

Lesson 1: Introduction to Human Anatomy and Physiology

Human Anatomy & Physiology Catechism

What is anatomy?

- The study of the human body, all its parts, and how it's put together

What is physiology?

- The study of how all the parts of the body function

What are germs?

- Tiny organisms that can cause diseases

What are parasites?

- Tiny organisms that can infect humans and steal nutrients from the person they infect, as well as make the person sick

What is a hypothesis?

- An educated guess

What is RNA?

- The DNA's messenger, which copies part of the information that is in the DNA and then leaves the nucleus

What is spontaneous generation?

- The wrong idea that life can come into existence from nonliving things.

What are humors?

- The name of the four liquids that Hippocrates believed would bring health to the body, if a person had equal amounts of liquids

What are cadavers?

- Dead bodies

What is a cell membrane?

- The wall around a cell

What are organelles?

- Small structures within a cell (the word meaning "little organs")

What is cytoplasm?

- The jelly-like substance inside a cell, in which all the organelles float

What are mitochondria?

- The organelles inside a cell that give the cell power

What is glucose?

- A kind of sugar the cell uses

What are lysosomes?

- Organelles that protect the cell from foreign invaders and break down chemicals

What are Golgi bodies?

- The organelles that look like stacked pancakes and store proteins and fats.

What is tissue?

- A group of cells of the same type

What is an organ?

- A group of tissues that work together to form a special body function

What is endoplasmic reticulum?

- A cellular structure that transports chemicals and gets rid of waste in a cell

What are centrioles?

- Special organelles that help cells reproduce

What is the nucleus?

- The control center of the cell

What is the nuclear membrane?

- The membrane that surrounds the nucleus

What is DNA?

- Letters we use to refer to deoxyribonucleic acid, which is the molecule inside every living thing that contains all the information about that thing

What are nucleotides?

- These are strung together to make genes

What are chromosomes?

- Where the DNA is packaged into units, your body has 46 of these units

Lesson 2: The Skeletal System

Human Anatomy & Physiology Catechism

What is the skeletal system?

- The bony supportive structure within the human body

What is a skull?

- The group of bones that make up your head

What is the rib cage?

- The bones that protect your heart and lungs

What are lipids?

- Fats that are stored in your bones, as well as elsewhere in your body

What is calcium?

- A mineral stored in your bones that helps keep your heart beating and your brain thinking. It also makes your bones strong.

What are sutures?

- Joints that do not move

What is a callus?

- A bulge that occurs in a broken bone while it is healing

What are osteoclasts?

- The bone cells that eat away at the spongy layer, causing your bones to get wider

What is osteoporosis?

- A disease that results in weak bones with lots of tiny holes in them

What is vitamin D?

- A vitamin that helps make strong bones. Your body makes this when it is exposed to the sun

What are rickets?

- A disease that causes weak and misformed bones. People can get this disease when they do not get enough vitamin D.

What is periosteum?

- The outside layer of a bone: a thin, tough membrane

What is synovial fluid?

- Fluid that allows the joints to move more easily

What is collagen?

- The tough fiber that makes up part of the bone

What is spongy bone?

- The layer of bone under the compact bone. It is a network of pores and tunnels interconnected in a pattern that makes the bone strong yet resilient.

What are ligaments?

- The tissues that connect one bone to another bone

What is the cranium?

- The bones of your skull that protect your brain

What is the femur?

- The longest bone in the body – the thigh bone

What are osteoblasts?

- The cells that make new bones

What is cartilage?

- A firm but resilient material in the body and on the ends of bones that absorbs shock well and keeps the bones from getting hurt when they rub against one another

Lesson 3: The Muscular System

Human Anatomy & Physiology Catechism

What are skeletal muscles?

- The muscles that are attached to and move your bones

What is lactic acid?

- A cellular waste product created when energy is produced anaerobically

What is rapid eye movement?

- Also known as REM sleep. The way the eye moves during sleep

What are extensor muscles?

- Muscles that open the joints wider

What is the Achilles tendon?

- The tendon that attaches the calf muscle to the heel bone

What are antagonistic muscles?

