First Aid & CPR

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CATA CANADIAN ATHLETIC THERAPISTS ASSOCIATION

INJURY PREVENTION CENTRE
KNOWLEDGE. LEADERSHIP. ACTION.

Parachute
PREVENTING INJURIES. SAVING LIVES.

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The Canadian Red Cross Society (CRCS) has made reasonable efforts to ensure the contents of this publication are accurate and reflect the latest scientific research available on the topic as of the date published. The information contained in this publication may change as new scientific research becomes available. Certain techniques described in this publication are designed for use in lifesaving situations. However, the CRCS cannot guarantee that the use of such techniques will prevent personal injury or loss of life.

This publication is available in English and French.

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1 The Red Cross

The Fundamental Principles

Humanity: We serve people, but not systems.
Impartiality: We care for the victims and the aggressors alike.
Neutrality: We take initiatives, but never take sides.
Independence: We bow to needs, but not rulers.
Voluntary Service: We work around the clock, but never for personal gain.
Unity: We have many talents, but a single idea.
Universality: We respect nations, but our work knows no bounds.

Red Cross Symbols

There are three official symbols (red cross, red crescent, and red crystal) used to identify the International Red Cross and Red Crescent Movement. These symbols are recognized around the world as signs of protection and neutrality.

How We Help

DISASTER MANAGEMENT

INTERNATIONAL OPERATIONS

FIRST AID PROGRAMS

SWIMMING & WATER SAFETY PROGRAM

RESPECT EDUCATION

COMMUNITY HEALTH AND WELLNESS

2 Responding to Emergencies

Preparing to Respond

First Aid Kit

Keep a well-stocked and regularly inspected first aid kit in your home, car, and workplace.

Willingness to Act

Sometimes people don't want to get involved in an emergency. The four most common reasons are:

1. **The Bystander Effect:** "Someone else will look after the person." Never assume that someone will take action. Offer to help in any way you can.
2. **Unpleasant injuries or illnesses:** "That makes me feel sick!" Close your eyes or turn away for a moment to calm yourself, then deal with the situation.
3. **Fear of catching a disease:** "I don't want to get sick!" Taking simple steps, such as wearing gloves, will limit the risk of catching a disease.
4. **Fear of doing something wrong or causing more harm:** "What if I make the person worse?" The most harmful thing you can do is nothing at all.

Legal Issues Around First Aid

First Aiders must:

- Get permission, if possible, before giving care.
- Give only the care they were trained to provide.
- Continue giving care until another trained person takes over, they are too exhausted to continue, the scene becomes unsafe, or the person's condition improves and care is no longer required.

Getting Permission to Help

You must get permission (consent) before giving care.

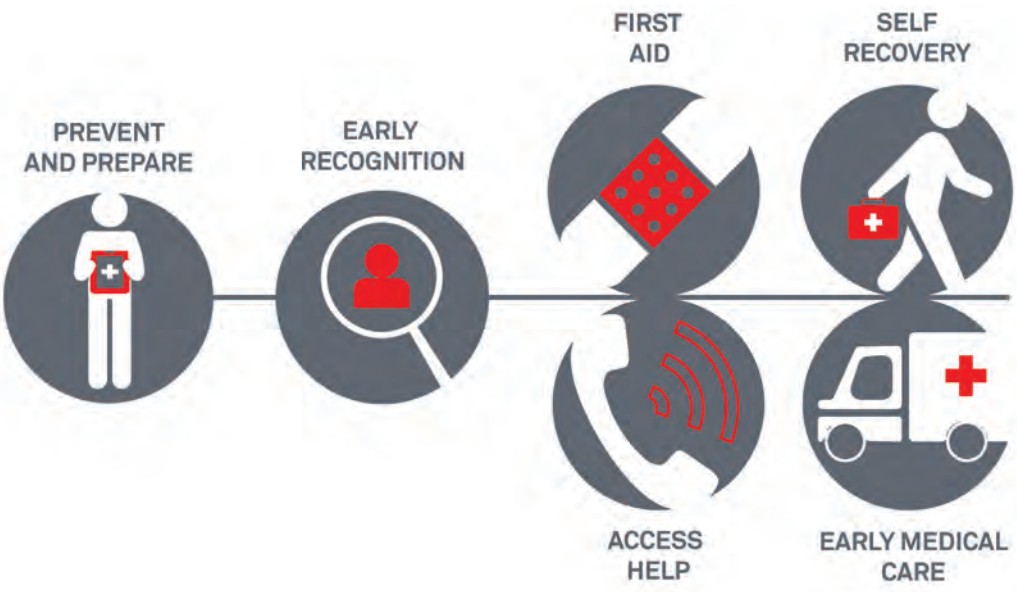
- For an unresponsive person, the law assumes you have permission.
- For a young child without a caregiver, provide care.
- If a person refuses care, call EMS/9-1-1.

Duty to Report Child Abuse or Neglect

Every adult in Canada has a legal duty to report child abuse or neglect, even if it is not confirmed. Information around the specific how-to-report details can be found in your jurisdiction's child protection act, but the duty to report is uniform in all acts. If you think a child is being harmed, then a report to child protection and/or the police needs to occur.

Chain of Survival Behaviours

The Chain of Survival Behaviours is a series of actions that, if integrated together, will help ensure a positive outcome for an ill or injured person.



Your Role as a First Aider

1. Recognize the emergency.
2. Protect yourself and others.
3. Access help (one of the simplest and most important ways of providing first aid).
4. Act according to your skills and training.

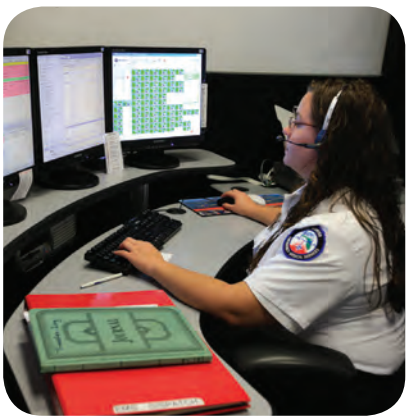
The Emergency Medical Services System

The emergency medical services (EMS) system is a network of community resources and trained personnel organized to give emergency care in cases of injury or sudden illness.

When to Call EMS/9-1-1

Call EMS/9-1-1 if there is a danger to you or others or if a person:

- Is not easily accessible.
- Is unresponsive or has an altered mental state.
- Is not breathing normally.
- Has persistent chest pain or pressure.
- Has life-threatening bleeding.
- Has a seizure.
- Has a head, neck, or spinal injury.
- Has an apparent mental health crisis.



After an Emergency

Being involved in an emergency and providing first aid can be stressful. After the emergency is resolved, you may have lingering feelings such as uneasiness, doubt, anxiety, and fear. It is often helpful to talk to somebody about the situation.

Consider seeking professional help (such as from your family doctor or mental health professional) if you experience any of the following for more than two weeks after the emergency:

- Crying fits or uncontrollable anger
- Trouble eating or sleeping
- Loss of engagement with former interests
- Feelings of guilt, helplessness, or hopelessness
- Avoiding family and friends
- Ignoring daily tasks, such as going to work

Lowering the Risk of Infection

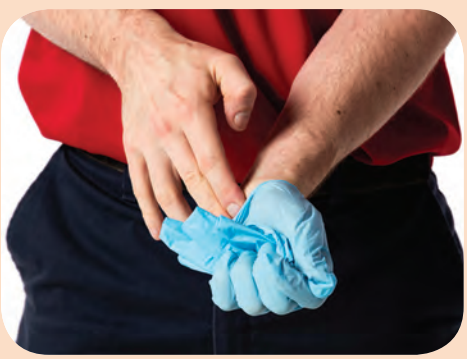
Equipment Precautions

"Personal protective equipment" ("PPE") are items that protect you from contact with germs. You should always use some type of barrier device when giving first aid.

