Canadian Red Cross First Aid and CPR Manual
2011 Edition

Chapter 1: The Red Cross

Henry Dunant

-after witnessing the result on a battlefield in Italy in 1859, Henry Dunant created a neutral organisation to care for wounded soldiers
-he was awarded the very first Nobel Peace Prize as a result
-in 1909, Canada's parliament passed the Canadian Red Cross Society Act

The Red Cross–the Fundamental Principles

1) Humanity–serve people not systems
2) Impartiality–care for victims/aggressors equally
3) Neutrality–never take sides
4) Independence–bow to needs, not rulers
5) Voluntary Services–work not for personal gain
6) Unity–many talents but single idea
7) Universality–respect nations but not bounded by them

Who We Are–The Canadian Red Cross

a) Mission–to improve lives of vulnerable people
b) Vision–voluntary provision of care for those in need
c) Values–humanitarian, respectful, accountable/transparent
d) Volunteers–helping others through time and energy

How We Help

a) Disaster Management–emergency/disaster relief/aid
b) International Operations–rebuild communities everywhere
c) First Aid Programs–training others
d) Swimming and Water Program–meeting individual needs and abilities
e) RespectED: Violence and Abuse Prevention–promoting healthier relationships and safer communities
f) Homecare Services–in-home help to maintain independence
g) Health Equipment Loan Programs–basic health and mobility device loans

NOTES: individuals in Canada (except Quebec) are not required to assist someone in distress; but if you begin to offer aid, you must continue until official help arrives (or you are in danger) to the best of your ability; prioritise the 3C's–1) Check a) ensure the scene is safe; b) the person(s) is/are safe; 2) Call 911 and retrieve AED; 3) Care for the ABC's (Airway; Breathing (head tilt/chin lift open airway); Circulation (CPR, bleeding control, shock)

Chapter 2: Preparing to Respond

Levels of First Aid Training

1) Emergency First Aid–deals with life-threatening conditions that focus upon airway, breathing, and circulation/wound emergencies
2) Standard First Aid–deals with the above plus situations that might lead to life-threatening conditions, focusing on ABC's wounds, head/spine injuries, bone/muscle/joint injuries; sudden medical emergency; heat-/cold-related emergency; poisoning

The First Aider's Role

1) Recognise the emergency
2) Call 911
3) Act according the skills/knowledge/comfort

Recognise An Emergency

-an illness/condition that requires immediate attention (e.g., heart attack)
-an injury to the body by an external force

Prepare! Stay Safe! Survive!

a) Prepare–preparations taken prior to an activity (e.g., first aid course, supplies, etc.)
b) Stay Safe–things done during the activity (e.g., proper gear, safe practices)
c) Survive–actions taken to ensure safety (e.g., reporting potential dangers)

Decide to Act

-respond to situations as perceived (e.g., call 911; provide comfort; keep order)

Barriers to Action

a) Others at scene–making the assumption your aid isn't required
b) Ill/injured person–feeling uncomfortable due to age/behaviour/race
c) Unpleasant injury–feeling queasy due to blood, vomit, etc.
d) Communicable potential–believing you may contract a disease
e) Fear of mistake–concern over doing something wrong

Get Consent

-you need to have the injured person's consent before providing aid
-give your name, that you are trained in first aid, and that you can offer aid; if unresponsive, assume consent
-if the injury is to a child, ask a supervising adult; if no adult, assume consent
-if aid refused, call 911 and inform of refusal; remain nearby and monitor

Preparing for Emergencies

-get training, practise, update certification

At Home

-keep important information in a known location and up-to-date, including medical data/conditions/allergies/prescriptions
-post important contact information
-install/maintain smoke/CO detectors
-have first aid kits handy (house, car)

After An Emergency

-oftentimes it is useful to discuss/debrief with someone and/or you can offer comfort to another by listening

Preparing For Disasters

-identifying what type/nature of disasters can occur in your community/home/region helps in preparedness

At Home

-discuss with family members possible emergencies
-choose two meeting places: one near home, another outside community
-keep family records in a fire/waterproof container
-have emergency supply kits on hand

After a Disaster

-move away from dangers; avoid phone unless calling 911; register with local Red Cross; wear comfortable, heavy-duty clothing when evacuating; carry emergency supply kit; lock home

Infection

-four things need to happen to contract an infection:

1) Germs in environment
2) Germs enter body
3) Enough germs present to cause infection
4) Host's immune system weakened

-if one of these is absent, infection is unlikely
-infections are spread through: direct contact (e.g., via blood); indirect contact (e.g., via item infected person has touched); airborne transmission (e.g., via water droplets spread by a cough/sneeze); vector-borne transmission (e.g., mosquito, tick)

-basic prevention can help stop spread: personal (handwashing, avoid bodily fluids of others, covering mouth/nose when sneezing/coughing, eat healthy, exercise); equipment (use 'barrier' device where appropriate such as goggles, gloves, dressings, etc.); environmental (proper ventilation, separate sinks for hygiene/food prep, proper disposal of contaminated materials)
-handwashing is an important precaution for preventing spread and should be completed before and after aiding another, after removing gloves, when hands appear dirty, after handling dirty materials, after arriving home
-hand sanitisers are no substitute for handwashing but only for rapid decontamination
-when removing gloves try to prevent outer part from touching skin; wash hands immediately after removing
-immunisation can protect against certain diseases by building up natural immune system protection

Chapter 3: The Emergency Medical Services System
-EMS is a network of services to provide emergency assistance
Who Is Coming to Help?
1) First Responders–examples include police and firefighters
2) Paramedics–specialised personnel that can administer medication and pre-hospital care

When to Call EMS/911
-if an emergency appears to exist, call 911
-they will determine if anyone should be sent to assist
-call if: a danger exists; person is unconscious; having difficulty breathing; has chest pain/pressure; deadly bleeding; seizure; slurred speech; head/spinal injury; blood in vomit/urine/stool; imminent childbirth
-also call in case of fire/explosion, gas leak, swift-moving water, vehicular accident, live wires, when an injured person is inaccessible
How to Call EMS/911
-a dispatcher will ask numerous questions to determine which personnel to send
-if you are first aid trained and another person is present, have them call so you can administer aid
-never attempt to drive a person to the hospital if their condition is or could turn life-threatening
Moving a Person Before Providing Care
-only move if their position/location is preventing you from giving aid, they are blocking the way to someone more seriously injured, may drown, or scene is unsafe

a) Clothes drag technique–if a head/spinal injury is suspected, grab clothing behind neck and pull person to safety while cradling head; try to keep head/neck/back straight
b) Two-person seat carry–a useful approach for someone struggling to or cannot walk and doesn't have a head/spinal injury; two people stand on either side, placing one arm under thighs and the other across back grasping wrists having the person lean back into support
c) Walking assist–aids someone who simply needs some support; stand on injured side placing their arm over your shoulders and holding it in place with one hand, support them with your other arm around their waist
d) Blanket drag–to use when no stretcher is available; place the person between you and the blanket; place half the blanket against the person's side; roll them towards you, reaching over to pull blanket towards them then rolling the person on top of the blanket; grab the blanket at the head and pull person to safely
e) Foot drag–a last resort, grab the person by the ankles and pull them in a straight line

Water Rescue
-if someone is far out in the water, call 911 and get an automated external defibrillator (AED) ready; do not swim out to assist if you are not properly trained
<u>Reaching Assist</u>–can be used if the person is closeby: find something that you can hold out to person (e.g., pole, belt, paddle, etc.); lie down at a 45 degree angle to water, spreading legs out (crouch on one knee if can't

lie down); hold out the assist item for the person to grab and then pull them to the edge of the water; secure them

Chapter 4: Check, Call, Care

-carry out a Primary Survey for the scene and person prior to administering first aid

Primary Survey

-check the scene and person

1) Check the scene: is the area safe, what happened, how many need aid, anyone present to help, anyone unconscious; if more than one injured, triage the situation doing what is best for the most
2) Check the person: if safe, ask person's name, tell them yours, that you're trained in first aid and can help if they want; if person is unconscious, assume you have consent; check ABCs (checking the ABCs is a rapid, simultaneous assessment–5-10 seconds)

Airway/Breathing: ensure an open airway (from mouth/nose to lungs); if speaking/crying, it is open; if unconscious, tilt the head back and lift chin ensuring tongue is away from the back of the throat; check for normal breathing (chest rises/falls); if only an occasional gasp (agonal respiration), it is not normal

Circulation: look for deadly bleeding and signs of shock; deadly bleeding needs to be controlled immediately; heart is beating with normal respiration but may soon stop if agonal respiration–begin chest compression immediately if agonal

