

CANADIAN RED CROSS EMERGENCY CARE WORKBOOK ANSWER KEY

The Responder

Key Terms

Abandonment: Ending care of a patient without that patient's consent or without ensuring that someone with equal or greater training will continue that care.

Confidentiality: Protecting a patient's privacy by not revealing any personal information you learn about the patient except to law enforcement personnel or more advanced medical care.

Consent: Permission to provide care, given by a patient to a responder.

Critical incident stress management: Techniques or interventions designed to help an individual cope with psychological stress.

Duty to act: A legal responsibility of some individuals to provide a reasonable standard of emergency care; may be required by case law, statute, or job description.

Emergency medical responder (EMR): A responder who has successfully completed a recognized training program in the care and transportation of a patient.

Emergency medical services (EMS) system: A network of community resources and medical personnel that provides emergency care to patients who are injured or suddenly ill.

First responder: A person trained in emergency care who may be called on to provide such care as a routine part of his job; often the first trained professional to respond to emergencies.

Good Samaritan laws: Laws that protect people who willingly give emergency care while acting in good faith, without negligence, and within the scope of their training.

Interpersonal communication: The process of speaking and listening to other people at an emergency scene; can be verbal or nonverbal.

Medical control: The process that allows a physician to direct care given to a patient by pre-hospital professionals.

Medical terminology: Terms used to describe medically related concepts, such as parts of the body, locations of those parts, or medical conditions; uses common language to clarify meaning, including parts of words, such as prefixes and suffixes, that have their own meaning, for example, *endo*, meaning within, or *cardio*, meaning pertaining to the heart.

Negligence: The failure to provide the level of care a person of similar training would provide, thereby causing injury or damage to another.

Refusal of care: The declining of care by a competent patient.

Standard of care: The minimal standard and quality of care expected of an emergency care provider.

Do You Know...

1. Answers may include the following: confusion, lowered attention span, poor concentration, denial, guilt, depression, anger, change in interactions with others, increased or decreased eating, uncharacteristic or excessive humour or silence, unusual behaviour

What Would You Do?

1. No, you are not at work, therefore, you are acting as a public responder and do not have a duty to act; 2. c; 3. Blood: wear personal protective equipment; Traffic: position the vehicle to protect yourself and the patient, put reflectors or other such objects around the area to warn traffic, have the patient move away from the traffic if possible

Test Your Knowledge

1. b; 2. d; 3. a; 4. c; 5. a; 6. b; 7. F; 8. c; 9. b; 10. a

The First Aid Attendant

Key Terms

Abandonment: Ending care of an ill or injured person without that person's consent or without ensuring that someone with equal or greater training will continue that care.

Confidentiality: Protecting a person's privacy by not revealing any personal information you learn about the person except to law enforcement personnel or more advanced medical care.

Consent: Permission to provide care, given by an ill or injured person to a first aid attendant.

Duty to act: A legal responsibility of some individuals to provide a reasonable standard of emergency care; may be required by case law, statute, or job description.

Emergency medical responder (EMR): a responder who has successfully completed a recognized training program in the care and transportation of an ill or injured person.

Emergency medical services (EMS) system: A network of community resources and medical personnel that provides emergency care to people who are injured or suddenly ill.

First aid attendant: A designated person who provides advanced first aid in the workplace.

Good Samaritan laws: Laws that protect people who willingly give emergency care while acting in good faith, without negligence, and within the scope of their training.

Interpersonal communication: The process of speaking and listening to other people at an emergency scene; can be verbal or nonverbal.

Material Safety Data Sheets (MSDSs): Documents containing important technical information about hazardous materials in a work setting.

Medical control: The process that allows a physician to direct care given to an ill or injured person by pre-hospital professionals.

Negligence: The failure to provide the level of care a person of similar training would provide, thereby causing injury or damage to another.

Refusal of care: The declining of care by a competent person.

Standard of care: The minimal standard and quality of care expected of an emergency care provider.

Workplace Hazardous Materials Information System (WHMIS): A national class identification system that provides workers and employers with information about the hazardous materials they use on the job.

What Would You Do?

1. No, you are not at work, therefore, you are acting as a public responder and do not have a duty to act; 2. c; 3. Blood: wear personal protective equipment; Traffic: position the vehicle to protect yourself and the injured person, put reflectors or other such objects around the area to warn traffic, have the person move away from the traffic if possible

Test Your Knowledge

1. b; 2. d; 3. a; 4. c; 5. a; 6. b; 7. c; 8. b; 9. a

The Emergency Scene

Key Terms

Emergency move: Moving a patient before completing care; done only in certain necessary circumstances.

Hazardous materials: Substances that are harmful or toxic to the body; can be liquids, solids, or gases.

Do You Know...

1. Animals, wires, tripping hazards, possible low lighting, items balanced on ledge; 2. Have person put pets in another room, move or remove tripping hazards, turn on any lights, remove items from ledge; 3. To protect a patient, to protect any responders, to warn oncoming traffic; 4. Location of emergency, extent of emergency, apparent dangers, apparent number of patients, behaviour of patients and bystanders at the scene

Fill in the Blanks

1. a. Fire; b. Crime scene; c. Traffic; d. Hazardous materials; e. Multiple patients injured

What Would You Do?

1. Gloves, helmet, protective eyewear, bright vest, appropriate footwear; 2. b; 3. c

Test Your Knowledge

1. c; 2. a; 3. c; 4. d; 5. c; 6. a; 7. b; 8. c

The Marine Emergency Scene

Key Terms

Confined spaces: Spaces with restricted openings for entry and exit, poor ventilation, possible air contaminants, and physical hazards related to engulfment or collapse.

Emergency move: Moving a person before completing care; done only in certain necessary circumstances.

Hazardous materials: Substances that are harmful or toxic to the body; can be liquids, solids, or gases.

Material Safety Data Sheets (MSDSs): Documents containing important technical information about hazardous materials in a work setting.

Workplace Hazardous Materials Information System (WHMIS): A national class identification system that provides workers and employers with information about the hazardous materials they use on the job.

Do You Know...

1. Animals, wires, tripping hazards, possible low lighting, items balanced on ledge; 2. Have person put pets in another room, move or remove tripping hazards, turn on any lights, remove items from ledge; 3. Location of emergency, extent of emergency, apparent dangers, apparent number of ill or injured people, behaviour of ill or injured people and bystanders at the scene

Fill in the Blanks

1. a. Fire; b. Crime scene; c. Traffic; d. Hazardous materials; e. Multiple people injured

What Would You Do?

1. Gloves, helmet, protective eyewear, bright vest, appropriate footwear, proper respiratory protection; 2. b; 3. c

Test Your Knowledge

1. c; 2. a; 3. c; 4. d; 5. c; 6. a; 7. b; 8. c

Preventing Disease Transmission

Key Terms

Acquired immune deficiency syndrome (AIDS): A condition caused by the human immunodeficiency virus (HIV).

Airborne transmission: The transmission of a disease by inhaling infected droplets that become airborne when an infected person coughs or sneezes.

Bacteria: One-celled micro-organisms that may cause infections.

Blood-borne pathogens: Bacteria and viruses present in human blood and body fluids that can cause disease in humans.

Community-associated MRSA: Methicillin-resistant *Staphylococcus aureus* (MRSA) that occurs in groups of people who have not recently been hospitalized or have not recently had a medical procedure.

Direct contact transmission: The transmission of a disease by touching an infected person's body fluids.

Hepatitis: A viral infection of the liver.

Herpes: A viral infection that causes eruptions of the skin and mucous membranes.

Human immunodeficiency virus (HIV): The virus that destroys the body's ability to fight infection. The resultant state is referred to as AIDS.

Immune system: The body's group of responses for fighting disease.

Immunization: A specific substance containing weakened or killed pathogens that is introduced into the body to build resistance to specific infection.

Indirect contact transmission: The transmission of a disease by touching a contaminated object.

Infection: A condition caused by disease-producing micro-organisms, also called pathogens or germs, in the body.

Infectious disease: Disease capable of being transmitted from people, objects, animals, or insects.

Influenza: Respiratory illness caused by influenza viruses and transmitted from person to person via large virus-laden droplets from coughing or sneezing.

Meningitis: An inflammation of the brain or spinal cord caused by a viral or bacterial infection.

Pathogen: A disease-causing agent; also called a micro-organism or germ.

Severe acute respiratory syndrome (SARS): A viral respiratory illness caused by the SARS-associated Coronavirus (SARS-CoV).

Tuberculosis (TB): A respiratory disease caused by a bacterium.

Vector-borne transmission: The transmission of a disease by an animal or insect bite through exposure to blood or other body fluids.

Virus: A disease-causing agent, or pathogen, that requires another organism to live and reproduce.

Do You Know...

1. A pathogen present, enough of the pathogen, person is susceptible to the pathogen, there is a route of entry;
2. Answers may include the following: personal protective equipment (gloves, gown, mask, eyewear), personal hygiene, engineering and work practice controls, equipment cleaning and disinfecting;
3. Exposure determination; identification of who will receive training, protective equipment, and vaccination; procedures for evaluating details of an exposure incident

What Would You Do?

1. Wear gloves, a mask, a gown, and protective eyewear;
2. b; 3. d

Test Your Knowledge

1. c; 2. b; 3. d; 4. c; 5. a; 6. d

Anatomy and Physiology

Key Terms

Body system: A group of organs and other structures working together to carry out specific functions.

Cell: The basic unit of all living tissue.

Circulatory system: A group of organs and other structures that carry oxygen-rich blood and other nutrients throughout the body and remove waste.

Digestive system: A group of organs and other structures that digest food and eliminate wastes.

Endocrine system: A group of organs and other structures that regulate and coordinate the activities of other systems by producing chemicals that influence the activity of tissues.

Genitourinary system: A group of organs and other structures that eliminate waste and enable reproduction.

Integumentary system: A group of organs and other structures that protect the body, retain fluids, and help prevent infection.

Musculoskeletal system: A group of tissues and other structures that support the body, protect internal organs, allow movement, store minerals, manufacture blood cells, and create heat.

Nervous system: A group of organs and other structures that regulate all body functions.

Organ: A collection of similar tissues acting together to perform specific body functions.