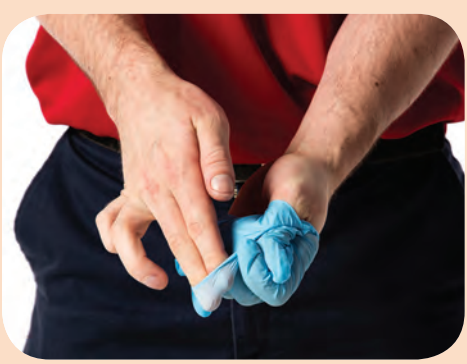
Removing Gloves

1. Touching only the outer surface, pull the glove off your hand, form it into a ball, and hold it in the palm of your gloved hand.

2. Insert your fingers under the rim of the glove on your other hand.



3. Pull the glove off the hand, trapping the balled glove inside, and discard appropriately.



4. Wash your hands properly.

Handwashing

1. Take off your jewellery, wet your hands, and then apply soap.

2. Rub your hands together for at least 30 seconds and rinse.

3. Dry with a towel.

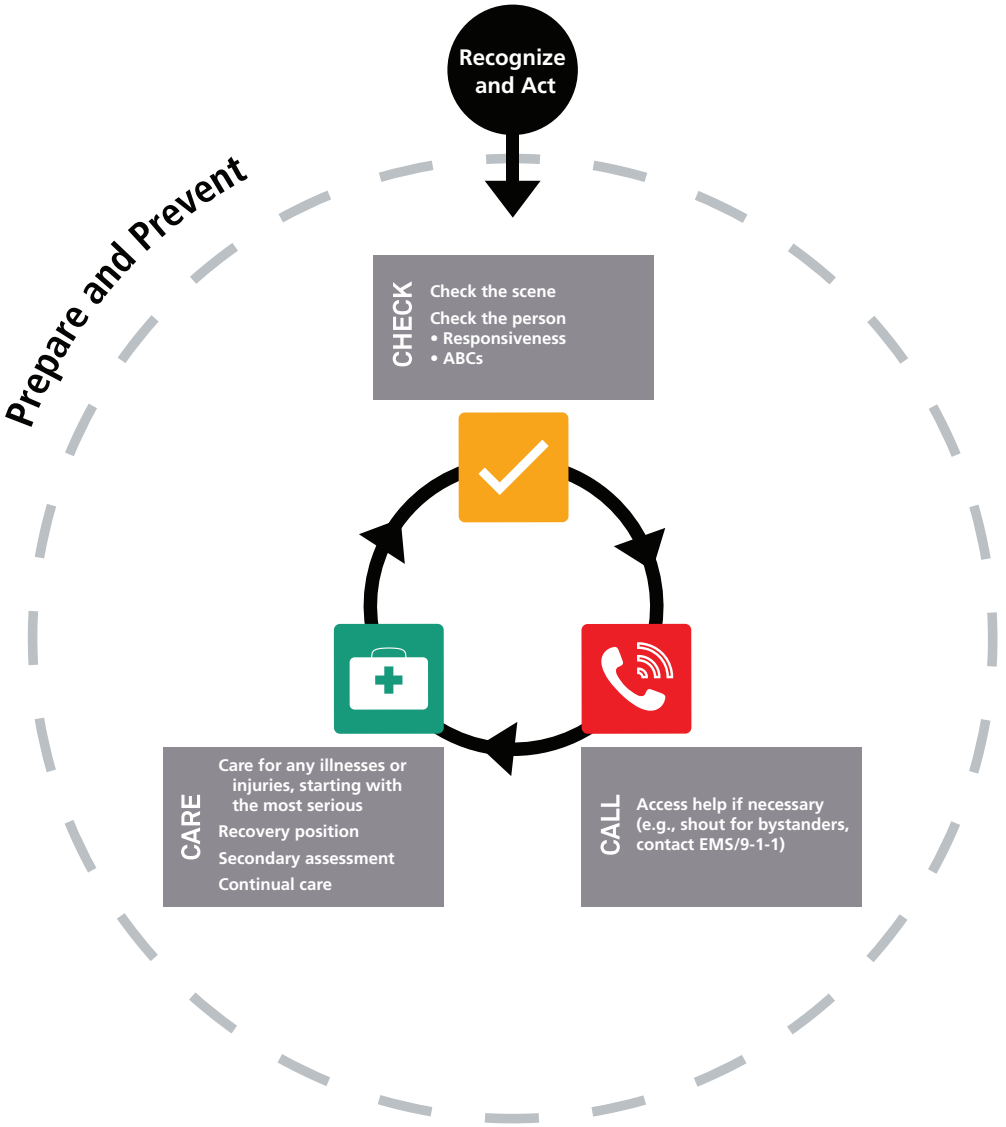
4. If you are in a public washroom, turn the faucet off using the towel.

If handwashing facilities are not available, use an alcohol-based hand sanitizer to clean your hands.

> **!** Clean under your fingernails by rubbing them against the palms of your hands. Be sure also to scrub your palms and wrists, the skin between your fingers, and the backs of your hands.

3 Check, Call, Care

When you encounter an ill or injured person, you will repeat the check, call, and care steps until the person's condition improves or EMS personnel arrive.



Check

Once you recognize an emergency, you must first check the scene, and then check the person.

Check the Scene

Before approaching an ill or injured person, stop and take a good look at the scene:

- Is the scene safe?
- Are there any hazards?
- What happened?
- How did it happen?

Check the Person (Primary Assessment)

If the scene is safe, quickly check the person:

1. Check whether the person is responsive.
2. Check the person's ABCs:
    - Airway
    - Breathing
    - Circulation

Checking ABCs

A = CHECK THE AIRWAY

Make sure the person has an open airway. If the person is speaking, moaning, or crying, the person's airway is open.

If the person is unresponsive, perform a head-tilt/chin-lift by gently tilting the head back until the chin is pointing up.

B = CHECK BREATHING

Check for normal breathing for 5 to 10 seconds. A person is breathing normally if air is moving into and out of the lungs and the chest is rising and falling in a normal, regular pattern. Someone who can speak or cry is breathing.

C = CHECK CIRCULATION

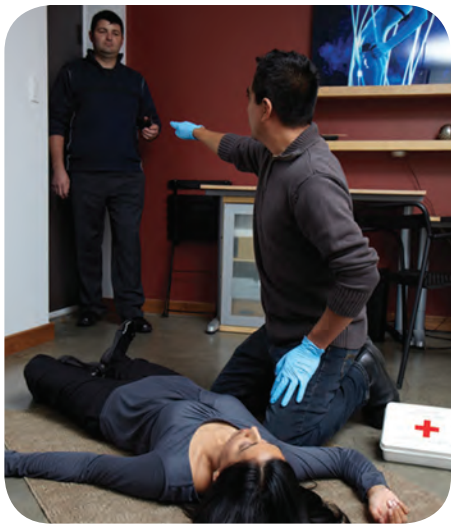
Quickly look at the person from head to toe for signs of life-threatening bleeding.

! A person who is not breathing normally may be occasionally gasping for air: This is a reflex action called "agonal respiration." Unlike normal breathing, it is irregular and sporadic. Care for the person as if he or she is not breathing.

Unresponsiveness, difficulty breathing, and life-threatening bleeding are life-threatening emergencies. These conditions must be your top priority. Obtain an automated external defibrillator (AED) and first aid kit if these items are available.

Call

If an individual is unresponsive or has a life-threatening condition, you must always activate EMS. Whenever possible, use a mobile phone or ask a bystander to call EMS/9-1-1.



If you are alone with the person and you do not have a mobile phone, call out loudly for help. If no one comes, get to a phone as quickly as you can and call EMS/9-1-1. As soon as you hang up, return to the person.

