

## REFERENCES

### CHAPTER 1

1. Archer, J., Probert, B. S., & Gage, L. (1987). College students' attitudes toward wellness. *Journal of College Student Personnel*, 28(4), 311-317.
2. Miller, N. P., & Robinson, D. M. (1963). *The leisure age*. Belmont, CA: Wadsworth.
3. Dunn, H. L. (1961). *High-level wellness*. Arlington, VA: R. W. Beatty.
4. Ardell, D. B. (1979). *High-level wellness*. New York: Bantam Books.
5. Hettler, W. (1980). Wellness promotion on a university campus. *Journal of Health Promotion*, 3: 77-92.
6. Eberst, R. M. (1984). Defining health: a multi-dimensional model. *Journal of School Health*, 54(3): 99-104.
7. Cmich, D. E. (1984). Theoretical perspectives of holistic health. *Journal of School Health*, 54(1): 30-32.
8. Greenberg, J. S. (1985). Health and wellness: a conceptual differentiation. *Journal of School Health*, 55(10): 403-406.
9. Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 51, 390-395.
10. Psychology Matters. (2007). Understanding how people change is the first step in changing unhealthy behavior. Retrieved from <http://www.psychologymatters.org/diClemente.html>.
11. McGlynn, G. (1996). *Dynamics of fitness: a practical approach*. Madison: Brown and Benchmark Publishers.

### CHAPTER 2

1. Centers for Disease Control and Prevention, National Center for Health Statistics. (2007). Retrieved from <http://www.cdc.nchs>.
2. Alexander, J. (1993). *In defense of garbage*. Westport: Praeger Publishers.
3. National Institute of Health, National Heart, Lung, and Blood Institute. (June 1998). *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The Evidence Report*.
4. Kannel, W. B., & Gordon, T. (1979). *Physiological and medical concomitants of obesity: The Framingham study*. *Obesity in America*, 125-43. U.S. Department of Health, Education, and Welfare. NIH Publication No. 79-359.
5. American Heart Association. (2007). *Risk Factors and Coronary Heart Disease and Heart Disease and Stroke Statistics-2005 Update*. Retrieved from <http://www.americanheart.org>.
6. Centers for Disease Control and Prevention. (2007). Preventing Heart Disease and Stroke: Addressing the Nation's Leading Killers. Retrieved from <http://www.cdc.gov/cvh>.
7. World Health Organization. (2007). *Global Strategy on Diet, Physical Activity and Health*. Retrieved from <http://www.who.int>.
8. Howard, G., et al. (1998). Cigarette smoking and progression of atherosclerosis. *Journal of the American Medical Association*, 337(21): 1491-1499.
9. National Heart, Lung, and Blood Institute. (2007). High Blood Pressure. Retrieved from

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## GLOSSARY

### A

- Abstinence** Voluntarily refraining from sexual activity, particularly sexual intercourse.
- Acquired immune deficiency syndrome (AIDS)** The final phases of HIV infection, typically resulting in severe illnesses because of a compromised immune system.
- Action stage** A stage of change wherein individuals are actively changing a behavior or trying to adopt a new, positive behavior.
- Adaptive response** The body's defensive mechanism to adapt and maintain homeostasis (stability).
- Addiction** Behavior characterized by compulsion, loss of control, and repetitive activity, despite adverse consequences.
- Adipose tissue** Fat cells.
- Aerobic** With oxygen; with respect to exercise or physical activity, sufficient oxygen is present to prevent the muscles from becoming hypoxic.
- Agility** The ability of a person to move quickly and deliberately with accuracy.
- Aging** The pattern of changes that occur as an individual becomes older.
- Alcohol (ethyl alcohol)** A depressant drug distilled from a variety of sources, such as grain, grapes, and potatoes, that, when ingested, produces feelings of euphoria and slows the central nervous system; abuse leads to cirrhosis of the liver.
- Alcoholism** A chronic, typically progressive, disease characterized by addictive alcohol consumption, loss of control, and a preoccupation with alcohol consumption.
- Amenorrhea** The absence of menstruation in females.
- Amino acids** The essential "building blocks" of proteins made up of organic compounds containing nitrogen, carbon, hydrogen, and oxygen. They are grouped as "non-essential" and "essential," meaning they cannot be synthesized by the body and must be gotten through the diet.
- Amphetamine** A class of stimulants that cause the body to release epinephrine, stimulating the central nervous system and increasing overall alertness and, often, leading to hyperactivity; slang *uppers*.
- Anabolic steroids** Drugs derived from testosterone and often used, illegally, to build muscle mass by athletes and bodybuilders.
- Anaerobic** Without oxygen; with respect to exercise or physical activity, insufficient oxygen is present, and the muscles build up levels of lactate, resulting in fatigue and decreased performance.
- Angina pectoris** Pain of the chest that is associated with heart disease.
- Angioplasty** A surgical procedure wherein a balloon catheter is inserted into a blood vessel and inflated to compress plaque against the vessel's interior wall, thereby opening the clogged vessel.
- Anorexia nervosa** An eating disorder characterized by a pathological fear of fatness, often resulting in self-imposed starvation and leading to excessive weight loss and, potentially, death.
- Anthropometric measurement** Measuring body girth at different sites to ascertain health statistics.
- Antibiotics** Substances produced either naturally or synthetically that are toxic to microorganisms; they are used to treat a variety of illnesses and infections.
- Antioxidants** Compounds such as vitamins C and E, betacarotene, and selenium that prevent oxidation in cells.
- Aorta** The largest artery in the body; it allows blood to be transported from the left ventricle of the heart to the body.
- Arrhythmia** Irregular heartbeat or rhythm.
- Atherosclerosis** Clogging of the arteries by fatty deposits, called plaque, on the arterial walls.
- Atrium** (plural, *atria*) The upper chambers of the heart that receive blood from the veins.
- Atrophy** The decrease in the size of a cell; often used to describe muscle cells.