- A pair of muscles or muscle group that act to pull a bone in opposite directions

What is a cardiac muscle?

- The muscle type that forms much of the heart

What is the gluteus maximus?

- The muscle that connects the back of the pelvic girdle and femur

What are voluntary muscles?

- Another name for skeletal muscles, because you can control them by thinking about controlling them.

What is tendonitis?

- A condition that occurs when tendons are overused and become inflamed

What is anaerobic?

- The type of cellular energy generation that occurs when there is an inadequate supply of oxygen in that cell

What is masseter?

- The muscle that closes the mouth and keeps it closed

What is atrophy?

- A condition that occurs when a muscle is underused and therefore becomes weak and shrinks

What are filaments?

- The small strips of protein located inside each myofibril

What are myofibrils?

- Strands of protein inside skeletal muscle cells

What are flexor muscles?

- Muscles that close the joints

What is muscle tone?

- This is produced when muscles are partially contracted

What are tendons?

- These connect skeletal muscles to bones

What is aerobic?

- The type of energy production that requires oxygen

Lesson 4: The Digestive and Renal Systems

Human Anatomy & Physiology Catechism

What is digestion?

- The body's process of breaking down food and converting it into the material the body needs to live, repair itself, and grow

What is the epiglottis?

- A flap of cartilage in the back of your throat that drops down over the larynx and prevents food from going down the larynx

What are premolars?

- The teeth located in front of your molars. They are useful for grinding food.

What is saliva?

- A liquid produced by the salivary glands (which are located in and near the mouth) containing enzymes that begin the breakdown of starches.

What is defecation?

- The last step in digestion; the elimination of solid waste from the alimentary canal

What is enamel?

- The extremely hard, white, shiny substance that coats your teeth

What is the larynx?

- The passage that leads to the lungs, located right in front of the entrance to the esophagus

What is pulp?

- The area below the enamel and dentin, which contains the nerves and blood vessels

What is a crown?

- The part of the tooth not hidden by the gums. It is covered with enamel.

What are enzymes?

- Chemicals that, among other things, help your body break food down into smaller components.

What is dentin?

- The living substance under the enamel on your tooth that supports it and absorbs shock that could otherwise damage the tooth.

What is chemical digestion?

- The process of digestion where the chemicals in foods are changed into smaller chemical components so your body can use them.

What is the alimentary canal?

- The part of the digestive system through which food passes, also called the gastrointestinal tract

What are incisors?

- The front four teeth, which are sharp and useful for biting

What is mechanical digestion?

- The part of digestion which involves the grinding and moving along of food through the digestive canal

What are cuspids?

- Sometimes called your canines, these teeth are sharp and are made for tearing food

What are molars?

- Teeth in the back of your mouth that are useful for grinding food

What is pepsin?

- A powerful enzyme in the stomach that is needed to break down the proteins eaten into smaller chemical components that the body can use

What is a bladder?

- A pouch that the ureters lead down to

What is the jejunum?

- The eight-foot long part of the intestine, after the duodenum

What is the appendix?

- A tube on the cecum that provides a place for bacteria to live until needed

What is the ileum?

- The last eleven feet of the small intestine

What are ureters?

- Tubes where urine trickles down

What are villi?

- Tiny projections inside the small intestine that help transport nutrients to blood vessels throughout the intestine

What is duodenum?

- The first foot-long part of the intestine

What is the pancreas?

- An organ used for digestion that produces hormones as well as digestive juices

What is the renal system?

- The place in your body where urine is produced

What is flatulence?

- A side effect that occurs when bacteria in your intestines digest carbohydrates and release different gases

What is the gall bladder?

- The part of the body that releases concentrated bile into the duodenum

What is the pyloric sphincter?

- A muscle that works carefully to ensure that only a small amount of chyme goes into the small intestine at a time

What is the liver?

- The part of the body where nutrients are processed

What is chyme?

- The liquid substance food becomes after being broken down in the stomach

What is bile?

- One of the chemicals made by the liver that is important for the digestive process

What are kidneys?

- Special organs in your renal system that produce urine

What is the ileocecal sphincter?