If a person becomes unresponsive, his or her vital signs deteriorate, or your secondary assessment reveals a condition that requires emergency care, call EMS/9-1-1 immediately.

Care

Care for any life-threatening conditions first. Give the care that is needed, within the scope of your knowledge and training. Continue to Check, Call, and Care, providing continual care with these guidelines:

- Monitor the person's breathing, level of responsiveness, and overall condition.
- Help the person rest in a comfortable position.
- If necessary, roll the person into the recovery position.
- Keep the person from getting chilled or overheated.
- Reassure the person.

Recovery Position

A person who is unresponsive or has an altered level of responsiveness should be rolled into the recovery position.

When placing a person in the recovery position, remember:

- Support and protect the head while rolling the person.
- Try to roll the person as one unit (head, back, and legs at the same time).
- Roll the person into a position where the body will stay safely on its side.
- Check the ABCs after you complete the roll.

Helping a Person With Medication

You should help a person take his or her medication only if:

- It is safe to do so.
- The person is responsive and has in some way expressed a need for help finding, preparing, and/or taking the medication.

FINDING THE MEDICATION

Find the medication and review all information on the package, including the name of the medication, any instructions or warnings, and, in the case of prescription medication, the person's name.

PREPARING THE MEDICATION

Follow the instructions on the label to prepare the medication for the person to ingest, inhale, or inject.

GUIDING THE PERSON IN TAKING THE MEDICATION

Guide the person in taking the medication by reading the instructions to the person and/or showing the person how to take the medication.

GIVING LIFESAVING MEDICATION

Rescue inhalers and epinephrine auto-injectors are lifesaving medications. If the person cannot give him- or herself lifesaving medication, prepare it, obtain permission, and either press the inhaler's plunger or inject the epinephrine for the person.

Secondary Assessment

Once you are confident that all life-threatening conditions have been addressed, perform a secondary assessment to check for conditions that may not be as obvious. The secondary assessment consists of three steps:

1. *Ask SAMPLE Questions*

Interview the ill or injured person and any bystanders at the scene using the acronym SAMPLE to guide your questions:

S igns and symptoms
A llergies
M edications
P ast medical history
L ast oral intake (food or drink)
E vents leading up to the emergency

2. *Check the Vital Signs*

LEVEL OF RESPONSIVENESS

Is the person alert, sleepy, or confused? Is the person's responsiveness changing?

BREATHING

Listen for sounds. Is the breathing fast or slow? Shallow or deep? Painful?

SKIN

Is skin dry or wet? An unusual colour or temperature?

3. *Perform an Injury Check*

Look carefully for injuries that were not identified during the primary assessment. An injury check may involve a focused examination or a hands-on check. If you find a medical-identification product during your check, read it carefully.

Focused Examination

If the person is responsive and able to answer questions, do a focused examination. If the person's condition deteriorates, respond immediately (e.g., call EMS/9-1-1, provide care).

1. Explain that the purpose of the examination is to identify injuries.
2. Ask the person if anything hurts or feels uncomfortable.

3. If the person indicates an area of pain or concern, look at the area for signs of injury.
4. Ask focused questions about how the person feels.

Hands-On Check

If a person is breathing but unresponsive or unable to communicate, you may need to do a hands-on check. Begin by checking the head for injuries, and then work downward, focusing on the chest, abdomen, and legs before checking the arms.

Shock

Be on the lookout for shock when providing care for any injury or sudden illness or whenever someone has been involved in a serious incident. Shock is a life-threatening condition.

What to Look For

The following are signs and symptoms of shock:

- Anxiety or confusion
- Cool, clammy skin that may be paler than normal
- Weakness
- Excessive thirst
- Rapid breathing
- Drowsiness or loss of responsiveness
- Nausea and vomiting

Call

Call EMS/9-1-1.

Care

People in shock need medical care. Call EMS/9-1-1 if you haven't already done so. While you are waiting for EMS personnel to arrive:

1. Care for the suspected cause of the shock.
2. Provide continual care.

4 Choking

If the person is able to cough or speak, his or her airway is not completely blocked. Encourage the person to cough and be prepared to provide care if the person stops coughing. If the person's airway is completely blocked, you must begin first aid immediately.

Adult or Child

Call

Immediately begin providing care. Call EMS/9-1-1 as soon as you or a bystander is able to do so.

Care

1. Alternate between any two of the following methods until the object comes out: back blows, abdominal thrusts, and chest thrusts.

2. If the choking person becomes unresponsive, ensure that EMS has been called and begin CPR, starting with chest compressions.

BACK BLOWS

1. Place your arm across the person's chest.
2. Bend the person forward and deliver up to 5 firm blows between the shoulder blades.

ABDOMINAL THRUSTS

1. Place your fist just above the belly button.
2. Give up to 5 quick, inward and upward thrusts.

CHEST THRUSTS

1. Place your fist in the middle of the person's chest with your thumb facing inward, and place your other hand over your fist.
2. Give up to 5 chest thrusts by pulling straight back.

IF YOU ARE BY YOURSELF AND CHOKING

1. Dial EMS/9-1-1 and move to a place where you can be noticed.
2. Attempt to dislodge the object by performing abdominal thrusts against a safe object.

Baby

Call

Immediately begin providing care for choking. Call EMS/9-1-1 as soon as you or a bystander is able to do so.

Care

1. Sit or kneel with the baby face down along your forearm, holding the jaw in your hand but keeping the mouth clear.
2. Deliver 5 firm back blows.

3. If the object does not come out, flip the baby face up, ensuring you support the head.

4. Place 2 fingers in the middle of the chest and deliver 5 firm chest compressions.
5. Repeat the back blows and chest compressions until the object comes out or the baby begins to breath normally or cry.
6. If the baby becomes unresponsive, immediately begin CPR, starting with chest compressions.

5 Circulation Emergencies

Heart Attack

A heart attack occurs when the heart cannot get enough oxygen because of a blockage in one of the arteries that feed it.

What to Look For

Classic signs of a heart attack are pain, pressure, tightness, or heaviness in the chest, or pain radiating from the chest to the arm(s), shoulder(s), back, jaw, and/or neck. A person may also experience:

- Shortness of breath
- Nausea or vomiting
- Cool, pale, sweaty skin
- Dizziness
- Unresponsiveness

Call

Call EMS/9-1-1 and get an AED immediately.

Care

1. Have the person rest quietly.
2. Have the person ***chew*** either 1 regular-strength or 2 low-dose acetylsalicylic acid (ASA) tablets.

! Other painkilling medications such as acetaminophen (e.g., Tylenol®) or ibuprofen (e.g., Advil®) do not have the same effect as ASA in reducing damage due to heart attacks. Do not substitute ASA with acetaminophen or ibuprofen.

! Nitroglycerin is a medication used to relieve chest pain. It is commonly prescribed as an oral spray.

Stroke

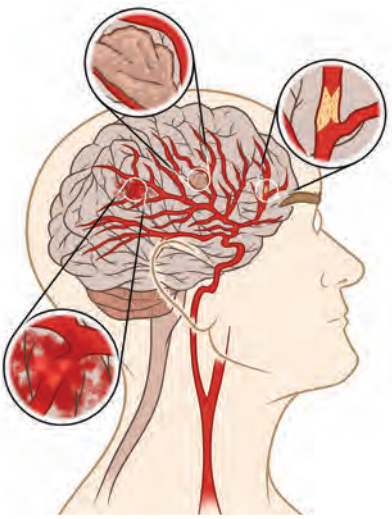
A stroke happens when the blood flow to part of the brain is interrupted. A person of any age can have a stroke.

What to Look For

- A sudden, severe headache
- Dizziness or confusion
- Unresponsiveness or temporary loss of responsiveness
- Sudden loss of bladder or bowel control

FAST

When trying to determine if a person is having a stroke, remember the acronym FAST:



F ACE—facial numbness or weakness, especially on one side

A RM—arm numbness or weakness, especially on one side

S PEECH—abnormal speech, difficulty speaking or understanding others, or a loss of speech

T IME—time is important; call EMS/9-1-1 immediately

Call

Call EMS/9-1-1 and get an AED.