-if responsive, determine if 911 should be called

-if unresponsive, call 911 and have AED available

-if alone, call 911 and get an AED if nearby and return to care

-if a child, do five cycles of CPR, call, then get AED and return to care

-if a baby, do five cycles of CPR, take with you to call 911, get AED and return to care

-H.A.IN.E.S. Recovery Position should be employed for an unconscious person if you need to leave them for any reason, their airway is open and they're breathing, and there is no deadly bleeding

-this position keeps the airway open and any blood/vomit to escape from mouth

-kneeling next to person, raise their furthest arm above them by rolling outward, palm up; place nearest arm across chest with fingers pointing to opposite shoulder, supporting head/neck with hand; carefully roll person away by pushing on bent knee and shoulder; pull top leg closer to chest; place upper hand on outstretched arm and against their forehead; check airway and ensure head tilted slightly down

Shock

-when organs don't receive enough oxygenated blood, a person can experience shock

-common causes include: excessive blood loss, extensive burns, significant fluid loss (via vomiting/diarrhoea), emotional stress, weak heart, infection

-be aware of: anxiety, cool/clammy skin, confusion, rapid breathing, nausea/vomiting, excessive thirst, weakness, drowsiness/loss of consciousness

-if you suspect shock, treat the cause if possible, have the person rest, keep them warm, check ABCs, provide comfort/reassurance

Secondary Survey

-if the ABCs are fine, begin a secondary survey to determine any non-life-threatening injuries

-if responsive, ask injured person or witnesses about incident

-check vital sign qualities: consciousness, breathing, skin colour (pale skin and/or blue lips indicate circulation issue), temperature

-check from head to toe for injuries

-write down observations if possible to provide to EMS upon arrival

-note that signs are what you can observe, while symptoms are what person reports to you

-ask SAMPLE questions:

S-signs and symptoms

A-allergies

M-medications
P-past medical history
L-last meal
E-events leading up to injuries
Quality of vital signs should be checked: level of consciousness (awake/sleep, confused); breathing (fast/slow, shallow/deep); skin (dry/wet, colour, temperature)
Head-to-Toe Check: carry out a systematic check for non-life-threatening injuries being sure to avoid further injury; inform threatening injuries being sure to avoid further injury; inform person of your intent; avoid painful areas; watch expression look for medic-alert product
Hands-Off Check: possible if person conscious and responsive; continue to monitor level of consciousness, breathing, skin colour; if any signs change for the worse, give first aid
-look at all body areas not covered by clothing for bruising/odd shapes
-note colour of skin and check temperature with back of hand (flush face may indicate breathing issue; cool/moist skin may be shock
-have person move each body part one at a time starting with head (if neck pain, do not move head/neck; if none, move side to side)
-look in ears, nose, mouth for blood/fluids
-have them shrug, take a deep breath, push stomach in/out, move hips slightly, wiggle toes, move ankles, bend knees, wiggle fingers, move wrists, move elbows; have them rest a few minutes then check vitals have then stand slowly, if in pain, dizzy, or can't move a body part, check ABCs again
Hands-On Check: may be necessary especially for an unconscious person but do not perform if airway may be compromised
-check head/neck for bumps, soft spots, bleeding; check shoulders, chest (having person take deep breaths), abdomen (soft spots, pain), hips, legs, and arms
-treat any injuries
-keep person comfortable, monitoring ABCs until EMS arrive

Chapter 5: Airway Emergencies
-the nose/mouth to lungs passage is your airway and blockage of it can be life-threatening
-first aid treatment focuses on attempting to remove blockage
Mild Choking
-a mild obstruction may be indicated by coughing, a natural way to clear the airway
-encourage person to keep coughing and stand by in case the object blocks passage
Severe Choking
-if an object or swelling blocks the airway, a life-threatening situation exists
Common Causes: large food piece, eating while active (e.g., talking, walking, running), too much alcohol before/during meals
Prevention: for adults--chew food well, eat slowly/calmly, do not be active with food in mouth, limit alcohol around meals; for children--do not allow eating during activities, feed babies soft food in small pieces, keep small objects out of reach (and balloons)
What to Look For: difficulty speaking, coughing, breathing; face colour change; look of panic; hand(s) clutching throat; high-pitched noise
Conscious, Choking Adult or Child
Check: scene for safety; if safe, check person and ABCs
Call: shout for help
Care: encourage continued coughing; if not coughing or cannot speak, breathe, or making high-pitched noises; stand behind and wrap an arm across their chest; bend them forward at the waste so that upper airway parallel to ground; with the heel of other hand give firm blows to back between shoulder blades

-if object doesn’t dislodge, make a fist and place just above belly button; place other hand over fist and pull sharply in and up five times; return to five firm back blows and back to abdominal thrusts until object dislodged, person begins coughing, or they fall unconscious
-if the object comes out, perform a secondary survey, then provide continual care and seek medical attention
-if the person becomes unconscious, place on ground on back, check ABCs, call 911, get an AED
-for a large/pregnant person, do as above but chest thrusts rather than abdominal ones
-for a seated person (i.e., in a wheelchair), lock wheels, crouch behind, perform 5 abdominal thrusts, place a fist in middle of back and pull them straight back sharply into seat back, continue alternating
-if you are alone and begin choking, call 911 leaving phone off hook, move to somewhere you may get noticed, drop your abdomen onto a safe, firm object (e.g., chair back)

Conscious, Choking Baby

Check: observe scene, if safe perform ABCs
Call: shout for help
Care: if coughing, do not interfere; if wheezing/high-pitched noises, have someone call 911, get an AED, perform first aid
-sandwich baby between forearm supporting the head, turn the baby face down, lower forearm upon thigh and deliver 5 firm blows with heel of hand onto back, if object doesn’t dislodge turn baby face up supporting on thigh, place 2 fingers in middle of chest just below nipplie line and push hard/fast about 4 cm (1.5 in) 5 times, alternate back/front thrusts until item dislodged or loses consciousness, perform secondary survey if item dislodged and provide continual care until EMS arrive

Unconscious, Choking Adult or Child

Check: ensure scene safe then check person and ABCs
Call: if person non-responsive have someone call 911, get AED, return to care
Care: start chest compressions (place heel on one hand in middle of chest, place other hand on top, perform 30 hard/fast compressions but allow chest to recoil after each), give one rescue breath (open airway via head tilt/chin lift, pinch nostrils, take a normal breath and cover their mouth with yours then blow in for 1 second watching to see if chest rises–if chest doesn't’ rise, tilt head farther back and blow into their mouth again; if both breaths go in but no response start CPR cycle of 30 compression: 2 breaths; if breath does not go in go to next step); repeat 30 compressions and check mouth by grabbing the tongue and lower jaw, checking for an object (turn head to side, slide a finger along cheek to base of tongue and out) and if none go back to giving a rescue breath; if there is an object, remove it and continue CPR until AED/EMS arrives or area becomes unsafe
-if there are two first aiders, alternate compression as it can be physically taxing

Unconscious, Choking Baby

Check: ensure scene is safe then check baby’s ABCs
Call: have someone call 911 and retrieve AED; if alone, perform five cycles of CPR then carry baby (if head/spinal injury ruled out) to make 911 call/get AED and then continue care
Care: start chest compressions with two fingers on chest below nipple line, do 30 hard/fast; give one rescue breath after head-tilt/chin-lift (inhale normally, cover baby’s mouth with yours, breathe in for 1 second); if chest doesn’t rise, do head-tilt/chin-lift again then attempt another breath; if 2 breaths go in but no response, begin CPR sequence 30 compressions:2 breaths; if breath does not go in, repeat compression, look in mouth grabbing tongue and lower jaw; if no object, go back to giving rescue breath; if there is an object remove it with mouth sweep; then go back to rescue breath; continue CPR until AED present/EMS arrives/area becomes unsafe/physically exhausted; provide care until EMS arrives

Chapter 6: Breathing and Circulation Emergencies

Breathing Emergencies

-respiratory distress is when breathing difficulty exists, respiratory arrest is when one can’t breathe at all
-brain damage becomes possible after 4-6 minutes without oxygen

Respiratory Distress

Common Causes: hyperventilation, asthma, allergic reaction/anaphylaxis, chest injury

Hyperventilation

-excessively fast respiration that upsets carbon dioxide-oxygen balance

Causes: emotions, head injury, severe bleeding, medical condition

Prevention: breathing exercises, relaxation techniques

What to Look For: rapid shallow breathing; feeling of suffocating; fear, anxiety, confusion; dizziness, numbness in extremities

What to Do: Check: ensure safe scene, then check person and ABCs; Call: have someone call 911 and get an AED if there appears to be an underlying injury/condition, if irregular breathing continues, or if person loses consciousness; Care: ensure ABCs present, try to get person to relax and breathe slowly (NOTE: breathe slowly with them), perform a secondary survey and treat non-life-threatening conditions, provide care until EMS arrive

