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### Cheat Sheet

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<th>Assessing state of consciousness</th>
<th>History of trauma</th>
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<td><strong>Events that led to incident</strong></td>
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<table>
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<th>Evaluation of pain</th>
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<td><strong>Provoqued and palliated by</strong></td>
<td><strong>Position</strong></td>
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<td><strong>Quantity and severity of the pain</strong></td>
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<td><strong>High (elevate legs)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Eliminate the cause</strong></td>
</tr>
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### Neuromuscular primary evaluation

<table>
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<tr>
<th>L’CAB</th>
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<tbody>
<tr>
<td><strong>Color</strong></td>
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<tr>
<td><strong>Chaleur (warmth)</strong></td>
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<td><strong>Motricity</strong></td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
</tr>
</tbody>
</table>

| L’ secure environment and ask for help |
| **Compressions (X 30)** |
| **A : opening of airway** |
| **B : ventilation (X2) : mouth to mouth, mouth to nose, mouth to mask** |

| **Adult : two hands** |
| **Child : one hand** |
| **Baby : two fingers** |
CVA symptoms - FAST:

Face : Looks uneven?
Arms : One arm hanging down?
Speech : Slurred speech?
Time : Call 9-1-1 now

**To do if you are alone**

<table>
<thead>
<tr>
<th>Unconscious Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult, child or baby conscious, clogged airway</td>
<td>Start 2 minutes of CPR</td>
</tr>
<tr>
<td>Adult unconscious (did not see what happened)</td>
<td>Unconscious = 911</td>
</tr>
<tr>
<td>Child/baby unconscious</td>
<td>Start 2 minutes of CPR</td>
</tr>
</tbody>
</table>

Poison Control Centre

1-800-463-5060

Soins D’urgences Cardiaque :

http://alve79.wix.com/soinurgencecardiaque
Rescuer VS Health Professional

**Rescuer**: Any person on an emergency. May have followed or not a first aid training (eg public, parent, friend, etc.)

**Health professional**: Anyone working in the health field. This person has an advanced care training and applied in the work environment (eg doctors, nurses, paramedics, etc.)

Objective of Rescuer

- Do not put your life in danger
- Help the victim (yourself or through health care services)
- Keep the victim alive until health care services show up
- Avoid the aggravation of the victim
- Assist with the recovery of the victim.

Communication with emergency service

The emergency medical system in North America is mainly 911. Some distant suburbs or regions may proceed differently via a center of local health department or by a first responder service. Key elements to communicate:

- The desired service (ambulance, fire, police, etc.)
- Our name and function
- The summary of the incident / accident
- The address, cross street
- The number of victims
- The age and sex
- The status of the victim (breathing capacity)
- Ask the arrival time of emergency services
- Hang up when the dispatcher will ask for
Legal aspects

Quebec Charter of Human Rights and Freedoms
Assistance to a person whose life is in peril
(Québec) L.R.Q., chapter C-12

Every person must come to the aid of anyone whose life is in peril, either personally or calling for aid, by giving him the necessary and immediate physical assistance, unless it involves danger to himself or a third person, or he has another valid reason.

Under the Quebec Charter of Rights and Freedoms (art. 2), "Every human being whose life is in peril has a right to assistance". To assist a person whose life is in danger is therefore part of the duties of every citizen. However, the Charter does not require to do so at the risk of his life.

1975, c. 6, a. 2.

QUEBEC’S CIVIL CODE
The Good Samaritan rule
L.Q., 1991, c. 64.

People occasionally hesitate to help others for fear of aggravating an injured person’s condition and exposing themselves to a damage suit. Under a special provision in the Civil Code of Québec (Book Five, art. 1471), anyone who in good faith helps a person in danger is protected from legal proceedings. An individual may not be found liable for injury caused while assisting a person in danger unless the injury is a result of intentional or gross fault.

Act to Promote Good Citizenship
L.R.Q., chapter C-20, article 2

A rescuer who sustains an injury or, if he dies therefrom, a dependant, may obtain a benefit from the commission.
Blood

Blood contains red blood cells for transporting oxygen and carbon dioxide, white blood cells to counter infections, and plasma (the fluid surrounding these cells) responsible for hydration of the body.

Capillary

Fine branching blood vessels that form a network between the arterioles and venules. They transfer oxygen and other nutrients from the bloodstream to other tissues in the body. They also collect carbon dioxide waste materials and fluids for return to the veins.

Veins

They bring the blood back to the heart. Blood pressure inside the veins is very low (about 4mmHg).

Arteries

They bring the blood from the heart to the organs and tissues. The pressure inside the arteries is very high because contractions of the ventricles (about 120mmHg).

Heart

The heart is the pump of the body. It is in the middle of your chest and is about the size of your fist. It is made up of 4 chambers (2 atria et 2 ventricles). It contracts about 70 times per minute to generate a flow of 4 to 6 liters per minute. The contraction comes from the nervous system integrated in the heart. The sinoatrial node, located at the top of the right atrium, is the heart's "natural pacemaker": it generates the electrical impulses to obtain the contractions.
Lungs

There are two lungs, made up of two main bronchi that subdivide into bronchioles, ending with bags called alveoli. The alveoli enable the diffusion between the air breathed and the blood. Oxygen is essential to produce energy within our body cells. Carbon dioxide (CO2) is the waste that comes from the cells energy production. When breathing in (inhalation), the oxygen (21%) contained in the air diffuses into the blood and when breathing out (exhalation or expiration), the carbon dioxide (CO2) contained in the blood diffuses into the alveoli. This process is called ventilation. Note that during expiration, oxygen (16%) also come out, enabling CPR. The cardiac and/or pulmonary arrest stops those processes that are essential for life: hence the need to start CPR.
Primary evaluation
L’CAB