Care

1. Have the person rest in a comfortable position.
2. Note when the signs and symptoms first started (or the last time the person was known to be well).

Life-Threatening External Bleeding

Life-threatening external bleeding is bleeding that is difficult to stop or control.

Call

Immediately apply direct pressure and then call EMS/9-1-1.

Care

1. Apply firm, direct pressure to the wound.

2. While maintaining direct pressure, apply a dressing and bandage it in place.

3. If blood soaks through the bandage, apply another bandage on top.

4. If direct pressure does not control the bleeding, consider using a tourniquet.

Applying a Tourniquet

The following situations may require a tourniquet:

- The bleeding cannot be controlled using direct pressure.
- You are unable to access the wound.
- You must move the person and are unable to maintain direct pressure.

1. Apply the tourniquet: It should be one hand's width above the injury and at least two fingers' width above any joint.

2. Tighten the tourniquet until the bleeding stops.

3. Secure the tourniquet in place.

4. Document the time the tourniquet was tightened.

!

If a commercial tourniquet is not available, a tourniquet can be improvised from everyday objects (e.g., a triangular bandage and a marker).

Life-Threatening Internal Bleeding

What to Look For

- Bruising and pain in the injured area
- Soft tissues that are tender, swollen, or hard
- Blood in saliva or vomit
- Severe thirst, nausea, or vomiting
- Anxiety

Call

Call EMS/9-1-1 and get an AED.

Care

1. Have the person rest quietly until EMS personnel arrive.

A person with life-threatening internal bleeding may be very thirsty, but giving anything by mouth (even water) can cause serious complications.

6 CPR and AED

Cardiopulmonary Resuscitation (CPR)

CPR is used when a person is unresponsive and not breathing.

Call

Have someone call EMS/9-1-1 and get an AED.

Adult

If you are alone, call EMS/9-1-1 and get an AED yourself.

Child or Baby

If you are alone, do 5 cycles (2 minutes) of CPR before taking the child or baby with you to call EMS/9-1-1 and get an AED.

Compression-Only CPR

Compression-only CPR uses chest compressions (without rescue breaths) to pump the heart. If you are unwilling or unable to give rescue breaths for any reason, compression-only CPR is acceptable. Traditional CPR with rescue breaths is the recommended method of care for children and babies.

Care

Adult or Child

1. Do 30 chest compressions:
- Put 2 hands in the centre of the person's chest.
- Push deeply and steadily, allowing the chest to recoil between compressions.

2. Give 2 breaths:
- Open the airway.
- Place your barrier device over the person's mouth and nose, and if using a flat plastic shield, pinch the person's nostrils.
- Give just enough air to make the chest start to rise.

3. If both breaths go in, repeat the cycle of 30 compressions and 2 breaths.

> You should do compressions at a rate of 100 to 120 per minute. This works out to 30 compressions in about 15 to 18 seconds.

Baby (Less Than 1 Year)

1. Do 30 chest compressions:

- Put 2 fingers in the centre of the baby's chest, just below the nipple line.
- Push deeply and steadily, allowing the chest to recoil between compressions.

2. Give 2 breaths:

- Open the airway.
- Place your barrier device over the baby's mouth and nose.
- Give just enough air to make the chest start to rise.

3. If both breaths go in, repeat the cycle of 30 compressions and 2 breaths.

CPR Compression Depth

ADULT

At least 5 cm (2 in.)

CHILD

At least 1/3 of the chest's depth

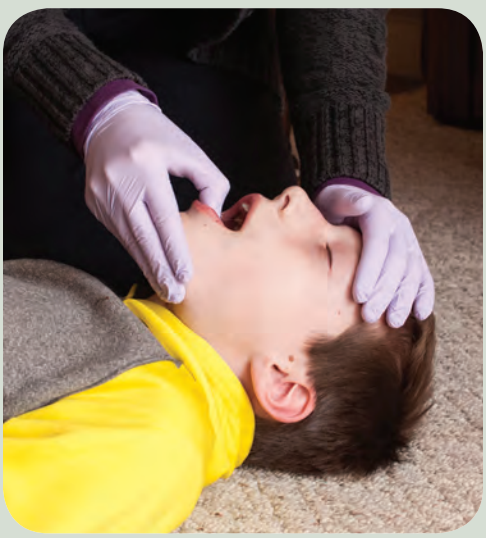
BABY

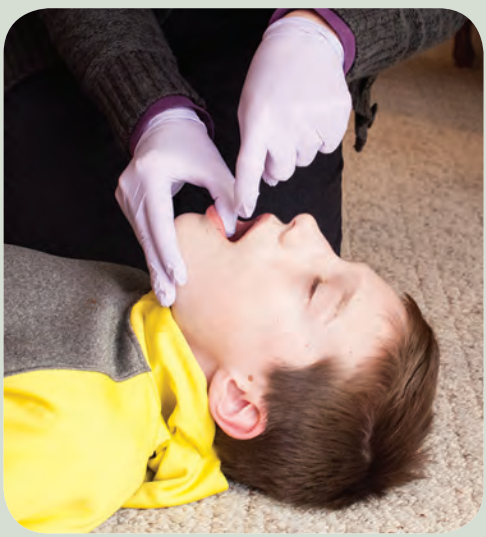
At least 1/3 of the chest's depth

Once you begin CPR, continue until:

- EMS personnel or another person takes over.
- You are too tired to continue.
- The scene becomes unsafe.
- You notice an obvious sign of life, such as movement.

What to Do If the Rescue Breaths Don't Go In





If the chest does not rise after the first breath, try repositioning the head. If that doesn't work, look in the person's mouth for an object. Continue to look into the person's mouth after each set of compressions until the airway is clear. Once the rescue breaths go in, continue CPR normally.

Automated External Defibrillation (AED)

Whenever you give CPR, you should also use an automated external defibrillator (AED). While CPR can help prevent brain damage and death by keeping oxygenated blood moving throughout the body, an AED can correct the underlying problem for some people who go into sudden cardiac arrest.

Using an AED

1. Open and turn on the AED.

If possible, use the appropriate size of pads—adult, child, or baby. Pads must be placed at least 2.5 cm (1 in.) apart. If there is not enough space on the chest, place one pad on the chest and one on the back.

2. Apply the AED pads:
   - Remove any clothing, jewellery, and medical patches that could interfere with pad placement.
   - If the chest is wet, dry the skin.
   - Place the pads at least 2.5 cm (1 in.) away from a pacemaker.

3. Follow the AED's automated prompts.
4. If the AED prompts you to do so, ensure that no one is touching the person and deliver a shock.

5. Continue CPR, starting with compressions.

You must remove a person from water before using an AED. It is safe to use an AED on ice or snow.

7 Breathing Emergencies

Asthma

Many people have asthma, a condition that can make breathing difficult. Asthma is normally triggered by something, such as dust, stress, or exercise.

What to Look For

- Trouble breathing (gasping for air, wheezing or coughing, or rapid, shallow breathing)
- Inability to say more than a few words without pausing to breathe
- Tightness in the chest

Call

Call EMS/9-1-1 and get an AED if the person is struggling to breathe or does not improve after taking his or her medication.

Care

1. If you think that something in the environment is triggering the attack, move the person away from the trigger.

2. Help the person to take his or her quick-relief asthma medication.

Using an Inhaler

1. Shake the inhaler and remove the cap.

2. Breathe out, and then close your mouth around the mouthpiece.
3. Press the top of the inhaler while taking one slow, full breath.
4. Hold the breath for as long as is comfortable.