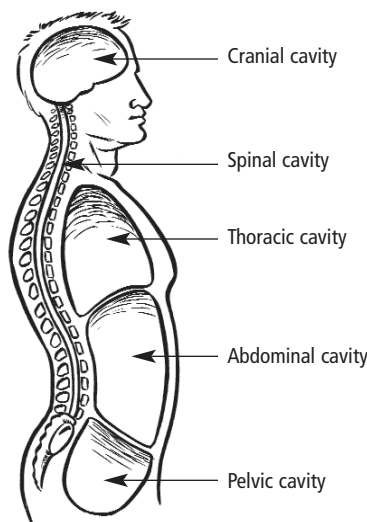
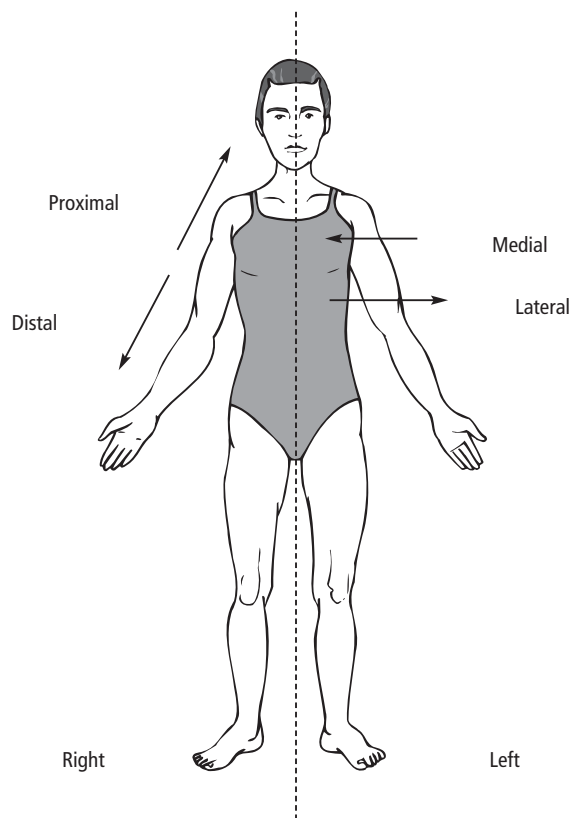
Respiratory system: A group of organs and other structures that bring air into the body and remove wastes through a process called breathing, or respiration.

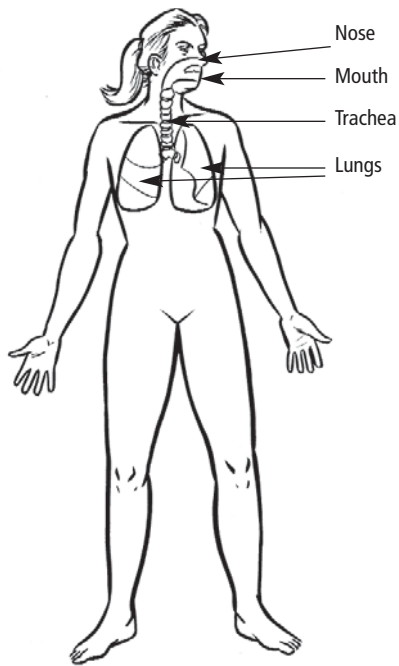
Tissue: A collection of similar cells acting together to perform specific body functions.

Vital organs: Organs whose functions are essential to life, including the brain, heart, and lungs.

Fill in the Blanks

1.

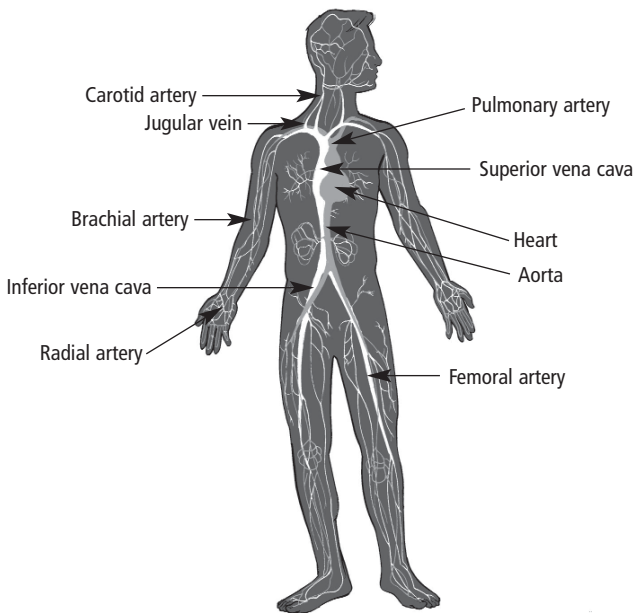




2. A reference position of the body where a person is standing erect, looking forward, feet flat, arms at the sides, and palms facing forward

3.

Body System	Major Components	Purpose
Respiratory	Airway, lungs	Supplies the body with oxygen through breathing
Musculoskeletal	Bones, muscles, joints, ligaments, tendons	Provides structure to body; protects internal organs; allows movement; produces heat; manufactures blood components
Nervous	Brain, spinal cord, nerves	Regulates the body; transmits messages to and from the brain
Digestive	Mouth, esophagus, stomach, intestines	Breaks down food and eliminates waste
Integumentary	Skin, hair, nails	Helps prevent infection; assists with temperature regulation; assists in production of vitamins
Circulatory	Heart, arteries, veins, capillaries, blood	Transports nutrients and oxygen to body cells; removes wastes
Endocrine	Glands	Secretes hormones and other substances into blood and onto skin
Genitourinary	Uterus and genitalia	Reproduction
	Kidneys and bladder	Removes wastes from the circulatory system; regulates water balance



4.

Body Cavity	Major Structures in the Cavity
a. Cranial	Brain
b. Spinal	Spinal cord
c. Thoracic	Heart, lungs
d. Abdominal	Liver, pancreas, intestines, stomach, kidneys, spleen
e. Pelvic	Bladder, rectum, reproductive organs

What Would *You* Do?

Scenario 1

1. a. Proximal, b. Distal; 2. Superior; 3. c

Scenario 2

1. d; 2. Nausea and vomiting; 3. Respiratory and circulatory

Test Your Knowledge

1. b; 2. d; 3. a; 4. c; 5. a; 6. b; 7. d

Secondary Survey

Key Terms

Blood pressure (BP): The force exerted by blood against the blood vessel walls as it travels throughout the body.

Brachial artery: A large artery located in the upper arm.

Carotid artery: An artery located in the neck that supplies blood to the head and neck.

Glasgow Coma Scale (GCS): A standardized system used to determine a patient's level of consciousness; often performed on patients with suspected head injuries.

Glucometry: The process of measuring the level of glucose circulating in the blood.

Golden Period: A term used to describe the critical period (typically the first hour) after a life-threatening traumatic injury; providing early interventions and advanced medical care during this time can result in the best chance of survival for patients.

Head-tilt/chin-lift: A method of opening the airway when there is no suspected head and/or spine injury.

Jaw thrust: A method of opening the airway when there is a suspected head and/or spine injury.

Level of consciousness (LOC): A patient's state of awareness, ranging from being fully alert to unconscious.

Load-and-go emergency: A life-threatening condition that requires a quick response and transfer to advanced medical care.

Mechanism of injury (MOI): The event or forces that caused a patient's injury.

Primary survey: A check for conditions that are an immediate threat to a patient's life.

Pulse oximetry: A method to measure the percentage of oxygen saturation in the blood using a pulse oximeter.

Rapid body survey: A hands-on check that is completed quickly, unless intervention is required; used to look for life-threatening injuries and conditions.

Respiratory rate: The number of times a person breathes per minute.

Secondary survey: A check for injuries or conditions that could become life-threatening if not cared for.

Secondary transport decision: Transport decision based on any additional information learned during the secondary and ongoing surveys.

Signs: Any observable evidence of injury or illness, such as bleeding or an unusually pale skin colour.

Symptoms: Something the patient tells you about her condition, such as "my chest hurts" or "I feel sick to my stomach."

Transport decision: A point in patient assessment at which the responder evaluates whether to treat on-site or transport the patient to more advanced medical care.

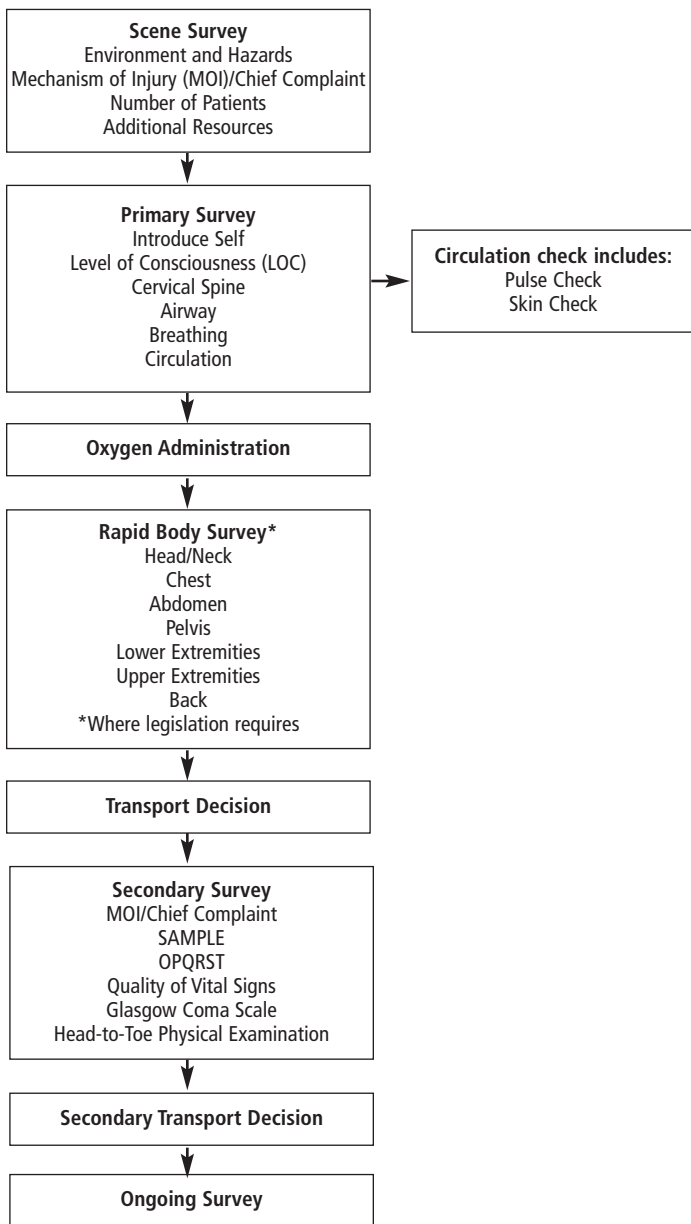
Vital signs: Important information about the patient's condition, which is obtained by checking the level of consciousness, breathing, pulse, skin characteristics, blood pressure, and pupils.

Do You Know...

