the hottest hours (midday) and move in the early morning or evening.
4. Signalling for Help
   * Use a mirror, bright clothing, or a fire to signal rescuers.
   * Create large symbols (SOS) on the ground using rocks or branches.
   * If near a road, leave signs (arrows, footprints) pointing to your location.

### Cold

Exposure to extreme cold can lead to serious health issues such as hypothermia and frostbite. It’s important to recognize the symptoms early to prevent severe complications or even death. Below is essential information on how to handle cold exposure emergencies.

Hypothermia

Hypothermia occurs when the body temperature drops below 95°F (35°C), causing the body to lose heat faster than it can produce it.

Symptoms of Hypothermia include Shivering (although shivering may stop in severe cases), slurred speech, confusion or disorientation, numbness, fatigue, or weakness, pale or blue skin, loss of coordination or clumsiness, slow or irregular heartbeat and breathing, loss of consciousness (severe cases)

Treatment for Hypothermia:

1. Move the person to a warmer area immediately, such as a heated building or vehicle.
2. Remove wet clothing and replace it with dry, warm layers.
3. Warm the person gradually by wrapping them in blankets, using warm, dry towels, or applying warm water bottles to their armpits, chest, or groin area. Avoid direct heat like a hot water bath.
4. Provide warm drinks (non-alcoholic and non-caffeinated), but avoid giving them alcohol, as it can lower body temperature.
5. Monitor their condition and seek medical help if the symptoms persist or worsen.

If the person is unconscious or unresponsive, call emergency services immediately. Do not attempt to warm them too quickly, as this can cause complications such as cardiac arrhythmias.

Frostbite

Frostbite occurs when body tissues freeze due to prolonged exposure to cold, particularly in extremities like fingers, toes, ears, and nose.

Symptoms of Frostbite include skin that appears white, grey, yellowish, or waxy, numbness or a "pins and needles" sensation, hard or frozen skin that is difficult to move, blisters (in severe cases), the area may feel cold to the touch.

This topic was also briefly covered under burns under the section cold burns.

Treatment for Frostbite:

1. Get the person to a warmer environment immediately.
2. Remove wet or tight clothing and place the affected area in warm water (100°F-104°F / 37°C-40°C). Do not use direct heat like a heating pad or fire, as it may cause further damage.
3. Rewarm the affected area slowly and gently. Do not rub or massage frostbitten skin, as this can cause further injury.
4. Keep the person warm, and protect the affected areas by wrapping them in sterile dressings or gauze.
5. Seek medical attention immediately for severe frostbite. Rewarming should only be done if the person is in a safe, warm environment.

In severe cases of frostbite, tissue damage may occur, requiring medical intervention to prevent further complications like amputation.

Finding Shelter and Preventing Cold Exposure:

1. Find Shelter: If possible, take shelter in a building, vehicle, or any structure that can block the wind and provide warmth.
2. Insulate Your Body: Insulate your body with dry clothing and materials such as wool or synthetic fabrics that retain heat. Avoid wearing cotton, as it can trap moisture and cause further heat loss.
3. Avoid Alcohol: While it may make you feel warm, alcohol actually lowers your core body temperature and increases the risk of cold exposure.
4. Keep Moving: If shelter is unavailable, continue moving to generate body heat. However, be careful not to overexert yourself, as it can lead to exhaustion.
5. Hydrate: Drink warm, non-caffeinated, non-alcoholic fluids to stay hydrated, but avoid anything that may lead to dehydration or worsen cold exposure.

What to Do If You Are Stranded in Cold Weather

1. Stay Dry: Wet clothing increases heat loss. Try to stay as dry as possible and remove wet clothing immediately.
2. Conserve Energy: Keep movements to a minimum to prevent exhaustion.
3. Signal for Help: Use a whistle, bright clothing, or fire to attract attention. Create large symbols like "SOS" in the snow or use a mirror to reflect sunlight.
4. Utilize Available Resources: If you have access to a water source, filter or purify it. Use any available materials like branches or tarps to construct shelter

## Poison/Venom/Allergies

### Poison

Poisoning occurs when a person ingests, inhales, or comes into contact with toxic substances. These substances can range from household chemicals and medications to environmental toxins. Quick action is crucial to preventing severe health consequences or even death.

Signs and Symptoms of Poisoning

Symptoms can vary based on the type of poison and the way it entered the body. However, common signs include difficulty breathing or shortness of breath, chest pain or tightness, nausea, vomiting, or diarrhea, sweating, drooling, or excessive salivation, drowsiness, confusion, or dizziness, seizures, burns or redness around the mouth or skin (if the poison is corrosive), abnormal pupil size (dilated or constricted)

First Aid for Poisoning

1. Ingestion Poisoning

* Call for help via the emergency helpline number
* DO NOT induce vomiting unless instructed by a medical professional. Vomiting can cause additional damage depending on the substance ingested.
* If the person is conscious and alert, offer them water or milk to dilute the poison (but only if instructed by a medical professional).
* Identify the poison if possible (bring the container, plant, or substance involved).

