

2 FIRST AID

Regulation 1101 under the *Workplace Safety and Insurance Act* details the obligations of employers regarding first aid equipment, facilities, and trained personnel in all workplaces. Section 91/4 of the Act authorizes the WSIB to penalize employers who do not comply with these requirements.

Basic first aid concentrates on **breathing, bleeding, and burns**.

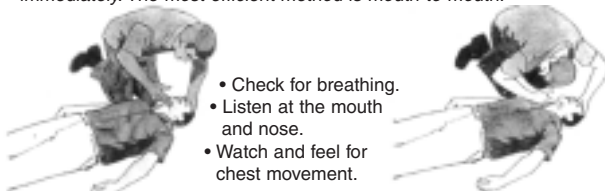
Breathing

If the casualty is unconscious, check for breathing. Listen at the mouth and nose. Watch and feel for chest movement.

If the casualty is not breathing, start artificial respiration immediately. The most efficient method is mouth-to-mouth (Figure 1).

First Aid – Breathing

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- Check for breathing.
- Listen at the mouth and nose.
- Watch and feel for chest movement.





<p>1</p>  <ul style="list-style-type: none"> • Open the airway. • Lift chin. • Remove obvious foreign material. 	<p>2</p>  <ul style="list-style-type: none"> • Pinch nostrils closed. • Take a breath.
<p>3</p>  <ul style="list-style-type: none"> • Make a tight seal at the mouth. • Blow two breaths. 	<p>4</p>  <ul style="list-style-type: none"> • Watch for chest movement. • If air is getting into the lungs, continue blowing at your normal breathing rate. • For an adult, blow one breath every five seconds. • For an infant or young child, make a tight seal over the mouth and nose and blow gentle puffs – one breath every three seconds.

Figure 1

Bleeding

Control external bleeding immediately.

- Apply direct pressure to stop blood flow.
- Place casualty in comfortable position and elevate affected part.
- Get the casualty to rest to slow circulation.
- Apply direct pressure with hand over dressing.
- Do not remove blood-soaked dressing. Add another

dressing and continue pressing.

- When bleeding is controlled, secure bandage and maintain elevation.

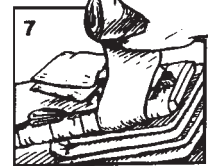
The simple formula for the control of bleeding is Rest, Elevate, Direct Pressure – R.E.D.

A deep wound in the palm of the hand usually results in severe bleeding. You should control bleeding from a wound across the palm of the hand with **direct pressure, elevation, and rest**.

- Make a fist and apply pressure to the wound; at the same time, elevate the hand.
- Seat the casualty.
- Place a wad of gauze dressings over the wound and close the fingers around the wad to maintain pressure.
- Elevate the hand again to a higher position.

For a crushed hand, the treatment is different.

1. Steady and support the injured hand.
2. Place a pad of dressings in the palm of the hand to keep it in the position of function.
3. Remove any jewellery before swelling occurs.
4. Transfer the hand to a padded splint extending from mid-forearm to fingertips and elevate slightly.
5. Place non-stick dressings between the fingers and between the index finger and thumb.
6. Cover the injured hand with sterile dressings or a clean cloth.
7. Starting at the fingertips, apply a roller bandage to secure the hand to the splint.
8. Apply an arm sling. Transport the casualty to medical aid.



Courtesy St. John Ambulance

Burns

Immediately immerse the burned part in ice water or immediately apply ice or clean cloths soaked in cold water.

Cold will

- reduce the temperature of the burned area and prevent further damage
- reduce swelling and blistering
- relieve pain.

Medical Alert

Valuable information about the history of a casualty can often be found on a **Medical Alert** device – a bracelet, necklace, or pocket card. This warning alerts first aiders and medical personnel to the fact that the casualty

- has a medical condition requiring special treatment, or
- is allergic to certain substances.

Severed Tissue

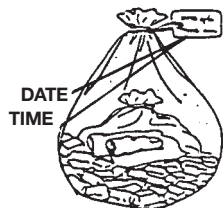
Completely or partially severed parts must be preserved, regardless of their condition, and taken to the medical facility with the casualty.

A partially severed part should be

- kept as near as possible to its normal position
- covered with sterile gauze dressing, bandaged, and supported
- kept cool with an ice bag or cold compress outside the bandage.

A completely severed part should be

- wrapped in sterile gauze moistened with clean water, placed in a clean watertight plastic bag and sealed, and a record made of the time this was done
- placed in another plastic bag or container partially filled with crushed ice
- transported with the casualty to a medical facility.



Bagging of completely severed part

Do not attempt to clean severed parts and do not use antiseptic solutions.

If possible, notify medical facility that casualty is being transported with partially or completely severed parts.

Heat and Cold Exposures

Workers required to work in high temperatures or cold environments must take precautions against exposure.

A healthy worker acclimatizes to this exposure and can maintain a normal temperature by conserving heat in the cold and by dissipating heat when it is hot.

When a body sweats excessively to dissipate heat, the resulting loss of body salts and fluids causes a muscular reaction called heat cramps. Prolonged exposure to a hot environment causes heat exhaustion. When the temperature control mechanisms of the body fail, heat stroke results and the person may die.

Heat Exhaustion

Symptoms

- Pulse weak and rapid
- Breathing rapid and shallow
- Vision blurred
- Skin cold and clammy
- Nausea and vomiting.