Using an Inhaler With a Spacer

1. Shake the inhaler and remove the cap.

2. Put the inhaler into the spacer.
3. Bring the spacer to your mouth and press the top of the inhaler.
4. Take slow, deep breaths, holding each breath for several seconds.

Anaphylaxis

Anaphylaxis is a severe allergic reaction that can be life-threatening.

What to Look For

A person with signs and symptoms from two or more of these categories—especially after contact with a possible allergen—should be treated for anaphylaxis:

- Skin (e.g., rash, swelling)
- Breathing (e.g., high-pitched noises)
- Alertness (e.g., dizziness)
- Stomach (e.g., vomiting)

Call

Call EMS/9-1-1 and get an AED.

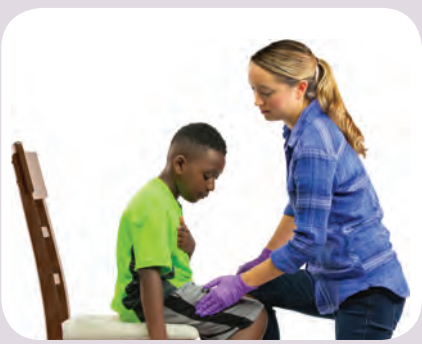
Care

If the person has an epinephrine auto-injector, help him or her to use it:

1. Remove the safety cap.

2. Firmly push the tip of the epinephrine auto-injector against the outer thigh. A click should be heard. Hold in place as directed, usually for 5 to 10 seconds.

3. Rub the injection site for 30 seconds.
4. If the person's condition does not improve within 5 minutes, repeat the dose.
5. Have the person rest quietly until EMS personnel arrive.



8 Wound Care

Bandaging Guidelines

- Use clean, sterile dressings.
- Check circulation below the injury before and after applying a bandage. If circulation is reduced, loosen the bandage.
- If blood soaks through, leave the bandage and apply another on top.

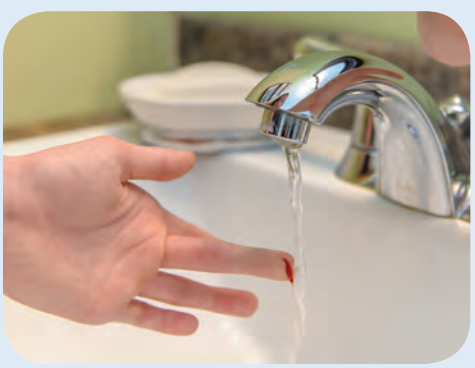
! Infection is a risk whenever a person's skin is broken. Monitor any open wound for redness, swelling, or discharge in the days following the injury. Seek medical attention if any signs of infection appear.

Cuts and Scrapes

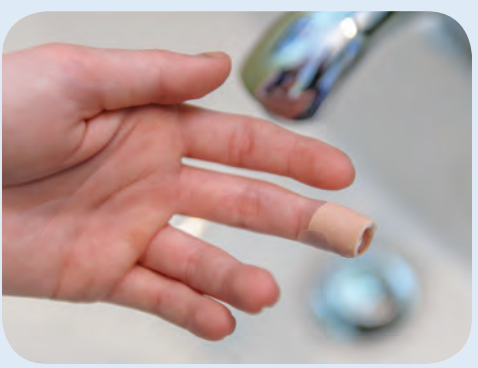
Care

1. If the wound is bleeding significantly, apply direct pressure until it stops.

2. Rinse the wound for 5 minutes with clean, running water.



3. Apply an antibiotic ointment or cream and bandage the wound.



Wounds on a person's head can affect the brain. If you feel a dip or soft area, you should treat the person for a head injury. Apply direct pressure only if there is life-threatening bleeding. Otherwise, try to control the bleeding by putting pressure on the area around the wound.

Burns

Burns are soft-tissue injuries caused by chemicals, electricity, heat, or radiation. Burns can be:

Superficial

Partial Thickness

Full Thickness

Call

Call EMS/9-1-1 and get an AED immediately if:

- The burns make it difficult for the person to breathe.
- The burns were caused by chemicals, explosions, or electricity.
- The burns are full thickness or involve a large amount of blistered or broken skin.
- The burns cover the face, neck, hands, genitals, or a larger surface area.

Monitor for hypothermia when cooling large burns, especially on children.

Care

1. Cool the affected area with water or a clean, cool (but not freezing) compress for at least 10 minutes.

2. Remove jewellery and clothing from the burn site, but do not attempt to move anything that is stuck to the skin.
3. Cover the burn loosely with a dry, sterile dressing.

Chemical Burns

Care

1. Put on protective equipment.
2. Remove any clothes that might have the chemical on them, and brush any dry chemical powder off the person's skin.
3. Flush with large amounts of cool running water for at least 15 minutes.

> **!** Use caution with dry caustic chemicals, as they may spread or react if they become wet. Refer to the appropriate Material Safety Data Sheet (MSDS) for additional first aid measures.

Electrical Burns

Care

Because powerful electrical currents can affect the heart, it is important to monitor the person's ABCs closely.

1. Ensure that the electrical current has been turned off.
2. Keep the person still.
3. Look for and treat two burns (the entry and exit points).

Bruises

Call

If the person is in severe pain or cannot move a body part without pain, or you suspect life-threatening internal bleeding, call EMS/9-1-1.

Care

1. Apply a cold pack, wrapped in a towel, for up to 20 minutes, and then remove it for 20 to 30 minutes. Repeat until the pain is reduced.

Splinters

Care

1. Gently grab the exposed end of the splinter with tweezers and carefully pull it out. Treat the wound as a cut.

Nosebleeds

Call

Call EMS/9-1-1 if the bleeding continues for more than 15 minutes.

Care

1. Have the person sit with the head slightly forward.
2. Pinch the person's nostrils for 10 to 15 minutes.

Knocked-Out Teeth

Call

Call EMS/9-1-1 if the tooth was knocked out by a forceful blow or if you suspect more serious injuries.

Care

1. Have the person bite down on a clean dressing.

2. Carefully pick up the tooth by the crown (the whiter part) and keep it protected.
3. Get the person and the tooth to a dentist as soon as possible.

Protect the tooth by putting it in egg white, coconut water, or whole milk, or wrapping the tooth in gauze or a clean cloth with some of the person's saliva.

Eye Injuries

Call

Call EMS/9-1-1 if there is an impaled object in or near the eye, the eye is out of the socket, or the eye has been exposed to a chemical.

Care

Avoid touching the eye or putting pressure on or around it.

If there is something in the eye but it is not impaled:

1. Have the person blink several times.
2. Gently flush the eye with running water.
3. If these steps do not remove the object, the person should seek medical attention.

If there is a chemical in the eye:

1. Gently flush the eye with running water (away from the unaffected eye) for at least 15 minutes or until EMS personnel arrive.

If the eyes were flash burned:

1. Cover the eyes with a cool, wet cloth.
2. Make sure the person gets medical attention.

Impaled Objects

Call

Call EMS/9-1-1.

Care

1. Leave the object in place.

2. Stabilize the object without putting direct pressure on it.

3. Secure the dressings in place.

Chest Injuries

What to Look For

- Deformity or swelling
- Guarded, shallow breathing
- Bruising
- Coughing up blood

If chest is penetrated:

- Gasping or difficulty breathing
- Bleeding from an open chest wound that may bubble
- A sucking sound coming from the wound with each breath

Call

Call EMS/9-1-1 and get an AED.

Care

1. Have the person rest in a comfortable position, keeping the person as still as possible.
2. If the wound is bleeding profusely, apply direct pressure. If bleeding is minor, do not apply pressure or a dressing.
3. If there is no penetrating injury, give the person something bulky (such as a towel) to hold against the chest.

! If you must apply a dressing, ensure that it does not become saturated with blood, as saturation will prevent air from escaping and create pressure in the chest. If the dressing becomes saturated it must be changed.