- The meeting point between the small and large intestines that opens and closes to let the liquid chyme from the small intestine enter the large intestine

What is the gastroesophageal sphincter?

- A circular muscle at the meeting point between the esophagus and the stomach

Lesson 5: Health and Nutrition

Human Anatomy & Physiology Catechism

What are nutrients?

- Substances found in food and drink that your body needs to be healthy

What are molecules?

- Formed when two or more different kinds of atoms are linked together

What is fructose?

- The very sweet sugar found in most fruits

What is glucose?

- One simple carbohydrate formed from most carbohydrates in your body

What is glycogen?

- Stored energy for later use in the body. The liver changes glucose into this complex carbohydrate.

What are fatty acids?

- What makes up fats... fats are made up of three fatty acids attached to a glycerol

What is Omega 6?

- The type of essential fatty acid of which your body needs the greatest amount. It is found in most cooking oils.

What are trans fats?

- Unhealthy fats that have been industrially altered through hydrogenation

What is glycerol?

- Linked with three fatty acid molecules to form a fat.

What are atoms?

- The smallest units of an element that retain the properties of the element

What are carbohydrates?

- Carbon, hydrogen and oxygen atoms linked together in specific forms that can be broken down to give your body the energy it needs

What is the glycemic index?

- The measure for how quickly food releases energy (in the form of glucose) into your bloodstream

What is blood sugar?

- What we call the glucose in your bloodstream

What is protein?

- A strand of amino acids; a substance made and used in every cell in your body

What is Omega 3?

- One of the two types of essential fatty acids your body needs. Among other foods, it can be found in tuna, dark leafy green vegetables and flax seeds.

What is hydrogenation?

- A process whereby unsaturated fats are chemically converted into saturated fats

What are calories?

- Units we use to measure energy

What are simple carbohydrates?

- Small carbohydrate molecules (sugars) that digest easily and provide “quick energy” for your body

What are complex carbohydrates?

- Large carbohydrate molecules (unrefined starches) that take a long time to digest. They release energy into your bloodstream slowly.

What are essential amino acids?

- The nine amino acids that your body cannot make, but that are essential (required) for your cells to make the proteins they need

What are essential fatty acids?

- The fatty acids your body can't make but must have in order to continue making the special fats it needs to survive

What are unsaturated fats?

- Fats that are usually liquid at room temperature, such as those that come from olives or nuts

What is an incomplete protein?

- A protein (like those found in vegetables) that contains only some of the essential amino acids

What is a complete protein?

- A protein, such as those from meat or eggs, that contains all nine essential amino acids

What are saturated fats?

- Fats that are usually solid at room temperature, such as butter

What are triglycerides?

- Another name for fats, based on the three fatty acid chains linked to a glycerol to make a fat

What is a vitamin deficiency?

- A condition that occurs when your body doesn't get the proper amount of a vitamin it needs

What is iodine?

- A mineral found in seawater and iodized salt

What is goiter?

- A swelling of the thyroid gland that can result from a lack of iodine

What is fat soluble?

- When a vitamin dissolves easily in fat and is stored in your body

What is iron?

- An important mineral for your body that is plentiful in beef

What is scurvy?

- A disease caused by a vitamin C deficiency

What is oxidation?

- What occurs when fruits are exposed to air, and the oxygen stimulates cellular enzymes to begin to break down the cell walls, turning the fruit brown

What is water soluble?

- When a vitamin dissolves easily in water and is not stored in your body

What is sodium?

- One of the minerals that your body needs most. It is found in table salt.

What is an antioxidant?

- Something that helps to stop the oxidation process

What is calcium?

- A mineral your body needs to have strong bones

What are rickets?

- A disease caused by a vitamin D deficiency, affecting how bones grow and remodel

What is a mineral?

- A nutrient originally obtained from non-living sources. These nutrients are usually found in the earth, rivers, lakes, streams and oceans, and many are required by your body.

What is coenzyme?

- An enzyme's helper. Some vitamins play this helper role in your body.

Lesson 6: The Respiratory System

Human Anatomy & Physiology Catechism

What is a nasal cavity?

- A space in your head where much of the dust, pollen, bacteria and other stuff in the air you breathe is filtered out.

