Module 3: Current Issues (Battle text Chapters 5, 9, 10, 11, 19, 20, 39, 40, 41)

Biology of Growth and Development, Biology of Aging, Biology of Cancer, Nutrition, Obesity

**Chapter 5 - Epidemiological And Public Health Perspectives On Aging In America**

1. **Active-life Expectancy (also, Disability-Free Life Expectancy)** -- The average number of years an individual is expected to live free of disability if current patterns of mortality and disability continue to apply.
2. **Activities of Daily Living (ADLs)** -- A scale to score physical ability/disability based on responses to questions about mobility and self-care; used to measure outcomes of interventions for various chronic disabling conditions such as arthritis.
3. **Acute** -- Referring to a health effect (or exposure), with sudden onset, often brief; sometimes loosely used to mean severe.
4. **Chronic** -- Referring to a health-related state (or exposure), lasting a long time. The U.S. National Center for Health Statistics defines a “chronic” condition as one of 3 months’ duration or longer.
5. **Co-morbidity** -- Disease(s) that coexist(s) in a study participant in addition to the index condition that is the subject of study.
6. **Dementia** -- An organic mental disorder that results in permanent or progressive loss of intellectual abilities such as impairment in memory, judgment, and abstract thinking and changes in personality.
7. **Depression** -- A mental state or chronic mental disorder characterized by feelings of sadness, loneliness, despair, low self-esteem, and self-reproach; accompanying signs include psychomotor retardation (or less frequently agitation), withdrawal from social contact, and loss of appetite and insomnia.
8. **Hip-fracture** -- A break near the top of the femur where it angles into the hip socket of the pelvis.
9. **Incontinence** -- The lack of voluntary control of excretory functions.
10. **Infectious Disease (also, Communicable Disease)** -- An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment.
11. **Instrumental Activities of Daily Living (IADLs)** -- A scale of activities related to independent living that includes preparing meals, managing money, shopping for groceries or personal items, performing light or heavy housework, and using a telephone.
12. **Life Expectancy (also, Expectation of Life)** -- The average number of years an individual of a given age is expected to live if current mortality rates continue to apply.
13. **Long-term Care** -- Services, care, or items (such as assistive devices), including disease prevention and health promotion services, in-home services, and case management services intended to assist individuals in coping with, and to the extent practicable, compensate for functional impairments in carrying out activities of daily living.
14. **Memory Impairment** -- A neuropathological state indicative of some kind of disease process or toxic exposure affecting the brain such that memory loss has progressed to such an extent that normal independent function is impossible.
15. **Primary Prevention** -- Intervention to prevent a disease before it has occurred. Includes efforts such as enhancing nutritional status, immunizing against communicable diseases, and eliminating environmental risks.
16. **Secondary prevention** -- Measures such as health care services designed to identify or treat individuals who have a disease or risk factors for a disease but who are not yet experiencing symptoms of the disease. Pap tests and high blood pressure screening are examples of secondary prevention.
17. **Tertiary prevention** -- Involves the management of individuals who have developed the disease with attempts made to restore to highest function, minimize the negative effects of disease, and prevent disease-related complications. Since the disease is now established, primary prevention activities may have been unsuccessful. Early detection through secondary prevention may have minimized the impact of the disease.