Secondary evaluation

Vital signs (every 5 minutes if victim is not stable)
- Breathing (Quantify and evaluate quality)
- Pulse (Quantify and evaluate quality)
- Blood pressure

Physical evaluation

Rule:
✓ Examine the victim from head to toe
✓ Examine from the part closer to the ground up to the higher one
✓ Immobilize the distal articulation (farthest from body) then the proximal articulation (closest to body)
✓ Stabilize the wounds immediately and keep going

Head, neck, thorax, abdomen, pelvis, legs, arms and back

Verify:
✓ Presence of pain
✓ Deformation
✓ Presence of liquid
✓ Crackling
✓ Resistance

SAMPLE (medical traumatic history)

PORSCHE (treatment of shock)
Cardiovascular diseases

Angina:

Angina is the condition when the heart does not get irrigated (blood and oxygen) properly because of a partial blockage of one or more coronary arteries. Can be the result of atherosclerosis (buildup of fatty deposits that block the flow of blood) or from the contraction of coronary arteries caused by the use of tobacco or drugs (cocaine, amphetamines), extreme emotional stress or exposure to cold.

Myocardial infarction:

The myocardial infarction (heart attack) is a complete blockage or a rupture of a coronary artery. Can be the result of atherosclerosis or weakening of an artery’s wall (due to high blood pressure or birth defect). Symptoms are present after intense physical effort, important stress or the consumption of drugs (stimulants like cocaine).

Signs and symptoms:

- Pain, pressure or tightness in the chest or shoulder or left jaw
- Hard to breathe, shortness of breath
- Red face, intense sweating

Treatment:

- Primary evaluation: L’CAB (911)
- SAMPLE
- Secondary evaluation (PORSCHE)

Specific treatment:

- Comfortable position (semi-sitting)
- Slack the clothes around the neck and chest
- Help the victim to take the angina medication (Nitroglycerine):
  - If using a spray, eject one dose into ambient air to make sure the pump works
  - Put the nitro under the tongue, in accordance with the posology.
Transient ischemic attack (TIA)

TIA is the consequence of atherosclerosis (buildup of fatty deposits) that partially blocks the flow of blood into the brain’s arteries.

Cerebrovascular accident (CVA) or Stroke

CVA is a complete blockage of a brain’s artery. Can be caused by atherosclerosis or a rupture of the artery.

Signs and symptoms:

- Weakness, numbness, or progressive or sudden tingle in the face, an arm or a leg.
- Sudden or temporary loss of speech and/or difficulty understanding
- Sudden or progressive loss of vision and/or double vision
- Sudden or progressive headache, intense and unusual
- Sudden loss of balance

Treatment:

- Primaire evaluation: L’CAB (911)
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORSCHE)

Consequence of oxygen deprivation to the brain and no CPR

<table>
<thead>
<tr>
<th>Time without oxygen</th>
<th>Description of lesions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 minutes</td>
<td>Lesion to the brain</td>
</tr>
<tr>
<td>4-6 minutes</td>
<td>Irreversible lesion to the brain</td>
</tr>
<tr>
<td>6-10 minutes</td>
<td>Permanent and serious lesion to the brain</td>
</tr>
<tr>
<td>10 + minutes</td>
<td>Death of brain tissues</td>
</tr>
</tbody>
</table>
Dislodging and object from a person’s airway

These techniques are used to eject an object out of the larynx or trachea. Pressure created on the lungs compress the air inside to eject the foreign object in the mouth. Blockage of the airway is the main cause of cardiac arrest (inability to bring oxygen to organs) for the children and babies. A fast and efficient dislodging in the first two minutes (from the beginning of the blockage) is the most effective treatment.

**Signs and symptoms**
- Cough, choking
- Cyanosis (bluish lips / cheeks / nails)
- Panic

**For adults**
- Can the victim talk? Move away tables, chairs, etc. If possible, encourage the person to cough to eject the object.
- Position yourself behind the victim: hold his/her hips, and put one of your legs (bent) between the victim’s legs.
- Start the thrusts as soon as the victim cannot talk
- “J” abdominal thrusts or Hemlich, or thoracic thrusts for pregnant women and obese persons
- Keep going until object is ejected or until victim is conscious.

**For babies**
- If coughing, let the baby cough to eject the object.
- Tap 5 times in the back, then do 5 thoracic thrusts with fingers, then look inside the mouth.
- Repeat until object is ejected or until victim is conscious.

When victim is conscious, start CPR then call 911.
HEIMLICH MANEUVER

Abdominal thrusts push the diaphragm into the rib cage.

The diaphragm increases pressure in the rib cage.

