
Glossary

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ABCs—the abbreviation for the steps followed when administering first aid to an unresponsive person:

- airway—open the airway.
- breathing—check for breathing and begin rescue breathing if necessary.
- circulation—check for a pulse and begin chest compressions if necessary.

Also see cardiopulmonary resuscitation (CPR).

acquired immune deficiency syndrome (AIDS)—a collective term describing the presence of infections, malignancies, and illnesses caused by the human immunodeficiency virus (HIV), which attacks and destroys the immune system and central nervous system.

active living—a way of life in which physical activity is valued and integrated into daily life and in which the intensity and type of physical activity are relative to individual needs, choices, abilities, and environment (Canadian Association for Health, Physical Education and Recreation 8).

addiction—a physiological and/or psychological dependence on a substance (e.g., nicotine, alcohol) or activity (e.g., marathon running, gambling) upon which an individual relies to function from day to day, despite the knowledge that there may be harmful consequences to self and others.

adjudication—to give sentence to; to make a formal judgement on a disputed matter.

aerobic—the process of using oxygen to produce energy.

aerobic activities—physical activities (e.g., jogging, cycling, cross-country skiing) that use large muscle groups of the body (e.g., quadriceps, hamstrings) in a continuous rhythmic nature and that produce and sustain an elevated heart rate for an extended period of time (e.g., 20 minutes).

agility—the ability to move the body in different directions (e.g., forwards, backwards, sideways) quickly and efficiently; the ability to change the direction of one's movement rapidly and accurately.

alcoholism—a physical and psychological dependence (addiction) on alcohol characterized by compulsive, uncontrollable drinking.

anaerobic—the production of energy in the absence of oxygen.

angina—temporary pain and/or tightness in the chest (that may radiate to other parts of the body) due to the heart beating faster than normal, caused by reduced flow of blood to the heart (therefore, shortage of oxygen and other nutrients reaching the heart muscle); often a result of the coronary arteries that nourish the heart becoming narrowed and/or clogged with fatty plaque (atherosclerosis); does not damage the heart muscle, but is one of the initial signs of heart disease.

antioxidants—nutrients, vitamins (e.g., vitamins A, C, E), and minerals (e.g., selenium, zinc) that help prevent and/or inhibit oxidative damage within the body caused by the highly reactive, unstable molecular fragments called free radicals (free radicals are unleashed by strenuous exercise, chemicals, and polluted air, and cause extensive damage to the body’s protein bonds and a host of ailments and diseases normally associated with aging).

arbitration—the use of an arbitrator, chosen and agreed upon by all disputants, to hear and come to a decision or resolution regarding a controversy between the parties involved.

balance—the ability to control or stabilize one’s equilibrium while moving (dynamic balance) or remaining stationary (static balance).

ballistic stretching—sudden, jerking, or bouncing contractions of the agonist muscle to produce a stretch in the antagonist muscle. Muscles are stretched by force of momentum; however, this type of stretching could cause tearing of the muscle fibres because the actin and myosin filaments within the muscle’s functional unit (called sarcomere) are not allowed to elongate past the current resting length in a held position but must continually contract to maintain the position.

blister—a collection of fluid below or within the first layer of skin (epidermis) caused by friction (e.g., a toe rubbing against the inner shoe surface).

blood pressure—the force that blood exerts on the walls of blood vessels as blood flows through them; the blood pressure reading is recorded as systolic pressure over diastolic pressure in mm/hg:

- systolic pressure—represents the pressure as the heart is contracting and pushing blood throughout the body
- diastolic pressure—represents the pressure against the blood vessel walls as the heart is relaxing between beats

An example of a “healthy” blood pressure reading is: 120 mm/hg over 80 mm/hg.

body awareness—includes awareness of

- body parts (e.g., arms, legs, elbows, knees, head)
- body shapes (e.g., curled, stretched, narrow, wide, twisted, symmetrical, asymmetrical)
- body actions (e.g., flex, extend, rotate, swing, push, pull)

body composition—refers to the individual’s body fat and lean (non-fat) body mass, which includes muscle, bone, and other tissues.