**Chapter 9 - Understanding Nutrition For The Public’s Health**

1. **Bioavailability** -- Bioavailability describes the quantity of vitamins provided by the food itself, and the amount of vitamins the body is able to absorb and use, which is often less than the total nutrients present in a food.
2. **Biofortification** -- Genetically modifying agricultural products to improve their nutritional content.
3. **DASH diet** -- A diet developed by the Department of Health and Human Services to minimize risks for hypertension.
4. **Diet Diversity** -- Diet diversity describes the nutrients available to a population based on the foods they are able to access. Populations that are sustained on two or three major crops, for example, would have low diet diversity.
5. **Discretionary calories** -- After fulfilling the daily recommended values of all food categories for his or her body type, each individual will still usually need between 100 and 300 additional calories to meet the recommended daily caloric intake. Those calories are called discretionary calories because each individual can decide for himself or herself what to eat to consume the extra needed calories.
6. **Food insecurity** -- Limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.
7. **Fortification** -- The addition of one or more nutrient to a food source, so as to correct a micronutrient deficiency.
8. **Functional foods** -- A functional food provides nutritional benefits beyond its caloric or basic nutritional value. Foods that contain antioxidants are good examples of functional foods.
9. **Good Source** -- If a food can be labeled a “good source” of a nutrient, it must then provide 10-19% of the Daily Value of that nutrient per serving.
10. **Healthy (food)** -- For a food to be labeled “healthy” implies that it is low in fat, saturated fat, sodium, and cholesterol, and contains at least 10% of the Daily Value of one or more of the following nutrients: vitamin A, C, iron, calcium, fiber, or protein.
11. **Hunger** -- The internal, physiological drive to find and consume food. Hunger is often experienced as a negative sensation and manifests as an uneasy or painful sensation. The recurrent and involuntary lack of access to food that may produce malnutrition over time.
12. **Macronutrients** -- Nutrients needed in large quantities, including carbohydrates, proteins, and fats.
13. **Malnutrition** -- Failure to achieve nutrient requirements, which can impair physical and/or mental health. It may result from consuming too little food or a shortage or imbalance of key nutrients.
14. **Minerals** -- Inorganic compounds needed for growth and for regulation of body processes.
15. **NHANES** -- The National Health and Nutrition Examination Survey (NHANES) is a program of studies designed to assess the health and nutritional status of adults and children in the United States. The survey is unique in that it combines interviews and physical examinations.
16. **Nutrient Density** -- A quantitative measure of a food’s nutrient value, measuring the amount of nutrients per kilocalorie.
17. **Nutritional Monitoring** -- A system of continuously measuring nutritional intake and status of a population. Nutritional monitoring is an important epidemiological tool for nutritional public health.
18. **Obese** -- Body Mass Index above 30.
19. **Overweight** -- An above-normal body weight; having a body mass index of 25 to 29.9.
20. **Phytochemicals** -- Naturally occurring plant chemicals that are not essential, but often aid in disease protection and maintaining health. Phytochemical compounds are intended to enhance the lives of plants themselves, but have recently been found to have benefits for humans as well.
21. **Precursor** -- A component of a vitamin that, when combined with other components and processes in the body, will produce a full vitamin. Precursors are most often acquired from foods, and stored in the body so that the body can make whole vitamins as they needed.
22. **Structural Changes** -- In reference to nutritional public health interventions, structural changes involve long-term adjustments to a population’s behaviors and/or environment that allow them to better meet their nutritional needs.
23. **Supplementation** -- A direct dosage of a nutrient, often given as a vaccine or pill.
24. **Toxicity** -- Toxicity is the presence of too much of a single micronutrient in the body. Each nutrient has a unique threshold for toxicity, and distinct harmful consequences from the ingestion of toxic amounts.
25. **Vitamins** -- Organic compounds necessary for reproduction, growth, and maintenance of the body. Vitamins are required in miniscule amounts.