What are cilia?

- Tiny motorized “whips” waving back and forth on the cells lining the back of your nose and throughout much of the respiratory tract.

What are sinus cavities?

- Holes in your skull that aid in the warming, moisturizing and filtering of the air you breathe.

What is the uvula?

- A small pink projection hanging downward from your soft palate.

What is a voice box?

- Another name for the larynx

What are bronchi?

- The two tubes that branch out from the trachea.

What are alveolar ducts?

- Little spaces where air enters the alveoli.

What is a diaphragm?

- The long muscle below your lungs. It helps you breathe in and out.

What are conchae?

- Structures in your nasal cavity where air is cleaned, moistened and brought to the correct temperature.

What is the pharynx?

- Where air passes through the three parts of this structure on its way down to the trachea

What is the oropharynx?

- The part of the pharynx that is closest to your mouth.

What is the larynx?

- The part of your body that gives you the ability to speak.

What is bronchitis?

- The condition that occurs when your bronchi are swollen, usually because of an infection.

What are alveoli?

- Balloon-like sacs in the lungs that allow the oxygen you need to pass easily from the air you inhale into the blood stream.

What is the respiratory system?

- The system that enables you to breathe; your nose, trachea, and lungs are a few of the parts of this system.

What are mucous membranes?

- Mucus producing tissues, found in many parts of your body.

What is the nasopharynx?

- The uppermost part of the pharynx. It is connected to the inner ear.

What is the laryngopharynx?

- The last part of the pharynx.

What are vocal chords?

- “Strings” or strips of tissue that are pulled tightly across your larynx. They vibrate as air blows by, giving you the ability to make sounds.

What are bronchioles?

- Very small, thin-walled tubes that carry air to where the lungs can finally use it.

Lesson 7: Life in the Blood

Human Anatomy & Physiology Catechism

What are arteries?

- Vessels that carry blood away from your heart.

What are venules?

- “Little veins” that come together to form larger veins.

What are capillaries?

- Blood vessels with very thin walls. They join the smallest arteries to the smallest venules.

What is plasma?

- The liquid part of your blood, made up of 90% water.

What are red blood cells?

- These turn your blood red and make up 40% of the solids found in a drop of blood.

What is hemoglobin?

- The special oxygen carrying protein that red blood cells make and use.

What are leukocytes?

- Another name for white blood cells.

What are antigens?

- These special markers are attached to your cells. The ones attached to red blood cells determine the type of blood you have.

What are veins?

- Vessels that return blood to your heart.

What are arterioles?

- Vessels that branch out from the arteries becoming “little arteries”.

What are platelets?

- Fragments of cells that are carried in your blood. They aid in the blood clotting process.

What are hormones?

- Chemical messengers that travel the body via the bloodstream in order to control and coordinate complex processes, such as growth and metabolism.

What are erythrocytes?

- Another name for red blood cells

What are phagocytes?

- Special white blood cells that eat dangerous or worn-out cells

What is anemia?

- A condition that results from not having enough red blood cells.

What are stem cells?

- Cells that have the ability to become any kind of cell they need to be.

What is the circulatory system?

- The system that carries your blood throughout your body.

What is oxygenated blood?

- Blood that is carrying oxygen to the cells.

What are white blood cells?

- Lymphatic/immune system cells that travel throughout your body, attempting to destroy harmful bacteria and viruses.

What is deoxygenated blood?

- Blood that has given up some of its oxygen and picked up carbon dioxide.

What is a blood transfusion?

- The transferring of blood from one person to another.

Lesson 8: The Cardiovascular System

Human Anatomy & Physiology Catechism

What are pulmonary veins?

- Veins that carry oxygenated blood from the lungs to the heart.

What are atria?

- The top two chambers of the heart.

What is plaque?

- Deposits of fatty material that build up inside the blood vessels.

What is the inferior vena cava?

- The large vein that collects blood from the lower parts of the body.

What is myocardium?

- The heart muscle. It's the thickest layer of the heart.

What is the interatrial septum?

- The thin wall between the two atria.

What is the endocardium?