9 Head, Neck, and Spinal Injuries

You should suspect a head, neck, and/or spinal injury in the following situations:

- A fall from any height greater than the height of the person
- A diving injury
- A person found unresponsive for unknown reasons
- A strong blow to the lower jaw, head, or torso
- A person has been struck by lightning or electrocuted

> **!** A person who has a suspected head, neck, or spinal injury may also have a pelvic injury. Do not put pressure on the pelvis and treat as a head, neck, or spinal injury.

What to Look For

PHYSICAL

- Severe pain or pressure in the head, neck, or back
- Blood or other fluids draining from the ears or nose
- Unusual bumps or depressions
- Bruises, especially around the eyes and behind the ears
- Seizures
- Impaired breathing or vision
- Nausea or vomiting
- Unequal pupil size
- Partial or complete loss of movement of any body part
- Loss of bladder or bowel control

MENTAL

- Changes in level of responsiveness, awareness, and behaviour
- Weakness, tingling, or loss of sensation
- Dizziness and/or loss of balance

Call

Call EMS/9-1-1 and get an AED.

Care

1. Have the person keep as still as possible until EMS personnel arrive:
   - If the person is unresponsive or unable to support his or her own head, manually support it in the position found.

Concussion

Concussions are a common subset of traumatic brain injuries (TBI) that can have catastrophic, lifelong consequences. Anyone who has had a concussion must follow the treatment plan recommended by a healthcare provider.

What to Look For

MENTAL

- Drowsiness
- Clouded or foggy mindset
- Seeming stunned or dazed
- Temporary memory loss
- Slowed reaction times

PHYSICAL

- Neck pain or headache
- Loss of responsiveness
- Dizziness or loss of balance
- Changes to vision
- Sleeping more or less than usual
- Nausea or vomiting
- Sensitivity to light and/or noise
- Seizure

EMOTIONAL

- Irritability
- Heightened emotions
- Personality changes

IN CHILDREN AND BABIES

- Changes in playing, sleeping, or eating habits
- Excessive crying
- Lack of interest in activities or toys

Call

Call EMS/9-1-1 if the person has any of the following:

- Repeated or projectile vomiting
- Loss of responsiveness of any duration
- Lack of physical coordination
- Confusion, disorientation, or memory loss
- Changes to normal speech
- Seizures
- Vision and ocular changes (e.g., double vision or unequal pupil size)
- Persistent dizziness or loss of balance
- Weakness or tingling in the arms or legs
- Severe or increasing headache

Care

1. Advise the person to immediately stop all activity and follow up with a qualified healthcare provider as soon as possible.

10 Bone, Muscle, and Joint Injuries

There are four basic types of bone, muscle, and joint injuries: strain, sprain, dislocation, and fracture. The first aid for each of these is generally the same.

STRAIN

The stretching or tearing of muscles or tendons.

SPRAIN

The stretching or tearing of ligaments at a joint.

DISLOCATION

The movement of a bone out of its normal position at a joint.

FRACTURE

A chip, crack, or break in a bone.

What to Look For

- Deformity, swelling, or bruising
- Limited or no use of the injured body part
- Bone fragments sticking out of the skin

Call

You should always call EMS/9-1-1 if:

- There are injuries to the thigh bone or pelvis.
- The area below the injury is numb, pale, blue, or cold.
- A broken bone is protruding through the skin.
- You cannot safely move the person.

Care

Treat the injury using the RICE method:

R est: Have the person rest comfortably.

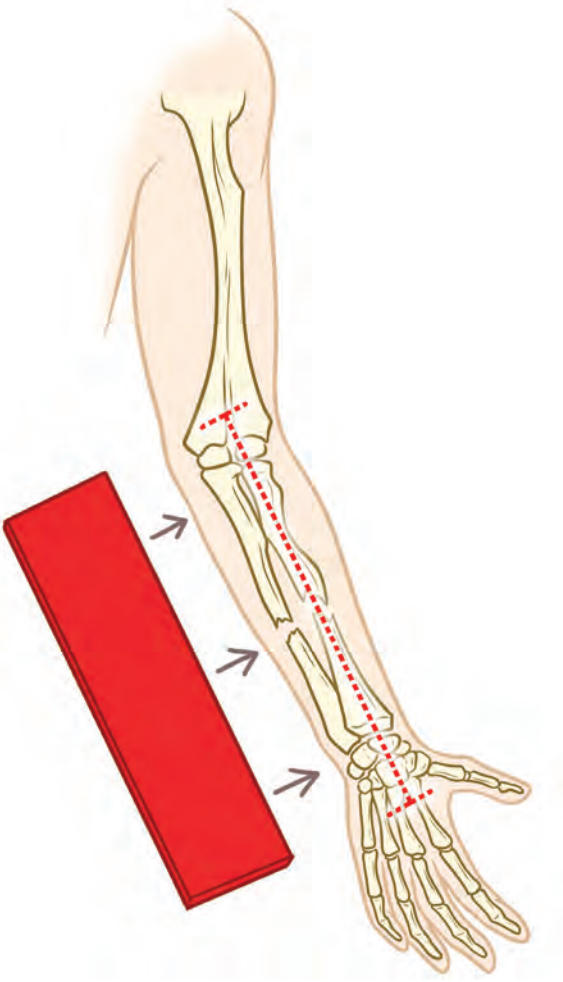
I mmobilize: Keep the injured area as still as possible.

C ool: Cool the injured area for 20 minutes of every hour.

E levate: Raise the injury, as long as this does not increase the pain.

Splints and Slings

- Check for normal temperature and skin colour below the injured area before and after immobilizing the limb:
  - If the area is cold before immobilizing, call EMS/9-1-1.
  - If the area is cold after immobilizing, loosen the splint gently.
- Remove jewellery below the site of the injury.
- Immobilize the injured part in the position in which it was found.
- Make sure a splint is long enough to extend above and below the injury.
- Pad slings and splints.



!

Common items such as rolled newspapers, scarves, belts, and pillows can be used to improvise slings and splints if commercial versions are not available.

Regular Sling

1. Have the person hold the injured arm across the body.

2. Slide a triangular bandage under the injured arm.
3. Bring the bottom end of the bandage over the shoulder of the injured side and tie the ends together behind the neck.

4. Secure the elbow by twisting, tying, or pinning the corner of the bandage.

5. Secure the arm to the body with a broad bandage.

Tube Sling

1. Have the person support the arm of the injured side.

2. Place a triangular bandage over the forearm and hand.

3. Tuck the lower edge under the arm and twist the end to secure the elbow.

4. Tie the bandage's ends together.

5. Secure the arm to the body with a broad bandage.

11 Sudden Medical Emergencies

Diabetic Emergencies

A diabetic emergency happens when blood sugar levels fluctuate outside the normal range.

What to Look For

- Changes in the level of responsiveness
- Changes in behaviour, such as confusion or aggression
- Rapid breathing
- Cool, pale, sweaty skin
- Appearance of intoxication
- Seizures

Call

Call EMS/9-1-1 if:

- The person is not fully awake.
- The person has a seizure.
- The person's condition does not improve within 10 minutes of having sugar.

> **!** Do not give the person insulin.

Care

1. If the person is able to swallow safely, have the person ingest sugar.
2. If the person's condition does not improve within 10 minutes, call EMS/9-1-1 and administer more sugar if it is still safe to do so.

> **!** The preferred sugar sources (in order of preference) are oral glucose tablets, chewable candy, fruit juice, fruit strips, and milk. If none of these are available, other forms of sugar can also be effective.

Seizures

A seizure is an episode of abnormal brain function.

What to Look For

- Uncontrollable muscle movement
- Drool or foaming at the mouth
- Uncontrolled repetitive motions
- An altered level of responsiveness

Call

Call EMS/9-1-1 if:

- You do not know the person's medical history.
- The seizure lasts more than a few minutes.
- The person has several seizures in a row.
- The person is unresponsive for an extended period.