Treatment

- Move out of the heat.
- Place at rest.
- Loosen tight clothing.
- Keep head low, raise legs and feet slightly.
- For cramps, give a glass of slightly salted water (add 1/4 teaspoon salt). Give as much as the casualty will take.
- Watch breathing; get medical help.

Heat Stroke

Symptoms

- Temperature of 42°C to 44°C
- Pulse rapid and progressively weaker
- Breathing noisy
- Often no perspiration in cases of non-exhaustion heat stroke
- Nausea and vomiting.

Treatment

- Sponge with cold water.
- Cover with wet sheets.
- Direct current of air around casualty by hand or electric fan.
- Obtain prompt medical aid.

See the chapter on heat stress for more details.

Cold Exposure

Exposure to cold can injure the surface of the body causing local tissue damage (frostbite). It can also cause general body cooling that can be fatal (hypothermia). Contributing factors include

- temperature
- wind velocity
- worker's age and physical condition
- degree of protection given by outer clothing or covering
- exposure to cold or icy water.

See the chapter on cold stress for more details.

Stay Warm

- Wear clothing that will maintain body heat without sweating. Several layers of light, loose-fitting clothing trap air and have greater protective value than one layer of heavy clothing.
- Cover your head. A warm hat liner is ideal for keeping your head and ears warm.
- Avoid tight-fitting boots. When practical, change boots regularly to allow each pair to dry completely. This will keep your feet a lot drier and warmer.
- Wear mittens instead of gloves when practical. This will keep your hands a lot warmer.

Stay Dry

Avoid wetness due to sweating, rain, or snow. Wetness contributes to heat loss.

Stay Safe

- Limit the length of time you spend in extreme cold conditions.
- Have someone check you for signs of frostbite.

Avoid Fatigue

Rest periodically in a sheltered location.

Avoid Tobacco

Nicotine decreases blood flow and increases the possibility of cold injury.

Avoid Alcohol

Because it dilates the blood vessels, alcohol causes additional heat loss.

Frostbite – Skin looks white, waxy, and feels numb. Freezing causes hardening.

- Warm frostbitten area gradually with body heat. Do not rub.
- Do not thaw hands or feet unless medical aid is far away and there is no chance of refreezing. Parts are better thawed in a hospital.
- If there are blisters, apply sterile dressings and bandage lightly to prevent breaking. Get medical attention.

Hypothermia

Caused when body temperature falls below normal during prolonged exposure to cold, it can develop quickly and be fatal.

Danger signs are shivering, slurred speech, stumbling, and drowsiness.

Condition is severe when shivering stops. Unconsciousness and stopped breathing may follow.

First aid for hypothermia must

- stop further cooling of the body
- provide heat to begin rewarming.

Treatment

- Remove casualty carefully to shelter. Movement or rough handling can upset heart rhythm.
- Keep the casualty awake.
- Remove wet clothing and wrap casualty in warm covers.
- Rewarm neck, chest, abdomen, and groin – but not extremities.
- Apply direct body heat or safe heating devices.
- Give warm, sweet drinks if casualty is conscious.
- Monitor breathing, give artificial respiration if needed.
- Call for medical aid or transport carefully to nearest facility.

Immersion Foot – Caused by wet cooling of the feet, over an extended period, at temperatures above freezing. It is most prevalent in persons who spend long periods with their feet in cold water or mud.

Immersion foot can be prevented by keeping the feet dry. Carry spare socks in a warm place, such as inside the jacket, and change them often to help prevent this condition.

Initially the feet are cold, swollen, and waxy, and may be numb. After warming, they may become red, swollen, and hot, and blisters may occur.

In advanced stages of immersion foot, gangrene may develop.

- Remove wet footwear and warm cold areas.
- Get medical aid.

Embedded Object

Do not attempt to pull out objects embedded in a wound. Pulling nails, splinters, or pieces of glass from wounds will cause more damage and will increase bleeding.

- Cover lightly with dressing without pressure on the object.
- Apply pressure around the wound and away from the embedded object.
- Get medical help as soon as possible.

Eye Injuries

Do not attempt to remove particles on the pupil or stuck to the eyeball.

- Remove loose particles with care using the moistened corner of a tissue.
- If that fails, cover the eye lightly with a dressing to prevent movement and transport casualty to a medical facility.
- Avoid rubbing the injured eye and causing further injury.

Unconsciousness

Loss of consciousness may threaten life if the casualty is face-up and the tongue has dropped to the back of the throat, blocking the airway.

- Make certain that the person is breathing before looking for the cause of unconsciousness.
- If injuries permit, place the casualty in the recovery position (Figure 2) with the neck extended.
- Never give anything by mouth to an unconscious casualty.

Fractures

A fracture is a break or a crack in a bone.

- Steady and support the injury. **Do not move the victim.**
- Dress the wound and control any bleeding.
- If casualty must be moved for safety, secure the limb with padded splints.
- Check for pulse. If none, get medical aid immediately.
- Reassure and keep casualty warm to prevent shock until help arrives.

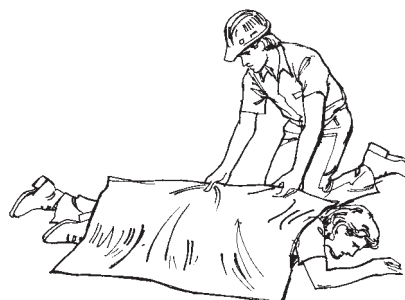


Figure 2