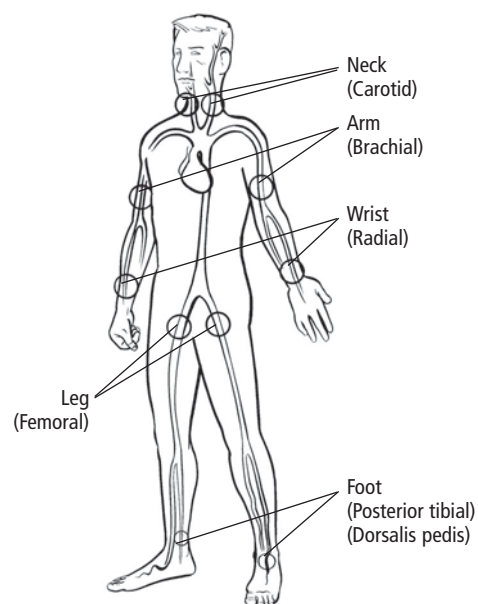
1. Interview the patient and bystanders, check vital signs, do a head-to-toe physical examination; 2. Location of emergency, phone number, name, what happened, number of patients involved, condition of patient(s), care being given; 3. Answers may include the following: unconsciousness or decreased level of consciousness, difficulty breathing (dyspnea), no breathing, no pulse or signs of circulation, severe bleeding, persistent pain or pressure in the chest or abdomen, vomiting or passing blood, suspected poisoning, sudden illness requiring assistance, head injuries, neck injuries, or spine injuries, possible broken bones, imminent childbirth, an incident above the responder's level of training or control; 4. Stethoscope, blood pressure cuff, pupil light, watch; pulse oximeter

Fill in the Blanks

1. The Assessment Process



2.



3.

- ABC:** Airway, Breathing, Circulation
- SAMPLE:** Signs and symptoms, Allergies, Medications, Past medical history, Last meal, Events before the incident
- AVPU:** Alert, Verbal, Painful, Unresponsive
- OPQRST:** Onset, Provoke, Quality, Region (or Radiate), Severity, Time
- APGAR:** Activity, Pulse, Grimace, Appearance, Respiration

4.

Observation	Vital Sign
120/72	Blood pressure
Alert and oriented	Level of consciousness
Equal, round, and reactive to light	Pupils
14, regular, and deep	Breathing
Dilated and fixed	Pupils
93, weak, and irregular	Pulse
130/P	Blood pressure
Pale, cool, and clammy	Skin characteristics
GCS of 13	Level of consciousness
Red, hot, and dry	Skin characteristics
76, regular, and full	Pulse
Unresponsive	Level of consciousness

5. Answers will vary

What Would You Do?

1. Answers may vary depending on the participants. Answers may include the following: administer oxygen, check blood glucose level, transport the child, perform a head-to-toe physical examination, interview bystanders, check vital signs

2.

Vital Sign	Normal vs. Not Normal
Level of consciousness: unresponsive	X
Breathing: 10, shallow, and regular	X
Pulse: 100, strong, and regular	✓
Skin characteristics: pale, cool, and clammy	X
Blood pressure: 120/60	✓
Pupils: equal, round, and reactive to light	✓

3. b

4.

Vital Sign	Normal vs. Not Normal
Level of consciousness: reactive to verbal stimuli	X
Breathing: 14, strong, and regular	✓
Pulse: 100, strong, and regular	✓
Skin characteristics: warm and pink	✓
Blood pressure: 110/60	✓
Pupils: equal, round, and reactive to light	✓

Test Your Knowledge

1. a; 2. c; 3. d; 4. d; 5. c; 6. b; 7. a; 8. d

Choking

Key Terms

Airway obstruction: A blockage of the airway that prevents air from reaching a person's lungs.

Finger sweep: A technique used to remove foreign material from a patient's airway.

Do You Know...

1. Mechanical, anatomical

What Would *You* Do?

1. d; 2. a; 3. b; 4. F (adults should have one ventilation every 5-6 seconds)

Test Your Knowledge

1. d; 2. c

Respiratory Emergencies

Key Terms

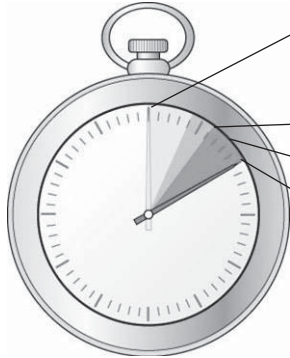
- Acute pulmonary edema:** Fluid buildup in the lungs.
- Anaphylaxis:** A severe allergic reaction in which the air passages constrict and restrict the person's breathing.
- Aspiration:** Taking blood, vomit, saliva, or other foreign material into the lungs.
- Asthma:** A condition that narrows the air passages and makes breathing difficult.
- Breathing emergency:** An emergency in which breathing is so impaired that life can be threatened.
- Bronchitis:** A disease causing excessive mucous secretions and inflammatory changes to the bronchi.
- Chronic obstructive pulmonary disease (COPD):** A disease characterized by a loss of lung function.
- Cyanosis:** A bluish coloration of the skin and mucous membranes due to the presence of deoxygenated blood in the vessels near the skin's surface.
- Emphysema:** A disease in which the alveoli lose their elasticity, become distended with trapped air, and stop working.
- Epinephrine:** A naturally occurring hormone; can be used to counter the effects of anaphylaxis.
- Hyperventilation:** Rapid breathing that upsets the body's balance of oxygen and carbon dioxide.
- Metered-dose inhaler (MDI):** A device prescribed to many people with asthma, containing a medication that counters the effects of an asthma attack.
- Pneumonia:** A group of illnesses characterized by lung infection and fluid- or pus-filled alveoli, resulting in inadequate oxygen in the blood.
- Pulmonary embolism:** A blockage of a pulmonary artery by a clot or other foreign material.
- Rescue breathing:** A technique of breathing for a non-breathing patient.
- Respiratory arrest:** A condition in which breathing has stopped.

Do You Know...

- Unusual breathing, gasping, wheezing, noisy breathing, skin is moist, skin is flushed, skin is pale, skin is ashen or bluish, shortness of breath, restlessness and anxiety, dizziness or light-headedness, chest pain, tingling in hands and feet, use of accessory muscles to breathe, tripod positioning;
- The patient begins to breathe, you need to start CPR, another trained responder takes over, advanced medical care is now in place, you are too exhausted to continue, the scene becomes unsafe

Fill in the Blanks

1.



0 minutes: Breathing stops; heart will soon stop beating. Clinical death

4–6 minutes: Brain damage possible

6–10 minutes: Brain damage likely

10+ minutes: Irreversible brain damage certain. Biological death

2.

Type of Emergency	Description
Choking	An obstruction in the airway
Asthma	A narrowing of the air passages
Emphysema	A disease in which carbon dioxide/oxygen exchange is not effective
Anaphylaxis	Swelling of the air passages due to a reaction to an allergen
Bronchitis	A disease causing excessive mucous secretions and anti-inflammatory changes to the bronchi
Hyperventilation	Breathing faster than normal

Test Your Knowledge

1. b; 2. a; 3. c; 4. b; 5. c; 6. b

Airway and Ventilation

Key Terms

Bag-valve-mask (BVM) resuscitator: A hand-held ventilation device consisting of a self-inflating bag, a one-way valve, and a face mask; can be used with or without supplemental oxygen.

Flowmeter: A device used to regulate in litres per minute (lpm) the amount of oxygen administered to a patient.

Hypoxia: A decrease in oxygen in the blood.

Nasal cannula: A device used to administer oxygen through the nostrils to a breathing patient.

Nasopharyngeal airway (NPA): A curved tube inserted into the nose to assist in maintaining an open airway.

Non-rebreather mask: A special mask combined with a reservoir bag; used to administer high-concentration oxygen to a breathing patient through a mask that covers both the nose and mouth.

Oropharyngeal airway (OPA): A curved plastic tube inserted into the mouth and positioned at the back of the throat to keep the tongue from blocking the airway.

Oxygen cylinder: A steel or alloy cylinder that contains 100% oxygen under high pressure.

Oxygen delivery device: A device used to administer oxygen from an oxygen cylinder to a patient.

Pressure regulator: A device attached to an oxygen cylinder that reduces the delivery pressure of the oxygen to a safe level.

Resuscitation mask: A pliable, dome-shaped device that fits over the nose and mouth; used to administer oxygen and assist with rescue breathing.

Suctioning: The process of removing matter such as saliva, vomitus, or blood from a patient's mouth and throat by means of a mechanical or manual device.

Ventilation: The process of providing oxygen to the lungs through rescue breathing or by other means.

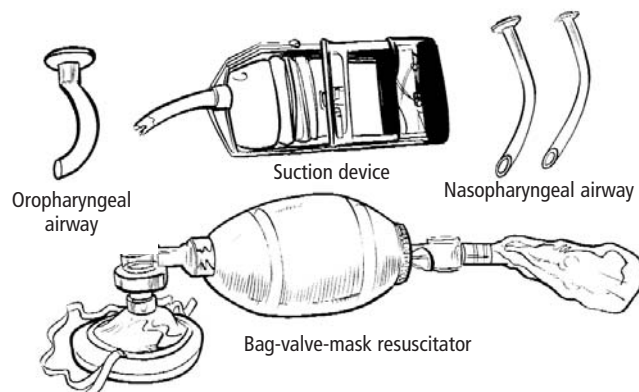
Ventilation devices: Devices used to help with ventilation.

Do You Know...

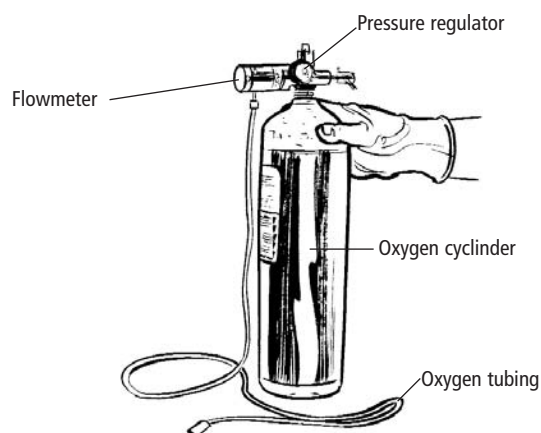
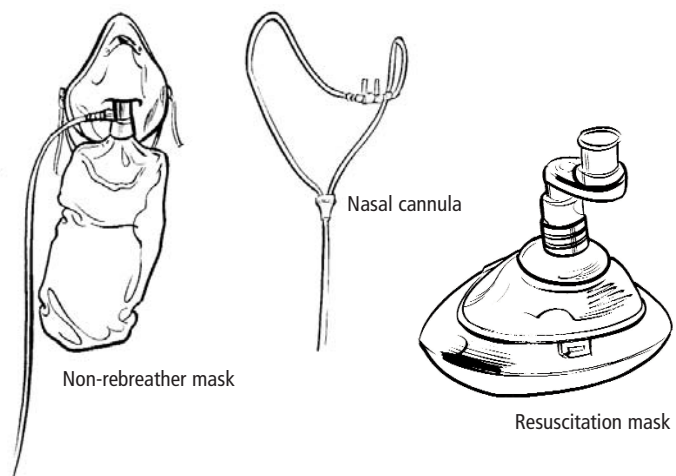
1. Do not operate around an open flame or sparks or in close proximity to an AED; do not stand oxygen cylinder upright unless secured; do not use grease, oil, or petroleum products to lubricate the regulator

Fill in the Blanks

1.