NOTE: Assisting With Medications

-person must be capable of self-administration; they must be conscious and able to express themself, understanding risk; assistance limited to preparing medication; oral meds only if they can swallow

-5 Rights of Medication:

1) Right person–name of label is person to receive medication
2) Right medication–confirm on label
3) Right amount–ensure accurate measurement
4) Right time--confirm timing
5) Right method–read directions

Asthma

-air passages narrow during an attack making breathing difficult

-can usually be controlled via medication

Prevention: know causes and avoid; commonly triggered by reactions to air quality (e.g., smoke), pollen, food, drug, insect sting; also temperature fluctuations, extreme humidity/dryness; colds/flu; stress; activity

-have prescribed medication nearby

-make sure supervisors of children with condition are aware

What to Look For: wheezing upon exhale, gasping/unable to catch breath, upset, chest tightening, tingling in extremities

What to Do: Check: ensure scene is safe then check person and ABCs Call: have someone call 911 and retrieve AED; if alone, call 911 and get AED then return to care Care: move person to a well-ventilated area helping them to get comfortable and calming them to try and slow breathing; help them take their meds if present; ensure ABCs; perform secondary survey; provide continual care

How to Assist in the Use of an Inhaler (Puffer) With a Spacer: check 5 Rights of Medication before proceeding; tell person to shake inhaler 3-4 times; help prepare inhaler/spacer; have them exhale and then help bring inhaler/spacer to mouth; have them push top of inhaler once; have them take a single deep breath and hold for up to 10 seconds before exhaling

Allergic Reactions

-a sensitivity to specific substance(s) via skin absorption, lung inhalation, swallowing, injection

Prevention: read ingredients carefully for foods; avoid food/medication triggers; introduce new foods systematically to a child with allergies

What to Look For: rash, hives, itching; feeling of tightness in chest/throat; weakness, dizziness, confusion

What to Do: Check: ensure scene is safe and if it is check person and ABCs Call: have someone call 911 and get AED if reaction is severe and person is having difficulty breathing; if alone, call 911 and get AED then return to care Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; calm/reassure to reduce anxiety; identify allergen and prevent further exposure; watch for increased distress; provide care

Anaphylaxis
-severe allergic reaction in which air passages may swell and lead to respiratory arrest
-may be caused by insect sting, medication, food, allergen
Prevention: avoid causes, carry medication and wear medic alert, alert supervisors for children
What to Look For: signs and symptoms are similar to an allergic reaction but more severe–swelling of lips, face, neck, ears, hands; redness of skin, or blotchy rash, hives; weakness, dizziness, nausea, vomiting, difficulty breathing, coughing, wheezing, high-pitched noises
What to Do: Check: ensure scene is safe then check person and ABCs Call: have someone call 911 and retrieve AED; if alone, call 911 and get AED then return to care Care: if the person has an epinephrine injector, help them to use it; ensure ABCs; perform secondary survey and treat non-life-threatening injuries; calm person, have them get in comfortable position; provide care until EMS arrive
How to Assist in the Use of an Epinephrine Auto-Injector: check 5 Rights of Medication; help prepare injector; have them place injector on thigh and then push firmly with a quick motion (a click should be heard) and hold for 10 seconds; have them remove injector and make sure it goes with them to hospital
Respiratory Arrest
Causes: suffocation, strangulation, airway obstruction, electrocution, drowning, drugs/alcohol, head/chest/lung injury, severe allergic reaction/insect sting, respiratory condition, poisoning
What to Look For: unconscious; bluish lips/pale face; lack of chest/abdomen movement; lack of breathing sounds (maybe the occasional gasp)
Circulation Emergencies
Prevention: best advice to prevent cardiovascular disease and/or heart attack is to maintain a healthy lifestyle
Nutrition: a healthy, balanced diet consists of something from each of the 4 food groups: grain, vegetable/fruit, milk/alternatives, meat/alternatives (Canada's food guide provides amounts)
-fluids are important, especially water (8 times 8 ounce glasses/day); fibres via whole grain breads, cereal, fruit, leafy vegetables; avoid foods high in salt, fat, cholesterol
-improve eating habits by knowing foods; choose low fat substitutes for high-fat dairy products; use no-hydrogenated oils/fats
Weight Control: heart disease, high blood pressure, diabetes, and gall bladder disease may occur from too much body fat
-losing weight is not easy and is impacted by caloric intake, physical activity, hormones, and/or thyroid problems
Exercise: good for the heart, lungs, blood vessels, and muscles; improving cardiovascular fitness should always be a goal; exercise helps to deal with stress, improves self-esteem, sleep, immune system, and controls body fat amount
-aim to exercise 3 times a week for 20-30 minutes at target heart rate (65-85% of maximum heart rate)
Stress Control: staying healthy and preventing illness can occur if you can better cope with stress
-help reduce stress by: developing rewarding hobbies; exercising regularly; avoiding caffeinated drinks; setting realistic goals; practising relaxation techniques
Breaking Unhealthy Habits: Smoking
-the dangers of smoking are now well known and is a preventable cause of heart disease, causes lung cancer and other forms of respiratory distress; these risks, however, begin decreasing as soon as smoking is stopped
Angina
-a periodic chest pain/pressure
Causes: cardiovascular disease, anaemia, certain heart disorders
What to Look For: signs/symptoms similar to a heart attack with pain that usually lasts less than 10 minutes, goes away if person rests, and is usually helped by medication
Heart Attack
-when the heart can't get enough oxygen because of a blocked artery
-caused by cardiovascular disease that affects heart and/or blood vessels

Risk Factors for Developing Cardiovascular Disease

-smoking, high blood pressure, poor diet, obesity, lack of regular exercise, stress, gender, heredity, age

What to Look For: squeezing chest pain, breathing problems, back or abdominal pain, cold and/or sweaty skin, nausea/vomiting, bluish or paler skin, denial, jaw pain

-women, the elderly, and diabetics may experience 'soft signs' of mild, unfocused chest discomfort (comes and goes, not really 'painful'), starts mild but strengthens, tired, gastric discomfort, fluish, improves with rest, worsens with activity

Angina and Heart Attack

What to do: Check: ensure scene is safe and if so check person and ABCs Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: have person rest, assist them to take any meds (e.g., ASA, nitroglycerin) after reviewing 5 Rights of Medication; ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; provide care until EMS arrive

Note: do not have person take ASA if asthma is a concern; ASA prevents blood clotting and reduces heart damage

Transient Ischemic Attack (TIA)

-a 'mini-stroke' caused by a temporary drop in blood flow to part of the brain

Causes: artery clot in brain; artery rupture in brain, tumour

What to Look For: remember F.A.S.T.: Face--numbness/weakness, particularly one side; Arm–numbness/weakness on one side; Speech–slurred or difficult to understand; Time–very important so call 911 immediately

-signs/symptoms may disappear within a few minutes/hours

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs okay; perform secondary survey, treat non-life-threatening conditions; have person rest, place them in recovery position with affected side up, reassure until EMS arrive

Stroke

-interrupted blood flow to brain

Causes/What to Look For/What to Do: all are similar to TIA; additional signs/symptoms of a stroke include: loss of bladder control; sudden, severe headache; dizziness/confusion; temporary loss of consciousness

Prevention: preventing a stroke consists of a healthy lifestyle; similar to cardiovascular disease

Note: Angina and TIAs are very similar and due to a temporary drop in blood flow (Angina to the heart, TIA to the brain)

Deadly Bleeding

-may occur outside or inside the body and needs to be controlled immediately

Causes: injury that breaks a blood vessel

Prevention: know surroundings; keep sharp objects in a safe place; be aware of machinery/equipment used; wear appropriate safety gear; get training if operating unfamiliar tools/machinery; stay alert

External Deadly Bleeding

What to Look For: large amount of bleeding, person in shock

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: expose the wound; apply direct pressure to bleeding; secure dessing; ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; provide care until EMS arrive

Internal Deadly Bleeding

What to Look For: bruising around injured area; soft tissue that is tender, swollen, hard; shock; blood in saliva/vomit; pain severe thirst; anxiety, nausea, vomiting

-signs/symptoms are less obvious and may take some time to appear

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: have person rest

in a comfortable position; check ABCs; perform a secondary survey and treat non-life-threatening; provide care until EMS arrives

Cardiac Arrest

-this is when the heart stops beating

Causes: cardiovascular disease is the most common cause; also drowning, suffocation, severe blood loss, certain drugs, electrocution, severe chest injury, other heart disease/abnormality

What to Look For: unconsciousness, no signs of normal breathing

What to Do: the brain and vital organs will not survive for long without oxygenated blood so someone in cardiac arrest requires CPR, defibrillation, and advanced medical care as soon as possible