Care

1. Protect the person from injury by:
   - Moving objects that could cause injury.
   - Protecting the person's head with a soft object.
2. Do not try to hold the person down.
3. Roll the person into the recovery position. The person may be drowsy and disoriented for up to 20 minutes.

Babies and young children may have seizures if their body temperatures suddenly rise. These are called "febrile seizures" and are most commonly associated with sudden high fevers. In most cases, these seizures are not life-threatening and do not last long, but you should always call EMS/9-1-1.

Mental Health Crisis

Mental health first aid is the first aid given to a person in a mental health crisis. Like all first aid, it involves recognizing the emergency, calling for help if necessary, and providing care until trained personnel take over or the crisis is resolved.

What to Look For

- Inability to think clearly, concentrate, or focus on a task
- Hallucinations or delusions (e.g., hearing voices)
- Depression or sudden mood swings
- Obvious lack of motivation

> **!** In a mental health crisis, the most immediate threat to the person is suicide. Responding to suicide or a suicide attempt can be traumatic. Talk to a professional if you experience lingering feelings of guilt or distress.

Call

If possible, contact support systems for the person. If you suspect that the person could hurt someone (including him- or herself), or if the person has attempted suicide, call EMS/9-1-1 immediately.

Care

1. Provide reassurance and support:
   - Reduce distractions and encourage the person to sit down.
   - Keep the person as calm as possible.
   - Listen empathetically.
   - Acknowledge the person's feelings and emotions without judgment.
   - If the person is delusional, do not dismiss his or her beliefs. Accept that they are real to him or her.
   - Speak quietly and firmly.
2. Offer self-help strategies such as breathing exercises.

Suicide

Potential signs of suicide include a person:

- Expressing negative (especially suicidal) thoughts and comments about him- or herself.
- Expressing an intent to die, especially if he or she has a plan.
- Expressing final wishes to someone close by.

Childbirth

Childbirth is a natural process, and the woman's body knows what to do. Your primary role will be to provide comfort and reassurance while you wait for EMS personnel to arrive.

What to Look For

- Contractions are 2 minutes apart or less.
- The woman says that the baby is coming.
- The woman feels the urge to push.
- The woman feels as though she needs to have a bowel movement.
- The baby is crowning.

Call

Have someone call EMS/9-1-1.

Care

1. Create a birthing area by placing clean blankets and/or towels under the mother.
2. As the baby is being birthed, support the head.

3. Wipe any fluids or mucus away from the baby's mouth and nose.
4. Actively dry the baby with a clean cloth to stimulate crying and breathing.
5. Place the baby directly onto the mother's chest and cover with a blanket or towel.
6. Let the placenta and cord drop onto a clean towel. Do not clamp, tie, or cut the cord.
7. Record the time of birth.
8. If the mother has any bleeding tears, apply gentle pressure to them.

12 Environmental Illness

Heat-Related Illnesses

What to Look For

	HEAT EXHAUSTION	HEAT STROKE
Skin	Moist Warm	Dry Hot
Physical	Headache Weakness, exhaustion Nausea, vomiting Fainting	Seizures Coma Severe headache
Mental	Anxiety Dizziness	Altered behaviour: irritable, aggressive, bizarre
Breathing	Normal	Rapid Shallow

Call

The signs and symptoms listed in **red** in the table above are the most serious. Call EMS/9-1-1 immediately if any of these are present. Otherwise, provide care and monitor the person closely.

Care

Heat Exhaustion

Remove from heat

Loosen tight clothing, remove padding from torso

Do not dry skin

ACTIVE COOLING

Pour water on torso

Fan skin

If person is alert, provide cool drink

Heat Stroke

Remove from heat

Loosen tight clothing, remove padding from torso

Do not dry skin

AGGRESSIVE COOLING (ORDER OF PREFERENCE)

Immerse body in cool water

Immerse forearms in cool water

Pour water on torso

Fan skin

If person is alert, provide cool drink

Cold-Related Illnesses

Frostbite

What to Look For

Superficial Frostbite

- Hardened skin
- Skin that looks paler than the area around it
- Pain or stinging in the area, followed by numbness

Deep Frostbite

- Skin and underlying tissues that are hard and solid to the touch
- Skin that is white, blue, black, or mottled
- Complete loss of feeling in the affected area

Care

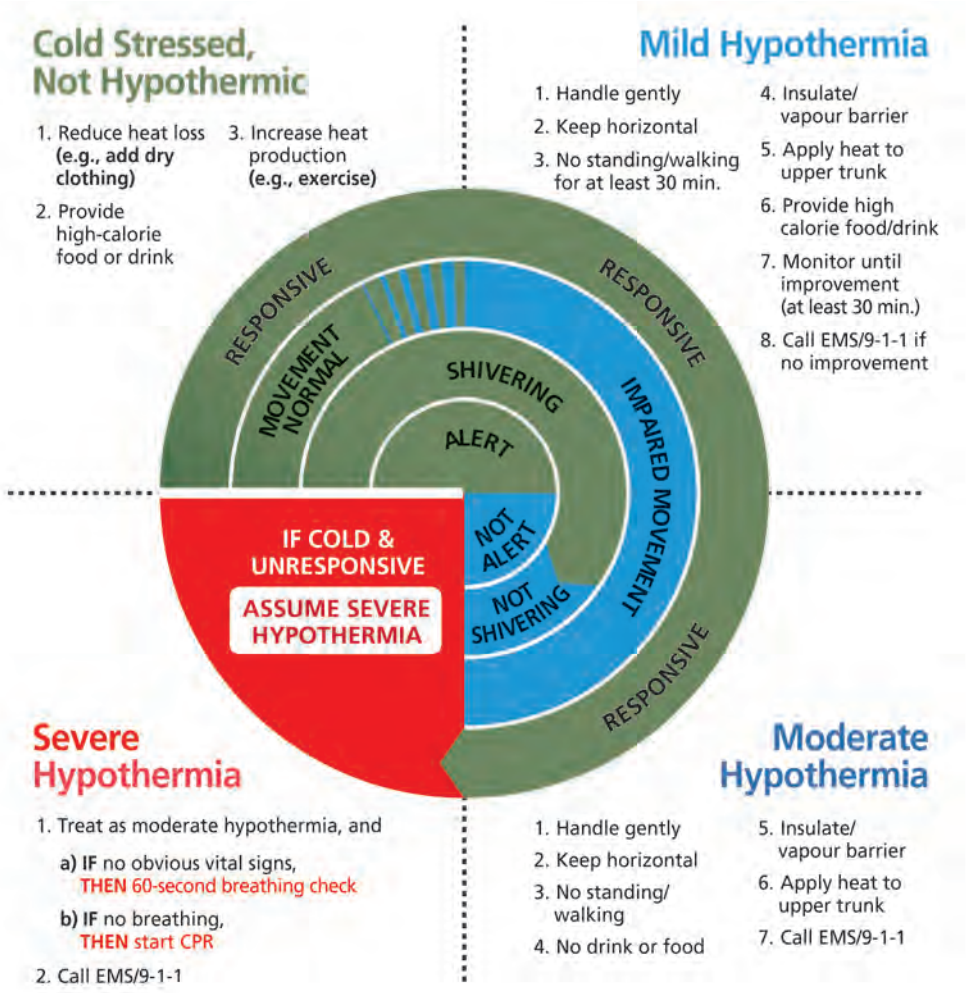
1. Remove anything that may restrict blood flow to the affected area.
2. Thaw the area only if you are sure it will not freeze again. Use warm (not hot) water or body heat.

3. Protect skin with loose, dry dressings. Place gauze between the fingers or toes if they are affected. Leave any blisters intact.
4. If possible, elevate any thawed extremities above the level of the heart.
5. Rehydrate the person by providing plenty of fluids.
6. Encourage the person to seek medical attention.