- The thin, smooth tissue that lines the inside walls of the heart.

What are semilunar valves?

- Two of the four valves found in the heart. These half-moon shaped valves keep the blood from flowing backwards into the ventricles from the aorta and pulmonary artery when the heart relaxes between beats.

What is a pacemaker?

- A unique cluster of cells inside the heart that causes the heart to beat on its own.

What is blood pressure?

- A measurement of the force of the blood pushing against the walls of the arteries.

What is a pulse?

- The momentary stretching of arteries caused by the rush of blood forced out of the heart with each beat (contraction).

What are ventricles?

- The two lower chambers of the heart. These muscular chambers push the blood out of your heart.

What are valves?

- "Doors" that open and close and are located between each atrium and ventricle and between each ventricle and the blood vessel leaving that ventricle.

What is the aorta?

- The largest artery in the body. It carries oxygenated blood away from the heart to arteries serving the body.

What are pulmonary arteries?

- The only arteries that carry deoxygenated blood. They carry blood from the right ventricle to the lungs.

What is the superior vena cava?

- The large vein that collects blood from the upper parts of the body.

What is the pericardium?

- A special fibrous sac that holds the heart in place.

What is the interventricular septum?

- The thick, muscular wall between the two ventricles.

What are atrioventricular valves?

- Two of the four valves found in the heart. These valves are placed between the atrium and ventricle on each side.

What is systolic blood pressure?

- The first number in a person's blood pressure. It indicates the pressure against the arterial walls when the ventricles contract.

What is diastolic blood pressure?

- The second number in a person's blood pressure. It indicates the pressure against the arterial walls when the ventricles relax.

Lesson 9: The Nervous & Endocrine Systems

Human Anatomy & Physiology Catechism

What is the peripheral nervous system?

- Contains nerves that spread out from the central nervous system to the outer edges of the body.

What is the autonomic nervous system?

- The part of the peripheral nervous system that works automatically. It controls your smooth muscles so your organs can function without you thinking about them.

What is the cerebral cortex?

- The folded outer part of your cerebrum.

What is the central nervous system?

- Contains the brain and spinal cord.

What are neurotransmitters?

- Chemicals at the end of an axon that transmit information from one neuron to another.

What are motor neurons?

- Neurons that send information from your brain and spinal cord to your body, telling your muscles and other organs what to do.

What is the somatic nervous system?

- The part of the peripheral nervous system that is responsible for the voluntary movements you make.

What is the interneuron?

- A type of neuron that is found between (and connects) other neurons.

What is the nervous system?

- The two-part (central and peripheral) system that controls a huge number of activities in your body.

What is a brain stem?

- Connects the brain to the spinal cord and controls things like your breathing and heartbeat.

What are neurons?

- The most important cells in the nervous system. They receive, store, and process information, as well as send messages throughout the body.

What is a myelin sheath?

- The fatty tissue wrapped around an axon that allows information to travel more quickly down the axon.

What is a synapse?

- The very tiny space between the axon terminal of one neuron and the dendrite of another.

What are sensory neurons?

- Neurons that send information to your spinal cord and brain for processing.

What is a cell body?

- The part of a neuron that contains the nucleus and receives information from the dendrites.

What is integration?

- A function of the brain that sorts and processes information, making it understandable and usable.

What is an axon?

- The part of a neuron that transmits information from the nucleus to different parts of the body.

What are nerves?

- Bundles of neuron axons running together. They gather information from inside and outside your body and send it to your brain. They also carry commands from your brain to your body.

What is the cerebrum?

- The largest part of the brain where most of your conscious actions are controlled, and thoughts are thought.

What is a dendrite?

- One of the “arms” of a neuron that reaches out in many directions and gathers information.

What is the cerebellum?

- The “little brain” that controls your complex muscle movements, helping you to maintain balance.

What is the endocrine system?

- The system that operates through hormones to coordinate and control many of the activities that go on in your body.

What are adrenal glands?

- The glands that release the hormone epinephrine (the hormone released during the fight or flight response).

What is homeostasis?

- The condition that occurs when all the systems of your body are working together to maintain a stable, healthy condition.

What are hormones?