-CPR uses rescue breaths and chest compressions to keep blood circulating

-an AED will analyse a person's heart's electrical rhythm and suggest delivering a shock if needed; this should help the heart re-establish an effective rhythm

-defibrillation quickly via an AED has been shown to increase survival rate greatly

Chapter 7: Respiratory and Cardiac Arrest

Rolling a Person

-if you cannot check someone's breathing because they are face down, you need to roll them over

-reach across them and grab clothing close to waist, supporting the neck/head pull them towards you and rolling them over, open airway and check breathing

Compression-Only CPR

-using chest compressions only to help the heart circulate oxygenated blood is suitable when an adult has collapsed suddenly, someone not comfortable/trained needs to act, or responder has no breathing barrier

-it should not be used on a drowning victim, a respiratory emergency that has caused cardiac arrest, a child/baby

Respiratory and Cardiac Arrest, Adult or Child

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: start CPR (place the heel of one hand in chest middle and other hand on top, do 30 hard/fast compressions allowing chest recoil between); give 2 rescue breaths (open airway via head-tilt/chin-lift, pinch nostrils, take a normal breath, cover their mouth with yours, give two 1-second breaths); if breaths go in (chest rises), repeat the 30 compressions:2 breaths cycle–if breaths do not go in, follow steps for an *Unconscious, Choking Adult or Child*; continue CPR until AED arrives, more advanced care arrives, scene becomes unsafe, or you are physically exhausted; provide care until EMS arrives

Respiratory and Cardiac Arrest, Baby

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, take baby (if you don't suspect a head/neck injury) call 911, get an AED, then return to person and return to care Care: start CPR (use one hand to maintain head-tilt, place 2 fingers in middle of chest below nipple line, do 30 hard/fast compressions allowing chest recoil between); give 2 rescue breaths, enough to make chest rise (take a normal breath, cover the baby's mouth and nose with your mouth, give two 1-second breaths); if breaths go in (chest rises), repeat the 30 compressions:2 breaths cycle–if breaths do not go in, follow steps for an *Unconscious, Choking Baby*; continue CPR until AED arrives, more advanced care arrives, scene becomes unsafe, or you are physically exhausted; provide care until EMS arrives

When AED Arrives:

1) Open and power it on
2) Remove clothing/objects that would obstruct placement of pads (including medical patches, using gloves)
3) Ensure chest is dry and free of hair where pads are to be placed (use included razor; if no razor, use second set of pads to pull hair off)
4) Follow diagrams to place pads (appropriate pad according to age)

5) Check if person has a pacemaker (small scar on chest with a lump size of small matchbox), if they do, place pads about 1”/2.5cm from pacemaker
6) Follow AED prompts
7) Give shock when prompted after ensuring no one is in contact with person

-use adult pads for a child (age 1-8) if no child ones are present
-use baby/child ones if less than 1 year of age
-if there’s less than 1”/2.5cm between pads when placed properly, place one on the back and one on the front
Note: if the person is in a pool of water/blood, jump in the liquid to see if a splash occurs; if a splash is made, move them to a ‘dry’ area before using AED

Special Considerations

Air in the Stomach: this can make someone vomit, if they are unconscious vomit may end up in lungs (aspiration); this can make rescue breaths and resuscitation more difficult; to prevent aspiration only give enough breath to raise chest

Vomiting: a person may vomit during CPR
-if this happens, turn person on their side towards you; wipe the person’s mouth clean; reposition them on their back and continue CPR

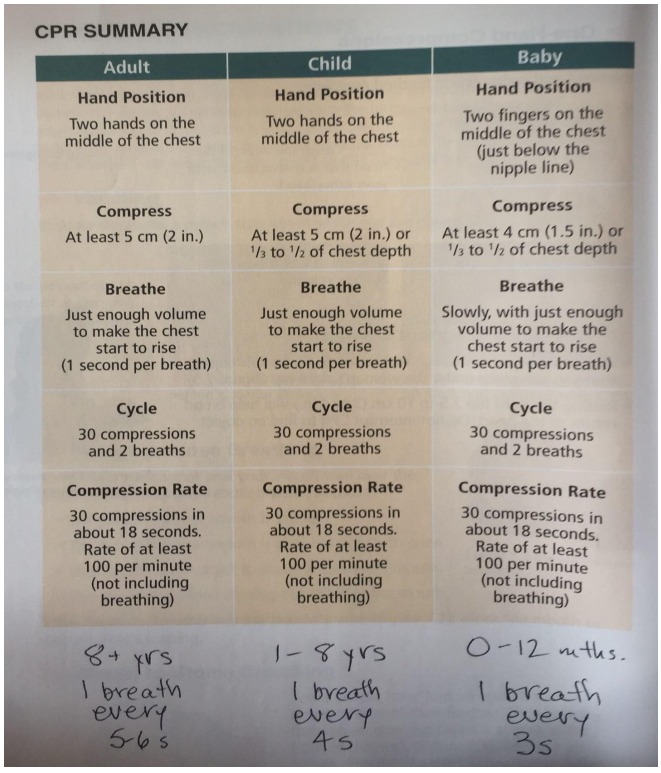
Mouth-to-Nose Breathing: if you cannot make a seal over the person’s mouth (jaw injury, mouth shut too tight, your mouth is too small, blood coming from mouth), breathe into their nose while blocking mouth to keep air from escaping

Mouth-to-Stoma Breathing: some people breathe through a stoma if they’ve had part of their trachia removed; breathe into this device in such situations blocking the mouth/nose to prevent escaping air

One-Hand Compressions: if for some reason doing 2-hand compressions is not possible, a 1-hand method should suffice
-place the heel of one hand in middle of the chest; grasp the wrist of this hand with your other hand; straighten arms as much as possible; being compressions

CPR for Pregnant Women: place a soft object under the women's right hip, raising it 3-4 inches and perform CPR
-have someone else get such an object so as to not interrupt CPR

CPR Summary:



CPR SUMMARY

Adult	Child	Baby
Hand Position Two hands on the middle of the chest	**Hand Position** Two hands on the middle of the chest	**Hand Position** Two fingers on the middle of the chest (just below the nipple line)
Compress At least 5 cm (2 in.)	**Compress** At least 5 cm (2 in.) or 1/3 to 1/2 of chest depth	**Compress** At least 4 cm (1.5 in.) or 1/3 to 1/2 of chest depth
Breathe Just enough volume to make the chest start to rise (1 second per breath)	**Breathe** Just enough volume to make the chest start to rise (1 second per breath)	**Breathe** Slowly, with just enough volume to make the chest start to rise (1 second per breath)
Cycle 30 compressions and 2 breaths	**Cycle** 30 compressions and 2 breaths	**Cycle** 30 compressions and 2 breaths
Compression Rate 30 compressions in about 18 seconds. Rate of at least 100 per minute (not including breathing)	**Compression Rate** 30 compressions in about 18 seconds. Rate of at least 100 per minute (not including breathing)	**Compression Rate** 30 compressions in about 18 seconds. Rate of at least 100 per minute (not including breathing)
8+ yrs 1 breath every 5-6 s	1-8 yrs 1 breath every 4 s	0-12 mths. 1 breath every 3 s

Chapter 8: Wound Care

-bruises, scrapes, and small cuts are common with many causes

Prevention: establish safe play habits; use appropriate safety equipment

Bruises

-discoloured skin area created by flow of blood to injured area

Causes: blow or impact to body

What to Look For: discolouring, swelling, pain

What to Do: Check: ensure scene is safe and if so check person and ABC Call: call 911 if you suspect a more serious injury Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; cool the injured area to prevent swelling and reduce pain (place cloth barrier between ice/injury); apply ice for about 20 minutes each hour for as long as pain present

Note: if a body part cannot be moved, pain is severe, or serious damage/internal bleeding may be present call 911 and get an AED

Cuts and Scrapes

-a wound where the skin has been split open

-edges may be smooth or jagged

Causes: any action of a sharp object on skin

What to Look For: pain, possible bleeding

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if you suspect a more serious injury Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; use a barrier between your hands and wound (e.g., gloves) or have person use their own hand; wash wound with soap and water; rinse the wound with soap and water; rinse wound under clean, running water for 5 minutes; after reviewing 5 Rights of Medication, apply antibiotic cream; cover wound with non-stick, sterile dressing/bandage; watch for signs of infection

Note: if the wound is significantly contaminated, they should see medical attention; if blood soaks through dressing, place more on top and if bleeding can't be controlled have person seek medical attention

A Stitch in Time: stitches, if needed, should be given within a couple of hours on injury; seek stitches if skin edges don't fall together, wound is greater than 1"/2.5cm long, wound is near joint or on hand/feet/face; stitches help speed healing, reduce infection risk, leaves a less noticeable scar

