MIE - H&S - 03 - Laboratory First Aid

Laboratory First Aid

In the case of serious injury, call emergency 416-978-2222 and 9-911 FIRST

1. Breathing Aid

Determine if victim is conscious. Tap her/him on shoulder and yell: “ARE YOU OKAY?” If there’s no response, start aid at once.

The first step is to open up her/his airway. Put one hand under their neck and gently lift up, while with the other hand you gently push down on their forehead. This “head tilt” will move tongue away from the back of the throat.

Now check for air. Place your ear and cheek close to the mouth and nose. Listen and feel for return of air. At the same time, look for the chest to rise and fall.

Check for about 5 seconds. If there’s still no breathing, start mouth-to-mouth resuscitation.

Mouth-to-mouth Resuscitation

Maintaining a head-tilt, pinch the nose shut with the hand you had on the forehead; this will prevent leakage.

Now open your mouth wide, take a big breath, seal your mouth around her/his mouth, and blow 4 full breaths as fast as you can. You should take only enough time between breaths to lift your head slightly for better inhaling.

If this still doesn't start an air exchange, re-position the head and try again. After 4 more quick breaths, again monitor whether there is air exchange

If there is still nothing happening, change your rate to one breath every 5 seconds, and continue patiently until the person starts to breathe on their own.

Mouth-to-nose Resuscitation

The same steps apply. You still keep the victim in a head-tilt position with one hand on the forehead. With your other hand, close the mouth and blow into the nose. (Open mouth when you check for air.)

2. Poisoning aid

Conscious victim

1. Dilute poison by giving the person a glass of water or milk – if he/she is not convulsing.
2. Save the label or container of the suspected poison for identification. (If the victim vomits, save sample for analysis.)
3. Phone Poison Control Centre or physician.
4. If victim becomes unconscious, keep his/her airway open. Give artificial respiration if indicated. Call emergency (9-416 978-2222 and 9-911).

Unconscious victim

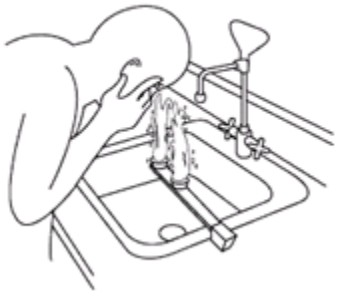
1. Maintain open airway.
2. Call emergency (9-416 978-2222 and 9-911).
3. Give artificial respiration and CPR if indicated.
4. Save container of suspected poison.
5. If patient has vomited, save sample.
6. Do not give fluids: do not induce vomiting in an unconscious person. If the victim is vomiting, turn the head so that material drains.

Convulsing victim

1. Call emergency (9-416 978-2222 and 9-911).
2. Do not attempt to restrain the victim: just position her/him in such a way that they will not injure them self by knocking against objects.
3. Loosen clothing at neck and waist.
4. Watch for obstruction of airway and correct it by head positioning. (Give artificial respiration and CPR if indicated.)
5. Do not force a finger between her/his teeth. Do not give fluids. Do not induce vomiting. (If the victim is vomiting, position the head so that the material drains.)
6. After the convulsion, place in prone position with head turned to allow fluids to drain.

Eye aid

Flush out with water at once. Pour luke-warm water gently into inside corner of the victim's eye and tilt head so that water flows across eyeball and off the face. Use a container of water or a tap that's 2 or 3 inches above eye. Do this for 15 minutes. (Victim can also use shower to wash eyes.) Call Poison Control Centre at 9-416 813-5900 or physician for additional advice.



Using Shower to wash the eyes

Emergency Eye Wash Station

Skin aid

Remove clothing and wash skin with large amounts of water. Call Poison Control Information Centre at 9-416 813-5900 or a physician for advice.

3. Bleeding aid

Direct Pressure

This is the preferred method, since it doesn't interfere with circulation:

Apply pressure by placing your palm on a dressing directly over the open wound. In an emergency, you can use your bare hand – but only until compress can be obtained.

The compress, a thick pad of cloth, will absorb blood and allow it to clot. Never disturb clots formed within the pad. If blood soaks through pad without clotting, don't remove it. Just add additional pads and continue pressing more firmly.