**B**

**Bacteria** (singular, *bacterium*) Single-cellular organisms.

**Bacterial vaginosis** A vaginal bacterial infection, marked by a malodorous discharge.

**Balance** The ability of a person to maintain stability.

**Ballistic stretching** Movements that are designed to increase flexibility through jerky, rapid, and bouncy movements; they are recommended to be used only by highly trained individuals because of the increased risk of injury they pose.

**Barbituates** Drugs that depress the central nervous system, typically used to induce sleep, relaxation, or to reduce tension; slang *downers*.

**Basal metabolic rate (BMR)** The amount of energy required to maintain the body at rest.

**Benign** Noncancerous, as in a *benign* tumor.

**Bidis** Thin, sweet-flavored cigarettes.

**Binge drinking** Having four to five drinks at a single sitting for either a woman or a man.

**Biofeedback** A technique used to manage stress wherein an individual voluntarily controls physiological responses.

**Blood-alcohol concentration (BAC)** The amount of alcohol in the blood; it is expressed as a percentage (e.g., .08%).

**Blood lipids** Fats in the blood, such as cholesterol and triglycerides.

**Blood pressure** The amount of force exerted on the walls of the blood vessels, measured in millimeters of mercury (mmHg); a reading of 120/80 mmHg is considered normal.

**Body composition** The relative percentage of body weight that is fat and fat-free tissue.

**Body mass index (BMI)** A mathematical formula involving height and weight that correlates with body fat and disease risk; it is computed by determining the ratio of weight to height squared.

**Bradycardia** A heart rate that is slower than normal.

**Bulimia nervosa** An eating disorder marked by a pattern of binge eating followed by purging, often via vomiting or laxative use, in order to maintain a low body weight; bulimics often have skewed body images.

**C**

**Calorie** A measure used to express the heat or energy value of food and physical activity. It is defined as the amount of heat necessary to raise the temperature of 1 kg of water 1° Celsius from 14.5° to 15.5° Celsius. Technically, a calorie is a kilocalorie (kcal).

**Cancer** A group of diseases characterized by abnormal, typically excessive, cellular growth, often spreading perniciously.

**Capillaries** The minute blood vessels responsible for delivering oxygenated blood to the tissues and connecting arteries to veins.

**Carbohydrate** A major source of bodily energy made up of carbon, hydrogen, and oxygen that is found in organic compounds; e.g., starches, sugars, glycogen.

**Carcinogen** A substance that contributes to the formation of cancerous cells or contributes to their growth.

**Cardiac output** The amount of blood the heart pumps in 1 minute.

**Cardiomyopathy** A disease that results in the deterioration of the heart muscle.

**Cardiorespiratory endurance** The ability of the body to oxygenate and fuel the cells of the body, preventing undue fatigue.

**Cardiovascular disease (CVD)** An encompassing term used to describe various diseases of the heart and the circulatory system; a leading cause of death in the United States.

**Catecholamines** Hormones, such as epinephrine or norepinephrine, that are released during the “fight-or-flight” phenomenon.

**Celibacy** Sexual abstinence.

**Cellulite** A term often used to describe fat that is lumpy or bulging. Technically, “cellulite” does not exist. The fat is

- simply bunched and lumpy because of the surrounding connective tissues; slang *cottage cheese, bail damage*.
- Cellulose** An indigestible carbohydrate that is an excellent source of dietary fiber and is found in most plants.
- Cervix** The lower, narrow end of the uterus opening into the vaginal canal.
- Chlamydia** A very common sexually transmitted disease, caused by the bacterium *Chlamydia trachomatis*. It is often asymptomatic and can lead to serious reproductive problems, such as pelvic inflammatory disease (PID).
- Cholesterol** A wax-like substance found in animal fats and oils and linked to cardiovascular disease, especially via atherosclerosis; it also is used by the body to make cellular membranes.
- Cirrhosis** A chronic disease, typically associated with the liver, marked by cellular degeneration and scarring.
- Clitoris** A small, erectile structure of the female genitalia, similar in tissue to the male penis; it is highly sensitive and contributes to female sexual arousal and orgasm.
- Cocaine** A white, crystalline powder, extracted from the leaves of the cocoa plant, that stimulates the central nervous system and produces feelings of euphoria; slang *crack, blow*.
- Complete protein** Proteins that contain all the needed amino acids for normal bodily growth and maintenance.
- Complex carbohydrates** Starches that are formed by the linking of three or more simple sugar molecules; also called *polysaccharides*.
- Concentric contraction** Contraction of a muscle wherein it shortens in length.
- Conception** When a sperm and an ovum combine to form a zygote.
- Condom** A cylindrical, latex shield designed to be worn over the penis during sexual activity to prevent conception and the transmission of sexually transmitted diseases.
- Contemplation stage** A stage of change wherein an individual is considering changing behavior in the next six months.
- Contraception** The prevention of conception; also called *birth control*.
- Contraindicated exercise** An exercise or physical activity that is not recommended because of the propensity for injury.
- Cool-down** The ending session of a workout wherein the body processes are brought back down to normal levels.
- Coordination** Performing two or more tasks simultaneously by integrating the senses.
- Coronary heart disease (CHD)** A disease of the heart, specifically the coronary arteries, wherein the arteries have narrowed because of a buildup of plaque on the arterial walls.
- Cross-training** A training regimen involving more than one type of physical activity.
- Cruciferous vegetables** Plants that produce cross-shaped leaves that are known to be high in fiber; e.g., cauliflower, broccoli, cabbage.
- Cunnilingus** Oral stimulation of the female genitalia.
- ## D
- Diabetes mellitus** A disease marked by the body's inability to utilize insulin properly for sugar uptake.
- Daily values (DV)** The reference values used for nutrients and foods on food labels.
- Diaphragm** A soft, rubber cup with a flexible rim that is inserted into the vagina and worn over the cervix to prevent sperm from entering the uterus; it is often used in conjunction with spermicidal jelly.
- Diastolic blood pressure** The pressure exerted against the blood vessels while the heart is at rest (i.e., not beating; diastole); it is the lower of the two numbers reported for blood pressure, i.e., the 80 in 120/80 mmHG.
- Dietary fiber** An indigestible carbohydrate, i.e., cellulose, that is found in vegetables and helps speed waste materials through the gastrointestinal tract.