Puncture Wounds

Causes: pointed object, animal bite

Prevention: establish safe play habits; use appropriate safety equipment; stay away from unfamiliar animals; wear shoes outside; sweep/clean up potential hazards

What to Look For: minimal external bleeding; possible bruising; hole where object penetrated

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get AED if wound is deep/large Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; use a barrier between your hands and wound (e.g., gloves) or have person use their own hand; put direct pressure on wound if a lot of bleeding; once bleeding is controlled wash wound with soap and water; rinse under clean, running water for 5 minutes; after reviewing 5 Rights of Medication, apply antibiotic cream; cover wound with non-stick, sterile dressing/bandage; watch for signs of infection

Dressings and Bandages: dressings are absorbent pads placed on a wound to prevent infection; bandages are used to wrap/cover a dressing

-these are used to control bleeding, apply pressure, provide support, and protect wound from contaminants

-a bandage that is too tight may reduce blood circulation

-if blood soaks through a dressing, place more on top–do not replace the one directly touching wound

Impaled Objects

Causes: force causing an object to penetrate body

Prevention: establish safe play habits; use appropriate safety equipment; wear shoes outside; sweep/clean up potential hazards
What to Look For: object protruding from wound; shock; pain; bleeding
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if object is large, or if impaled in head, neck, or torso Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries
-leave object in place; stabilise object by placing dressings around it; use bandages to keep dressing in place; get medical attention

Nosebleeds

Causes: forceful nose bleeding, nose trauma, high blood pressure, bleeding disorders, dry weather
Prevention: use a humidifier indoors if air is dry; wear proper safety equipment; encourage gentle nose blowing
What to Look For: blood running from the nose
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if person loses consciousness, if bleeding continues for more than 15 minutes, if bleeding begins again, if caused by medical condition or head injury Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries
-pinch nostrils for 10-15 minutes with head slightly forward; once under control, have person avoid rubbing, blowing, or picking nose; if loses consciousness, place in recovery position; gently pull out an object that may have caused bleed if accessible, if not accessible seek medical attention; if head injury the cause, do not pinch nose; provide continual care

Knocked-Out Teeth

Causes: blow or fall impacting mouth
Prevention: wear appropriate safety equipment; wear a seatbelt in car and do not eat/drink in a moving car
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if tooth loss was the result of head injury, person loses consciousness or there may be a more serious injury
Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries
-control bleeding by biting down on a sterile dressing; pick up the tooth by the crown, rinse it off in water, place in milk or water or wrap in sterile gauze, sealing container and labelling; get ot dentist ASAP; provide continual care

Eye Injuries

Causes: foreign objects/particles in eye; impact to eye; radiation/burn
Prevention: wear appropriate safety equipment, get training for machinery/equipment
What to Look For: pain/irritation; difficulty opening eye; watery eye; redness; problem seeing; deformity
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if you suspect a head/spinal injury, if there is an impaled object in/near eye, if eye is out of socket Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries
-if a foreign object in eye, see if person can dislodge by blinking to produce tears; clean surrounding dirt away and then flush eye with water; if object remains, seek medical attention
-if there is an impaled object, have person rest comfortably; stabilise object by placing dressings around it but do not put pressure on eye; use bandages to keep dressing in place
Flash burn: cover eyes with cool, wet cloth; seek medical attention

Ear Injuries

Causes: impact, cut/tear, head injury, loud noise, foreign object
Prevention: wear proper safety equipment
What to Look For: blood/fluid from ear; hearing problem; swelling/deformity; sudden, intense pain
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if blood/fluid draining from ear Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries

-if there is a foreign object and you don't suspect head/spinal injury and appears to be removable: remove by tilting head towards impacted side, gently tapping above the ear to loosen it; grasp object and pull it out
-if a head/spinal injury suspected and/or blood/fluid draining from ear: let ear drain and keep person comfortable still; cover the ear lightly with sterile dressing; provide care until EMS arrive

Infection

-due to germs invading the body
Causes: dirt, foreign bodies, any contact with wound
Prevention: wash hands before/after providing first aid; where gloves wor4king around bodily fluids; use sterile dressings for wounds ; keep immunisations up-to-date (if no tetanus shot within 5 years, seek medical attention); use antibiotic cream to help reduce risk; keep wound area clean, washing regularly
What to Look For: redness, pus, swelling, tenderness, red streaks emanating from area, heat/warmth around area, fever, nausea
What to Do: seek medical attention if infection suspected

Amputations

-complete/partial severing of body part
-tissue damage can be severe but typically not a lot of bleeding
Causes: significant force
Prevention: wear appropriate safety equipment; follow machinery/equipment guidelines
What to Look For: pain, shock, part of body disconnected from rest, bleeding
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if blood/fluid draining from ear Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries
-treat bleeding with direct pressure; retrieve amputated part, wrap in clean gauze and place in labelled plastic bag, place on ice; send with person to hospital; provide care until EMS arrive
-if only partially disconnected, put back in place and treat as an open wound

Crush Injuries

-due to significant pressure on body part
Causes: result of being squeezed between heavy, immobile objects
Prevention: be familiar with surroundings and equipment/machinery being used; ensure equipment/machinery in good working order; wear appropriate safety fear; stay alert
What to Look For: person caught under object; possible wound; deformity; pain; shock; sign of internal bleeding
What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; perform a secondary check and treat non-life-threatening injuries; provide care until EMS arrive

Penetrating Chest Injuries

-if lungs are penetrated by an object, a breathing emergency may arise as blood and/or air enter chest
Causes: weapons, fall, industrial accident
Prevention: good safety practices when operating heavy machinery (e.g., motor vehicle), playing recreational sports
What to Look For: breathing difficulty, chest wound bleeding, sucking sound from chest wound with each breath, severe pain at injury site, coughing up blood, bubbling blood at chest wound, gasping
What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; perform a secondary check and treat non-life-threatening injuries
-have person rest in a comfortable position; cover wound with material that prevents air getting in (e.g., plastic bag); tape dressing in place but leave side closest to ground open for drainage (stops air from going in but allows it to escape); if breathing gets difficult with this, the open side may need to be lifted to let air escape; provide care until EMS arrive

Pneumothorax and Hemothorax

Causes: pneumothorax is when air enters the chest but not lungs via the wound; that puts pressure on the lungs causing collapse; hemothorax is when blood accumulates in chest cavity but no in lungs and prevents lungs from expanding effectively

Prevention: good safety practices when operating heavy machinery (e.g., motor vehicle), playing recreational sports

What to Look For: breathing difficulty, chest wound bleeding, sucking sound from chest wound with each breath, severe pain at injury site, coughing up blood, bubbling blood at chest wound, gasping

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; perform a secondary check and treat non-life-threatening injuries

-have person rest in a comfortable position; cover wound with material that prevents air getting in (e.g., plastic bag); tape dressing in place but leave side closest to ground open for drainage (stops air from going in but allows it to escape); if breathing gets difficult with this, the open side may need to be lifted to let air escape; provide care until EMS arrive

Blunt Chest Injuries

-a direct blow to chest but no resulting hole in chest wall

Causes: motor vehicle accident, fall, sports injury, crushing force on chest

Prevention: good safety practices when operating heavy machinery (e.g., motor vehicle), playing recreational sports

What to Look For: pain, bruising at site, deformity/swelling, shock, guarded/shallow breathing

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; perform a secondary check and treat non-life-threatening injuries

-keep head/spine as still as possible as head/spine injuries can occur from chest impact; provide care until EMS arrive

Flail Chest

Causes: breast bone fractures, rib-breast bone cartilage fractures, rib fractures

What to Look For: breathing difficulty, painful breathing, crunching/grinding sound in chest, uneven chest expansion during breathing

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; perform a secondary check and treat non-life-threatening injuries

-treat injury as a Blunt Chest Injury, provide a bulky item (e.g., towel) to hild against chest to aid breathing, in case ribs are broken keep person still

Burns

-soft tissue injury due to radiation, heat, chemicals, electricity

Prevention

Chemical Burns: store in original containers; wear protective gear; wash hands after use; get WHMIS training; follow package label instructions/precautions, reading prior to use

Electric Burns: keep water away from appliances; fix or dispose of damaged equipment; cover electrical outlet if small children present

Lightning Strike Burns: stay away from water during storm; get into building or car; avoid trees, telephone poles if outside; only use a wired telephone in an emergency; stay off hilltops, crouching in a valley/ravine; avoid metal vehicles/machinery and other metal items (e.g., fencing, pipes); try to stay 2 metres from others