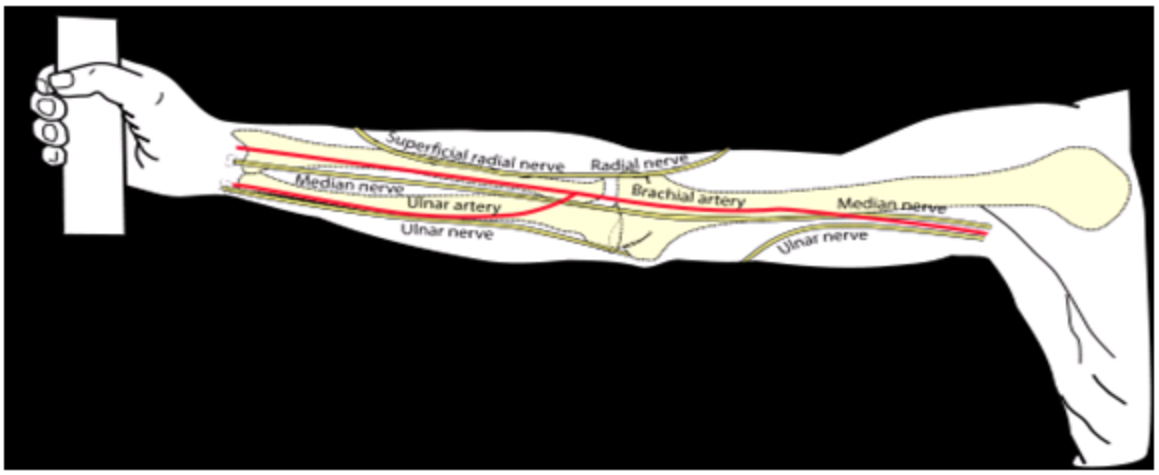
On most parts of the body a pressure bandage can be used to hold a pad on a severe wound and free your hands. Place centre of bandage directly over pad on wound. Keep steady pull on bandage to hold pad in place as you wrap both ends around body part. Then, tie knotting directly over pad.

Note: if there's no fracture, always elevate an open wound to the hand, arm or leg.

Pressure points

If the above doesn't stop the bleeding, use this method:

Apply pressure over "brachial" artery, closing it off by forcing it against arm bone. This point is located on inside of arm, in groove between biceps and triceps and midway between the armpit and the elbow.



To apply, grasp middle of victim's upper arm, with your thumb on the outside of their arm and your fingers inside. Press fingers toward thumb, using the flat surface of fingers not tips.

For severe bleeding from leg wound, apply pressure on "femoral" artery, forcing it against pelvic bone. This point is located front and centre on the diagonally slanted "hinge" of the leg, in crease of the groin area, where artery crosses pelvic bone on its way to the leg.

To apply, position the victim flat on their back, and the place heel of your hand directly over pressure point. Lean forward over your straightened arm. (You keep your arm straight to prevent strain.) If bleeding continues, use the flat of the fingertips and exert additional pressure on them with heel of other hand.

4. Shock aid

Shock from injury is also called "traumatic" shock. Body functions are depressed and death may result even if injuries wouldn't otherwise be fatal. Look for:

- Pale or bluish skin. (In dark-skinned victim, check mucous membranes inside mouth of under eyelids.)
- Moist or clammy skin.
- Rapid Pulse, often too faint to be felt at wrist.
- Increased breathing rate. Shallow if there's chest of abdominal pain.
- Weakness. If due to hemorrhage, victim may also be restless and anxious. Will complain of deep thirst.
- Retching or vomiting.
- In late stages, victim is apathetic and unresponsive: eyes are sunken and vacant: pupils dilated. Skin gets mottled look.

Position right

1. If any doubt about proper position based on injuries, keep victim lying flat. He/she may improve if feet are raised 8" to 12" – BUT if they have increased trouble breathing, or

experiences additional pain, lower them again.
2. For head injury, keep victim flat or propped up; NEVER have head lower than rest of body.
3. If unconscious, or with severe wounds of lower part of face and jaw, place them on side to let fluids drain.
4. If you suspect neck or lower spine injury, never move.

Prevent chill

Keep victim warm enough to prevent chilling, but never add **extra** heat – raising the body temperature in traumatic shock is harmful.

Give fluids

Give fluids by mouth if medical help won't be available in an hour -or-more. Give lukewarm water. Better yet, "salt-soda" solution (1 teaspoon salt, ½ teaspoon baking soda, in quart of water). Have them sip very slowly. NEVER give fluids if victim is unconscious, vomiting or convulsing, or has abdominal injury.

5. Fracture aid

A fracture is a crack or break in a bone. If the victim is conscious, they can provide clues. (They may have heard bone snap or feel a grating sensation.) You may note deformities, swelling, and discoloration.

CLOSED fractures are more common. Since they're "inside," accurate diagnosis requires x-ray. But if you even **suspect** a fracture, carry out aid to prevent further injury.

OPEN fractures are the result of a broken bone end that has torn through the skin and slipped back again. Open fractures are more serious because of tissue damage, bleeding and danger of infection. They get priority.

Treating fractures

1. Prevent motion of injured parts.

2. Maintain open airway (artificial respiration, if needed).

3. Elevate involved extremities, if possible.

4. Apply splints if there will be a delay in ambulance service or medical assistance. But never attempt to set a fracture or push a protruding bone back!

5. If you lift or move an unconscious victim, act as though there is an injury to their neck or

spine. If ambulance will arrive shortly, do not attempt to move.