**Dietary reference intakes (DRIs)** A term used to describe the suggested nutrient intakes in the diet.

**Distress** Stress that is considered harmful or negative.

**Douching** The process of rinsing the vaginal canal, typically with a vinegar-and-water mixture; it is not an effective means of birth control.

**Dysmenorrhea** Painful menstruation.

## E

**Eccentric contraction** A contraction that results in the lengthening of the muscle.

**Electrocardiogram (EKG or ECG)** A graphic representation of the electrical activity of the heart.

**Emotional wellness** Recognizing and accepting feelings, strengths, and limitations that allow one to manage emotions and cope with stressful events, while still maintaining intimate relationships.

**Epididymis** The structure that connects the vas deferens and the testes, where-in sperm mature.

**Epididymitis** Inflammation of the epididymis, often as the result of gonorrhea or chlamydial infection.

**Essential fat** The amount of fat that is necessary for the body to function properly; it is approximately 3 percent for males and 12 percent for females.

**Eustress** Stress that is considered helpful or positive.

## F

**Fat** An energy nutrient, containing some 9 kcal for each gram.

**Fellatio** Oral stimulation of the penis.

**Fight-or-flight response** The physiological response of the body to stress that prepares the person to either “fight” or “flight” by stimulating the nervous system.

**Flexibility** The range of motion about a joint.

**Frequency** How often something is performed.

## G

**General adaptation syndrome (GAS)** Hans Selye’s theoretical three-stage model about how the body reacts to stress, particularly over time. The stages are alarm, resistance, and exhaustion.

**Genital herpes** A sexually transmitted disease caused by a viral infection of either the herpes simplex virus Type I or II.

**Genital warts** A sexually transmitted disease caused by the human papilloma virus (HPV), increasing the risk of cervical cancer in women.

**Glucose** The principal source of energy in all cells.

**Glycogen** The form in which glucose is stored in the body in the muscles and the liver.

**Gonorrhea** A sexually transmitted disease, caused by the bacterium *Neisseria gonorrhoeae*, that is often asymptomatic in women. If left untreated, it can lead to serious complications, such as pelvic inflammatory disease and epididymitis, which can result in sterility; slang *The Clap*.

## H

**Hallucinogens** Psychoactive substances that alter the brain’s sensory processing, producing hallucinations.

**Health** Traditionally, health was defined as the “absence of disease;” however, now it is viewed as a state of sound physical, mental, and social well-being.

**Health-related components of fitness**

Cardiorespiratory endurance, body composition, flexibility, muscular strength, and muscular endurance.

**Heart** The muscled organ responsible for pumping blood throughout the body.

**Heart attack** The death or damage of heart muscle tissue caused by insufficient blood supply, typically because of a blocked coronary artery.

**Heart rate reserve (HRR)** The difference between the resting heart rate and the maximal heart rate.

**Heat cramps** Spasms in the muscles that are caused by heat-induced electrolyte imbalances.

**Heat stroke** A life-threatening condition occurring as a result of the body being exposed to high atmospheric temperatures.

**Hemoglobin** The oxygen-carrying component of red blood cells.

**Heroin** An opium-derivative drug; slang *junk, smack*.

**High-density lipoproteins (HDLs)** The “good” cholesterol that helps transport excessive cholesterol from the blood back to the liver.

**Homeostasis** The natural state of balance or equilibrium.

**Homocysteine** An amino acid that, when in excessive amounts, may promote plaque formation and blockage of the arteries.