2.



What Would You Do?

1. a; 2. b; 3. c; 4. d; 5. c

Test Your Knowledge

1. a; 2. d; 3. c; 4. d; 5. c; 6. b; 7. c; 8. a; 9. d; 10. b

Airway and Ventilation in a Marine Environment

Key Terms

Bag-valve-mask (BVM) resuscitator: A hand-held ventilation device consisting of a self-inflating bag, a one-way valve, and a face mask; can be used with or without supplemental oxygen.

Endotracheal (ET) intubation: An advanced technique for airway management for people who are unable to maintain an open airway; involves placing a tube within the trachea.

Flowmeter: A device used to regulate in litres per minute (lpm) the amount of oxygen administered to a person.

Hypoxia: A decrease in oxygen in the blood.

Laryngoscope: An instrument used to see the vocal cords for ET tube placement; consists of a handle and a lighted blade.

Nasal cannula: A device used to administer oxygen through the nostrils to a breathing person.

Non-rebreather mask: A special mask combined with a reservoir bag; used to administer high-concentration oxygen to a breathing person through a mask that covers both the nose and mouth.

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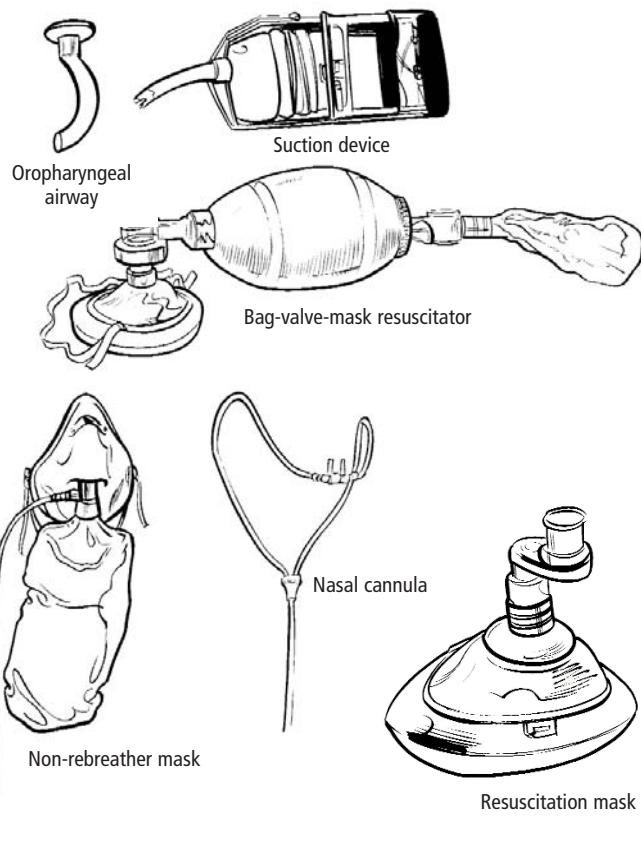
Ventilation devices: Devices used to help with ventilation.

Do You Know...

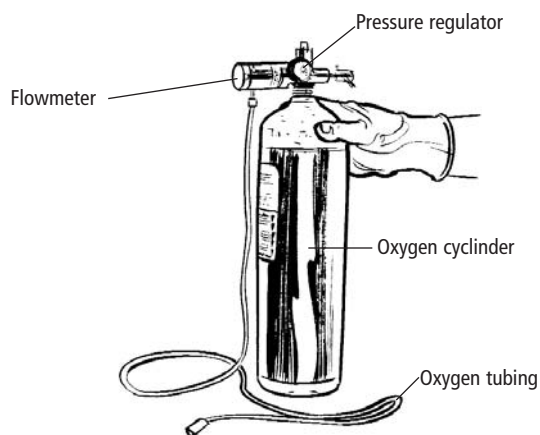
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Fill in the Blanks

1.



2.



What Would You Do?

1. a; 2. b; 3. c; 4. d; 5. c

Test Your Knowledge

1. a; 2. d; 3. c; 4. d; 5. c; 6. b; 7. c; 8. a; 9. d; 10. b

Circulatory Emergencies

Key Terms

Angina: Chest pain or pressure resulting when the heart needs more oxygen-rich blood than it is getting; pain or pressure usually lasts less than 10 minutes.

Cardiovascular disease: A disease of the heart and blood vessels; commonly known as heart disease.

Cholesterol: A fatty substance made by the body and found in certain foods.

Circulatory emergencies: Sudden illnesses or injuries involving the heart or blood vessels.

Congestive heart failure (CHF): A condition in which the heart loses its pumping ability, causing fluid buildup in the body; results in heart failure.

Coronary arteries: Blood vessels that supply the heart muscle with oxygen-rich blood.

Dysrhythmia: A disturbance in the conduction of electrical impulses within the heart.

Heart: A fist-sized muscular organ that pumps blood throughout the body.

Heart attack: A sudden illness involving the death of heart muscle tissue when it does not receive enough oxygen-rich blood; also called myocardial infarction (MI).

Nitroglycerin: A medication often prescribed to people diagnosed with angina.

Risk factors: Conditions or behaviours that increase the chance that a person will develop a disease.

Stroke: A disruption of blood flow to a part of the brain that causes permanent damage; also called a cerebrovascular accident (CVA).

Transient ischemic attack (TIA): A temporary disruption of blood flow to the brain; sometimes called a mini-stroke or TIA.

Do You Know...

1. OPQRST: **O**nset (Did it start suddenly?), **P**rovoke (What provokes the pain or causes it to get worse?), **Q**uality (What does the pain feel like?), **R**egion or **R**adiate (Where exactly is the pain located? Does it radiate to other areas?), **S**everity (How bad is the pain?), **T**ime (When did the pain begin?); 2. Facial droop: have patient smile; Arm weakness: have patient close his eyes and hold arms out for 10 seconds; Speech abnormalities: have patient say, "You can't teach an old dog new tricks"; 3. TIA; 4. Answers may include the following: smoking, high-fat diet, high blood pressure, obesity, lack of routine exercise, high blood cholesterol, family history of cardiovascular disease, age, sex

What Would You Do?

1. Systolic blood pressure, pulse rate, if he has taken any erectile dysfunction drugs in the past 24 hours; 2. b; 3. Answers may include the following: administer oxygen, have the man maintain a position of comfort, maintain normal body temperature, reassure the man; 4. Decrease damage to the heart, increase success of rehabilitation

Test Your Knowledge

1. T; 2. a; 3. b; 4. d

Cardiopulmonary Resuscitation

Key Terms

Asystole: The absence of electrical activity in the heart.

Automated external defibrillator (AED): An electronic device that shocks a patient's heart to stop certain dysrhythmias.

Cardiac arrest: A condition in which the heart has stopped functioning.

Cardiopulmonary resuscitation (CPR): A technique that combines rescue breathing and chest compressions for a patient whose breathing and heart have stopped.

Ventricular fibrillation: A life-threatening dysrhythmia in which the heart muscle quivers rather than pumping blood.

Ventricular tachycardia: A life-threatening dysrhythmia in which the heart muscle contracts too quickly to adequately pump blood to the body.

Do You Know...

1. The patient's heart starts beating, another trained responder takes over, advanced medical care is now in place, an AED is available, you are too exhausted to continue, the scene becomes unsafe

Fill in the Blanks

1.

CPR Chart			
	Adult	Child	Baby
Hand Position:	Two hands on middle of chest	One or two hands on middle of chest	Two fingers on middle of chest (just below nipple line)
Compress:	At least 5 cm (2 in.)	At least 5 cm (2 in.) or $\frac{1}{3}$ to $\frac{1}{2}$ of chest depth	At least 4 cm (1.5 in.) or $\frac{1}{3}$ to $\frac{1}{2}$ of chest depth
Breathe:	Until chest starts to rise (about 1 second per breath)	Until chest starts to rise (about 1 second per breath)	Slowly, until chest starts to rise (about 1 second per breath)
Cycle:	30 compressions 2 breaths	30 compressions 2 breaths	30 compressions 2 breaths
Compression Rate:	At least 100 per minute (with no breaths)	At least 100 per minute (with no breaths)	At least 100 per minute (with no breaths)

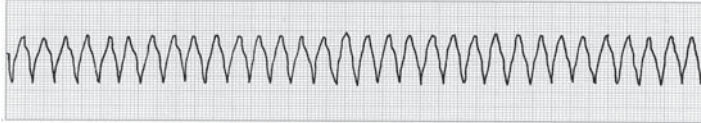
2.



Normal sinus rhythm



Ventricular fibrillation



Ventricular tachycardia



Asystole

What Would You Do?

Scenario 1

1. b; 2. b; 3. d; 4. b; 5. Use two-thumb encircling technique

Scenario 2

1. c; 2. Remove the necklace if it interferes with electrode pad placement, ensure the boy is not in freestanding water, ensure there is at least 2.5 cm (1 in.) between electrode pads; 3. d; 4. Check ABCs, follow AED voice prompts, and act appropriately to your findings

Test Your Knowledge

1. d; 2. a; 3. b; 4. F; 5. b; 6. d; 7. c

Bleeding, Shock, and Soft Tissue Injuries

Key Terms

Arteries: Large blood vessels that carry oxygen-rich blood from the heart to all parts of the body.

Bandage: Material used to wrap or cover a part of the body; commonly used to hold a dressing or splint in place.

Blast injury: An injury resulting from an explosion; caused by pressure waves, flying debris, or being thrown.

Blood volume: The total amount of blood circulating within the body.

Burn: An injury to the skin or other body tissues caused by heat, chemicals, electricity, or radiation.

Capillaries: Tiny blood vessels linking arteries and veins that transfer oxygen and other nutrients from the blood to all body cells and remove waste products.

Closed wound: A wound in which soft tissue damage occurs beneath the skin and the skin is not broken.

Clotting: The process by which blood thickens at a wound site to seal an opening in a blood vessel and stop bleeding.

Critical burn: Any burn that is potentially life-threatening, disabling, or disfiguring; a burn requiring more advanced emergency care.

Crush injury: An injury caused when a crushing force is applied to any part of the body over a short or long period of time.

Direct pressure: The pressure applied on a wound to control bleeding.

Dressing: A pad placed directly over a wound to absorb blood and other bodily fluids and to prevent infection.

External bleeding: Bleeding from an open wound in the skin.

Full-thickness burn: A burn injury involving both layers of skin and underlying tissues; skin may be brown or charred, and underlying tissues may appear white.