If fracture is an open one, cut away clothing. Control bleeding by applying pressure through a large sterile or clean dressing. Never wash, probe or insert fingers. If bone fragment is protruding, cover entire wound with a large sterile bandage, compress or pad.

Splinting fractures

Splints on arms, legs or truck will immobilize injured part and decrease pain. After splinting, elevate limb slightly to reduce hemorrhage and swelling.

1. Emergency splints can be made from many things (newspapers, corrugated cardboard, yardsticks, or rolled-up blankets). Or use “human” splint. That is, tape or tie injured leg to healthy one. Or injured arm to chest, if elbow is bent. Or the injured arm to your side, if elbow is straight. ALWAYS put padding between injured and un-injured parts.

2. Splint should extend past joints on either side of fracture.

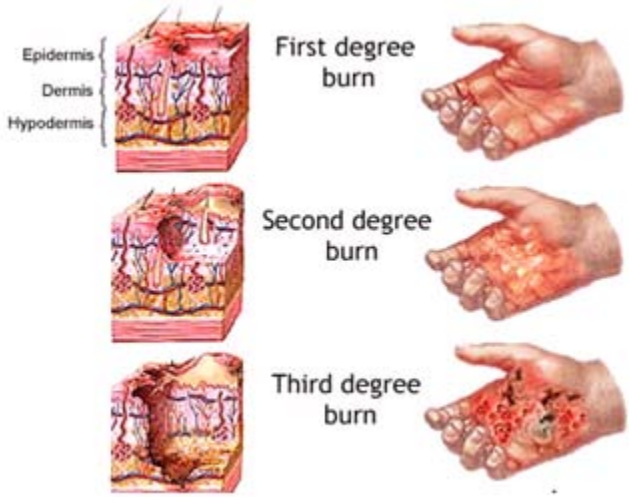
3. Splints may be held in place by strips torn from skirts, lab coats, large handkerchiefs, neckties, etc.

4. In arm fractures, check wrist pulse and inspect fingers often for swelling or blueness (means bandages are too tight). If victim complaints of numbness, tingling or inability to move fingers or toes, loosen ties at once (or risk nerve damage). Then re-apply.

5. Remember: victims can often move parts below fracture without pain – do not let them. Never test for fracture by having them move or walk. Do not let them move (or yourself move) their head if possible neck or spine injury is suspected.

6. In rare cases you may have to straighten and splint a bent limb. Place one hand above and one hand below fracture to support it. In leg fracture, have someone pull the end of the leg gently and steadily until splints are applied. Give aid for shock.

6. Burn aid



Burns are classified by depth (“degree”) of skin damage.

First-degree burns result from hot objects or scalding. Signs: redness or discoloration, mild swelling, pain.

Second-degree burns result from heavier contact with hot objects or flash burns from gasoline and kerosene. Signs: greater depth than first-degree burns; red or mottled appearance; blisters; a “wet” look. Usually hurts more than deeper burns because nerve endings aren’t destroyed.

Third-degree burns show deep tissue destruction: white or charred look: complete loss of all layers of skin.

First-degree aid

1. Use cold water applications or submerge burned part in cold water.

2. Apply a dry dressing if necessary.

Second-degree aid

1. Submerge part in cold water until pain subsides.

2. Apply freshly laundered clothes wrung out in ice water.

3. Gently blot dry.

4. Apply dry sterile gauze or clean cloth as bandage.

5. If arms or legs are affected, raise them.

6. NEVER break blisters or remove tissue. NEVER use an antiseptic preparation, ointment, or spray.

Third-degree aid

1. Do not remove adhered particles of charred clothing from burned area.

2. Cover burns with thick sterile dressings or freshly laundered sheets.

3. Keep burned hands elevated above level of heart. Keep burned feet or legs elevated (don't let victim walk).

4. Have victim with face burns sit up or prop them up. Keep her/him under constant observation for breathing issues. If problem develops, maintain open airway.

5. Do not submerge a large burned area or use ice-water. This may increase the risk of shock. But, you can apply a COLD PACK to face, hands or feet.

6. Quickly arrange transportation to hospital. If an ambulance can't come within one hour and the victim is conscious, give them a weak "salt-soda" solution to sip (it's 1 teaspoon salt, ½ teaspoon baking soda in quart lukewarm water).

7. Do not apply ointment, commercial preparations, grease or any other "remedy."

Chemical burn of skin

1. Quickly wash burn area with large amounts of water, using shower or hose for at Emergency shower and eye wash

least 5 minutes. Remove clothing from areas involved.

Emergency shower and eye wash

2. If first aid directions for the specific chemicals are handy, as on reagent bottle label, follow them.

3. Apply a dressing bandage and get medical aid.

Recommended Reference:

American National Red Cross Manual. “Standard First Aid and Personal Safety.”

Please proceed to take the Test for this section. Answering 4 out of 6 questions correctly is a pass and you may re-take the test if necessary (up to 3 times).