**Human immunodeficiency virus (HIV)** The virus responsible for acquired immunodeficiency syndrome (AIDS).

**Human papilloma virus (HPV)** A family of more than 100 viruses that causes genital warts and cervical cancer.

**Hydrostatic weighing** An underwater weighing technique used to assess body composition.

**Hypertension** High blood pressure; a blood pressure reading of greater than 140/90 mmHG.

**Hypertrophy** An increase in cellular size; e.g., muscular hypertrophy.

**Hypokinetic disease** A disease that is the result of “too little” movement; e.g., cardiovascular disease.

**Hypotension** Low blood pressure; a blood pressure reading of less than 100/50 mmHG.

**Hypothermia** A decrease in body temperature below 95° Fahrenheit.

## I

**Insulin** A hormone, secreted by the pancreas, that helps metabolize blood glucose.

**Intensity** How hard someone should exercise to bring about improvements.

**Interval training** Regimented training that involves periods of exertion followed by rest.

**Isokinetic contraction** A contraction of “same speed”; these contractions must

occur under the governance of a special machine made to control the speed of contraction.

**Isometric contraction** A contraction of “same length”; these contractions occur when a muscle contracts and produces tension, yet no movement occurs in the muscle, e.g., pushing against an immovable object.

**Isotonic contraction** A contraction of “same tension”; these contractions occur normally when any non-governed movement occurs.

## L

**Lactic acid** The end-product of anaerobic glycolysis.

**Lactovegetarian** A vegetarian who consumes milk and milk by-products.

**Lean body mass** The non-fat body weight.

**Life expectancy** The number of years one is expected to live.

**Lipoproteins** A protein-covered lipid that transports fat in the blood; e.g., LDLs, HDLs.

**Low-density lipoproteins (LDLs)** The “bad” cholesterol-transporting molecules in the blood that lead to high cholesterol.

## M

**Maintenance stage** Stage of change wherein individuals maintain behavior for a 5-year period.

**Malignant** Cancerous; e.g., *malignant* tumor.

**Mammogram** An X-ray screening of the breasts for early cancer detection.

**Marijuana** A psychoactive drug from the *Cannabis sativa* hemp plant.

**Maximal heart rate ( $HR_{max}$ )** The highest heart rate that an individual can achieve.

**Maximal oxygen consumption ( $VO_{2max}$ )** The maximum amount of oxygen the body can utilize per minute; it is typically reported in the relative format of mL/kg/min.

**Melanoma** A virulent form of skin cancer that spreads rapidly and is responsible for numerous deaths.



**MET** The metabolic equivalent of the rate of resting energy expenditure of 3.5 ml/kg/min.

**Metabolism** The energy transformations that occur within living cells.

**Metastasis** The spreading of cells from one part of the body to another, often associated with cancer.

**Minerals** Inorganic elements found in foods, used by the body for normal processes.

**Mode** A form of exercise.

**Monogamous** A sexual relationship between two individuals who only have sexual relations with each other.

**Muscular endurance** The ability of a muscle to repeatedly contract and apply force over time.

**Muscular strength** The ability of a muscle to exert maximum force against a resistance.

**Myocardial infarction** A heart attack; death or damage to the heart musculature because of insufficient oxygen supply.

**Myocardium** The muscle of the heart.

## N

**Nonmelanoma skin cancer** A cancerous tumor that grows at the original site, but that does not metastasize (i.e., spread) to other areas of the body.

**Nutrient density** The amount of nutrients compared to the caloric content of a food source.

**Nutrients** The substances in food sources that provide energy, help regulate metabolism, and help with cellular growth and bodily repair.

**Nutrition** The study of food and how the body processes it.

## O

**Obesity** An excessive amount of body fat; for men, greater than 20 percent body fat; for women, greater than 30 percent body fat.

**Occupational wellness** Finding self-satisfying work, seeking a balance between one's career and personal life, and having the financial wherewithal to live a desired lifestyle.

**Oligomenorrhea** Having irregular menstrual cycles.

**Osteoporosis** The softening and deterioration of bones via bone mineral loss.

**Overload principle** The principle of working the body past the point to which it is normally accustomed.

**Overweight** Having a BMI between 25 and 29.9; having excessive weight compared to a standard such as height or body structure.

**Ovolactovegetarian** Vegetarians whose diets include the consumption of eggs, milk, and milk by-products, in addition to plants.

**Ovovegetarian** Vegetarians whose diets include the consumption of eggs, in addition to plants.

**Oxygen uptake (VO<sub>2</sub>)** The amount of oxygen being consumed by the bodily tissues at a given time.

## P

**Pelvic inflammatory disease (PID)** A disease involving swelling of the fallopian tubes, ovaries, and uterus that typically results from an untreated chlamydial or gonorrhea infection.

**Penis** The male sexual organ.

**Percent body fat** The percent of one's body that is made up of fat.

**Peripheral vascular disease** A disease characterized by a narrowing of the peripheral blood vessels.

**Peristalsis** The involuntary contraction of the intestinal-wall muscles that forces food and waste material through the intestines.

**Phytochemicals** The compounds found chiefly in fruits and vegetables that are thought to prevent tumor formation and thus reduce the risk of developing cancer.

**Plyometrics** Explosive movements, such as jumping and leaping, that help promote muscular power production.

**Power** The process of being able to produce the maximum amount of power in the shortest amount of time.

**Precontemplation stage** The stage of change wherein an individual is unwilling to change.



**Preparation stage** The stage of change wherein an individual has made the decision to make a change in the following month.

**Process of change** The actions that assist individuals in changing behavior.

**Progressive muscle relaxation** A relaxation technique wherein one systematically contracts a muscle or group of muscles and then relaxes it/them to help reduce stress.

**Proprioceptive neuromuscular facilitation (PNF)** A form of stretching that involves first contracting the muscle and then allowing it to relax to gain even more range of motion.

**Protein** One of the energy nutrients made up of organic compounds of amino acids and used primarily for building tissues.