calorie—the unit used to measure the energy in food and the energy one burns; also referred to as kilocalorie (kcal); the amount of heat energy necessary to raise the temperature of a kilogram (a litre) of water one degree Celsius.

carbohydrate (CHO)—one of the three basic foods (the other two being protein and fat) that are the body's source of energy; CHO is stored in the body as glycogen; carbohydrates are classified according to the number of sugar units they are composed of

- monosaccharide—single sugar units (e.g., glucose)
- disaccharides—a pair of single sugar units linked together
- polysaccharides (also referred to as complex carbohydrates)—many long strands of sugar units, forming starch or fibre

cardiac arrest—the sudden cessation of heart contractions resulting in circulatory failure of the blood and oxygen to the rest of the body; is caused by a heart attack or by another type of emergency such as electrocution; may result in respiratory arrest and death.

cardiopulmonary resuscitation (CPR)—a life-saving procedure designed to revive an individual in cardiovascular failure; it involves opening the airway, providing artificial breathing by forcing the victim's heart to pump blood, and applying pressure or chest compressions to restart blood circulation.

cardiovascular disease—a group of medical conditions that affect the heart and/or blood vessels; heart attacks and strokes are the most dramatic signs of cardiovascular disease. This disease begins with a buildup of blood cells and fatty deposits upon the inside walls of the arteries (atherosclerosis) that supply blood and oxygen to the brain and heart.

cardiovascular endurance—represents the combined ability of

- the pulmonary system to exchange oxygen between the outside air and the blood circulating through capillaries in the lung
- the cardiovascular system to transport oxygen to the working muscles
- the muscular system to use oxygen

Other terms used to describe cardiovascular endurance include cardiorespiratory endurance/fitness, cardiovascular/aerobic fitness, aerobic power/capacity, and physical work capacity.

cholesterol—a fat-soluble sterol that is a member of the group of organic substances called lipids (along with triglycerides and phospholipids); it is a soft, waxy substance found in animal-derived foods and made in the body to synthesize vitamin D at the skin surface, to facilitate the synthesis of various steroid hormones (e.g., sex hormones and adrenal corticoids) and to facilitate the absorption and transport of fatty acids. The two classifications of cholesterol are:

- **HDL**—high density lipoprotein transports cholesterol from the blood to the liver for degradation and removal.
- **LDL**—low density lipoprotein transports cholesterol from the liver to tissues such as the muscle.

community health/global health—public health efforts to reduce the incidence of disease and its impact on people, communities, and populations (e.g., improving the early treatment of strokes; decreasing cardiovascular risk factors related to inappropriate diet, obesity, and tobacco use; and reducing the high-risk behaviours).

concussion—associated with injuries sustained by the brain as a result of a violent shaking or jarring from a blow or collision.

coordination—the integration of an individual’s body parts (e.g., arms, legs, hands, feet, head, torso) to produce a smooth, fluid motion; the ability to use the body’s senses to perform motor tasks smoothly and accurately.

cross-training—a physical workout program that incorporates a variety of exercises to develop and/or maintain one or more of the physical fitness components (e.g., participating in cycling, swimming, and running to develop cardiovascular fitness).

cultural diversity—the varied characteristics that identify the customs, institutions, and achievements of a particular group of people.

dehydration—an excess loss of water from the body that may be a result of hot, humid weather, diarrhea, vomiting, too much alcohol, caffeine, and/or intensive exercise; a water loss of as little as 1 to 4 percent of one’s body weight may result in an increase of core body temperature, interference with metabolic and cardiovascular functioning, and/or reduced physical work capacity.

dietary fibre—the indigestible polysaccharides in food that do not provide energy (calories); insoluble fibre (also called roughage) helps move undigested food through the digestive tract; soluble fibre helps lower blood cholesterol.