The overpressure caused by the diaphragm pushes on the foreign object to eject it.
ABDOMINAL HEIMLICH MANEUVER

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>DETAILS</th>
</tr>
</thead>
</table>
| 1. Ask the victim if he/she is choking.  
  OR  
  Ask the victim if he/she is breathing. | ✓ Victime nods, can’t talk.  
  ✓ Victim shakes head, can’t talk |
| 2. Reassure the victim, saying you know how to help. | ✓ Make sure you support the person properly in case the victim becomes unconscious (will fall on your thigh) |

CONSCIOUS VICTIME, STANDING OR SITTING

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Position yourself behind the victim. If victim is sitting, go on your knees. If victim is standing, put one foot between the victim’s feet and bend your knee.</td>
<td>✓ Do not use the belt as reference</td>
</tr>
<tr>
<td>2. Put your thumbs on the victim’s hips to locate the hipbone.</td>
<td>✓ The index fingers should join at the belly button or the periumbilical area.</td>
</tr>
<tr>
<td>3. Join your index fingers in the front of the abdomen.</td>
<td>✓ Put the thumb inside the fist</td>
</tr>
<tr>
<td>4. Close your fist with one hand.</td>
<td>✓ Each thrust should be a separate motion and should be done with the goal to eliminate the blockage quickly and efficiently.</td>
</tr>
<tr>
<td>5. Hold your fist with your other hand and push it into the abdomen of the victim, making quick thrusts towards the inside and up (like a “J”).</td>
<td></td>
</tr>
</tbody>
</table>
| 6. Repeat the thrusts harder and harder every time until the object is ejected.  
  OR  
  Until the victim becomes conscious. | |
UNCONSCIOUS VICTIM

To clear the windpipes of an unconscious victim, do the CPR. The *ABC steps* for this victim will not change. The differences are:

- During the first insufflation, if the thorax does not raise, bend the head forward then move the head back to give a second insufflation (*if the airways are really blocked during the second insufflation, the thorax will not raise*).
- After each cycle of 30 compressions, check inside the mouth (*without moving the head, lowering the jawbone*) to see if the object got ejected.

**ALERT**

- *The goal of the CPR on an unconscious victim with blocked airway is to unclog, not to find the object.*
- *Airway is considered unclogged when 2 insufflations raise the thorax.*

As soon as the airways are unclogged, evaluate the breathing of the victim, same as when performing the *ABC*:

- If the victim breathes, put the victim in the recovery position.

- If the victim do not breathe, keep performing CPR.
THORACIC HEIMLICH MANEUVER
(For pregnant woman or when you cannot perform abdominal thrusts)

**ACTIONS**

1. Position yourself behind the victim. If victim is sitting, go on your knees. If victim is standing, put one foot between the victim’s feet and bend your knee.

2. Put your arms under the armpits of the victim.

3. Close your fist with one hand and position it between the victim’s breasts.

4. Hold your fist with your other hand and push it into the thorax of the victim (thoracic compression).

5. Repeat the thrusts harder and harder every time until the object is ejected.

**DETAILS**

- Make sure you support the person properly in case the victim becomes unconscious (will fall on your thigh).

- Put your thumb inside the fist.

- Each thrust should be a separate motion and should be done with the goal to eliminate the blockage quickly and efficiently.

**VARIATION ON HEIMLICH MANEUVER**

1. If the rescuer’s arms are too short to perform the thoracic technique:

   - Put one arm under the armpit and the other over the shoulder of the victim.
2. If the victim does not let the rescuer get into position in the back (victim is too agitated) or if there is not enough room behind the victim:

- Position yourself in front of the victim, join both hands onto the sternum of the victim and make direct compressions.

  OR

- Put your fist, with the thumb inside, on the belly button. The second hand takes support on the victim. With your fist make “J” motion abdominal thrusts.

3. If the victim is in a wheelchair, or if the victim is too tall so you had to make him/her sit on a chair:

- Position yourself behind the chair and perform the Heimlich maneuver, either abdominal or thoracic.
Automated External Defibrillation (A.E.D)

**Theory of defibrillation**

In the first 10 minutes, ventricular tachycardia (V-tach or VT, 150-300 beats per minute) and ventricular fibrillation (V-fib or VF, 250-600 beats per minute) are the two most common arrhythmias. The heart beats too fast to provide enough oxygen to the cells, so you need to stop it so that the sinoatrial node can take over and restore the normal rhythm. Is it dangerous to perform heart massage when it is beating? No!

Those arrhythmias are deadly because at a high rate, ventricles cannot fill up sufficiently. Then the blood pressure drops, blood flow is almost stopped. The heart’s cells then lack oxygen (hypoxia), they send distress signals: they depolarize. Hypoxia then quickly causes permanent necrosis of the heart’s tissues.

From the moment the heart is in VT or VF, chances of survival go down by 10 % per minute. Hence the need to use the defibrillator as quickly as possible to shock the heart and restore the normal rhythm.

**Ventricular fibrillation (250 – 600 beats per minute)**

![Ventricular fibrillation](image)

**Ventricular tachycardia (150 – 300 beats per minute)**

![Ventricular tachycardia](image)

**Asystole**: No cardiac electrical activity (flatlining). Hence no heart beat and no blood flow.
Definitions :

- Depolarization: Contraction: Systole
- Repolarization: Relaxation: Diastole

- Wave PQRST:
  - Wave P: Contractions of atria
  - Wave QRS: Contraction of ventricles and relaxation of the atria
  - Wave T: Repolarization of ventricles

E.C.G during defibrillation

Shock

Sinus rhythm  Ventricular fibrillation  Sinus rhythm
Precautions before using the E.A.D.