## Q

**Quackery** The knowing and purposeful promotion of unsubstantiated and/or false claims simply for profit; slang *snake oil salesmen*, referring to the old Wild West and the traveling salesmen who sold ineffective snake-oil concoctions to cure nearly everything.

## R

**Range of motion** The full arc of movement about a given joint; *flexibility*.

**Ratings of perceived exertion** A perception scale designed by Dr. Gunnar Borg to help individuals monitor exercise intensity.

**Reaction time** The period of time that a person requires to act to a specific stimulus.

**Recommended dietary allowance (RDA)** The daily amount of nutrients that most healthy individuals need.

**Relapse** The process of slipping back into unhealthy habits or behaviors.

**Repetitions** The number of times a specific movement is performed.

**Resistance** The amount of weight that is lifted for a repetition.

**Resting heart rate ( $HR_{rest}$ )** The heart rate of an individual at rest.

**Risk factors** The variables that may influence one developing a disease; often they involve one's lifestyle or genetics.

## S

**Sedentary** Inactive.

**Set** A fixed number of repetitions.

**Setpoint theory** A theory that the body has a genetically pre-established weight at which it works to stay.

**Sexually transmitted disease (STD)** One of a number of diseases that are spread via sexual activity; e.g., chlamydia, gonorrhea, AIDS.

**Shin splints** An injury to the lower leg, characterized by tenderness and pain to the anterior and medial portion of the shin.

**Simple carbohydrate** A sugar with little nutritional value, but with a high caloric content.

**Skill-related fitness components** The components that make one skillful in athletics; i.e., agility, balance, coordination, power, reaction time, and speed.

**Social wellness** Developing satisfying relationships and living harmoniously with others.

**Specificity** The principle that refers to the fact that only the muscles or systems of the body that are actually worked will adapt and develop.

**Speed** The ability of a person to perform a specific task in a short amount of time.

**Sphygmomanometer** A device used to measure blood pressure, made up of an inflatable bladder and pressure-reading scale known as a manometer.

**Spiritual wellness** Developing one's inner self and identifying values of right and wrong that give one a purpose in life and provide philosophical guidelines for living.

**Spot reducing** The erroneous idea that one can reduce subcutaneous fat by working the underlying muscle.

**Stress** The nonspecific response of the body to any demand made upon it.

**Stressor** A stimulus that triggers a stress response.

**Stretching** The process of moving the joints beyond the accustomed range of motion in the hope of improving flexibility.

**Stroke volume** The amount of blood ejected from the heart with each beat; approximately 70 ml for the average person.

**Sun protection factor (SPF)** The degree of protection that specific ingredients in sunscreen lotion provide against the sun's harmful rays; a minimum SPF rating of 15 is recommended for proper protection.

**Syphilis** A sexually transmitted disease, caused by the bacterium *treponema pallidum*, that exhibits four stages: primary, secondary, latent, and tertiary.

**Systolic blood pressure** The pressure exerted against the blood vessels while the heart is beating (i.e., systole); it is the higher of the two numbers reported for blood pressure, i.e., the 120 in 120/80 mmHG.

## T

**Tachycardia** A heart rate that is faster than normal.

**Termination/adoption stage** The stage of change in which an individual has eliminated an undesirable behavior or maintained a positive behavior for five years.

**Thermogenic response** The amount of energy required for the body to digest food.

**Trans fat** A fat that is formed by adding hydrogen to unsaturated fat; it is a fat that can lead to atherosclerosis.

**Triglyceride** A fat formed from glycerol and three fatty acids.

**Type A** A behavior type that is marked by aggression, competitiveness, ambition, and, at times, hostility.

**Type B** A behavior type that is marked by calmness, relaxation, and, at times, a "laid-back" attitude.

## U

**Ultraviolet B rays (UVB)** The rays of the sun that cause sunburn, as well as contribute to skin cancer development.

**Underweight** An individual having a body weight that is extremely low and considered below normative values.

## V

**Vegan** An individual who consumes no animal products or by-products at all, and typically refuses to wear leather products as clothing.

**Vegetarian** An individual who eats only plants.

**Very low-density lipoprotein (VLDL)** The extremely "bad" cholesterol that promotes atherosclerosis because of its low density and tendency to adhere to the arterial walls.

**Vitamin** An organic nutrient that is essential for the body's normal metabolism, growth, and development.

## W

**Waist-to-hip ratio** A measurement used to assess disease risk, based on the distribution of body fat, as abdominal body fat leads to a greater risk for disease.

**Warm-up** The first part of a workout that helps to prevent injuries by properly preparing the body for the upcoming exercise bout.

**Wellness** An integrated method of functioning that is oriented toward maximizing an individual's potential by balancing six dimensions, i.e., physical, occupational, social, spiritual, intellectual, and emotional.