dynamic contraction—a muscular movement in which the ends of a muscle are drawn closer together as the muscle shortens in length (referred to as a concentric contraction), or in which the ends of a muscle are drawn further apart as the muscle increases in length (referred to as an eccentric contraction).

electrolytes—minerals that provide conductivity functions for fluid passage through cellular membranes that keeps the body’s internal environment stable; examples of electrolytes include sodium, potassium, and chloride.

emergency medical services (EMS)—a system for responding to an individual’s sudden illness or injury; this system may include the local police, ambulance services, 911 rescue vehicles, and fire trucks.

ergogenic aids—substances (e.g., energy bars, protein drinks) that are meant to enhance physical performance by increasing energy production and/or decreasing recovery time for the individual who uses them.

ethical—based on the perceptions of moral obligation or duty of humans and the reasons for that moral obligation.

fast-twitch muscle fibre—a type of muscle fibre that has a low oxidative capacity and a high glycolytic capacity; associated with speed and/or power activities such as a 100-metre sprint.

fat—one of the three basic foods (the other two being carbohydrate and protein); it is the most concentrated source of energy in the diet, furnishing more than twice the calories of carbohydrate or protein; the chief form of fat in food is triglycerides (one of the three main classes of lipids) and is either saturated fat (from an animal food source) or unsaturated fat (from a plant food source).

first aid—the immediate assistance provided for an individual who has incurred physical distress or injury for the purpose of maintaining the body's vital functions until further medical aid can be obtained.

flexibility—the capacity of a joint to move through a full range of motion (limited by bones, muscles, ligaments, tendons, and the bone-joint capsule).

force—an external push or pull exerted on an object that causes movement.

frostbite—an injury to body tissues due to exposure to extremely cold temperature, strong wind, and precipitation; as a result, there may be an excessive decline in body temperature, cell damage, and blockage of blood supply to exposed body parts (e.g., ears, cheeks, nose, fingers, toes).

glycemic index—a ranked measure or rating system that indicates the extent to which a food raises the blood glucose concentration and elicits an insulin response; glucose at a dose of 50 grams is used as a benchmark and is given the rating of 100 (raises blood sugar immediately); other foods are ranked in relation to dose of glucose. Examples of high-glycemic-index foods include potatoes, cornflakes, and honey; examples of low- to moderate-glycemic-index foods include rice, pasta, and bananas.

heart attack—a blood clot in the coronary artery that carries blood to the heart, thereby reducing or stopping the heart's blood supply; a heart attack could cause mild symptoms such as mild pain, a feeling of breathlessness, and upset stomach, or severe symptoms such as crushing pain in the chest that spreads into the shoulders and down the arms; a heart attack can cause cardiac arrest.

heat exhaustion—a condition in which the body cannot maintain its internal temperature as a result of a warm/hot environment with high humidity; it is characterized by symptoms such as profuse sweating, dizziness, headache, shortness of breath, weak/rapid pulse, lack of saliva, and extreme fatigue (Williams *et al.* 51).

heatstroke—a condition in which the body cannot maintain its internal temperature as a result of a warm/hot environment with high humidity; it is characterized by symptoms such as lack of sweat, hot, dry skin, lack of urine, hallucinations, swollen tongue, visual disturbances, excessively high body temperature, and possibly unconsciousness (Williams *et al.* 51).

human immunodeficiency virus (HIV)—attacks and destroys the body’s immune system (white blood cells), which protects against infection and disease; eventually, AIDS and death may result; the virus is transmitted through transfer of body fluids (i.e., blood, semen, and vaginal secretions).

human sexuality—the way people choose to experience and express themselves as sexual creatures and involves biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious, and spiritual factors; it encompasses the sexual knowledge, attitudes, values, beliefs, and behaviours of a culture (World Health Organization; Health Canada, *Canadian Guidelines for Sexual Health Education* 4).