- Ointment and drug stamps/patches (ex: Nicoderm)
- Oxygen enriched atmospheres: hyperbaric chamber, oxygen tent, O2 cylinder
- Vehicules, surroundings, moving victims
- Wet or electrically conductive surfaces
- Accidental electrical shocks
- Pacemaker, implanted defibrillator (at least one inch from casing)
- Shave the hair on the chest
- Interference from electrical/electromagnetic equipment (ex: fluorescent tube)

E.A.D. Kit

- E.A.D.
- Battery
- 2 packs of electrodes
- 2 razors
- 1 pocket mask
- 1 towel
- 1 pen and 1 note block
- Gloves
- Paremadic scissors

Pediatric

Set on pediatric mode

- Key
- Electrode

Anterior-posterior electrode

- 8 years old and younger
- 25 kilos and lighter
**USING BAG VALVE MASK AND MASSAGE BOARD**

Put the board on the opposite side. Turn the victim on the side.

Put the board at a 45 degrees. Put the victim on the back.

Clear the airway with your non dominant hand by pulling on the jawbone.
Position your dominant hand under the bag valve mask to keep a good stability.
Circulatory shock, a.k.a. shock

**Definition**: Shock is a condition that occurs when blood flow is too low, so cells and organs are not getting enough oxygen and nutrients to function properly. Many organs can be damaged as a result, therefore it can lead to death. There are many types of shock including hypovolemic shock (bleeding, serious burns), neurogenic shock (CVA, TIA, head injury, spinal chord injury), cardiogenic shock (angina, heart attack) and thermic shock (hypothermia, hyperthermia).

**Signs and symptoms**:
- Pale, cool, moist skin
- Agitation, weakness
- Anxiety
- Weak and rapid pulse
- Fast but shallow breathing

**Treatment**:
- Primaire evaluation (L’C.A.B)
- Secondaire evaluation
- SAMPLE
  - Signs et symptoms
  - Allergies
  - Meds
  - Past medical history
  - Lunch (last meal)
  - Events that led to the incident
- PORSCHE
  - Position (comfortable)
  - Oxygen
  - Reassure
  - Signs (monitor vital signs)
  - Cover (with blanket)
  - High (elevation of legs)
  - Eliminate the cause
Oxygen Therapy

Oxygen is essential to produce energy within the cells. Therefore the lack of oxygen will impair the cell’s operation. Hypoxemia (reduction of oxygen level in the blood) leads to hypoxia (reduction of the cell’s oxygenation), ultimately leading to necrosis (death of tissues) faster or slower depending on the affected organ. This can happen in a limited zone (ex: CVA, heart attack) or widespread (ex: shock, choking).

Commonly called inhaler or oxygen tank, the oxygen cylinder can provide to the victim a higher oxygen concentration than the one found in ambient air. Depending on the conditions, this device can give a better chance of survival, help reduce the damages, or treat the victim.

Legal aspect
Using medical oxygen in an emergency is a medical act just like defibrillation or tracheotomy. Therefore it is necessary to get a diagnostic then a prescription before providing medical oxygen. However, a procedure was implemented so that the general population can provide medical oxygen without any diagnostic nor prescription. It is understood that anybody can provide medical oxygen to someone who needs it. It is up to the rescuer to determine if oxygen is necessary; when in doubt, use it. However, once medical oxygen is in use, the rescuer has the legal obligation to alert the emergency services so that they can come and properly assess the victim. It is prohibited at all times to close the oxygen supply. Only health professionals can do so. Shutting off the oxygen supply is the same as determining that the victim is out of danger. But depending on situations, only specialized equipment and/or health professionals can properly make that assessment.
Wounds

Definition: Wounds are skin lesions. Skin is the natural protection against infections. When it is damaged, pathogenic agents (bacteria, fungi, molds, viruses) can get inside the body. Therefore the wound has to be treated to prevent a possible contamination. Immunocompromised persons, young children, elderly persons and diabetic persons are more at risk to develop an infection.

Types of lesions
- Laceration: a rough, jagged tear
- Incision: a surgical cut made in skin with a sharp object (knife, scalpel)
- Perforation: often very deep, made by a gunshot, or a pointy or blunt object
- Avulsion: when the skin is partially detached
- Amputation: limb is partially or completely detached
- Scratch ou abrasion: result of rubbing against an abrasive surface
- Contusion ou bruise: internal bleeding in a small area

Treatment
- L’CAB (primaire evaluation)
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORSCHE)
- Disinfect skin
- Apply a bandage
- May require stitches
- Amputation
  - Put the limb in a plastic bag with a moistened swab.
  - Put the bag in a cold place (ice box, refrigerator, ice bag)
- Gunshot wound: Treat like a spinal injury, find the entrance and exit holes.
BURN BETWEEN FINGERS

1- Put gauze between fingers

2- Cover fingers with gauze
1- Put a gauze on the burn. With an elastic bandage or guaze, wrap two times around the arm.

2- Wrap around up to the wrist to compress the wound.

3- Wrap hand up to the wrist.
3- Repeat the process, going away from the wrist.

4- Finish with two turns around the wrist.
Hemorrhage (bleeding)

**Definition**: An escape of blood from a ruptured blood vessel, especially when profuse.

**EXTERNAL**

**Capillary bleeding** (most common and least severe)
- Often because of skin contact with an abrasive surface.

  **Signs and symptoms**:
  - Slight pain
  - Blood pearls on the skin

  **Treatment**:
  - Sanitize with water and soap or benzalkonium or Baxedin (avoid alcohol pads due to burns they generate)
  - Apply a plaster

**Venous bleeding**
- Usually happens because of a small cut or laceration (ex: paper cut, hit on the nose)

  **Signs and symptoms**:
  - A continuous flow of blood
  - Pain

  **Treatment**:
  - L’CAB (Primary evaluation)
  - Secondary evaluation (SAMPLE)
  - Secondary evaluation (PORSCHE)
  - Apply pressure directly on the wound with a gauze or clean white fabric
  - Elevate the limb higher than the heart
  - Let the limb rest on a surface (not in contraction)
  - Put ice on the painful areas
  - Dressing
  - PORSCHE
Arterial bleeding (Most severe but least common)