2. Inhalation Poisoning

* Get the person to fresh air immediately while keeping yourself safe from exposure.
* If the person is unconscious but breathing, place them in the recovery position to ensure their airway remains clear.
* Call emergency services immediately.

3. Contact Poisoning

* Wash the affected skin immediately with soap and water. Remove any contaminated clothing and rinse it off.
* If the poison is from a plant (e.g., poison ivy, poison oak), wash the affected area with mild soap and water, and avoid scratching.
* For chemical burns, flush the area with large amounts of water for at least 20 minutes.
* Seek medical attention if the person experiences severe reactions like difficulty breathing or intense pain.

4. Injection Poisoning

* Call emergency services immediately.
* For drug overdose: If the substance is known (e.g., heroin), give the person Naloxone (Narcan) if available and trained to use it.
* For stings or bites: Remove the stinger or needle carefully without squeezing it. Wash the area with soap and water, and apply ice to reduce swelling.
* Monitor vital signs (breathing, pulse) and be prepared to administer CPR if necessary.

When to Seek Medical Help

* If the person is unconscious, drowsy, or confused.
* If the person cannot breathe or is showing difficulty breathing.
* If the person shows signs of severe poisoning, such as seizures, paralysis, or severe burns.
* If the poisoning involves a child or an elderly person.
* If you cannot identify the poison.

### Venom

Venomous bites or stings can be caused by animals like snakes, spiders, insects, marine life, and scorpions. Immediate action is vital to prevent severe reactions or death.

Signs and Symptoms of Venomous Bites

* Pain, swelling, and redness at the site
* Difficulty breathing or dizziness
* Rapid heart rate or weakness
* Nausea, vomiting, or paralysis
* Severe itching, rash, or blurred vision

First Aid for Venomous Bites

1. Snake Bites:
   * Stay calm, keep the limb still, and call emergency services.
   * Do not try to suck out venom or apply ice.
   * Remove tight clothing near the bite area.
2. Spider Bites:
   * Clean the bite, apply a cool compress, and seek help if symptoms worsen.
3. Insect Stings:
   * Remove the stinger (if visible), clean the site, and apply a cool compress.
   * Seek help for allergic reactions.
4. Scorpion Stings:
   * Clean the sting, apply ice, and seek medical help for severe reactions.
5. Marine Stings:
   * Rinse the sting with vinegar or seawater, remove tentacles, and seek help for severe reactions.

What to Do in a Remote Area

1. Stay Calm: Avoid panic to reduce the spread of venom.
2. Move to Safety: Get away from the animal and to a safer area.
3. Apply First Aid: Immobilize the limb, clean wounds with available resources, and apply cool compresses.
4. Signal for Help: Use bright clothing, mirrors, or fire to signal for help.
5. Look for Natural Remedies: If necessary, use safe plants or water for relief.

When to Seek Medical Help

* Severe symptoms like difficulty breathing or seizures
* If the person becomes unconscious
* If help is not readily available in remote areas

### Allergic Reactions

An allergic reaction occurs when the body’s immune system reacts to a substance it deems harmful, even though it may not be harmful to most people. The substance causing the reaction is called an allergen, which can range from food to insect stings, medications, or environmental triggers like pollen.

Signs and Symptoms of an Allergic Reaction

* Mild Symptoms:
  + Itchy skin, rash, or hives
  + Swelling of lips, face, or eyes
  + Sneezing, coughing, or a runny nose
  + Shortness of breath or wheezing
* Severe Symptoms (Anaphylaxis):
  + Difficulty breathing or wheezing
  + Swelling of the throat or tongue
  + Drop in blood pressure (leading to dizziness or fainting)
  + Rapid or weak pulse
  + Loss of consciousness

First Aid for Allergic Reactions

1. Mild Reactions:
   * Remove the allergen if possible (e.g., take off tight clothing or avoid the triggering food).
   * Take antihistamines (if available and not contraindicated).
   * Apply cool compresses to reduce swelling or hives.
2. Severe Reactions (Anaphylaxis):
   * Call emergency services immediately.
   * If the person has an epinephrine auto-injector (EpiPen), administer it right away. Follow the device’s instructions.
   * Keep the person lying down and raise their legs to prevent shock, unless it causes breathing difficulty.
   * Stay with the person and monitor their breathing and pulse until help arrives.
3. Insect Stings:
   * Remove the stinger if visible (scrape it off with a credit card or a flat object).
   * Clean the sting area with water and apply a cold compress.
   * Take antihistamines or apply an antihistamine cream to reduce itching and swelling.

When to Seek Medical Help

* If the reaction is severe or symptoms progress quickly (e.g., difficulty breathing, throat swelling, or unconsciousness).
* If the person does not have an epinephrine auto-injector or medical assistance is unavailable.
* After using an epinephrine auto-injector, as further medical attention is usually necessary.