hyperthermia—the elevation of the body temperature above the normal range (i.e., over 37.3°C).

hypothermia—the dropping of the body temperature to 35°C or lower, often caused by the body’s reaction to wet and cold weather conditions.

intercourse—an intimate sexual act that involves vaginal, anal, or oral penetration by the penis.

isometric contraction (also referred to as static contraction)—a muscular contraction in which the muscle increases tension and produces force against an immovable object without observable shortening or lengthening of the muscle.

layer principle—the wearing of layers of clothing (to be added or removed as deemed necessary by environmental conditions) to prevent hyperthermia and/or hypothermia; the three layers are: undergarment warmth layer, middle insulation layer, and outer protection layer from wind, rain, and snow.

mediation—negotiation between parties at variance in the hopes of reconciling the disagreement with the aid of a neutral third person (mediator).

minerals—naturally occurring, inorganic substances found in food and water that play a vital role in regulating many bodily functions; minerals do not supply energy (i.e., calories); examples of minerals are potassium and iron.

moral—relating to conduct as right or wrong, as determined by duty, and as governed by laws.

movement relationships—include

- lead—move in front of a partner or group.
- follow—move behind a partner or group.
- chase—move quickly to reach or overtake a person or object.
- flee—move quickly to avoid a chaser.
- dodge—move quickly to change direction, pathway, and/or speed to evade a player or an object.

muscular endurance—the ability of a muscle or group of muscles to exert force over an extended period of time without incurring fatigue.

muscular strength—the maximum amount of force that can be exerted by a muscle or group of muscles in a single effort.

negotiation—to bring about a solution to a dispute, disagreement, or difference of opinion between individuals; the three styles of negotiation are:

- win/win (i.e., mutual satisfaction)
- win/lose (i.e., one individual wins at the cost of the other's goals)
- lose/lose (i.e., a compromise in which both individuals give up something)

Newton's laws of motion—

- Newton's first law of motion: "Every body will remain in a state of constant motion or rest unless acted upon by an outside force."
- Newton's second law of motion: "The applied force is proportional to the resulting acceleration; that is, the greater the applied force, the greater the resulting acceleration—providing mass is constant."
- Newton's third law of motion: "For every action force, there is an equal and opposite reaction force." (Coaching Association of Canada 5-11)

osteoporosis—"porous bones," a degenerative disease in which there is a reduction of bone density and its innate ability to regenerate and heal itself; the result is a thinning of the bones due to a slow progressive loss of bone minerals, especially phosphorus and calcium; this condition leads to brittle and easily fractured bones, especially in the wrists, hips, and spinal cord.

passive stretching—occurs when the load or movement motion is performed by an independent agent, such as another person or appropriate equipment.

power—the ability to apply maximum strength (i.e., a muscular contraction) with the quickest possible speed (e.g., putting the shot); the transfer of energy into force at a fast rate.

protein—one of the three basic foods (the other two being carbohydrate and fat); it is composed of amino acids, either essential (which must be obtained from food) or non-essential (which can be obtained from food but are also manufactured internally in the quantities the body requires); amino acids are a source of energy in the body, provide the connective and structural building blocks of tissue, repair injured tissue, and serve as enzymes that control the metabolic functions within the body cells.

qualities of effort in movement—refers to

- time—fast (e.g., quick, explosive); slow (e.g., careful, drawn out, sustained)
- force—strong (e.g., intense, heavy, forceful, loud); light (e.g., easy, weak, gentle, soft)
- flow—free (e.g., smooth, large, continuous movement that is flowing and ongoing and cannot be readily stopped); bound (e.g., small, controlled, restricted movement that can be readily stopped)

rate of perceived exertion and category-ratio pain scales (Borg)—a tool for estimating effort and exertion, breathlessness, and fatigue during physical work; it is the degree of heaviness and strain experienced in physical work as estimated by a specific rating method of a six (i.e., no exertion at all) to a 20 (i.e., maximal exertion). The category-ratio scale can be used to measure exertion and pain; it is a general intensity scale for most subjective magnitudes with special anchors of 0.5 and 10. Therefore, the worst pain experienced at 10 (i.e., “max P”) may not be the highest possible level—there may be pain still worse. Refer to RM G–6: Heart-Rate Zone Levels.