- Chemicals produced in your glands that travel the blood stream to interact with specific cells or organs, telling them to perform precise functions.

What is a thyroid gland?

- The gland located on the front of the neck that produces a hormone that speeds up the rate at which almost all cells burn their fuel for energy.

What is a thymus gland?

- The gland that helps the body's defense system by producing the hormones responsible for the development of a certain type of white blood cell.

What is a pituitary gland?

- The gland in your brain that is the central controller for many other hormone releasing glands.

Lesson 10: The Nervous System Extended

Human Anatomy & Physiology Catechism

What is gray matter?

- The outer surface of the brain. Neuron cell bodies give it its color.

What is the frontal lobe?

- The lobe located in the front part of the cerebrum. It is where speech and language are learned and used, purposeful movements initiated, and problems solved.

What is the temporal lobe?

- The lobe of the cerebrum that is located near your temple. It processes both smells and memory.

What is a reflex arc?

- When an interneuron in the spinal cord decides to activate a motor neuron without waiting for the brain to give instructions.

What is the parietal lobe?

- One of the four lobes of the cerebrum. It is located behind the frontal lobe and processes all sorts of sensory information.

What is the left hemisphere?

- The left half of the cerebrum.

What is white matter?

- The inner surface of the brain. Myelin gives it its color.

What is the occipital lobe?

- The lobe located in the back part of the cerebrum. It processes visual information.

What is cerebrospinal fluid?

- A special fluid between the skull and brain that helps cushion the brain and keep it comfortably in place.

What is the right hemisphere?

- The right half of the cerebrum

Lesson 11: Your Senses

Human Anatomy & Physiology Catechism

What is a general sense?

- Another name for your sense of touch. It is the one sense that your whole body can experience.

What are olfactory glands?

- Glands that produce the mucus layer in which the cilia float.

What is the external ear?

- The outer part of the ear, containing the pinna, external auditory canal and eardrum.

What are auditory ossicles?

- The three tiny bones inside your middle ear: the malleus, incus and stapes.

What is the olfactory epithelium?

- The system that gives you your sense of smell.

What are semicircular canals?

- The three structures inside the inner ear that contain fluid and help to control your balance.

What is the cupula?

- A tiny sail-like structure inside the inner ear that helps to keep you balanced.

What are otoliths?

- Tiny stones inside your ears that help detect the movement of your head.

What is the macula?

- A small spot inside your inner ear that contains a thick, gel-like fluid and houses teeny-tiny stones (otoliths).

What is static?

- The sense of balance that tells you the position of your head and helps you to maintain your posture when you are not actively moving.

What is the cochlea?

- The snail shell shaped structure inside the inner ear that converts sound waves to nerve signals.

What is dynamic?

- The sense of balance that informs you about active movements of your head.

What is a vestibule?

- The part of the inner ear where your static sense of balance is located.

What are cilia?

- Tiny hairs projecting from each olfactory cell. They greatly increase the surface area so that even very faint odors can be detected.

What are papillae?

- The visible “bumps” on your tongue. Some of them house your taste buds.

What is pinna?

- The part of the ear you see from the outside, also called the auricle.

What is the inner ear?

- The inner part of the ear, containing the semicircular canals and the cochlea.

What is an eardrum?

- The thin membrane that vibrates in response to sound waves and transmits the vibrations to the auditory ossicles.

What are special senses?

- The five senses that occur as a result of specific organs at special places in your body.

What are taste buds?

- The five taste sensation (sweet, sour, salty, bitter, umami) are detected by these special receptors.

What is the middle ear?

- The middle part of the ear, containing the malleus, incus and stapes.

What is the olfactory system?

- The system that gives you your sense of smell.

What is the external auditory canal?

- The part of your ear leading from the pinna to the ear drum.

What is the sclera?

- The white outer layer of your eyeball. It covers all but the cornea.

What is the iris?

- The colored circle behind the cornea. It automatically adjusts the size of the pupil, controlling the amount of light entering the eye.

What is the aqueous humor?

- A clear, watery fluid that flows through the pupil and moistens the back of the cornea, the iris, and the lens of the eye.

What is the retina?