**Workload** The intensity placed upon the body during a workout.

## Z

**Zygote** The first cell of a fertilized egg.

## REFERENCES

### CHAPTER 1

1. Archer, J., Probert, B. S., & Gage, L. (1987). College students' attitudes toward wellness. *Journal of College Student Personnel*, 28(4), 311-317.
2. Miller, N. P., & Robinson, D. M. (1963). *The leisure age*. Belmont, CA: Wadsworth.
3. Dunn, H. L. (1961). *High-level wellness*. Arlington, VA: R. W. Beatty.
4. Ardell, D. B. (1979). *High-level wellness*. New York: Bantam Books.
5. Hettler, W. (1980). Wellness promotion on a university campus. *Journal of Health Promotion*, 3: 77-92.
6. Eberst, R. M. (1984). Defining health: a multi-dimensional model. *Journal of School Health*, 54(3): 99-104.
7. Cmich, D. E. (1984). Theoretical perspectives of holistic health. *Journal of School Health*, 54(1): 30-32.
8. Greenberg, J. S. (1985). Health and wellness: a conceptual differentiation. *Journal of School Health*, 55(10): 403-406.
9. Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 51, 390-395.
10. Psychology Matters. (2007). Understanding how people change is the first step in changing unhealthy behavior. Retrieved from <http://www.psychologymatters.org/diClemente.html>.
11. McGlynn, G. (1996). *Dynamics of fitness: a practical approach*. Madison: Brown and Benchmark Publishers.

### CHAPTER 2

1. Centers for Disease Control and Prevention, National Center for Health Statistics. (2007). Retrieved from <http://www.cdc.nchs>.
2. Alexander, J. (1993). *In defense of garbage*. Westport: Praeger Publishers.
3. National Institute of Health, National Heart, Lung, and Blood Institute. (June 1998). *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The Evidence Report*.
4. Kannel, W. B., & Gordon, T. (1979). *Physiological and medical concomitants of obesity: The Framingham study*. *Obesity in America*, 125-43. U.S. Department of Health, Education, and Welfare. NIH Publication No. 79-359.
5. American Heart Association. (2007). *Risk Factors and Coronary Heart Disease and Heart Disease and Stroke Statistics-2005 Update*. Retrieved from <http://www.americanheart.org>.
6. Centers for Disease Control and Prevention. (2007). Preventing Heart Disease and Stroke: Addressing the Nation's Leading Killers. Retrieved from <http://www.cdc.gov/cvh>.
7. World Health Organization. (2007). *Global Strategy on Diet, Physical Activity and Health*. Retrieved from <http://www.who.int>.
8. Howard, G., et al. (1998). Cigarette smoking and progression of atherosclerosis. *Journal of the American Medical Association*, 337(21): 1491-1499.
9. National Heart, Lung, and Blood Institute. (2007). High Blood Pressure. Retrieved from

- <http://www.nhlbi.nih.gov>.
10. McArdle, W. D., Katch, F. I., & Katch, V. L. (1991). *Exercise physiology: energy, nutrition, and human performance*. Philadelphia: Lea & Febiger.
  11. National Stroke Association. (2007). Retrieved from <http://info.stroke.org>.
  12. American Cancer Society. (2007). Retrieved from <http://www.cancer.org>.
  13. Peto, R., Lopez, A. D., Borham, J., Thun, M., & Heath, C. (1994). *Mortality from smoking in developed countries 1950-2000*. New York: Oxford Univ. Press.
  14. Centers for Disease Control and Prevention. (2007). *Lung Cancer Risk Factors*. Retrieved from [http://www.cdc.gov/lungcancer/basic\\_info/risk\\_factors.htm](http://www.cdc.gov/lungcancer/basic_info/risk_factors.htm).
  15. U.S. Department of Health and Human Services. (1989). *Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General*. U.S. Department of Health and Human Services, Public Health Service Centers for Disease Control and Prevention, Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health. DHHS Publication No. (CDC) 89-8411.
  16. U.S. Department of Health and Human Services. (1990). *The Health Benefits of Smoking Cessation*. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. DHHS Publication No. (CDC) 90-8416.
  17. Pate, R., et al. (1995). Physical Activity and Public Health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Journal of American Medical Association*, 273(5): 402-407.
  18. Kockaya, G., A. Wertheimer. (2010). What are the top most costly diseases for USA? The alignment of burden of illness with prevention and screening expenditures. *Health*, 2(10), 1174-1178.
  19. Heart Association. Heart Disease and Stroke Statistics, 2010 Update. Table 6-1. <http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.109.192667>.
  20. BM, Zhao Y, Axon RN. U.S. trends in prevalence, awareness, treatment, and control of hypertension, 1988-2008. *JAMA*. 2010;303(20):2043-2050.
  21. Cancer Institute. Surveillance Epidemiology and End Results (SEER) Stat Fact Sheets: All Sites. <http://seer.cancer.gov/statfacts/html/all.html>.

### CHAPTER 3

1. Wellness Councils of America. (2002). *Just for you! Coping with stress, health information brochure series*.
2. Selye, H. (1977). How to master stress. *Parents*, 52(11), 25.
3. Selye, H. (1974). *Stress without distress*. New York: J. B. Lippincott.
4. Tortora, G., & Anagnostakos, N. (1987). *Principles of anatomy and physiology*. New York: Harper & Row.
5. Friedman, M., & Roseman, R. (1984). *Type A behavior and your heart*. New York: Alfred A. Knopf.
6. Kobasa, S. (1979). Stressful life events, personality, and health: an inquiry into hardiness. *Journal of Personality and Social Psychology*, 37: 1-11.