Hemorrhage: A loss of a large amount of blood in a short time.

Internal bleeding: Bleeding that occurs inside the body.

Open wound: A wound resulting in a break in the skin's surface.

Partial-thickness burn: A burn injury involving both layers of skin; characterized by red, wet skin and blisters.

Pressure bandage: A bandage applied snugly to create pressure on a wound to help control bleeding.

Shock: A life-threatening condition that occurs when the circulatory system fails to provide adequate oxygen-rich blood to all parts of the body.

Soft tissues: Body structures that include the layers of skin, fat, and muscles.

Superficial burn: A burn injury involving only the top layer of skin, characterized by red, dry skin.

Tourniquet: A constricting band used over an artery above the site of an open wound with severe bleeding to decrease blood flow to the injured area for a short period of time.

Veins: Blood vessels that carry oxygen-poor blood from all parts of the body to the heart.

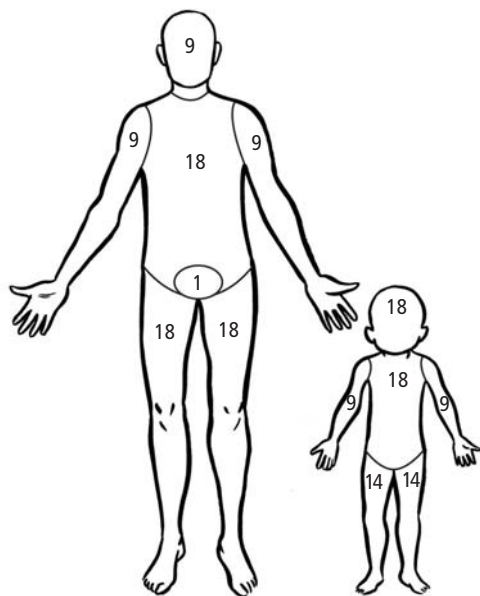
Wound: An injury to the soft tissues.

Do You Know...

1. Plasma, white blood cells, red blood cells, platelets;
2. Transporting oxygen, nutrients and wastes, protecting against disease, helping to maintain constant body temperature;
3. Discoloration of the skin, soft tissues that are tender, swollen, or firm, anxiety or restlessness, rapid and weak pulse, rapid breathing, cool or moist skin, pale or bluish skin, nausea, vomiting, excessive thirst, decreased level of consciousness, drop in blood pressure;
4. Answers may include the following: assess and care for ABCs, care for specific conditions, help the patient rest comfortably, help maintain normal body temperature, provide ongoing survey and care, control external bleeding, administer oxygen, avoid giving the patient anything to eat or drink, obtain more advanced medical care;
5. Neurogenic: failure of the nervous system to control the size of blood vessels, causing them to dilate; Psychogenic: factors such as emotional stress cause blood to pool in the body in areas away from the brain because of vessels dilating; Septic: poisoning caused by severe infections that cause blood vessels to dilate; Anaphylactic: life-threatening allergic reaction to a substance; Cardiogenic: failure of the heart to effectively pump blood to all parts of the body; Hypovolemic: severe lack of blood and fluid in the body; Respiratory: failure of the lungs to transfer sufficient oxygen into the bloodstream;
6. Answers may include the following: restlessness, irritability, pale skin, cool skin, moist skin, rapid breathing, rapid and weak pulse, changes in level of consciousness, nausea, changes in blood pressure;
7. Care can include the following: administer oxygen, keep the patient warm, stabilize the piece of metal and then bandage the arm, obtain more advanced medical care, reassure the patient;
8. Abrasions, lacerations, avulsions, punctures

Fill in the Blanks

1.



2. The two layers are the epidermis and dermis; superficial burns affect the epidermis, partial-thickness burns affect the epidermis and dermis, and full-thickness burns can affect the epidermis and dermis as well as underlying structures, including fatty tissue and muscle

What Would You Do?

Scenario 1

1. a; 2. c; 3. Maintain normal body temperature, administer oxygen, have him maintain a comfortable position, obtain more advanced medical care

Scenario 2

1. a; 2. Answers may include the following: administer oxygen, maintain normal body temperature, obtain more advanced medical care, do a head-to-toe physical examination, interview the boy and any bystanders, take spinal precautions, splint the leg, have the boy rest in a comfortable position; 3. c; 4. d

Scenario 3

1. b; 2. a; 3. Wrap the hand in sterile gauze, place the hand in a plastic bag, keep the hand cool (without putting it directly on ice), send the hand with the patient to the hospital

Scenario 4

1. c; 2. d; 3. T; 4. a

Test Your Knowledge

1. d; 2. c; 3. a; 4. b; 5. d; 6. a; 7. b; 8. b; 9. c; 10. d; 11. T; 12. b; 13. c; 14. F (you can treat for shock without knowing the specific cause); 15. d; 16. T; 17. d; 18. b; 19. c; 20. d; 21. c; 22. T; 23. a; 24. d; 25. a; 26. c; 27. b

Bleeding, Shock, and Soft Tissue Injuries in the Workplace

Key Terms

Arteries: Large blood vessels that carry oxygen-rich blood from the heart to all parts of the body.

Bandage: Material used to wrap or cover a part of the body; commonly used to hold a dressing or splint in place.

Blast injury: An injury resulting from an explosion; caused by pressure waves, flying debris, or being thrown.

Blood volume: The total amount of blood circulating within the body.

Burn: An injury to the skin or other body tissues caused by heat, chemicals, electricity, or radiation.

Capillaries: Tiny blood vessels linking arteries and veins that transfer oxygen and other nutrients from the blood to all body cells and remove waste products.

Closed wound: A wound in which soft tissue damage occurs beneath the skin and the skin is not broken.

Clotting: The process by which blood thickens at a wound site to seal an opening in a blood vessel and stop bleeding.

Critical burn: Any burn that is potentially life-threatening, disabling, or disfiguring; a burn requiring more advanced emergency care.

Crush injury: An injury caused when a crushing force is applied to any part of the body over a short or long period of time.

Dermatitis: An inflammation of the skin usually resulting from direct contact with a chemical irritant or from an allergy.

Direct pressure: The pressure applied on a wound to control bleeding.

Dressing: A pad placed directly over a wound to absorb blood and other bodily fluids and to prevent infection.

External bleeding: Bleeding from an open wound in the skin.

Full-thickness burn: A burn injury involving both layers of skin and underlying tissues; skin may be brown or charred, and underlying tissues may appear white.

Gangrene: The death of tissue caused by bacteria that thrive in the absence of oxygen results in a sudden onset of pain and swelling, with local tissue discoloration and a highly infectious discharge.

Hemorrhage: A loss of a large amount of blood in a short time.

Internal bleeding: Bleeding that occurs inside the body.
Open wound: A wound resulting in a break in the skin's surface.

Partial-thickness burn: A burn injury involving both layers of skin; characterized by red, wet skin and blisters.

Pressure bandage: A bandage applied snugly to create pressure on a wound to help control bleeding.

Shock: A life-threatening condition that occurs when the circulatory system fails to provide adequate oxygen-rich blood to all parts of the body.

Soft tissues: Body structures that include the layers of skin, fat, and muscles.

Subungual hematoma: A collection of blood that forms under the nail bed as a result of a blow to the finger or toe.

Superficial burn: A burn injury involving only the top layer of skin, characterized by red, dry skin.

Tourniquet: A constricting band used over an artery above the site of an open wound with severe bleeding to decrease blood flow to the injured area for a short period of time.

Veins: Blood vessels that carry oxygen-poor blood from all parts of the body to the heart.

Wound: An injury to the soft tissues.

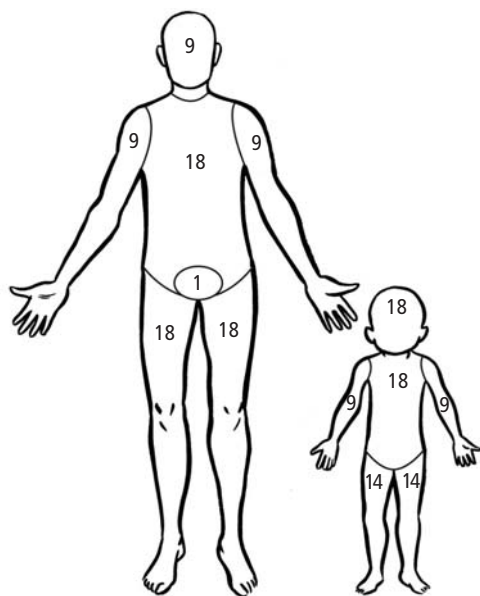
Do You Know...

1. Plasma, white blood cells, red blood cells, platelets;
2. Transporting oxygen, nutrients, and wastes, protecting against disease, helping to maintain constant body temperature;
3. Discoloration of the skin, soft tissues that are tender, swollen, or firm, anxiety or restlessness, rapid and weak pulse, rapid breathing, cool or moist skin, pale or bluish skin, nausea, vomiting, excessive thirst, decreased level of consciousness, drop in blood pressure;
4. Answers may include the following: assess and care for ABCs, care for specific conditions, help the person rest comfortably, help maintain normal body temperature, provide ongoing survey and care, control external bleeding, administer oxygen, avoid giving the person anything to eat or drink, obtain more advanced medical care;
5. Neurogenic: failure of the nervous system to control the size of blood vessels, causing them to dilate; Psychogenic: factors such as emotional stress cause blood to pool in the body in areas away from the brain because of vessels dilating; Septic: poisoning caused by severe infections that cause blood vessels to dilate; Anaphylactic: life-threatening allergic reaction to a substance; Cardiogenic: failure of the heart to effectively pump blood to all parts of the body; Hypovolemic: severe lack of blood and fluid in the body,

dehydration; Respiratory: failure of the lungs to transfer sufficient oxygen into the bloodstream; 6. Answers may include the following: restlessness, irritability, pale skin, cool skin, moist skin, rapid breathing, rapid and weak pulse, changes in level of consciousness, nausea, changes in blood pressure; 7. Care includes one of two methods. Method 1: with one hand, press down on the back of the hook shank by the eye of the hook to push barb away from any tissue; with the other hand, quickly jerk out the hook; wash the injured area and dress the wounds. Method 2: move the hook in a curve so that the barbed tip exits through the skin; clip off the barbed tip and remove the remainder of the hook by pulling it back the way it entered; wash the injured area and dress the wounds; 8. Abrasions, lacerations, avulsions, punctures

Fill in the Blanks

1.



2. The two layers are the epidermis and dermis; superficial burns affect the epidermis, partial-thickness burns affect the epidermis and dermis, and full-thickness burns can affect the epidermis and dermis as well as underlying structures, including fatty tissue and muscle

What Would You Do?