Hypothermia

Care

1. Starting with the outside ring, assess the person's responsiveness, movement, shivering, and alertness. Decide whether each one is **normal** or **impaired/absent**.
2. Provide the care described in the quadrant that matches the person's condition.



13 Poisons

Call

If the person has an altered level of responsiveness or has difficulty breathing, call EMS/9-1-1 and get an AED. Otherwise, call the Poison Control Centre.

Care

The specific care depends on the type of poison. Follow these general guidelines, along with any instructions from the Poison Control Centre or EMS dispatcher. Always use PPE when caring for a poisoned person so that you don't come into contact with the poison.

Swallowed

WHAT TO LOOK FOR

- An open container of poison nearby
- Burns around the mouth
- Increased production of saliva and/or saliva that is an abnormal colour
- Abdominal cramps, vomiting, and/or diarrhea
- A burning sensation in the mouth, throat, or stomach

CARE

1. Check the packaging of the poison.
2. Induce vomiting only if told to do so by the EMS dispatcher or the Poison Control Centre.
3. If the person needs to go to the hospital, bring a sample of the poison (or its original container).

Inhaled

WHAT TO LOOK FOR

- Breathing difficulties
- Irritated eyes, nose, or throat
- Bluish colour around the mouth
- An unusual smell in the air

CARE

1. Move the person into fresh air, but do not enter a hazardous atmosphere yourself to do so.

Absorbed

WHAT TO LOOK FOR

- Rash or hives
- Burning or itching skin
- Blisters
- Burns

CARE

1. If the poison is a dry powder, brush it off the person's skin, being careful to avoid touching it.
2. Remove any clothing covered in the poison.
3. Flush the skin with running water for at least 15 minutes. Make sure the water flushes away from any unaffected areas of the body.

Injected

WHAT TO LOOK FOR

- One or more puncture wounds
- Problems breathing
- Redness and swelling at the entry point
- A needle found nearby

CARE

1. Wash the puncture site with clean running water.
2. Keep the person still.

Carbon Monoxide Poisoning

Carbon monoxide (CO) is a gas that has no smell, colour, or taste. It is released when fuel is burned (e.g., in a car engine, fireplace, or furnace) without proper ventilation. Concentrated CO is poisonous and life-threatening to those who inhale it.

What to Look For

Signs and symptoms include the following:

- Headache
- Dizziness or light-headedness
- Confusion or altered level of responsiveness
- Weakness or fatigue
- Muscle cramps
- Nausea and vomiting
- Chest pain

Care

1. Treat the person for inhaled poisoning.

Poison Ivy, Sumac, and Oak

Poison ivy, poison sumac, and poison oak produce oil that causes skin irritation in most people.

What to Look For

- Itchy skin
- Reddening of the skin
- Bumps or blisters

Care

1. Encourage the person to apply a cream or ointment designed to reduce itching and blistering (e.g., calamine).
2. Suggest that the person take an oral antihistamine to help relieve itching.
3. If the rash is severe or on a sensitive part of the body (such as the face or groin), the person should see a healthcare provider.

Poison Ivy

Poison Sumac

Poison Oak

Giant Hogweed and Wild Parsnip

What to Look For

The sap of these plants causes the following signs and symptoms when skin is exposed to sunlight:

- Swelling and reddening of the skin
- Painful blistering
- Purplish scarring

Call

Call EMS/9-1-1 if the person is having trouble breathing or if the sap is on the eyes, face, or groin.

Care

1. Protect the area from sunlight.
2. If sap gets into the eyes, rinse them thoroughly with water for at least 15 minutes or until EMS personnel arrive.
3. Encourage the person to seek medical attention.

Giant Hogweed

Wild Parsnip

Poisoning Caused by Alcohol or Drugs

Provide care based on the method the person used to take the drug (e.g., swallowed or injected).

Look for clues as to what drug was taken and give this information to EMS personnel when they arrive. Because drugs can significantly alter a person's perception and/or behaviour, you must be careful to protect yourself. If the person is aggressive, call EMS/9-1-1.

> **!** Opioid drugs, such as heroin and fentanyl, are a common cause of drug overdose. Opioid overdoses can cause respiratory failure and death. Naloxone is a drug used to quickly reverse the effects of an opioid drug overdose.

Insect Stings

Call

Call EMS/9-1-1 and get an AED if there are any signs of a severe allergic reaction.

Care

1. If the stinger is still imbedded, scrape it away from the skin.

2. Wrap a cold pack in a thin towel and place it on the affected area.
3. Continue to watch for signs of anaphylaxis.

Animal Bites

Call

Call your local animal control department if the animal is wild or a stray.

Care

1. Try to get the person safely away from the animal. Do not try to capture it.
2. Treat any wounds.
3. Seek medical attention if the animal is stray or unknown to you or if you suspect it might have rabies.
4. Watch for signs and symptoms of infection.

Spider Bites

Venomous spider bites in Canada are very rare and typically come from either a black widow or brown recluse spider.

Black Widow

WHAT TO LOOK FOR

- A raised, round, red mark
- Cramping pain in the thighs, shoulders, back, and abdominal muscles
- Excessive sweating
- Weakness

Brown Recluse

WHAT TO LOOK FOR

- A slight stinging sensation
- A blood-filled blister that appears within 2 to 8 hours
- A bull's-eye pattern around the bite

Signs and symptoms of a severe reaction occur within 72 hours of the bite and include nausea, vomiting, and joint pain.

Call

Call EMS/9-1-1 if you know or suspect that the person was bitten by a venomous spider.

Care

To care for a spider bite from a black widow spider or a brown recluse spider:

1. Have the person rest quietly and keep the bite elevated.
2. Apply a cold pack wrapped in a thin, dry towel.

Tick Bites

Care

If the tick hasn't started to dig into the flesh, brush it off the skin.

If the tick has begun to bite:

1. Use tweezers to grasp the tick by the head as close to the person's skin as possible.
2. Pull upward without twisting until the tick releases its hold. If you cannot remove the tick or if its mouthparts stay in the skin, the person should seek medical attention.
3. If the tick is removed, wash the area with clean water.
4. If the area becomes infected or the person develops a fever or rash, the person should seek medical attention.

Save any tick you remove in a sealable bag or empty pill bottle, and bring it to the medical appointment. Ticks can be tested for diseases such as Lyme disease and so can help to diagnose your condition.

Snakebites

Call

If you know or suspect that the bite was caused by a venomous snake, call EMS/9-1-1.

Care

1. Ensure that the snake is no longer present. If you see the snake, describe it to EMS personnel when they arrive.
2. Keep the person still, with the bite level with the heart.
3. If the bite is on a limb, remove any jewellery or tight clothing from the limb.
4. Wash the wound with water and cover it with a clean, dry dressing.

Stings From Marine Life

What to Look For

- Pain
- Rash and redness
- Swelling
- Puncture wounds or lacerations

Call

Call EMS/9-1-1 and get an AED if the person is having airway or breathing problems, the person was stung on the face or neck, or you do not know what caused the sting.

Care

1. Flush the injured area with vinegar for at least 30 seconds. If vinegar is not available, mix baking soda and water into a paste and leave it on the area for 20 minutes.
2. While wearing gloves or using a towel, carefully remove any pieces of the animal.
3. Immerse the affected area in water as hot as the person can tolerate for at least 20 minutes or until the pain is relieved. Hot or cold packs can also be used.
4. Encourage the person to seek medical attention and to watch for signs of infection.

Foundations of First Aid

Protect yourself:
Your safety always comes first.

Act:
Do the best you can. Doing something is always better than doing nothing.

Remember the three basic steps:
Check, Call, Care.

Activate EMS/9-1-1:
When in doubt, call for help.

Prioritize:
Care for the most serious condition first.