- Often the result of a serious trauma (ex: car accident, knife wounds, gunshot wounds, significant fall)

Signs and symptoms:

- Blood squirts, follows heart beat
- Intense pain
- Weakness, dizziness, thirst, nausea, rapid but weak pulse, skin is moist, pale and cool

Treatment:

- Treatment of venous bleeding +
- Apply pressure and ice on the artery (upstream)
- 911

INTERNAL

Bruise

- Often following a blow or when the skin is pinched (without a tear)

Signs and symptoms:

- Pain
- Skin is blue
- A slight bump can appear immediately or shortly after

Treatment:

- Ice

Internal bleeding

- Often following a violent blow, big blood vessels (veins or arteries) could be ruptured and cease to feed affected organs.

Signs and symptoms:

- Very painful
- Skin rapidly turning blue on a large surface
- Skin is firm in the affected area
- Weakness, dizziness, thirst, nausea, rapid but weak pulse, skin is moist, pale and cool

Treatment: L’CAB, SAMPLE, PORSCHE and 911
HAND BLEEDING

1- Apply gauze

2- Put a roll of gauze in the hand

3- Put a triangular bandage on the wrist
HAND BLEEDING

4- Cross over the hand

5- Cross on the fingers

6- Tie to the wrist
Bone fracture

**Definition**: Could be partial (crack) or complete (fracture). Fracture can be single, multiple or fragmented.

**Signs and symptoms***:**
- Pain
- Swelling, deformation
- Discoloration (blue)
- Hard to move the affected area
- Bone sticking through the skin (open)
- Tear in the skin

**Treatment**:
- Ask the victim not to move
- Do not move the limb
- Primary evaluation: environment
- SAMPLE
- Secondary evaluation
- PORSCHÉ

**Specific treatment**
- Stabilize the limb yourself or ask the victim to do it
- PORSCHÉ
- Cover the wounds with gauze
- Cover open fractures with gauze and a donut dressing
- Apply ice on the deformation to counter pain and swelling
- Verify CCMS (Color, Chaleur/warmth, Mobility and Sensitivity), pulse and blood pressure (using capillary refill time technique)
- Immobilize the limb: immobilize above and below the fracture and the joint before and after the fracture
- Verify CCMS (Color, Chaleur/warmth, Mobility and Sensitivity), pulse and blood pressure (using capillary refill time technique)
- PORSCHÉ after the splint

***Signs and symptoms are similar to: a sprain, a strain, a luxation or a dislocation. A doctor needs a radiography in most cases to make the diagnostic. In doubt, immobilize and advise the victim to see a doctor or call 911.
SIMPLE ARM SLING

1- Put the triangular bandage under the arm of the victim, keeping the 90° corner under the elbow

2- Lift the inferior 45° corner onto the shoulder
3- To close the sling and stabilize the arm, roll the elbow’s corner and put a safety pin or tie a knot

4- Tie the other two corners around the neck. You can also add a cushion for improved comfort
TUBULAR SLING FOR UPPER LIMBS

1- Like the simple sling, put the bandage under the limb, keeping the 90° corner under the elbow of the injured limb

2- Lift the 45° corner up towards the elbow
3- Join both ends and twist them to stabilize the elbow

4- Twist the remaining (or keep a larger strip to improve comfort) and tie the loop on the shoulder

5- To solidify the sling, add a strip under the elbow and one in the middle of the arm and tie up.
1- To fill in the wrist’s cavity and depending on the fracture, put a roll of gauze into the hand

2- Use an elastic roll to stabilize the arm, wrist and hand starting from the proximal part (closer to body) to the distal part (farther from body)

OR

Use triangular bandages to stabilize the limb
ELBOW, HUMERUS, CLAVICLE OR SHOULDER FRACTURE

1- Wrap around the wrist with the triangular bandage, then pass it in the back

2 – Tie a knot on the side

3 – To solidify, add a triangular bandage at the elbow or forearm
FINGERS FRACTURE

Best technique, to make sure the joints will not move

Option
FOREARM FRACTURE

Pad out around the forearm and tie up
INSTALLATION OF CERVICAL COLLAR

1- Stabilize

2- Measure distance between the trapeze and the jawbone with fingers

3- Adjust the collar according to measurement

4- Press firmly on the safety locks
INSTALLATION OF CERVICAL COLLAR

5- Insert collar about one third of its length

6- Close with the Velcro®

Do all that while always keeping the head still!!! Your knees can be used instead of hands whenever necessary.
Asthma

Definition:

1. Bronchial hyperresponsiveness: The bronchi are hypersensitive to multiple allergens (pollen, dust, mold, cigarette smoke, pet hair, etc.).

2. Bronchoconstriction: Bronchi reduce their diameter to prevent the allergen to penetrate into the alveoli.

3. Hypersecretion: The glands produce large quantities of mucus to neutralize allergens, they get expelled when coughing.