**Chapter 10 - The Nutrition Transition: Changes In Eating Patterns And The Relationship To Chronic Illness**

1. **Acquired Immunodeficiency Syndrome (AIDS)** -- A condition of the immune system caused by the human immunodeficiency virus (HIV). It is characterized as having a CD4 cell count of less than 200 cells per cubic milliliter of blood.
2. **Advocacy** -- Communication directed at policymakers and decision makers to promote policies, regulations, and programs to bring about change.
3. **Aflatoxins** -- Highly toxic compounds produced by mold fungus in agricultural crops, especially peanuts, and in animal feeds that have not been carefully stored. High-level aflatoxin exposure can cause liver cancer.
4. **Anticarcinogen** -- Any chemical which reduces the occurrence of cancers, reduces the severity of cancers that do occur, or acts against cancers that do occur, based on scientific evidence.
5. **Antioxidants** -- Compounds that protect others from oxidation by being oxidized themselves. This prevents the breakdown of substances in food or the body, particularly lipids.
6. **Atherosclerosis** -- Often called “hardening of the arteries”. Artery walls become progressively thickened due to accumulation of fatty deposits, smooth muscle cells, and fibrous connective tissue – plaque. Narrowing of the lumen of an artery occurs – restricting blood flow. Too much cholesterol in the blood increases the risk that fatty deposits (plaque) will form in arteries.
7. **Blood glucose** -- The main sugar found in the blood and the body's main source of energy.
8. **Blood glucose level** -- The amount of glucose in a given amount of blood. It is noted in milligrams in a deciliter, or mg/dL.
9. **Blood pressure** -- The force of blood exerted on the inside walls of blood vessels. Blood pressure is expressed as a ratio (example: 120/80, read as "120 over 80"). The first number is the systolic pressure or the pressure when the heart pushes blood out into the arteries. The second number is the diastolic pressure or the pressure when the heart rests.
10. **Body mass index (BMI)** -- A measure of underweight and overweight calculated as weight (kg) divided by height squared (m2). The BMI is a formula that uses weight and height to estimate body fat and health risks. In adults, a BMI between 19 and 24 is considered to be a healthy weight range for height. A BMI between 25 and 29 is considered overweight. And a BMI of 30 or greater is considered obese. Anyone with a BMI of 30 or greater should talk to a health provider about losing weight for their health.
11. **Cancer** -- Cancer develops when cells in the body begin to grow out of control. Normal cells grow, divide, and die. Instead of dying, cancer cells continue to grow and form new abnormal cells. Cancer cells often travel to other body parts where they grow and replace normal tissue. This process, called metastasis, occurs as the cancer cells get into the bloodstream or lymph vessels. Cancer cells develop because of damage to DNA. DNA is in every cell and directs all its activities. When DNA becomes damaged the body is able to repair it. In cancer cells, the damage is not repaired. People can inherit damaged DNA, which accounts for inherited cancers. Many times, DNA becomes damaged by exposure to something in the environment, like smoking.
12. **Carbohydrate** -- One of the three main nutrients in food. Foods that provide carbohydrate are starches, vegetables, fruits, dairy products and sugars.
13. **Carcinogen** -- A substance with the potential to cause cancer.
14. **Cardiovascular disease** -- Disease of the heart and blood vessels (arteries, veins and capillaries).
15. **Cerebrovascular disease** -- Damage to blood vessels in the brain. Vessels can burst and bleed or become clogged with fatty deposits. When blood flow is interrupted, brain cells die or are damaged, resulting in a stroke.
16. **Cholesterol** -- A soft, waxy substance found among fats circulating in your bloodstream and in all of your body’s cells. You can get cholesterol in two ways. Your body makes some cholesterol and the rest comes from animal products you eat such as meat, poultry, fish, eggs, butter, cheese, and whole and 2% milk. Cholesterol is not found in foods from plants.
17. **Diabetes mellitus** -- A condition characterized by hyperglycemia resulting from the body's inability to use blood glucose for energy. In Type 1 diabetes, the pancreas no longer makes insulin and therefore blood glucose cannot enter the cells to be used for energy. In Type 2 diabetes, either the pancreas does not make enough insulin or the body is unable to use insulin correctly.
18. **Dietary Approaches to Stop Hypertension (DASH diet)** -- A diet designed to reduce blood pressure due to generous amounts of potassium. The DASH eating plan was developed by the U.S. Department of Health and Human Services.
19. **Dietary fiber** -- the term for several materials that make up the parts of plants your body can't digest. Plant food components, including plant cell walls, pectins, gums, and brans that cannot be digested. Fiber is classified as soluble or insoluble.
20. **Dietary Guidelines for Americans** -- A report published by the U.S. Department of Agriculture and U.S. Department of Health and Human Services that explains how to eat to maintain health. The guidelines form the basis of national nutrition policy and are revised every 5 years.
21. **Glucagon** -- A hormone that is secreted by special cells in the pancreas (alpha cells) in response to low blood glucose concentration and elicits release of glucose from liver glycogen stores.
22. **Glucose** -- A monosaccharide; sometimes known as blood sugar.
23. **Glycogen** -- A substance made up of sugars. Manufactured and stored in the liver and muscles as a storage form of glucose, it releases glucose (sugar) into the blood when needed by cells. Glycogen is the chief source of stored fuel in the body.
24. **Health communication** -- The art and technique of informing, influencing, and motivating individual, institutional, and public audiences about important health issues. The scope of health communication includes disease prevention, health promotion, health care policy, and the business of health care as well as enhancement of the quality of life and health of individuals within the community.