Scenario 1

1. a; 2. c; 3. Maintain normal body temperature, administer oxygen, have him maintain a comfortable position, obtain more advanced medical care

Scenario 2

1. a; 2. Answers may include the following: administer oxygen, maintain normal body temperature, obtain more advanced medical care, do a head-to-toe physical examination, interview the co-worker and any bystanders, take spinal precautions, splint the leg, have the co-worker rest in a comfortable position; 3. c; 4. d

Scenario 3

1. b; 2. a; 3. Wrap the hand in sterile gauze, place the hand in a plastic bag, keep the hand cool (without putting it directly on ice), send the hand with the person to the hospital

Scenario 4

1. c; 2. d; 3. T; 4. a

Test Your Knowledge

1. d; 2. c; 3. a; 4. b; 5. d; 6. a; 7. b; 8. b; 9. c; 10. d; 11. T; 12. b; 13. c; 14. F (you can treat for shock without knowing the specific cause); 15. d; 16. T; 17. d; 18. b; 19. c; 20. d; 21. c; 22. T; 23. a; 24. d; 25. a; 26. c; 27. b

Musculoskeletal Injuries

Key Terms

Bone: A dense, hard tissue that forms the skeleton.

Dislocation: The displacement of a bone from its normal position at a joint.

Distal circulation: Blood flow below the site of an injury.

Extremities: The limbs of the body.

Fracture: A break or disruption in bone tissue.

Immobilize: To use a splint or other method to keep an injured body part from moving.

Joint: A structure in which two or more bones are joined.

Ligament: A fibrous band that holds bones together at a joint.

Muscle: A tissue that lengthens and shortens to create movement.

Osteoporosis: A disease characterized by low bone mass and bone tissue deterioration.

Skeletal muscles: Muscles that attach to bones.

Splint: A device used to immobilize body parts.

Sprain: The excessive stretching and tearing of ligaments and other soft tissue structures at a joint.

Strain: The excessive stretching and tearing of muscles and tendons.

Tendon: A fibrous band that attaches muscle to bone.

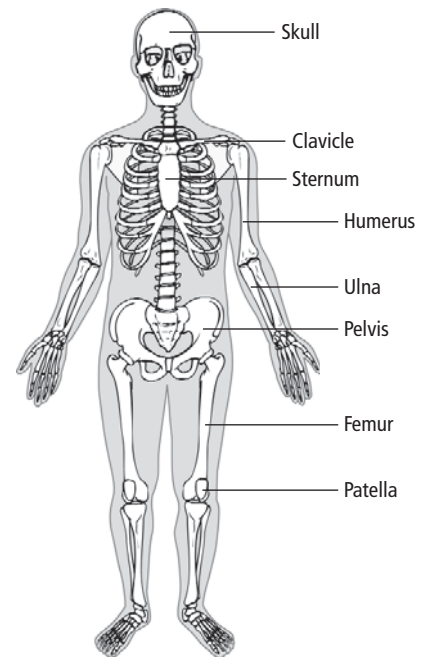
Traction: A pulling force applied to a body part to care for specific musculoskeletal injuries.

Do You Know...

1. Check before to compare with the uninjured limb, decreased circulation and/or sensation below an injury requires more advanced medical care, check after to compare the pre-splinting check to know if the splint is too tight; 2. Pain, swelling, deformity, discoloration of the skin, inability to use the affected part normally; 3. Answers may include the following: significant deformity, moderate or severe swelling and discoloration, inability to move or use the affected body part, bone fragments protruding from a wound, patient feels bones grating or felt or heard a snap or pop at the time of injury, loss of circulation or feeling in an extremity, cause of the injury suggests it may be severe, patient feels affected joint giving way; 4. Rest, immobilize, cold, elevate; 5. Soft, rigid, anatomical, traction

Fill in the Blanks

1.



2. Care may include the following: maintain normal body temperature, administer oxygen, obtain more advanced medical care, have the patient rest, immobilize above and below the injured area, cool the area, elevate the area

What Would You Do?

Scenario 1

1. c; 2. d; 3. Answers may include the following: pulse, skin colour, capillary refill, mobility, sensation

Scenario 2

1. d; 2. a; 3. T; 4. c

Test Your Knowledge

1. b; 2. c; 3. a; 4. d; 5. a; 6. c; 7. b; 8. d; 9. a

Head and Spine Injuries

Key Terms

Cervical collar: A rigid device positioned around the neck to limit movement of the head and neck.

In-line stabilization: A technique used to minimize movement of the patient's head and neck.

Spinal column: The series of vertebrae extending from the base of the skull to the tip of the tailbone (coccyx).

Spinal cord: A bundle of nerves extending from the base of the skull to the lower back, protected by the spinal column.

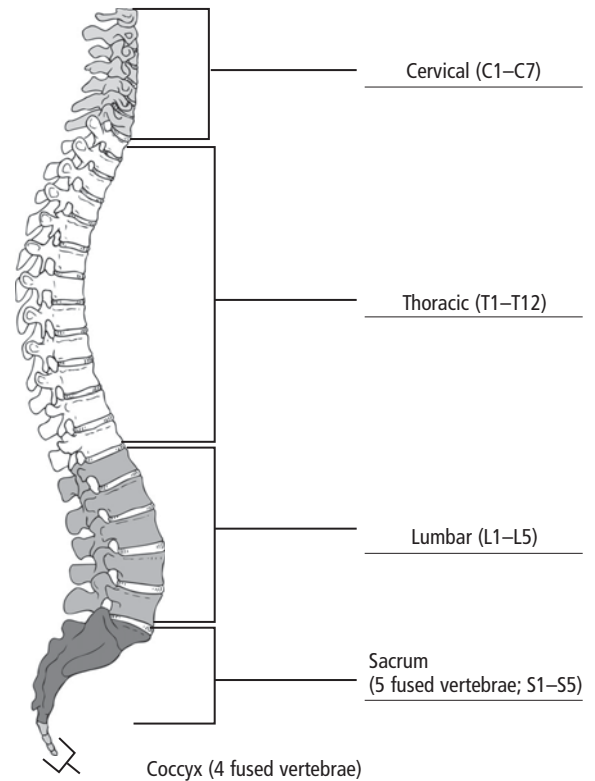
Vertebrae: The 33 bones of the spinal column.

Do You Know...

1. Begin manual in-line stabilization; apply a cervical collar; log-roll the patient on his side; check the back for injury; position the backboard behind the patient; log-roll the patient onto the board; ensure the patient is in the correct position on the board; secure the chest to the board; secure the hips to the board; secure the thighs to the board; secure the legs to the board; immobilize the head to the board; Note: may apply collar after patient is on board, but strapping shouldn't begin until collar is applied; 2. Answers may include the following: changes in level of consciousness, severe pain or pressure in the head, neck or back, swelling, tingling or loss of sensation in the extremities, partial or complete loss of movement of any body part, unusual bumps or depressions on the head, neck or back, blood or other body fluids draining from the ears, nose, mouth or open wounds, profuse external bleeding of the head, neck or back, irregular breathing, open wounds to the scalp, seizures, sudden impaired breathing or vision, unusual or unequal pupil size, nausea or vomiting, persistent headache, loss of balance, incontinence, specific changes in blood pressure and pulse, raccoon eyes, Battle's signs

Fill in the Blanks

1.



What Would You Do?

Scenario 1

1. T; 2. An open airway and/or head and/or spine injury; 3. c; 4. b

Scenario 2

1. d; 2. c; 3. Pressure builds up between the brain and the skull; 4. Pack around the nail with dressings to stabilize the object and then bandage. Once the object has been stabilized, place sterile gauze or eye pads to cover both eyes while maintaining the patient's head in a neutral position

Test Your Knowledge

1. d; 2. b; 3. a; 4. c; 5. d; 6. a; 7. d; 8. F; 9. b

Chest, Abdominal, and Pelvic Injuries

Key Terms

Abdominal aortic aneurysm: A rupturing of the abdominal aorta.

Flail chest: An injury involving fractured ribs that do not move normally with the rest of the chest during breathing.

Hemothorax: A condition in which blood enters the pleural space as a result of a blunt or penetrating trauma.

Occlusive dressing: A dressing or bandage that seals a wound and protects it from the air.

Pneumothorax: A condition in which air enters the pleural space usually as a result of a blunt or penetrating trauma.

Sternum: The long, flat bone in the middle of the front of the rib cage; also called the breastbone.

Sucking chest wound: A type of penetrating chest injury in which a sucking sound is heard with each breath a person takes due to air freely passing in and out of the chest cavity.

Tension pneumothorax: The continual flow of air into the pleural space, which cannot escape.

Do You Know...

1. Chest injuries: bluish skin, flushed skin, pain at the injury site that increases with deep breathing or movement, coughing up blood, difficulty breathing (dyspnea), obvious deformity; Abdominal and/or pelvic injuries: tenderness in the abdomen, thirst, protruding organs, nausea and vomiting, weakness, bruising; All three: pale skin

What Would You Do?

Scenario 1

1. b; 2. c; 3. Put the covering over the wound, seal three sides, except the one closest to the ground to allow air to escape when patient exhales, keep air from entering the wound, and promote drainage of any fluids from the wound; 4. d

Scenario 2

1. d; 2. b; 3. T

Test Your Knowledge

1. T; 2. c; 3. a; 4. c; 5. b; 6. d; 7. a; 8. c

Sudden Illnesses

Key Terms

- Altitude sickness:** Illness due to a change in altitude.
- Appendicitis:** Acute inflammation of the appendix.
- Blood glucose level:** The amount of sugar (glucose) in the blood.
- Bowel obstruction:** An occlusion of the intestinal cavity resulting in blockage of normal flow of intestinal contents.
- Diabetic emergency:** A situation in which a person becomes ill because of an imbalance of insulin.
- Epilepsy:** A chronic condition characterized by seizures that vary in type and duration; can usually be controlled with medication.
- Fainting:** A loss of consciousness resulting from a temporary reduction in blood flow to the brain; also called syncope.
- Gastroenteritis:** A condition often resulting from an infection of the gastrointestinal tract.
- Glucometer:** A device used to measure a patient's blood glucose level.
- Hyperglycemia:** A condition in which too much sugar is in the bloodstream.
- Hypoglycemia:** A condition in which too little sugar is in the bloodstream.
- Insulin:** A hormone that enables the body to use sugar for energy; frequently used to treat diabetes.
- Kidney stones:** Solid concentrations of dissolved minerals found in the kidneys or ureters.
- Peptic ulcer:** A small erosion in the gastrointestinal tract caused by the destruction of the gastric or intestinal mucosal lining by hydrochloric acid.
- Peritonitis:** An inflammation of the peritoneum.
- Seizure:** A disorder in the brain's electrical activity; marked by loss of consciousness and often uncontrollable muscle movement.

Status epilepticus: An epileptic seizure (or repeated seizures) that lasts longer than five minutes without any sign of slowing down.