7. Glaser, R., Keicolt-Glaser, J., Bonneau, R. H., & Malarkey, W. (1992). Stress-induced modulation of the immune response to recombinant hepatitis B vaccine. *Psychosomatic Medicine*, 54(1): 22-29.
8. Van Rood, Y. R., Bogaards, M., Goulmy, E., & van Houweligen, H. C. (1993). The effects of stress and relaxation on the invitro immune response in man: a meta-analytic study. *Journal of Behavioral Medicine*, 16: 163-181.
9. Schmidt, R. A. (1991). *Motor Learning & Performance*. Champaign, Illinois: Human Kinetics.
10. American Psychological Society. (2007). *The Different Kinds of Stress*. Retrieved from <http://www.helping.apa.org/work/stress.html>.
11. Kanner, A. D., Coyne, J. C., Schaefer, C., & Lazarus, R. S. (1981). Comparisons of two modes of stress measurement: Daily hassles and uplifts versus major life events. *Journal of Behavioral Medicine*, 4, 1-39.
12. Rand, A. (1982). *Philosophy: Who needs it?* New York: Signet.
4. Pate, R., et al. (1995). Physical Activity and Public Health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Journal of American Medical Association*, 273(5): 402-407.
5. Borg, G. A. (1982). Psychophysical bases of perceived exertion. *Medicine & Science in Sport & Exercise*, 14(5): 377-381.
6. American College of Sports Medicine. (2000). *ACSM's Guidelines for Exercise Testing and Prescription, sixth edition*. Philadelphia: Lippincott, Williams, & Williams.
7. McArdle, W. D., Katch, F. I., & Katch, V. I. (1991). *Exercise physiology: energy, nutrition, and human performance*. Philadelphia: Lea & Febiger.
8. Hales, D. (2001). *An invitation to fitness & wellness*. Belmont, CA: Wadsworth.
9. Robbins, G., Powers, P., & Burgess, S. (1997). *A wellness way of life*. Madison, WI: WCB Brown & Benchmark.
10. Getchell, B. (1979). *Physical fitness: a way of life*. New York: John Wiley & Sons, Inc.
11. Paschalis et al. (2010). A Weekly Bout of Eccentric Exercise Is Sufficient to Induce Health-Promoting Effects. *Medicine & Science in Sports & Exercise*, 43(1), 64-73.

## CHAPTER 4

1. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, *Physical Activity and Health: A Report of The Surgeon General*. (2004). [www.cdc.gov](http://www.cdc.gov).
2. Tortora, G. J., & Anagnostakos, N. P. (1987). *Principles of Anatomy and Physiology*. New York: Harper & Row.
3. American College of Sports Medicine. (1998). Position Stand: The recommended quantity and quality of exercise for developing and maintaining cardio-respiratory and

muscular fitness, and flexibility in healthy adults. *Medicine & Science in Sports & Exercise*, 30(6): 975-991.

## CHAPTER 5

1. U.S. Department of Health and Human Services. (1988). *The Surgeon General's report on nutrition and health*. DHHS (PHS) Publication N0. 88-50211. U.S. Government Printing Office: Washington, D.C.

2. National Institute of Health, National Heart, Lung, and Blood Institute. (June 1998). *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The Evidence Report*.
3. National Academy of Sciences. (1989). *Recommended Dietary Allowances, 10th Edition*. Washington, D.C.: National Academy Press.
4. McArdle, W. D., Katch, F. I., & Katch, V. L. (1991). *Exercise physiology: energy, nutrition, and human performance*. Philadelphia: Lea & Febiger.
5. Fuchs, C., et al. (1999). Dietary fiber and the risk of colorectal cancer and adenoma in women. *New England Journal of Medicine*, 340(3): 169-176.
6. Hales, D. (2001). *An invitation to fitness and wellness*. Belmont, CA: Wadsworth.
7. American Society for Nutritional Sciences. (2005). *Nutrient Information*. ([www.nutrition.org/nutinfo/content/ener.shtml](http://www.nutrition.org/nutinfo/content/ener.shtml)).
8. Belko, A. Z. (1987). Vitamins and exercise—an update. *Medicine & Science in Sports & Exercise*, 19: S191-S196.
9. Weight, L. M., Nokes, T. D., Graves, J., Jacobs, P., & Berman, P. A. (1988). Vitamin and mineral status of trained athletes including the effects of supplementation. *American Journal of Clinical Nutrition*, 47: 186-192.
10. Kanter, M. (1995). Free radicals and exercise: effects of nutritional antioxidant supplementation. *Exercise and Sports Sciences Reviews*, 23: 375-398.
11. Welland, D. (1999) Drink to good health, especially water: here is why and how much. *Environmental Nutrition*, 22(10): 1-2.
12. Noakes, T. D. (1993). Fluid replacement during exercise. *Exercise and Sports Science Reviews*, 21: 297-332.
13. Federal Consumer Information Center. *The Food Guide Pyramid*. ([www.pueblo.gsa.gov/cic\\_text/food/food-pyramid/main.htm](http://www.pueblo.gsa.gov/cic_text/food/food-pyramid/main.htm)).
14. American College of Sports Medicine. (1983). Position stand: Proper and improper weight loss programs. *Medicine & Science in Sports & Exercise*, 15(1): ix-xiii.
15. Atkinson, R. (1992). Treatment of obesity. *Nutrition Reviews*, 50(11): 338-339.
16. National Institutes of Health Technology assessment conference statement: (1992). Methods for voluntary weight loss and control. *Nutrition Reviews*, 50(11): 340-345.
17. Wadden, T., Sternberg, J., Letizia, K., Stunkard, A., & Foster, G. (1989). Treatment for obesity by very low calorie diet, behavior therapy, and their combination: A five year prospective. *International Journal of Obesity*, 13(Supplement 2): 39-46.
18. Elliot, D. L., Goldberg, L., Kuehl, K. S., & Bennett, W. (1989). Sustained depression of the resting metabolic rate after massive weight loss. *American Journal of Clinical Nutrition*, 49(1): 93-96.
19. Mole, P. A., Stern, J. S., Schultz, C. L., Bernauer, E. M., & Holcomb, B. J. (1989). Exercise reverses depressed metabolic rate produced by severe caloric restriction. *Medicine & Science in Sports & Exercise*, 21(1): 29-33.
20. Stordy, B. J., Marks, V., Kalvey, R. S., & Crisp, A. H. (1977). Weight gain, thermic effect of glucose and resting metabolic rate during recovery from anorexia nervosa. *American Journal of Clinical Nutrition*, 30(2): 138-146.
21. Blair, S. (1993). Evidence for success of exercise in weight loss control. *Annals of Internal Medicine*, 119(7 pt. 2): 702-706.