25. **Health promotion** -- Any planned combination of educational, political, regulatory, and organizational supports for actions and conditions of living conducive to the health of individuals, groups, or communities.
26. **Healthy People 2010** -- Healthy People 2010 provides a framework for prevention of diseases in the United States. It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats.
27. **High-density-lipoprotein cholesterol (HDL)** -- A fat found in the blood that takes extra cholesterol from the blood to the liver for removal. It is sometimes referred to as "good" cholesterol.
28. **Human Immunodeficiency Virus (HIV)** -- A member of the retroviral family that causes AIDS by infecting and destroying T helper cells, gradually declining the immune system.
29. **Hyperglycemia** -- Too high a level of glucose (sugar) in the blood; a sign that diabetes is out of control. Many things can cause hyperglycemia. It occurs when the body does not have enough insulin or cannot use the insulin it does have to turn glucose into energy. Signs of hyperglycemia are a great thirst, a dry mouth, and a need to urinate often. For people with type 1 diabetes, hyperglycemia may lead to diabetic ketoacidosis.
30. **Hypertension** -- A condition present when blood flows through the blood vessels with a force greater than normal. Also called high blood pressure. Hypertension can strain the heart, damage blood vessels, and increase the risk of heart attack, stroke, kidney problems and death. It is categorized as transitory or sustained elevation of systolic and diastolic blood pressure above 140/90 mmHg.
31. **Insulin** -- A hormone that helps the body use glucose (sugar) for energy. The beta cells of the pancreas (in areas called the islets of Langerhans) make the insulin. When the body cannot make enough insulin on its own, a person with diabetes must inject insulin made from other sources, i.e., beef, pork, human insulin (recombinant DNA origin), or human insulin (pork-derived, semisynthetic).
32. **Insulin resistance** -- The body's inability to respond to and use the insulin it produces. Insulin resistance may be linked to obesity, hypertension, and high levels of fat in the blood.
33. **Lipid** -- A term for fat in the body. Lipids can be broken down by the body and used for energy.
34. **Low-density lipoprotein cholesterol (LDL)** -- A fat found in the blood that takes cholesterol around the body to where it is needed for cell repair and also deposits it on the inside of artery walls. Sometimes called "bad" cholesterol.
35. **Medical nutrition therapy** -- Use of specific nutrition counseling and interventions, based on an assessment of nutritional status, to manage a condition or treat an illness or injury.
36. **Metabolic syndrome** -- The tendency of several conditions to occur together, including obesity, insulin resistance, diabetes or pre-diabetes, hypertension, and high lipids.
37. **Micronutrients** -- Vitamins and minerals required in small amounts daily (e.g. vitamin A and iron).
38. **NCDs** -- Non Communicable Diseases.
39. **Obesity** -- A condition in which a greater than normal amount of fat is in the body; more severe than overweight; having a body mass index of 30 or more.
40. **Pancreas** -- An organ that makes insulin and enzymes for digestion. The pancreas is located behind the lower part of the stomach and is about the size of a hand.
41. **Plant Stanols/Sterols** -- Naturally occurring substances found in plants, present in small quantities in many fruits, vegetables, vegetable oils, nuts, seeds, cereals and legumes. The sterols/stanols work by blocking the absorption of cholesterol in the small intestine. This lowers the low density cholesterol by 6-15%, without lowering the high density cholesterol. Clinical research trials have documented safety and effectiveness for use by the entire family. Plant stanols/sterols do not interfere with cholesterol lowering.
42. **PLWHA** -- People living with HIV and AIDS.
43. **Primary care** -- According to the Institute of Medicine, “The provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.”
44. **Primary care provider** -- A physician who specializes in general and family practice, general internal medicine, or general pediatrics, or a nonphysician health care provider, such as a nurse practitioner, physician assistant, or certified nurse midwife.
45. **Provider barriers** -- Any mental, physical, psychosocial, or environmental condition that prevents or discourages health care providers from offering preventive services. Examples of provider barriers include a poor practice environment, lack of knowledge, and lack of efficacy studies.
46. **Quality** -- According to the Institute of Medicine, “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." ”Error! Bookmark not defined. Simply stated, it is doing the right thing, for the right patient, at the right time, with the right outcome.
47. **Rehabilitative services** -- Services to restore specific skills, including overall physical mobility and functional abilities.
48. **Risk Factor** -- A risk factor is an attribute or exposure which is causally associated with an increased probability of a disease or injury
49. **Triglycerides** -- The chief form of fat in the diet and the major storage form of fat in the body. People who have high levels of triglyceride often have a low level of “good” cholesterol and a high level of “bad” cholesterol. Triglyceride levels of 150 mg/dL or higher may increase your risk for heart disease. Many people with heart disease, diabetes or both have high triglyceride levels.
50. **Vulnerable and at-risk populations** -- High-risk groups of people who have multiple health and social needs. Examples include pregnant women, people with human immunodeficiency virus infection, substance abusers, migrant farm workers, homeless people, poor people, infants and children, elderly people, people with disabilities, people with mental illness or mental health problems or disorders, and people from certain ethnic or racial groups who do not have the same access to quality health care services as other populations.
51. **Waist circumference** -- An anthropometric measurement used to assess a person’s abdominal fat. Abdominal fat increases the risk of many of the serious conditions associated with obesity. Women's waist measurements should be less than 35 inches. Men's should be less than 40 inches.