reaction time—the time it takes to react or respond to stimuli that one hears, sees, or feels; the time elapsed between stimulation and start of reaction to stimuli (e.g., a 100-metre sprinter reacting to the signal to push off out of the blocks).

recommended daily dietary allowance (RDA)—the nutritional needs recommended for prevention of nutritional depletion in healthy people; the RDAs do not take into account, for example, altered requirements due to sickness, injury, daily exercise, and athletic competition preparation.

risk management—developing a thorough understanding of specific physical activities to eliminate or significantly reduce foreseeable risks.

self-esteem—the individual’s personal view of self; how one “sees” oneself and “feels” about oneself, either positively or negatively.

sexually transmitted infections (STIs) (also referred to as sexually transmitted disease)—a wide range of infections, bacterial or viral, that are spread mainly but not exclusively through sexual intimacy; an individual can become repeatedly infected and can be host to more than one STI at a time.

slow-twitch muscle fibre—a type of muscle fibre that has a high oxidative capacity and a low glycolytic capacity; associated with endurance-type activities such as marathon running.

space awareness—refers to where the body moves with respect to

- locations (e.g., personal and general space)
- directions (e.g., forwards, backwards, sideways, up, down)
- levels (e.g., low, middle, high)
- pathways (e.g., curved, straight, zigzag)
- planes (e.g., frontal, horizontal, sagittal)

speed—the ability to move one’s body and/or body parts as quickly as possible, in the shortest amount of time.

sprain—trauma to the ligaments (tearing of ligament fibres) of a joint, causing pain and disability; it is not a dislocation.

static stretching—loading of the muscle(s) and allowing the actin and myosin filaments within the functional unit (called sarcomere) to elongate slowly by sliding apart and past the current resting length, in a position held for 20 to 30 seconds; proprioceptive neuromuscular facilitation is a type of static stretch where there is pre-contraction of the muscle to be stretched against the resistance of a partner, and contraction of the antagonist muscle during the stretch.

strain—trauma to the muscle or tendon due to a violent contraction or excessive forcible stretch of the muscle.

stress—the body's non-specific physical or psychological response to any demands made upon it by physical, emotional, or psychological forces that change or disrupt the individual's equilibrium; stress accompanying pleasant events is called eustress, whereas stress accompanying negative events is called distress; some of the responses to stress may include muscle tension, anxiety, increased heart rate and/or blood pressure, silliness, and joy.

stroke—a blood clot in a blood vessel that leads to the brain; the brain cells served by that blood vessel gradually die due lack of oxygen and other nutrients; strokes may cause paralysis, loss of ability to speak, and death.

stroke volume—the amount of blood, measured in millilitres (mL), that is ejected from the heart's left ventricle in a single heartbeat.

substance dependence—the body's physical and psychological reliance on a substance (e.g., alcohol, heroin, cocaine); if substance use is discontinued, the body experiences withdrawal symptoms.

type II diabetes—a chronic disease characterized by elevated blood glucose and inadequate or ineffective insulin, which is the hormone responsible for the transfer of sugar in the blood to enter cells for fuel or to be stored for later use; elevated blood glucose levels can lead to blindness, kidney disease, and nerve damage; a major contributor to the development of type II diabetes is a lifestyle that includes lack of physical activity and over-consumption of refined carbohydrates.

vitamins—organic food substances in plants and animals that serve as co-enzymes or co-factors in essential metabolic processes of the human body; vitamins do not supply energy but do act as agents to facilitate the biochemical processes of every organ in the body; vitamins are classified as fat-soluble (vitamins A, D, E, and K) or water-soluble (vitamins B-complex and C).

Notes