22. Powers, S. K., & Dodd, S. L. (1997). *The essentials of total wellness: exercise, nutrition, and wellness*. Boston: Allyn and Bacon.
23. Shisslak, C. M. (1993). Body weight and bulimia as discriminators of psychological characteristics among anorexic, bulimic, and obese women. *Journal of Abnormal Psychology*, 99(4): 380-384.
24. Bishop, J. G., & Aldana, S. G. (1999). *Step up to wellness: A stage-based approach*. Boston: Allyn and Bacon.
25. National Center for Health Statistics. (1988). *Health, United States, 1987. DHHS Publication No. (PHS) 88-1232*. Public Health Service. Washington, D.C.: U.S. Government Printing Office.
26. Valtin, H. (2002). Drink at least eight glasses of water a day. Really? Is there scientific evidence for 8X8? *The American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology*, 282, 993-1004.
6. Corey, L., & Handsfield, H. (2000). Genital herpes and public health: addressing a global problem. *Journal of the American Medical Association*, 283(6): 791-795.
7. Arvin, A., & Prober, C. (1997). Herpes simplex virus type 2 infection—a persistent problem. *New England Journal of Medicine*, 337(16): 1158-1160.
8. Wald, A., et al. (2000). Reactivation of genital herpes simplex virus type 2 infection in asymptomatic seropositive persons. *New England Journal of Medicine*, 342(12): 844-851.
9. Daniels, D., Hillman, R., Barton, S., & Goldmeir, D. (1993). *Sexually transmitted disease and AIDS*. London: Springer-Verlag.
10. Robbins, S., & Angell, M. (1987). *Basic pathology*. Philadelphia: W. B. Saunders.
11. Halweil, B. (1999). HIV/AIDS pandemic is worsening. *World Watch*, 12(2): 31-32.
12. Insel, P. M., & Roth, W. T. (2000). *Core concepts in health*. Mountain View, CA: Mayfield Publishing Co.
13. National Institute on Drug Abuse. (2005). *Information on Commonly Abused Drugs*. Retrieved from <http://www.nida.nih.gov/DrugsOfAbuse.html>.
14. Kockaya et al. 2010.

## CHAPTER 6

1. World Health Organization. (2000). *HIV/AIDS/STI Surveillance: Report on the Global HIV/AIDS Epidemic*, [www.who.int](http://www.who.int).
2. Centers for Disease Control and Prevention. Department of Health and Human Services. (September 1999). *Sexually Transmitted Disease Surveillance*, 1998. [www.cdc.gov](http://www.cdc.gov).
3. Donatelle, R. J., & Davis, L. G. (1998). *Access to health*. Boston: Allyn and Bacon.
4. Hales, D. (2001). *An invitation to fitness & wellness*. Belmont, CA: Wadsworth.
5. Cohen, F., & Kemeny, M. (2000). Persistent stress as a predictor of genital herpes recurrence. *Archives of Internal Medicine*, 159(20): 2430-2437.

## CHAPTER 7

1. Prentice, W. (1999). *Rehabilitation techniques in sports medicine*. Dubque: WCB/McGraw-Hill.
2. Arnheim, D., & Prentice, W. (2000). *Principles of Athletic Training*. Boston: McGraw-Hill.
3. American Red Cross. (1996). *Responding to Emergencies*. Boston: StayWell.
4. National Safety Council. (2001). *First Aid and CPR*. Boston: Jones and Bartlett.



5. Pfeiffer, R., & Mangus, B. (1998). *Concepts of Athletic Training*. Boston: Jones and Bartlett.
6. American Academy of Orthopaedic Surgeons. (1991). *Athletic Training and Sports Medicine*. Park Ridge, III.: American Academy of Orthopaedic Surgeons.
7. Hubbard, R., & Armstrong, L. (1989). Hyperthermia: new thoughts on an old problem. *Physiology and Sports Medicine*, 16(6): 97-113.
8. Convertino, V., et al. (1996). American College of Sports Medicine position stand: exercise and fluid replacement. *Medicine & Science in Sport & Exercise*, 28(1): i-vii.
9. Murray, S. R., Michael, T. J., & McClellan, P. D. (1995). The influence of fluid replacement rate on RPE and HR during exercise in a hot, humid environment. *Journal of Strength and Conditioning Research*, 9(4): 251-254.
10. Murray, S. R., & Udermann, B. (2003). Fluid Replacement: A historical and critical review. *International Sports Journal*, 7(2): 58-73.

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