Urinary tract infection: An infection, usually bacterial, at any site within the urinary tract

Do You Know...

1. Answers may include the following: seizure lasts more than five minutes, patient has repeated seizures, patient appears to be injured, you are uncertain about the cause of the seizure, patient is pregnant, patient is known to have diabetes, patient is a baby or child, seizure takes place in water, patient fails to regain consciousness after the seizure, patient has a febrile seizure brought on by a high fever, patient is an older adult and could have suffered a stroke, this is patient's first seizure; 2. Errors include the following: not giving the woman glucose, giving the woman water, administering insulin

What Would You Do?

Scenario 1

1. b; 2. Move any items he might injure himself on; protect his head; 3. c; 4. Not necessarily, he is diagnosed with epilepsy, has had a short seizure, and has suffered no other obvious injuries; 5. Answers may include the following: patient doesn't wake up, patient has another seizure, patient sustained injuries during the seizure

Scenario 2

1. SAMPLE: Signs and symptoms (What things are bothering you?), Allergies (What allergies do you have?), Medications (What medications do you take?), Past medical history (What medical conditions do you have?), Last meal (When did you last eat or drink? What did you last eat or drink?), Events before the incident (What happened to cause the problem?); 2. b; 3. c

Test Your Knowledge

1. d; 2. a; 3. F; 4. c; 5. b; 6. d; 7. a

Sudden Illnesses in a Marine Environment

Key Terms

Blood glucose level: The amount of sugar (glucose) in the blood.

Diabetic emergency: A situation in which a person becomes ill because of an imbalance of insulin.

Epilepsy: A chronic condition characterized by seizures that vary in type and duration; can usually be controlled with medication.

Fainting: A loss of consciousness resulting from a temporary reduction in blood flow to the brain; also called syncope.

Gastroenteritis: A condition often resulting from an infection of the gastrointestinal tract.

Glucometer: A device used to measure a person's blood glucose level.

Hyperglycemia: A condition in which too much sugar is in the bloodstream.

Hypoglycemia: A condition in which too little sugar is in the bloodstream.

Insulin: A hormone that enables the body to use sugar for energy; frequently used to treat diabetes.

Kidney stones: Solid concentrations of dissolved minerals found in the kidneys or ureters.

Peptic ulcer: A small erosion in the gastrointestinal tract caused by the destruction of the gastric or intestinal mucosal lining by hydrochloric acid.

Peritonitis: An inflammation of the peritoneum.

Pharmacology: The study of drugs and how they interact with the body.

Seizure: A disorder in the brain's electrical activity; marked by loss of consciousness and often uncontrollable muscle movement.

Status epilepticus: An epileptic seizure (or repeated seizures) that lasts longer than five minutes without any sign of slowing down.

Urinary tract infection: An infection, usually bacterial, at any site within the urinary tract.

Do You Know...

1. Answers may include the following: seizure lasts more than five minutes, person has repeated seizures, person appears to be injured, you are uncertain about the cause of the seizure, person is pregnant, person is known to have diabetes, person is a baby or child, seizure takes place in water, person fails to regain consciousness after the seizure, person has a febrile seizure brought on by a high fever, person is an older adult and could have suffered a stroke, this is person's first seizure; 2. Errors include the following: not giving the woman glucose, giving the woman water, administering insulin

What Would You Do?

Scenario 1

1. b; 2. Move any items he might injure himself on, protect his head; 3. c; 4. Not necessarily, he is diagnosed with epilepsy, has had a short seizure, and has suffered no other obvious injuries; 5. Answers may include the following: person doesn't wake up, person has another seizure, person sustained injuries during the seizure

Scenario 2

1. SAMPLE: Signs and symptoms (What things are bothering you?), Allergies (What allergies do you have?), Medications (What medications do you take?), Past medical history (What medical conditions do you have?), Last meal (When did you last eat or drink? What did you last eat or drink?), Events before the incident (What happened to cause the problem?); 2. b; 3. c

Test Your Knowledge

1. d; 2. a; 3. F; 4. c; 5. b; 6. a

Poisoning

Key Terms

Absorbed poison: A poison that enters the body through the skin or mucous membranes.

Depressants: Substances that affect the central nervous system to slow physical and mental activity.

Designer drug: A potent and illegal street drug formed from a medicinal substance whose chemical composition has been modified ("designed").

Drug: Any substance other than food intended to affect the functions of the body.

Hallucinogens: Substances that affect mood, sensation, thought, emotion, and self-awareness; alter perceptions of time and space; and produce delusions.

Ingested poison: A poison that is swallowed.

Inhalants: Substances inhaled to produce an effect.

Inhaled poison: A poison breathed into the lungs.

Injected poison: A poison that enters the body through a bite, sting, or syringe.

Medication: A drug given to prevent or correct the effects of a disease or condition or otherwise enhance mental or physical well-being.

Narcotics: Powerful depressant substances used to relieve anxiety and pain.

Overdose: A situation in which a person takes enough of a substance that it has poisonous or fatal effects.

Poison: Any substance that causes injury, illness, or death when introduced into the body.

Poison Control Centre: A specialized health centre that provides information in cases of poisoning or suspected poisoning emergencies.

Stimulants: Substances that affect the central nervous system to speed up physical and mental activity.

Substance abuse: The deliberate, persistent, excessive use of a substance without regard to health concerns or accepted medical practices.

Substance misuse: The use of a substance for unintended purposes or for intended purposes but in improper amounts or doses.

Do You Know...

1. Ingestion: chlorine bleach, alcohol; Inhalation: carbon monoxide, chlorine gas, cocaine; Injection: ticks, spiders, snakes, animal bites, heroin, cocaine; Absorption: powdered chemicals, poison sumac, poison ivy, cocaine; 2. Answers may vary

What Would You Do?

1. a; 2. d; 3. a

Test Your Knowledge

1. b; 2. a; 3. b; 4. a; 5. F; 6. c; 7. a; 8. b; 9. d

Heat- and Cold-Related Emergencies

Key Terms

Frostbite: A serious condition in which body tissues freeze, most commonly in the fingers, toes, ears, and nose.

Heat cramps: Painful spasms of skeletal muscles following exercise or work in warm or moderate temperatures; usually involve the calf and abdominal muscles.

Heat exhaustion: A form of shock, often resulting from strenuous work or exercise in a hot environment.

Heat stroke: A life-threatening condition that develops when the body's cooling mechanisms are overwhelmed and body systems begin to fail.

Hypothermia: A life-threatening condition in which the body's warming mechanisms fail to maintain normal body temperature and the entire body cools.

Fill in the Blanks

1. Normal body temperature: 37°C; heat cramps: usually 37°C; heat exhaustion: 37–38°C; heat stroke: up to 41°C; mild hypothermia: 36°C; moderate hypothermia: 30–34°C; severe hypothermia: <30°C
- 2.

Heat Stroke	Heat Exhaustion	Heat Cramps
High body temperature Red, hot, dry skin Progressive loss of consciousness Rapid, weak pulse Rapid, shallow breathing	Normal or slightly raised body temperature Cool, moist, pale skin Headache Nausea Dizziness and weakness Exhaustion	Normal body temperature Severe muscle contractions (usually in the legs and abdomen) Moist skin

3. Answers may include the following: those who work or exercise strenuously outdoors or in unheated or poorly cooled indoor areas, older adults, young children, those with health problems, those who have had a heat- or cold-related illness in the past, those who have respiratory or cardiovascular disease or other conditions that cause poor circulation, those who take diuretics

What Would You Do?

Scenario 1

1. b; 2. Cool him down, give him cool fluids to drink, get him to stop working and get out of the sun/heat, loosen clothing, minimize shock; 3. c; 4. Avoid working in the hottest part of the day, decrease activity level when it is hot out, take frequent breaks, dress appropriately for the environment, drink large amounts of fluids

Scenario 2

1. c; 2. d; 3. Care for boy: decrease amount of clothing, give cool liquids to drink; Care for girl: change into warm, dry clothes, give warm liquids to drink; 4. a; 5. T

Test Your Knowledge

1. c; 2. b; 3. d; 4. c; 5. c; 6. b

Special Populations and Crisis Intervention

Key Terms

Active listening: A process that helps you more fully communicate with a patient by focusing on what the patient is saying.

Alzheimer's disease: A progressive, degenerative disease that affects the brain, resulting in impaired memory, thinking, and behaviour.

Assault: Abuse, either physical or sexual, resulting in injury and often emotional crisis.

Behavioural disorder: Any of various forms of behaviour, resulting from situational, organic, or psychiatric causes, that are dangerous or disturbing to the person or those around him.

Child abuse: The physical, psychological, or sexual assault of a child, resulting in injury and emotional trauma.

Developmental disability: Impaired mental function, resulting from injury or genetics.

Elder abuse: Any of four types of abuse: the infliction of pain or injury (physical abuse), mental anguish or suffering (psychological abuse), financial or material abuse, or unnecessary confinement or willful deprivation (neglect) by an older adult's caretaker.

Emotional crisis: A highly emotional state resulting from stress, often involving a significant event in a person's life, such as the death of a loved one.

Hearing impairment: Partial or complete deafness.

Mental disability: Impaired mental function that interferes with normal activity.

Nonverbal communication: Communication through body actions, such as assuming a nonthreatening posture or the use of hand gestures.

Physical assault: Abuse that may result in injury to the body.

Physical disability: A serious injury that results in the loss of limb function or a condition with which there is an impairment that interferes with activity or movement.

Sexual assault: Forcing another person to take part in a sexual act.

Sudden infant death syndrome (SIDS): The sudden death of a seemingly normal, healthy infant that occurs during the baby's sleep without evidence of disease.

Suicide: Self-inflicted death.

Visual impairment: Inability to see adequately, or at all; also referred to as blindness or partial blindness.

Do You Know...

1. Observe the child before touching him, communicate clearly with the parent or guardian and child, remain calm, keep the child with loved ones if possible, gain trust through your actions; 2. Bargaining: an unspoken promise of something in exchange for returning to the pre-existing condition or an extension of life; Anxiety: feelings of worry, uncertainty, and fear; Acceptance: pain and discomfort are eased; Denial/disbelief: refusing to accept the fact that the situation has occurred; Guilt/depression: placing the blame on oneself; Anger: expressing verbal or physical aggression; 3. Nonverbal communication items include the following: moving down to someone's eye level, placing your hands on your hips, smiling, body posture, nodding

Fill in the Blanks

1.