- The lining of the inside of the back of your eye. It contains the rods and the cones.

What are cones?

- Special cells concentrated in one spot on your retina that allow you to see in color.

What is the fovea?

- The area of the retina where the cones are concentrated. It is where your vision is most sharply focused.

What is astigmatism?

- A visual defect resulting from the cornea being shaped incorrectly. As a result, everything is a bit blurry.

What is myopia?

- A nearsighted person is said to have myopia.

What is hyperopia?

- A farsighted person is said to have hyperopia.

What is a blind spot?

- The spot in your eye where there are no rods or cones. It is the place where the optic nerve is located.

What is binocular vision?

- God's design for the eyes of people and some animals. It enables the eyes to work together in order to locate objects more accurately.

What are tears?

- A wet substance designed to moisten, cleanse and disinfect your eyes.

What are tear ducts?

- Special tubes that lead from the corners of your eyes into your nose.

What is pinkeye?

- A condition that results when the conjunctiva (protective covering over the white part of the eye) becomes infected and turns pink.

What is farsighted?

- A person that can see things well far away but cannot see things very well up close is said to be farsighted.

What is a cornea?

- The clear “window” in the front of your eye through which light passes.

What is a pupil?

- The round black spot in the middle of your iris. Light enters this part of your eye.

What is a lens?

- The part of your eye that enables you to see near and far. It focuses light rays, very much like the lens of a camera.

What are rods?

- Special cells spread all over your retina that allow you to see in dim light.

What is an optic nerve?

- The nerve that sends information from the retinal cells to the brain.

What is colorblind?

- A person who cannot see all the colors they should is said to be colorblind.

What is nearsighted?

- A person that can see things well up close but cannot see things very well far away is said to be nearsighted.

Lesson 12: The Integumentary System

Human Anatomy & Physiology Catechism

What is the integumentary system?

- Your skin (along with your nails, hair, sweat glands, and oil glands) makes up this complex group of tissues.

What is the dermis?

- The innermost layer of your skin.

What is melanin?

- Lots of this pigment will make a person's skin brown, olive or black.

What is ultraviolet?

- Very high-energy light produced by the sun that can cause skin cancer.

What is sebum?

- An oily substance which coats the skin and hair, keeping them smooth and supple.

What is hard keratin?

- The keratin made within the outer layers of hair cells, and within nail cells.

What is the medulla?

- The innermost layer of your hair, made of loosely connected cells.

What is the lunula?

- The half-moon shaped area of paleness beyond the cuticle of your nail. It is part of the nail matrix.

What is the epidermis?

- The outermost layer of your skin.

What is the hypodermis?

- The layer of skin located below the dermis. It contains adipose tissue.

What are epithelial cells?

- What we call the cells in the epidermal layer of the skin.

What is carotene?

- The pigment that gives the skin a slightly yellow tone.

What is elastin?

- A common protein that makes your skin "elastic".

What are sweat glands?

- Glands in the dermis that produce sweat.

What is the cuticle?

- The outermost layer of a hair, made up of overlapping cells, like the shingles of a roof. This layer is clear.

What are cleavage lines?

- Patterns of tension in your skin.

What is a hair follicle?

- A little "pocket" from which hair grows.

What is a nail bed?

- The place where the nail lies.

What is adipose tissue?

- Fat tissue.

What is keratin?

- A tough protein found in your skin, hair and nails.

What are melanocytes?

- Special cells found deep in the epidermis that produce melanin.

What are the sebaceous glands?

- Oil glands that are like built-in skin lotion dispensers.

What is a shaft?

- The part of the hair made up of dead, keratinized cells.

What is the cortex?

- The layer in which the color of your hair is found.

What is subcutaneous tissue?

- The hypodermis is also known as subcutaneous tissue.

What are nail folds?

- Folds of skin that hold your nails in place.

What are hair follicle receptors?

- Sensory neurons that are wrapped around each hair follicle.

Lesson 13: The Lymphatic and Immune Systems

Human Anatomy & Physiology Catechism

What is the lymphatic system?

- The part of your body's defense against infections that includes special nodes and vessels, and carries a special fluid.