Signs and symptoms:

- Increase of breathing rate
- Increase of heart rate
- Cyanosis (bluish lips, cheeks and nails)
- Excessive sweating
- The skin of the chest caves in between the ribs, below or above the ribs with each breath
- Choking sensation
- Fear and anxiety

Treatment:

- Primary evaluation (L’C.A.B)
- Loosen the clothes
- Help using the bronchodilator if prescribed (usually 2 inhalations of Ventolin® 100mcg)
- Secondary evaluation (PORSCHE)
Hyperventilation

**Definition**: Hyperventilation is when the breathing rate is higher than 20 per minute for adults. It can be considered normal after moderate to intense physical exercise, fever, trauma or medical conditions. It is abnormal in case of phobia.

**Signs and symptoms**
- Breathing rate is higher than 20
- Rapid pulse
- Dizziness
- Nausea and vomiting
- Shaking, tingle
- Headaches

**Treatment**
- Primary evaluation (L’C.A.B)
- Secondary evaluation (SAMPLE)
- Breathe with pinched lips
- Try to calm and comfort
- Breathe with your hands in front of your mouth at the same time as the victim
**Epilepsy**

**Definition**: Epilepsy is a neurological disorder marked by sudden recurrent episodes of sensory disturbance, loss of consciousness, or convulsions, associated with abnormal electrical activity in the brain. A person that is not epileptic can live a seizure in case of high fever, brain cancer, brain injury, drug overdose or the use of medication. Epilepsy is defined as a result of the repeated seizures (more or less frequently, more or less lengthy) that occur in the life of an individual.

**Signs and symptoms**
- Sudden screaming with stiffening of the body and loss of consciousness often causing a fall.
- Noisy breathing and foam at the mouth
- Shaking of the body (generalized tremors of the limbs and body)
- Loss of control of bladder and bowel
- Irregular breathing or stops breathing momentarily
- Cyanosis (blue lips, cheeks, nails)

**Treatment**

**During the seizure**
- Put a soft object under the head to protect it
- Do not restrain the person except in case of strangulation or possible injury
- Loosen clothes, necktie

**After**
- L’CAB (911)
- Secondary evalution (SAMPLE)
- Secondary evaluation (PORCHE)

***Do not put anything in the mouth: teeth could get damaged and pieces could clog the airway. It is physically impossible to swallow our tongue. Sometimes, the tip of the tongue could be cut by the teeth.***
Définition: A concussion is an injury to the brain that results in temporary loss of normal brain function. It usually is caused by a blow to the head. Can also occur when the head and upper body are violently shaken.

Signs and symptoms
- Nausea and vomiting
- Variable consciousness or loss of consciousness after the impact
- Rapid and superficial breathing

Treatment
- L’CAB
- Hold the head (ask the victim not to move)
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORCHE)
- Cervical collar and immobilize on spine board
Diabetes

**Definition**: Type one diabetes is contracted at birth or during childhood. It is due to a deficiency of insulin, a hormone produced by the pancreas. Insulin opens a door to enable sugar to get inside the cell. For type one (1) diabetes, insulin injection is needed. Type two diabetes usually occurs around late adulthood. The problem is with the cell pores that are distorted, making it harder for insulin to enter the cells.

**Signs and symptoms**: 

<table>
<thead>
<tr>
<th>Hypoglycemia</th>
<th>Hyperglycemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low blood sugar</td>
<td>High blood sugar</td>
</tr>
<tr>
<td>Blurry vision</td>
<td>Blurry vision</td>
</tr>
<tr>
<td>Extreme fatigue and paleness</td>
<td>Extreme fatigue and paleness</td>
</tr>
<tr>
<td>Sweat</td>
<td>Dry mouth</td>
</tr>
<tr>
<td>Headache</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>Hunger</td>
<td>Extreme thirst</td>
</tr>
<tr>
<td>Mood swings</td>
<td>Frequent urination</td>
</tr>
<tr>
<td>Dizziness</td>
<td></td>
</tr>
<tr>
<td>Tremors</td>
<td></td>
</tr>
</tbody>
</table>

**Treatment**:  

- L’CAB  
- Secondary evaluation (SAMPLE)  
- Secondary evaluation (PORSCHE)  
- Do a blood sugar test and help victim to inject Glucagon or Insulin if needed  
- In doubt, give insta-glucose or 5 packs of sugar or fruit juice.
Allergy and intolerance

Intolerance

inability to properly metabolize or absorb a substance. The reactions will be related to the digestive system: abdominal cramps, diarrhea, vomiting, bloating (eg lactose).

Allergy

An allergy is defined by an abnormal and exaggerated immunological reaction by the body. Does not affect most people. Allergies can be local, general or anaphylactic (insect bites, seafood, peanuts, etc.) It is important to recognize anaphylaxis and know the deal with it. It is a question of life or death.

Signs and symptoms (anaphylactic shock) :

- Difficulty breathing or swallowing, respiratory sounds
- Rapid pulse and breathing
- Cyanosis (lips, cheeks, nails bluish color)
- Itching
- Cough
- Swelling of the throat, lips and tongue
- Metallic taste or itching in the mouth
- Feeling hot, redness of the skin
- Stomach cramps, nausea, vomiting
- Decreased blood pressure
- Pale
- Weakness

Treatment :

- L’CAB (911)
- Secondary evaluation (SAMPLE)
- Loosen the clothes
- Épipen™ or Allerject™ or Benadryl / Epinephrine
- PORSCHE
EPIPEN INJECTION™

Two dosages: 0.3 mg adult – Regular, YELLOW label
0.15 mg child (15 to 30 kg) – GREEN label

USAGE:
1. Hold firmly, orange tip downward.
Remove the blue safety cap by pulling it up. Do not bend or twist.
2. Swing and push orange tip firmly into mid-outer thigh until you hear a “click.” Hold on thigh for several seconds.