**Chapter 11 - Exercise: The Vaccine And Antidote For Obesity**

1. **Aerobics** -- Refers to exercise where the predominant energy source is dependent upon the utilization of oxygen to liberate energy for muscle contraction. In lay terms, aerobics refers to continuous endurance exercise such as jogging, swimming, walking, and rowing.
2. **Amphetamine** -- A drug that stimulates the central nervous system, prolonged use may cause drug dependence.
3. **Doubly Labeled Water** -- A chemically altered molecule of water where non-radioactive isotopes of hydrogen and oxygen are used to track their utilization rates in the body. The difference between the loss of hydrogen and oxygen, in the body, constitutes carbon dioxide production, which is directly related to metabolic rate.
4. **Isoenergetic** -- Equal in energy value, whether it be energy intake or energy expenditure.
5. **MET** -- The resting metabolic rate or amount of energy expended at rest, which is approximately 35 ml oxygen per kg body weight per minute.
6. **Pulmonary Hypertension** -- An increase in blood pressure in the arteries of the lungs that can lead to shortness of breath, dizziness, fainting, and decreased exercise tolerance. If severe, pulmonary hypertension can cause right heart failure.
7. **Valvular Heart Disease** -- Disease affecting any one of four valves in the heart. The affect may be stenosis (narrowing of the valve so blood cannot pass freely) or regurgitation (failure of the valve to close, allowing blood to go back through the valve in the wrong direction).