Thermal Burns: keep matches away from children; store flammable products properly; turn pot handles in when cooking on a stove and/or only use back burners; keep hot water tank at 49 C/120 F at most; do not put water on a grease fire; store aerosol cans away from heat/flame ; place a metal screen barrier in front of fireplaces

Sunburns: avoid direct sunlight between 10 am and 3 pm; wear protective clothing when in sun; use sunscreen according to directions

Fire Safety

-ensure working smoke detectors present; plan/practise fire escape protocols including floor plans, escape routes, meeting place, call 911 (assignment); familiarise with new surroundings when travelling; to escape crawl if smoke present; ensure children can open windows, descend on a ladder; leave quickly; if trapped, stuff we (if possible) clothing/towels around doors/vent; call 911

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: have someone call 911 and retrieve an AED if anyone is having breathing difficulty, in significant pain, or unconscious, burns cover 10+5 of body, or fire due to chemicals, explosion, electricity

Chemical Burns Cause: wet/dry chemicals What to Do: Check: ensure scene is safe and if so check person and ABCs Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, return to care if burn covers 10+% of body; Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries; wear protective equipment; flush area with coll, running water for 15+ minutes and chemaisl away from aea; remove contaminated clothing; seek medical attention; refer to SSDS or call Poison Control Centre for first aid suggestions

Electrical Burns Cause:electricity, lightning What to Do: Check: ensure scene is safe (have trained person turn off electricity prior to approach) and if so check person and ABCs Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, return to care; Care: monitor ABCs as heart may have been impacted; perform a secondary survey and treat non-life-threatening injuries; treat person as you would a head/spinal injury; look for entry/exit wounds that may require treatment; provide care until EMS arrives

Thermal Burns Cause**:** liquid, steam, heat , flame Care: treat according to level of burn

Radiation Burns Cause: radioactive material What to Do: refer to WHMIS

Seriousness of Burns

Superficial Burns

What to Look For: redness, pain, possible swelling

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: no need to call 911 unless the person is in great pain or unconsciousness Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries

-cool burn with standing/running water for 10-20 minutes; provide continual car; apply antibiotic cream after burning sensations stops (review 5 Rights of Medication); watch for infection

Partial-Thickness Burns

What to Look For: pain, swelling, blisters

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED if burn covers 10+% of body, they are in great pain, unconscious Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries

-cool small area at a time via running/standing water for 10-20 minutes; if water too painful, cover burn with cool, moist sterile dressing; remove clothing around injury but not if stuck to skin; after cooling cover with dry, sterile dressing; seek medical attention

Full-thickness Burn

What to Look For: redness, pain (may not be present if nerve damage), swelling, blisters, charred/waxy white flesh, open wound

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: have someone call 911 and get an AED; if alone, call 911, get an AED, and return to care Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries

-treat for shock; cool small area at a time; if <10% of body affected, cool with standing water; if too painful, cover burn with cool, moist sterile dressing; remove clothing around injury but not if stuck to skin; after cooling cover with dry, sterile dressing; seek medical attention; have person lie down and treat for shock

Special Considerations for burns: don't treat serious burns with ointment; cool only with wter, not ice; leaver blisters as they are a natural cooling mechanism; only touch with sterile dressing, no absorbent cotton; seek medical attention if lare ages of hands, head, face, feet, groin burnt

Chapter 9: Head and Spinal Injuries

-head and spinal injuries can be fatal, lead to brain dysfunction that includes paralysis, memory/speech issues, behavioural changes, permanent disability

Causes: motor vehicle accident, sports injury, fall, assault; suspect such an injury if: a person falls from a height greater than theirs; diving injury; found unconscious; strong blow to head, trunk, lower jaw; wound in head/trunk; motor vehicle accident; helmet damage; lightning strike; electrocution

-always treat injury as serious

Prevention: put on seat belt in car; ensure babies/children in approved safety seat; wear appropriate headgear/protection in activities (also mouthpieces, eyewear); understand rules and risks of activities; have non-slip floors, stair treads, handrails where appropriate, ensure good lighting for stairs and hallways; drink responsibly; be aware of medication effects; check around water (make sure it is deep enough if diving; enter feet first if depth unknown; swim with another)

What to Look For: always call 911 if you suspect a head/spinal injury; following signs/symptoms do not necessarily indicate such an injury: change in consciousness level/behaviour; shock; drowsiness; severe pain in head, neck, back; blood/fluid from ears/nose; heavy bleeding from or unusual bumps on head/neck/back; seizure; breathing/vision difficulty; nausea, vomiting; unequal pupil size; constant headache, arm/leg weakness or inability to use; loss of feeling/numbness/tingling of body part; neck/back in unusual position; dizziness, disorientation, loss of balance; head bruising, especially around eyes/ears; loss of control of bladder/bowels

-symptoms may take time to appear

What to Do: Check: ensure scene is safe; if so, approach person telling them not to move; check ABCs Call: have someone call 911 and get an AED; if alone, call 911, get an AED, and return to care Care: place hands on both sides of head to ensure head/spine move as little as possible, support head as found until EMS arrives; leave a helmet on unless it is impeding checking ABCs; perform a secondary survey as well as possible without letting go of head (if another first aider present have them do survey); provide care until EMS arrive

-leave person in position found unless in immediate danger or has a life-threatening condition that requires attention

-any injury to jaw, nose, face that can cause a fracture has potential to cause a head/spinal injury

-a person may have a head/spinal injury without any of the symptoms

-do not move person if suspect head/spinal injury unless you are trained and have proper equipment

Moving a Person With a Head and/or Spinal Injury: use the log roll (1-2 people along length, rolling person in unison while someone supports head/neck during roll)

-only do this if you need to clear their airway, you suspect a life-threatening injury and must roll them to treat it, you need to place them on a solid object to move them from danger

Concussion

-a blow to the head/body that causes the brain to shake inside the skull can lead to bleeding/swelling of brain from mild to serious in nature

Causes: single, forceful blow to head; repeated forceful movement of head; violent blow to aw; severe shaking (baby); explosion; blunt force hit to head; motor vehicle accident; significant body blow

What to Look For: consciousness loss is usually short-lasting; person may report 'blacking out'; confusion, memory loss

What to Do: (similar to head/spine injury) Check: ensure scene is safe; if so, approach person telling them not to move; check ABCs Call: have someone call 911 and get an AED; if alone, call 911, get an AED, and return to care Care: place hands on both sides of head to ensure head/spine move as little as possible, support head as found until EMS arrives; leave a helmet on unless it is impeding checking ABCs; perform a secondary

survey as well as possible without letting go of head (if another first aider present have them do survey); provide care until EMS arrive
-leave person in position found unless in immediate danger or has a life-threatening condition that requires attention
-any injury to jaw, nose, face that can cause a fracture has potential to cause a head/spinal injury
-a person may have a head/spinal injury without any of the symptoms
-do not move person if suspect head/spinal injury unless you are trained and have proper equipment
Shaken Baby Syndrome: occasionally, out of anger/frustration, a person will shake a baby; this can result in fractures (of skull, ribs, arms, legs), heavy bleeding, bruising, brain swelling (cutting off oxygen to brain)
-medical attention must be sought immediately
-can occur up to 5 years of age; most occur under 6 months
-a common cause of infant mortality and most frequent cause of long-term disability

Scalp Injury

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: cal 911 and get an AED if unsure how severe injury is or if you can feel a dip, soft area, piece of bone Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries
-hair may hide severity of injury so check carefully; put dressing on wound having person hold; secure dressing with a bandage
-if you feel dip, soft spot, bone, treat as a head injury; put direct pressure on wound if severe bleeding; try to control bleeding by pressure around wound; provide care until EMS arrive