Age Group	Age Range (years)	Things to Consider
Baby	0–1	May exhibit "stranger anxiety"
Toddler	1–3	Usually uncooperative Reassure that they will not be separated from their parent or guardian
Preschooler	3–5	Use their natural curiosity Easy to examine if approached properly
School-aged	5–12	Usually cooperative Can readily converse with them Do not like exposure
Adolescent	13–18	More like an adult Direct questions to them but allow input from parents or guardians Do not like exposure

Differences in Children	Body System	Differences in Older Adults
More flexible, and softer bones	Musculoskeletal	Weaker bones and joints
Thinner skin	Integumentary	Thinner and more fragile skin
Reduced airway size; smaller trachea; faster respiratory rate; nose breathers (newborns); abdominal muscles used to breathe	Respiratory	Respiratory muscles weaker and less co-ordinated; cough and gag reflexes reduced
Thinner, softer brain tissue	Nervous	Brain tissue shrinks; decreased memory, pain perception, and balance; altered mental status and depression common; slower reaction time

2.

What Would You Do?

Scenario 1

1. Write down what you want to say, speak slowly and clearly, look directly at the man when speaking, ask bystanders if anyone knows the man; 2. c; 3. Level of consciousness, pulse, skin, blood pressure, pupils; 4. Musculoskeletal injury, head and/or spine injury, concussion

Scenario 2

1. b; 2. d; 3. Poisoning, head injury, drugs and/or alcohol, heat stroke, diabetic emergency

Scenario 3

1. T; 2. c; 3. a

Test Your Knowledge

1. d; 2. b; 3. c; 4. a; 5. b; 6. d; 7. b; 8. d; 9. a; 10. b; 11. b; 12. d; 13. d; 14. b; 15. b

Childbirth

Key Terms

Abruptio placentae: A partial or complete detachment of a normally implanted placenta at more than 20 weeks gestation.

Amniotic sac: A fluid-filled sac that encloses, bathes, and protects the developing baby.

Breech birth: The delivery of a baby, feet or buttocks first.

Contraction: The rhythmic tightening of muscles in the uterus during labour.

Crowning: The time in labour when the baby's head is at the opening of the vagina.

Ectopic pregnancy: When a fertilized ovum implants anywhere other than in the uterus.

Labour: The birth process; beginning with the contraction of the uterus and dilation of the cervix and ending with the stabilization and recovery of the mother.

Miscarriage: The spontaneous termination of pregnancy before 20 weeks of gestation.

Placenta: An organ attached to the uterus and unborn child through which nutrients are delivered to the baby; expelled after the baby is delivered.

Placenta previa: A condition in which the placenta is attached in the lower uterus.

Postpartum bleeding: Bleeding after the birth of a newborn; characterized by more than 500 mL (17 oz.) of blood loss.

Prolapsed cord: A complication of childbirth in which a loop of umbilical cord protrudes through the vagina prior to delivery of the baby.

Third trimester bleeding: Bleeding during the last three months of pregnancy. Usually caused by abruptio placentae, placenta previa, or uterine rupture.

Umbilical cord: A flexible structure that attaches the placenta to the unborn child, allowing for the passage of blood, nutrients, and waste.

Uterine rupture: A spontaneous or traumatic rupture of the uterine wall.

Do You Know...

1. Normal delivery: woman on her back, knees bent and apart, padding under head and shoulders; Prolapsed cord: woman in knee-chest position; Third trimester bleeding: woman in recovery position; 2. Preparation, delivery of the baby, delivery of the placenta, stabilization; 3. Cord is compressed against the baby and blood flow to the baby will stop; 4. Miscarriage: high blood loss possible; Premature labour: no real danger to woman; Ectopic pregnancy: high blood loss; Third trimester bleeding: high blood loss possible

What Would You Do?

1. d; 2. c; 3. b; 4. b; 5. Delivery of the placenta; 6. Ensuring baby's airway is open and clear and keeping baby warm

Test Your Knowledge

1. d; 2. d; 3. b; 4. a; 5. b; 6. d; 7. a; 8. b; 9. c; 10. a

Reaching and Moving Patients

Key Terms

Body mechanics: Using the body to gain mechanical advantage in the safest and most efficient way.

Chocking: Placing items, such as wooden blocks, against the wheels of a vehicle to help stabilize the vehicle.

Drowning: A form of suffocation caused by being immersed in water or other liquid.

Lifejacket: A type of government-approved flotation device designed to be worn by a person; turns an unconscious person who is facing down in the water to a face-up position, allowing the person to breathe.

Personal flotation device (PFD): A buoyant device designed to be worn to keep a person afloat.

Do You Know...

1. Use your legs to lift (not your back), keep the object close to you, keep your body aligned, reduce the height or distance you need to move an object, keep your back, wrists, and knees in normal alignment; 2. Immediate danger, gaining access to other patients, providing proper care; 3. Dangerous conditions at the scene, size of the patient, your physical ability, whether others can help you, the patient's condition

What Would You Do?

1. Something to throw, such as a rope and buoyant object; 2. Throw the object past her and to the side (upwind), ensure you do not let go of the object when throwing, keep yourself a safe distance from the edge of the water; 3. Keep low to the ground, secure yourself to something stable; 4. c; 5. b

Test Your Knowledge

1. c; 2. d; 3. a; 4. c; 5. d; 6. d; 7. b; 8. T; 9. a

Reaching and Moving People in a Marine Environment

Key Terms

Body mechanics: Using the body to gain mechanical advantage in the safest and most efficient way.

Chocking: Placing items, such as wooden blocks, against the wheels of a vehicle to help stabilize the vehicle.

Drowning: A form of suffocation caused by being immersed in water or other liquid.

Lifejacket: A type of government-approved flotation device designed to be worn by a person; turns an unconscious person who is facing down in the water to a face-up position, allowing the person to breathe.

Personal flotation device (PFD): A buoyant device designed to be worn to keep a person afloat.

Radio medical advice: Medical advice from a doctor that is accessed by cellphone, direct radiotelephone contact or by contacting a nearby port or ship and used in situations in which responders are required to perform procedures beyond their training and ability.

Ship-to-helicopter transfer: Medical evacuation from a ship to a helicopter for people who require rapid transport to a hospital facility due to severe trauma or medical emergency.

Ship-to-ship transfer: Medical evacuation from one ship to another ship for people who require transport to a hospital facility due to severe trauma or medical emergency; involves difficult manoeuvring for both vessels and requires high standards of competence for a safe and efficient transfer.

Do You Know...

1. Use your legs to lift (not your back), keep the object close to you, keep your body aligned, reduce the height or distance you need to move an object, keep your back, wrists, and knees in normal alignment; 2. Immediate danger, gaining access to other people, providing proper care; 3. Dangerous conditions at the scene, size of the person, your physical ability, whether others can help you, the person's condition

What Would You Do?

1. Something to throw, such as a rope and buoyant object; 2. Throw the object past her and to the side (upwind), ensure you do not let go of the object when throwing, keep yourself a safe distance from the edge of the water; 3. Keep low to the ground, secure yourself to something stable; 4. c; 5. b

Test Your Knowledge

1. c; 2. d; 3. a; 4. c; 5. d; 6. d; 7. b; 8. T; 9. a

Multiple Casualty Incidents

Key Terms

Incident command system (ICS): A system used to manage resources, such as personnel, equipment, and supplies, at the scene of an emergency.

Multiple casualty incident (MCI): An emergency situation involving two or more patients.

START system: A simple system used at the scene of multiple casualty incidents to quickly assess and prioritize care according to three conditions: breathing, circulation, and level of consciousness.

Triage: The process of sorting and providing care to multiple patients according to the severity of their injuries or illnesses.

Fill in the Blanks

1. Immediate (respirations more than 30 per minute); 2. Immediate (unresponsive); 3. Minor (patient can walk, no abnormal vital signs); 4. Delayed (normal vital signs, obvious injury/illness); 5. Dead/non-salvageable (not breathing); 6. Immediate (radial pulse absent); 7. Delayed (normal vital

signs, obvious injury/illness); 8. Immediate (respirations more than 30 per minute); 9. Delayed (normal vital signs, obvious illness); 10. Dead/non-salvageable (not breathing); 11. Dead/non-salvageable (not breathing); 12. Immediate (altered LOC); 13. Minor (normal vital signs, obvious injury, able to walk); 14. Immediate (respirations more than 30 per minute); 15. Immediate (radial pulse absent); 16. Immediate (radial pulse absent); 17. Minor (normal vital signs, small injuries); 18. Immediate (altered LOC); 19. Delayed (normal vital signs, unable to walk)

What Would You Do?

1. Have everyone who is mobile leave the area and meet at a designated point; 2. Obvious signs of death, not breathing; 3. c; 4. c

Test Your Knowledge

1. b; 2. a; 3. d; 4. a; 5. c; 6. d; 7. b

Communications and Transportation

Key Terms

Downwind: In the direction in which the wind blows.

Freeboard: The distance between the top of a watercraft, or the deck of a ship, and the waterline.

Landing zone: The area where aircraft land.

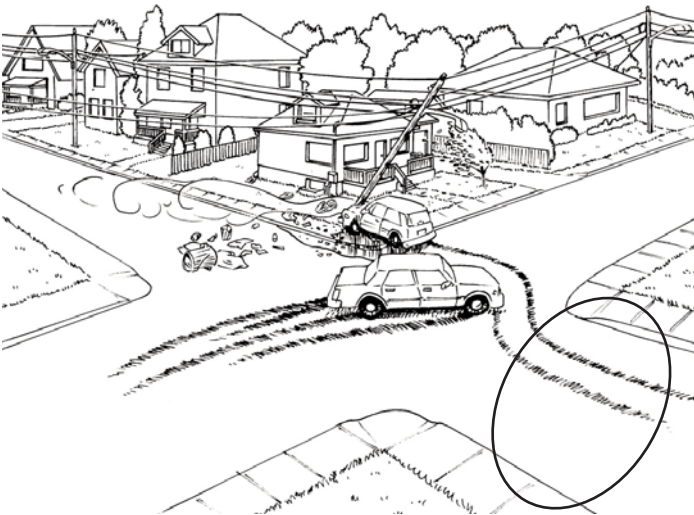
Right-of-way: The right of a vessel or vehicles to cross in front of other vessels or vehicles.

Routine maintenance: Maintenance work that is planned and performed on a regular basis to ensure proper working order of equipment and/or vehicles.

Upwind: In the direction from which the wind blows.

Do You Know...

1. Landing zone near power lines, loose debris, people standing, person approaching helicopter from rear
2. You want to avoid power lines, debris, fumes, and any rolling cars. To protect all involved it may be appropriate to block the intersection.



What Would You Do?

1. The patient's information, vital signs, chief complaint, history (SAMPLE and OPQRST) and assessment findings, care given; 2. Ensure the patient's ABCs are under control, place necessary papers (including passport, medical records, treatment notes) in plastic envelope to send with patient, ensure patient is wearing a PDF/lifejacket, keep patient warm

Test Your Knowledge

1. d; 2. b; 3. F; 4. d; 5. F; 6. d; 7. b