**Chapter 19 - Cancer Prevention From A Biologist’s Perspective**

1. **Adduct** -- A new chemical species AB, each molecular entity of which is formed by direct combination of two separate molecular entities A and B in such a way that there is change in connectivity, but no loss, of atoms within the moieties A and B.
2. **Angiogenesis** -- Blood vessel formation. Tumor angiogenesis is the growth of blood vessels from surrounding tissue to a solid tumor. This is caused by the release of chemicals by the tumor.
3. **Apoptosis** -- Programmed cell death, or "cell suicide"; a form of cell death in which a controlled sequence of events (or program) leads to the elimination of cells without releasing harmful substances into the surrounding area.
4. **Carcinogenesis** -- The generation of cancer from normal cells, correctly the formation of a carcinoma, but often used synonymously with transformation or tumorigenesis.
5. **Electrophile** -- An atom, molecule or ion able to accept an electron pair.
6. **Endogenous** -- Developing or originating within the organisms or arising from causes within the organism.
7. **Epigenetic** -- Refers to the state of the DNA with respect to heritable changes in function without a change in the nucleotide sequence. Epigenetic changes can be caused by modification of the DNA, such as by methylation.
8. **Exogenous** -- Produced outside of, originating from, or due to external causes.
9. **Free Radical** -- A highly chemically reactive atom, molecule or molecular fragment with a free or unpaired electron. Free radicals are produced in many different ways such as normal metabolic processes and UV radiation from the sun. Free radicals have been implicated in aging, cancer, cardiovascular disease and other kinds of damage to the body.
10. **Initiation** -- Preneoplastic change in the genetic material of a cell.
11. **Isozyme** -- Multiple forms of an enzyme that catalyze the same reaction but whose synthesis is controlled by more than one gene.
12. **Malignant** -- Refers to cells or tumors growing in an uncontrolled fashion. Such growths may spread to and disrupt nearby normal tissue, or reach distant sites via the bloodstream.
13. **Microarray** -- A technology using a high-density array of nucleic acids, protein, or tissue for examining complex biological interactions simultaneously which are identified by specific location on a slide array.
14. **Neoplastic** -- Characterized by the presence of new and uncontrolled cellular growth.
15. **NIH (National Institutes of Health)** -- The federal agency responsible for overseeing government-sponsored biomedical research. It is divided into 27 institutes and research centers.
16. **Progression** -- The process by which a growing mass of initiated cells undergoes qualitative changes, potentially including a transition from benign to malignant behavior. The process is characterized by the accumulation of new genetic changes in and continued expansion of the tumor.
17. **Promotion** -- The process by which an initiated cell develops into an overt neoplasm. It is characterized by proliferation under permissive host conditions.
18. **Xenobiotic** -- Chemical substances that are foreign to the biological system. They include naturally occurring compounds, drugs, environmental agents, carcinogens, insecticides, etc.

**Chapter 20 - Colon Cancer: A Common, And Yet Preventable, Cancer**

1. **Adenocarcinoma** -- Cancer that arises from glandular tissue.
2. **Biopsy** -- Removal of a small amount of tissue for examination under a microscope.
3. **Chemoprophylaxis** -- Prevention of disease by the use of chemicals or drugs
4. **Colectomy** -- Surgical removal of the colon performed in patients with high risk forms of the disease.
5. **Colonoscopy** -- Visual examination of the inner surface of the colon using a flexible lighted scope passed into the body under sedation.
6. **Colostomy** -- An opening in the abdominal wall to allow the passage of stool.
7. **Lynch syndrome** -- A Hereditary form of colon cancer, characterized by multiple polyps, that accounts for 5 to 10% of all cases.
8. **Melena** -- Blood traces found in the stool. Tarry stool.
9. **Polyp** -- A tissue protuberance from the colon mucosa.