Chapter 10: Bone, Muscle, and Joint Injuries

-may be the result of a strain (muscle/tendon stretch/tear); sprain (ligament stretch/tear); dislocation (bone out of normal joint position); fracture (break/chip/crack of bone)
Causes: fall; awkward/sudden movement; motor vehicle accident; body blow; repetitive force (e.g., running); sport
Prevention: proper vehicle restraints; safety equipment/great; non-slip adhesive strips in bathtub/stair treads/slippery floors; know surroundings; be safe around water; warm-up before exercises; take breaks when tired; ensure good lighting and sturdy handrails on stairs
What to Look For: pain; deformity; swelling; bruising; limited use or inability to move an injured area; bone sticking out through skin; muscle cramp; snap/pop sound when injury occurs; shock
-a muscle cramp is not an ‘injury’ but a painful condition due to heavy exercise or being imobile for a lengthy period; usually passes via rest, stretching/massaging area; changing position of affected area
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: cal 911 and get an AED if there is an issue with ABCs, head/spine injury, difficulty walking, more than one injury, injury to thigh bone or pelvis, altered level of consciousness Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries
-treat injury with R.I.C.E.: have person stop activity (Rest) and Immobilise injured area; apply Ice for 20 minutes every hour for 24-48 hours (use barrier between ice and skin); Elevate the injured area above heart; provide care
Splinting Guidelines: secure injured area using–Soft Splints (folded blanket, towel, pillows, and bandages); Rigid Splints (board, rolled newspaper, tree branch); Anatomical S;lints (use another body part to help immobilise; e.g., support one leg with the others); Slings (arm, hand, wrist support via bandage looped around neck)
-regardless of splint type: check skin temperature/colour below injury before and after splinting (if cold prior, seek medical attention immediately); if warm before but cold after, loosen splint); try to splint injury in position found; immobilise above and below bone/joint injury; pad a rigid/anatomical splint for comfort
Regular Sling and Binder: check circulation of injured region by comparing skin temperature/colour to uninsured area; remove rings and ask if any tingling in fingers; have person support injured arm, holding it

across body with fingers pointed at opposite shoulder; place triangular bandage under supported arm,; holding ends of one side in each han; place end furthest from injured arm over shiuld and around neck; take bottom corner, pull it up supporting arm and around neck via other shoulder, securing two ends behind neck; tuck untied corner into secured bandage; securei injured elbow tying another bandage around body; techeck circulation

Applying a Tube Sling For a Collarbone Fracture: check circulation of injured region by comparing skin temperature/colour to uninsured area; remove rings and ask if any tingling in fingers; place forearm of injured side across chest with finger touching opposite shoulder; place triangular bandage so that one side's corner extends slightly past best elbow and side follows arm across chest past fingers at shoulder; supporting the forearm, tuck bandage under arm from elbow to fingers; take bandage corner near elbow and twist to keep elbow secure, then wrap the rest around ends together; pad the bent elbow/arm area for comfort; tie another bandage around body, securing elbow/arm; check circulation and loosen bandages if problem exists

Osteoporosis

-for older people, this is a leading cause of bone/joint injuries and may occur due to bone calcium loss
-more common in women

Prevention: increase bone strength via calcium-rich foods; regular exercise, vitamin D uptake

What to Look For: fractures that occur with little/no force (especially hips, vertebrae, wrists)

Chapter 11: Sudden Medical Emergencies

Fainting

-brief period of unconsciousness due to lack of blood to brain

Causes: pregnancy; standing motionless for too long; pain; traumatic news; heat/; dehydration; hunger

Prevention: have some sit/lie if feeling 'faint' (dizzy, nauseous); stay hydrated and nourished; avoid tight collars; stand slowly from sitting/lying position

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED

Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries; place person in recovery position to get blood flowing to brain and airways stay open if pregnant, has a history of heart disease, or another serious illness, seek medical attention

Diabetic Emergencies

-when body can't control blood sugar levels
-may be too high (hyperglycemia) or too low (hypoglycemia)
-hyperglycemia is less likely to be an emergency as it develops slowly

Causes: imbalance between 2 or more of–exercise, food intake, insulin production

Prevention: take prescribed meds; check blood sugar level regularly ; keep quick-sugar foods handy

What to Look For: change in consciousness level; change in behaviour (e.g., confusion, aggression); rapid breathing; cool, sweaty skin; pale skin; appear intoxicated; look/feel ill

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED

Care: ensure ABCs present; perform a secondary survey and treat non-life-threatening injuries; if conscious, and person knows its a diabetic emergency, of a sugary drink (e.g., apple or orange juice) and if improves have them eat a full meal if unconscious, perform a secondary survey, place them in recovery position, provide care until EMS arrive

Seizures

-episode of abnormal electrical signals in the brain leading to distrubed brain function, shaking/contraction of limbs, altered consciousness

Causes: head injury; fever, certain medical conditions; poison/drugs; heat stroke; audiovisual stimulation; infection

Prevention: avoid injuries by following safety protocols previously discussed; take prescribed meds as directed; ensure a child's fever doesn't' get too high (seek medical attention if it can't be reduced); limit video game time

What to Look For: sense of urgency to get to safety; hallucinations; daydreaming; uncontrolled muscle movement; eyes rolling into head; drool/foam
Check: ensure scene is safe and if so check person and ABCs Call: call 911 if seizure lasts more than a few minutes, has several seizures in a row, they appear injured, unsure of cause, pregnant, diabetic, child/baby, occurs in water Care: during a seizure (allow them to move about but ensure objects moved away; place blankets/pillows near head); after seizure (ensure ABCs present, perform a secondary survey and treat non-life-threatening injuries; place person in recovery position; keep them comfortable, warm, provide care)

Childbirth

What to Look For: contractions are 2 minutes or less apart; woman says baby is coming/baby's head is showing
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED
Care: ensure ABCs present; help woman to get comfortable and calm worman; wash hands, put on gloves; put clean towels/blanket under her buttocks; support baby's head with one hand as it emerges; once the shoulders appears expect the rest very quickly; hold firmly but do not squeeze; place baby face down and ensure ABCs are present; keep baby warm by wrapping in clean cloth; allow placenta and cord to drop onto a clean towel by the baby–do NOT cut the cord; apply gentle pressure to any tears if woman bleeding; treat mothers and/or baby for shock; provide care until EMS arrive
-be prepared to begin CPR if baby doesn't start breathing on own

Miscarriage

-spontaneous termination of pregnancy within first 20 weeks
Causes: hormonal or genetic; womb abnormality; infection' certain illnesses; age; trauma
Prevention: speak to doctor
What to Look For: anxiety; vaginal bleeding; labour-like pain
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get AED if wound is deep/large Care: ensure ABCs present; calm/comfort woman; perform secondary survey and treat non-life-threatening injuries; provide care until EMS arrive

Chapter 12: Environmental Emergencies

Cold-Related Emergencies

Frost Nip and Frostbite

-frost nip is a superficial freezing of skin whereas frostbite includes freezing of deeper tissue
-body extremities are most susceptible (i.e., ears, fingers, toes, nose)
Causes: exposure to cold
Prevention: wear layered clothing, preferably of tightly woven fabric (avoid cotton); cover most vulnerable body parts; drink warm fluids (or water) ; avoid caffeine/alcohol; take frequent breaks
What to Look For: frost nip (pain/stinging followed by numbness; pale skin); frostbite (waxy, cold skin; hard/solid skin to touch; burning sensation after warming, also reduces pain, tenderness, blisters)
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 if combined with severe hypothermia Care: remove person from cold; ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; warm affected area slowly using body heat or warm water; don't break blisters but protect them with loose dressings; place gauze between fingers/toes; seek medical attention if you suspect frostbite

Snow Blindness

Causes: overexposure to sunlight reflecting off snow
Prevention: wear sunglasses that protect from all sides and that block 100% of UV rays
Check: ensure scene is safe and if so check person and ABCs Call: call 911 if you can't get person to medical attention Care: ensure ABCs present; perform secondary survey and treat non-life-threatening injuries; place person in darker environment; use coll, damp cloths on eyes to reduce pain; seek medical attention
-symptoms may take several hours to appear after exposure

Hypothermia
-life-threatening condition due to low body temperature
Causes: lengthy exposure to cold environment
People at Risk: those who work/exercise outside; elederly; children; malnourished; dehydrated; health issues; have past environmental-related emergency circulatory condition; medications that dehydrate
Prevention: be aware of weather conditions; dress appropriately; cover vulnerable areas of body–especially head and trunk where most heat loss occurs; shivering is a natural response and a sign to get out of cold; drink warm fluids; avoid alcohol/caffeine; carry lighter/matches in a waterproof container; wear PFD on water; change into dry clothes if wet
Things to Remember: hypothermia can cause mild to severe symptoms; can get worse quickly if wet and in cold environment; can get worse slowly if dry in cold environment; can concur any time of year
Mild Hypothermia: shivering, complaining of cold; numbness; body temperature below normal
Moderate Hypothermia: shivering , complaining of cold; lack of coordination and/or speech; confused, unusual behaviour; impaired judgement
Severe Hypothermia: shivering, complaining stops; numbness; lack of coordination/speech; confusion, unusual behaviour; impatient judgement; breathing slowed/stopped; unconscious; body stiffens
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED
Care: ensure ABCs present; treat gently and monitor breathing; get person out of cold; remove wet clothes; warm slowly by wrapping in blankets; put heat sources (e.g., heating pads) in armpits, groin, back of nick placing barrier between (e.g., cloth); give warm liquids if alert (not caffeine/alcohol); perform a secondary survey and treat non-life-threatening injuries; provide care until EMS arrive
Heat-Related Emergencies
Causes: 1) Environmental--heat wave; high humidity 2) Physical--age (children and elderly less able to regulate body); chronic illness; heart disease; skin/hormone/nervous system diseases; burns 3) Behavioural–too much time in sun; not drinking enough fluids to counter sweat loss; excessive work/exercise in hot weather; too much alcohol in hot weather; certain drugs 4) Other–salt or water depletion; obesity; fatigue; poor physical fitness
Prevention: drink cool fluids regularly; avoid outdoors 10am-3pm; slow activities in heat and do less; take breaks; dress for temperature and activity; wear a hat, light-coloured clothing; avoid alcohol and cafeine
Heat Cramps
What to Look For: mild muscle contraction (usually legs and/or abdomen) that may increase in severity normal body temperature; moist skin
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: ask someone to get cool water Care: ensure ABCs are present; get person to cool place; give lots of fluids (juice or sports drink); perform a secondary survey and treat non-life-threatening injuries; stretch/massage affected muscles; provide care until EMS arrive
Heat Exhaustion
What to Look For: slight body temperature increase; moist skin; skin redness; nausea; dizziness, weakness,; exhaustion
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 if vomiting, losing consciousness Care: ensure ABCs are present; have the person rest in a cool place; remove sweating clothing, loosen other clothing; ut cool water on skin fan; small sips of cool water; perform a secondary survey and treat non-life-threatening injuries; avoid activity 10am-3pm; follow treatment for Heat Stroke
Heat Stroke
What to Look For: high body temperature; red, hot, dry skin; irritable, bizarre, aggressive behaviour; progressive loss of consciousness; rapid, weak pulse becoming irregular; rapid, shallow breathing; sweizures
What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED
Care: ensure ABCs are present; rest in a cool place; cool body (e.g., immerse in cool water; sponge with cool