IMPORTANT:

A person who has suffered an anaphylactic shock must be transported to a hospital and placed under observation for 24 hours. That person may make a second reaction in the following hours.
ALLERJECT™ INJECTION

Two dosages: 0.3 mg adult – Regular, RED outer case
0.15 mg child (15 à 30 kg) – Kids, BLUE outer case

Allerject® contains an electronic voice instruction system to help guide through the injection. If the voice instructions do not work, the auto-injector will still work, using these instructions.

USAGE:

1. Pull Allerject™ from outer case
2. Pull off RED safety guard
   TO AVOID AN ACCIDENTAL INJECTION, DO NOT TOUCH THE BLACK BASE (WHERE THE NEEDLE COMES OUT)
3. Place the BLACK end against the middle of the outer thigh (through clothing if necessary), then press firmly and hold for 5 seconds.
   ONLY INJECT INTO THE MIDDLE OF THE OUTER TIGHT (UPPER LEG)

NOTE: Allerject® makes a distinct sound (click and hiss) when you press it against the leg. This is normal and indicates it is working correctly.
Poisoning et intoxication

**Definition:** Substance consumed (voluntarily or not) can affect the biological system or cause death if it enters the body. The level of intoxication depends on the substance (eg gas), the amount ingested (eg alcohol), the absorption type (inhalation, ingestion, injection or transcutaneous) and elapsed time. The age, sex, weight, etc. are also factors to consider.

**Signs and symptoms:**
- Difficulty breathing
- Fast breathing and heart rate
- Nausea, diarrhea and vomiting
- Dizziness, somnolence
- Burning at the route of absorption, itching, rash
- Change of mood or state of consciousness, restlessness or lethargy
- Dried mouth or excessive saliva
- Expansion or contraction of the pupils
- Diaphoresis (extreme sweating)

**Treatment:**
- L’CAB
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORCHE)
- Call the poison control centre (1-800-463-5060)

**Specific treatment:**
- Keep vomit
- Find the substance used, the quantity and the time elapsed
- Clean the contaminated area with water for 15 minutes
- If powdered product, remove the maximum and flush
- Remove contaminated clothing has not merged with the skin
- Induce vomiting if the emergency medical service or poison control center asks you to do so
Hyperthermia

**Definition:** Hyperthermia is the rise of body temperature above normal and commonly known as fever. It is mainly due to a bacterial or viral infection. It can also occur in other circumstances such as exhaustion due to heat and heat stroke. Body enzymes are very sensitive to a temperature change. Any decrease or increase in can change their metabolism, this can lead to death.

Rectal or ear temperature: **more than 38 °C**
Oral temperature: **more than 37,5 °C**
Under the arm temperature: **more than 37,3 °C**

**Signs and symptoms:**
- Increase in body temperature above normal (see annex)
- Tremors, chills
- State of consciousness variable
- Possible convulsions (young children)
- Sweating and dehydration
- Loss of appetite, fatigue
- Warm skin, moist and red

**Treatment:**
- L’CAB
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORSCHE)
- Take the temperature
- To cool down the body
  - Remove the clothes
  - Moisten the skin using water and a sponge
  - Make the person drink cool water

***Never immerse the victim in cold water as this will cause generalized tremors which will increase the temperature of the person.***
**Definition**: Muscle cramps are produced by an imbalance of electrolytes in the cells. Sweat contains salt (sodium chloride) and water. This loss of sodium in the cell creates a sustained contraction.

**Signs et symptoms**:
- Stiffness of muscles, spasms
- Pain

**Treatment**:
- L’CAB
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORSCHE)
- Stretch the muscle
- Massaging the muscle towards the heart
- Apply heat
Heat exhaustion

**Definition**: Heat exhaustion occurs when a person is exposed to heat for a more or less significant lapse of time depending on the tolerance of the person. It also depends on the activity carried out, the clothes worn by the person and hydration. Loss of water becomes an essential element in the evaluation of the victim. The water contained in the sweat comes largely from plasma (liquid containing the red and white blood cells). This water loss reduces tissue hydration and the regulation of body temperature by the skin. Muscle cramps due to heat are often a sign leading to heat exhaustion.

**Signs and symptoms**:  
- Excessive Sweating  
- Dilated pupils  
- Dizziness  
- Blurred vision  
- Headache  
- Cramps  
- Signs of shock

**Treatment**:  
- L’CAB  
- Secondary evaluation (SAMPLE)  
- Secondary evaluation (PORSCHE)  
- Take the temperature  
- Move the victim in a cool area  
- Rehydrate with water by sip  
- Solution of orange juice, water and salt or Pedialyte  
- Put cool water towels at the armpits, the groin, the forehead, under the breasts, behind the neck
**Heat stroke**

**Definition**: Heat stroke is the aggravation of heat exhaustion. This condition is caused by failure of the body's temperature-regulating mechanism when exposed to excessively high temperatures. Heat stroke is a medical emergency, the victim needs to be treated at the hospital rapidly to restore hydrolytic and electrolytes balance.

**Signs and symptoms**:  
- Temperature around 40 degrees  
- Body is warm to the touch, dry or moist  
- Pulse is rapid and fleeing  
- Breathing is noisy  
- Victim is nervous  
- Headache  
- Fatigue  
- Dizziness  
- Nausea or vomiting  
- Variable consciousness level

**Treatment**:  
- L’ABC  
- Secondary evaluation (SAMPLE)  
- PORSCHE  
- Take the temperature  
- Move the victim in a cool area  
- Rehydrate with water by sip  
- Solution of orange juice, water and salt or Pedialyte  
- Put cool water towels at the armpits, the groin, the forehead, under the breasts, behind the neck  
- 911
Hypothermia

**Definition**: Hypothermia is a medical emergency that occurs when the body loses heat faster than it can produce heat, causing a dangerously low body temperature.