**Chapter 39 - Arthritis: The Nations Most Common Cause Of Disability**

1. **Arthritis** -- The term used to describe more than 100 rheumatic diseases and conditions that affect the joints and tissues, causing inflammation around the joints.
2. **Behavioral Risk Factor Surveillance System (BRFSS)** -- A routine, systematic epidemiological method of collecting information on certain health behaviors to analyze.
3. **Gout** -- Rheumatic disease resulting from an accumulation of uric acid crystals in tissues and fluids within the body.
4. **National Health and Nutrition Examination Survey** -- A national health survey conducted to obtain information on the overall health and nutritional status of the general population of the U.S.
5. **National Health Interview Survey (NHIS)** -- A source of information collected on the overall health of the civilian population of the U.S that consists of questionnaires on health, demographics and socioeconomic status of the general population.
6. **Osteoarthritis** -- Degeneration of the cartilage and underlying bone within a joint, characterized by bony overgrowth.
7. **Osteophytes** -- Bony overgrowth of joints caused by rheumatic diseases.
8. **Rheumatoid Arthritis (RA)** -- Systemic inflammatory disease manifesting in multiple joints in the body, primarily affecting the lining of the joints and sometimes other organs.

**Chapter 40 - Osteoporosis: A Significant Cause Of Disability And Mortality**

1. **Bone mineral density (BMD)** -- A measure of the amount of calcium in the bones. It is used to diagnose osteoporosis.
2. **Calcium** -- Key mineral stored in bones that is responsible for proper functioning of muscles and nerves.
3. **DXA** -- Dual energy X-ray absorptiometry, a test to diagnose osteoporosis.
4. **Estrogens** -- Female hormones produced by the ovaries. Estrogen deficiency can lead to osteoporosis.
5. **Menopause** -- The time in a woman's life when menstrual periods permanently stop; it is also called the "change of life." Menopause is the opposite of the menarche.
6. **Osteoblasts** -- Cells that build bone.
7. **Osteoclasts** -- Cells that break down bone.
8. **Phosphorus** -- An essential element in the diet and a major component of bone. Phosphorus is also found in the blood, muscles, nerves, and teeth. It is a component of adenosine triphosphate (ATP), the primary energy source in the body.
9. **Resistive strength exercise** -- A type of exercise that uses a force opposing the movement, such as a weight, to cause a strong muscle contraction. This type of exercise promotes low forces on bone that promotes healthy bone formation.
10. **Vitamin D** -- A vitamin that is necessary for absorption of calcium and phosphorus and to maintain blood calcium and phosphorus within normal levels. Under normal conditions of sunlight exposure, dietary supplementation may not be necessary.
11. **Weight bearing activity** -- A type of physical activity that loads bones through their length such as when walking or running. This type of activity is essential for healthy bone formation.

**Chapter 41 - Alzheimer’s Disease: A Slow Death**

1. **Amyloid plaques** -- Abnormal protein aggregates found outside the neurons of Alzheimer's patients.
2. **Beta amyloid** -- The main constituent of amyloid plaques in the brains of Alzheimer's patients formed when Beta-secretase cleave amyloid protein.
3. **Mini-Mental Status Examination (MMSE)** -- A brief, quantitative measure of cognitive status in adults. It can be used to screen for cognitive impairment, to estimate the severity of cognitive impairment at a given point in time, to follow the course of cognitive changes in an individual over time, and to document an individual’s response to treatment.
4. **Neurofibrillary tangles** -- Abnormal protein aggregates found the inside neurons of Alzheimer's patients.
5. **Neurons** -- The basic nerve cell of the brain and nervous system. Neurons receive and send electrical messages to and from the brain to the body.
6. **Neurotransmitter** -- A chemical messenger that bridges the gap between neurons to convey signals between neurons.
7. **Sensitivity** -- The percent of people correctly identified by a test as having the disease out of the total number of people with the disease. It is expressed as TP/TP+FN where TP= true positive, and FN= false negative. Sensitivity shows how good the test is in correctly identifying those people who truly have the disease.
8. **Specificity** -- The percent of people correctly identified by the test as being disease free among those without the disease. It is expressed TN/TN+FP where TN = true negative and FP = false positive. Specificity shows how good the test is in correctly identifying those who are disease free.
9. **Tau protein** -- component of neurofibrillary tangles in AD.