water; ice pack on groin, armpits, back of neck); small sips of cool water; perform a secondary survey and treat non-life-threatening injuries; provide care until EMS arrive

Drowning

Causes: submergence in water preventing oxygen into lungs

Prevention: know water depth; wear appropriate safety gear; be aware around water; supervise children near water; take swimming lessons

Conscious, Drowning Person

What to Look For: struggling, panic in water

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: call 911 and get an AED Care: remove person from water safely, quickly (i.e., use reach assist); ensure ABCs present; treat for hypothermia; perform a secondary survey and treat non-life-threatening injuries; provide care until EMS arrive

Chapter 13: Poisons

-a poison is a substance (absorbed, injected, swallowed, inhaled) that has a harmful impact on the body
-are immediately life-threatening if they affect circulation or bleeding
-when testing, ensure you avoid contact

Prevention: keep poisonous substances properly stored, including medications; teach children to ask before eating on unknown substance; keep products in original containers; use and teach children the posing symbol; always read medicine labels (2-3 times); dispose of outdated medications via pharmacy; work in well-ventilated area when using dangerous chemicals; wear protective gear/clothing when working with chemicals; run engines in open space; review labels before using products; learn about poisonous plants in area

Prevention in the Workplace: according to WHMIS: hazardous material must be labelled; risk and precautions must be known; have MSDS available; trainiend must be provided; check labels and follow instructions

Swallowed Poisons

What to Look For: open container nearby; burns around mouth; increased production of or discoloured saliva; cramps, vomiting; seizures; dizziness, drowsiness; unconscious; burning sensation in mouth, throat, stomach diarrhoea

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: local Poison Control Centre if alert and ABCs present; 911 and retrieve AED if altered level of consciousness or breathing difficulty Care: ensure ABCs present; perform secondary survey and treat non-life-threatening conditions; check poison label; induce vomiting if instructed by PCC/911; provide care; send container with person to hospital

Inhaled Poisons

What to Look For: breathing difficulty; dizziness; seizures; unconsciousness; fog/cloud in air; irritated eyes, nose, throat; vomiting; bluish colour around mouth; unusual smell

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: local Poison Control Centre if alert and ABCs present; 911 and retrieve AED if altered level of consciousness or breathing difficulty Care: ensure ABCs present; get person into fresh air but never enter hazardous atmosphere yourself; perform secondary survey and treat non-life-threatening conditions; provide care; start CPR if person not breathing (use barrier device to avoid contact with poison)

Absorbed Poisons

What to Look For: rash, swelling; hives; burns; unconsciousness; itching; blisters

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: local Poison Control Centre if alert and ABCs present; 911 and retrieve AED if altered level of consciousness or breathing difficulty Care: ensure ABCs present; remove substance from skin by flushing with water for at least 15 minutes; perform secondary survey and treat non-life-threatening conditions; provide care

Injected Poisons

What to Look For: puncture wound; pain; breathing problems; redness, swelling at entry point, medications/drugs nearby

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: local Poison Control Centre if alert and ABCs present; 911 and retrieve AED if altered level of consciousness or breathing difficulty Care: ensure ABCs present; keep puncture site lower than heart; rest in comfortable position; perform secondary survey and treat non-life-threatening conditions; provide care

Stings and Insect Bites

Prevention: wear long-sleeved shirts, pants when in wooded or grassy areas; tuck pant legs into socks/boots, tuck shirt into pants; where ticks present, use tape/rubber bands where pants meet socks; where light-coloured clothing; avoid perfume; remain in middle of trails; avoid underbrush and tall grass; check for ticks once inside; if outdoor pets, spray with appropriate repellent

What to Look For: pain, redness, swelling at injury site; nearby insects

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: 911 and retrieve AED if sings of severe allergic reaction Care: ensure ABCs present; remove stinger by scraping; perform secondary survey and teat non-life-threatening conditions; wash area with soap and water; apply a cold pack; watch for signs of allergic reaction

Tick Bites

What to Do: Check: ensure scene is safe and if so check person and ABCs Call: no need to call 911 or get AED Care: ensure ABCs present; brush tick off if not yet attached; if attached, use tweezers to grab head and pull it out; perform secondary survey and treat non-life-threatening conditions; wash bite area with soap and water then apply antiseptic/antibiotic (after reviewing 5 Rights of Medication); if tick cannot be removed fully, seek medical attention; if rash or flu-like symptoms appear within a month, seek medical attention

Lyme Disease

Causes: bite from an infected tick

What to Look For: early symptoms–a rash in a small red area that spreads 13-18 cm/5-7 inches; fever, headache, weakness, joint/muscle pain, flu-like symptoms 2-4 weeks later (numbness, arthritis, stiff neck; memory loss; vision/hearing difficulties; high fever; irregular, rapid heart rate

What to Do: seek medical attention as soon as possible

Stings From Marine Life

-in Canada, usually just from jellyfish; stingrays, urchins elsewhere

Prevention: know local marine life and avoid stinging variety

What to Look For: paind; redness; rash; swelling

What to Do: Check: ensure scene is safe and if so check person and ABC Call: if breathing difficulties, have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; wash area with vinegar for a least 30 seconds (or apply baking soda and water–toothpaste-like consistency–leaving on for 20 minutes; then in hot water for 20 minutes); put on gloves and remove any tentacles/animal parts; perform a secondary check and treat non-life-threatening injuries; put on cold pack for first hour; after dry, see pharmacies for appropriate cream

Snake Bites

Prevention: do not aggravate a snake; watch where you're stepping while hiking; wear appropriate footwear

What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; keep person still and calm; perform a secondary check and treat non-life-threatening injuries; check temperature and colour of limb beyond bie; report description of snake, if you have, to EMS

DO NOT: apply ice, suction, tourniquet; cut wound

Animal Bites

What to Do: Check: ensure scene is safe and if so check person and ABC Call: local animal control Care: try to get person away from animal while remaining safe; do not try to capture animal; ensure ABCs are present; control deadly bleeding; perform a secondary check and treat non-life-threatening injuries; if minor bit, wash bit with soap and water, control bleeding and dress; watch for signs of infection

Substance Misuse and Abuse

-when used improperly some substances can act like a poison
Stimulants: serve to speed up physical/mental activity
Hallucinogens: change mood, sensations, thought, emotion, and self-awareness; can cause intense fear, panic, paranoid delusions, vivid hallucinations, deep depression, tension, anxiety
Depressants: slow down physical and mental activity; cause drowsiness, impairs coordination and judgement (alcohol is most common one abused)
Designer Drugs: chemical alteration of medications (esp., narcotics, amphetamines); effects unpredictable and dangerous; e.g., ecstasy
What to Look For: signs and symptoms similar to other medical emergencies: moist, flushed skin; sweating; nausea, vomiting; chills; fever; breathing changes; altered level of consciousness; seizure; alternate mental state
What to Do: Check: ensure scene is safe and if so check person and ABC Call: have someone call 911 and retrieve an AED; if alone, call 911, get an AED, then return to person and return to care Care: ensure ABCs are present; perform a secondary check and treat non-life-threatening injuries; roll person into recovery position