Hypothermia is when the temperature is less than 35 °C:
- 37 to 35 °C: normothermia (normal)
- 35 to 34 °C: light hypothermia
- 34 to 32 °C: moderate hypothermia
- 32 to 25 °C: Severe hypothermia
- Less than 25 °C: Critical hypothermia (cardiac arrest)

**Signs and symptoms**:

<table>
<thead>
<tr>
<th>Light hypothermia</th>
<th>Moderate hypothermia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal pulse</td>
<td>Slow and weak pulse</td>
</tr>
<tr>
<td>Normal breathing</td>
<td>Slow and superficial breathing</td>
</tr>
<tr>
<td>Chills</td>
<td>Excessive shivering</td>
</tr>
<tr>
<td>Hard to talk</td>
<td>Dilated pupils</td>
</tr>
<tr>
<td></td>
<td>Bluish skin</td>
</tr>
<tr>
<td></td>
<td>Confusion</td>
</tr>
<tr>
<td></td>
<td>Drowsiness</td>
</tr>
</tbody>
</table>

**Treatment**:

- L’CAB
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORSCHE)
- Warm up slowly without rubbing (wool blankets)
- Remove wet clothes
- Skin to skin contact is a sleeping bag
- Hot drink

**Severe hypothermia**

- Slow breathing or no breathing
- No shivering
- Unconscious
- Weak and irregular pulse, or no pulse

***NO ALCOHOL***
Frostbite

Definition: Injury to body tissues caused by exposure to extreme cold, typically affecting the nose, fingers, or toes and sometimes resulting in gangrene.

Signs and symptoms

Superficial frostbite (dermis and epidermis)
- White and waxy skin
- Skin surface is firm it is soft underneath
- Numbness and pain

Deep frostbite (hypodermis, bone, muscle)
- Skin discoloration (bluish or greyish)
- Cold and hard at all skin layers
- Insensitivity

Treatment
- L’CAB
- Secondary evaluation (SAMPLE)
- Secondary evaluation (PORSCHE)

Superficial frostbite
- Warm up slowly without rubbing (wool blanket)
- Remove wet clothes
- Skin to skin contact (in a sleeping bag)

Deep frostbite
- Do not try to warm up
- Immediately bring the victim to the hospital: risk of amputation.
Vital signs

<table>
<thead>
<tr>
<th>Age</th>
<th>Sleeping</th>
<th>Awake/calm</th>
<th>Active/fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>New born</td>
<td>80-160</td>
<td>100-180</td>
<td>220 and +</td>
</tr>
<tr>
<td>1 week to 3 months</td>
<td>80-180</td>
<td>100-220</td>
<td>220 and +</td>
</tr>
<tr>
<td>3 months to 2 years</td>
<td>70-120</td>
<td>80-150</td>
<td>220 and +</td>
</tr>
<tr>
<td>2 years to 10 years</td>
<td>60-100</td>
<td>70-110</td>
<td>180 and +</td>
</tr>
<tr>
<td>10 years to adult</td>
<td>50-90</td>
<td>55-90</td>
<td>180 and +</td>
</tr>
</tbody>
</table>

Temperature

<table>
<thead>
<tr>
<th>Age</th>
<th>Degrees Celsius</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months</td>
<td>37,5</td>
</tr>
<tr>
<td>6 months</td>
<td>37,5</td>
</tr>
<tr>
<td>1 year old</td>
<td>37,7</td>
</tr>
<tr>
<td>3 years old</td>
<td>37,2</td>
</tr>
<tr>
<td>5 years old</td>
<td>37,0</td>
</tr>
<tr>
<td>7 years old</td>
<td>36,8</td>
</tr>
<tr>
<td>9 years old</td>
<td>36,7</td>
</tr>
<tr>
<td>11 years old</td>
<td>36,7</td>
</tr>
<tr>
<td>13 years old</td>
<td>36,6</td>
</tr>
</tbody>
</table>
Annex: First aid kit

<table>
<thead>
<tr>
<th>Contents</th>
<th>Daycare</th>
<th>Hiking</th>
<th>Vehicule</th>
<th>House</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Aid Guide</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Scissors (trauma or bandage)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Clip for a sling</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Safety pins</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Sterile adhesive bandage (25mm X 75mm)</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>Sterile gauze pads (102mm X 102mm)</td>
<td>25</td>
<td>12</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>Sterile gauze roll (50mm X 9m)</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Sterile gauze roll (102mm X 9m)</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Triangular bandages</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Absorbent compress dressing, sterile</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Adhesive first aid tape (25mm X 9m)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Antiseptic wipe packet</td>
<td>25</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Adhesive strips (plasters), assorted sizes</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Eye patch pads</td>
<td>4</td>
<td>2</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Alcohol pads</td>
<td>25</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Pair of nonlatex gloves</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Thermometer (1 rectal, 1 oral), non-mercury/non-glass</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Breathing barrier (with one-way valve), pocket mask</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Instant cold compress</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pack of waterproof matches</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Energy bar</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Water bottle</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Survival / emergency / space blanket</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Candle</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Plastic bag</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Antiseptic hand wipes or gel</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>