What is a localized infection?

- An infection that is restricted to one area of your body.

What is mutation?

- The change that happens in DNA when it is not copied correctly.

What is acute?

- The term that is used to describe diseases that are short-lived.

What is benign?

- When a disease does not cause significant harm.

What are lymph nodes?

- Tiny masses found scattered throughout your body that filter lymph fluid.

What is a spleen?

- The largest of the lymph organs. Its main job is to filter blood.

What is immunity?

- The body's ability to resist infection and disease.

What is a systemic infection?

- An infection that spreads throughout your body, affecting many of your body's systems.

What is a tumor?

- When a cell starts to reproduce abnormally, a tumor is formed.

What is chronic?

- The term that is used to describe diseases that are long-lasting.

What is contagious?

- What we call diseases that can be spread from one person to another.

What are lymph vessels?

- The vessels through which lymph fluid travels.

What is lymph?

- The name of the fluid that enters the lymph vessels.

What are pathogens?

- Microscopic germs that get inside your body and can potentially cause an infection.

What are bacteria?

- One-celled organisms found nearly everywhere on your body.

What is a disease?

- Something that upsets the normal homeostatic functioning of your body's systems.

What is malignant?

- When a disease is life-threatening.

What are infectious diseases?

- Diseases that are caused by parasites such as bacteria, fungi, worms and viruses.

What are tonsils?

- Masses of tissue in the throat that work much like your lymph nodes.

What are lymphocytes?

- Special white blood cells inside the lymph nodes.

What is an innate immunity?

- What we call the wide range of defenses, such as the skin barrier and inflammation that act in the same way no matter what the attack. These are defenses you are born with, not defenses that result from a vaccination or the flu you may have had last year.

What are histamines?

- Special kinds of chemicals that are released and sent to injured tissue.

What is an adaptive immunity?

- A sophisticated system of defense that ensures your body doesn't get certain diseases more than once.

What are allergies?

- These occur when your immune system overreacts to non-harmful substances that get inside your body.

What is an acquired immunity?

- Immunity that occurs when your immune system is exposed to, and responds to, a specific threat.

What are antibiotics?

- Medicines made from chemicals. They are very effective at killing unwanted living organisms that invade our bodies.

What are T lymphocytes?

- Cells that are sent to the thymus for special training in spotting and attacking foreign cells. They are also called T cells.

What is a complement system?

- The second line of your innate immunity. It is composed mostly of proteins made in the liver and causes parts of your body to become inflamed when needed.

What is pus?

- A substance (made up of damaged tissue, living and dead bacteria and dead white blood cells) your body sometimes produces at the site of trapped bacteria.

What are antibodies?

- Special proteins made by B cells that lock onto foreign antigens, flagging them for destruction.

What is an autoimmune disease?

- Diseases in which the body forms antibodies against its own tissue.

What is an active artificial immunity?

- Immunity that is generated by vaccinations that stimulate the immune system in an artificial way.

What is innate?

- The term used to describe defenses that are available to your body all the time. They respond to every threat in the same manner, such as your skin or a fever.

What is inflammation?

- The swelling of tissue. It is an important part of the body's immune response.

What are B lymphocytes?

- Cells that are developed in the bone marrow and are trained to spot and attack foreign cells. They are also called B cells.

What are killer T cells?

- Special T cells that attack and destroy "flagged" cells.

What is passive immunity?

- Immunity that is acquired without any action on the part of the body's immune system.

What is penicillin?

- The first antibiotic to be widely used. It comes from a mold.

Lesson 14: Growth and Development

Human Anatomy & Physiology Catechism

What is an embryo?

- What you were called when you were developing in your mother's womb during your first two months of life.

What is an amniotic sac?

- The fluid-filled bag in which the embryo lives. It is attached to the mother.

What is a fetus?

- What you were called when you were developing in your mother's womb after your first two months of life.

What is puberty?

- The period between the ages of nine and fourteen when the human body begins taking on a more adult form, and the differences between males and females become more obvious.

What are genetics?

- The study of genes and heredity.

What is a trait?

- A recognizable physical characteristic, like eye color, skin color, or hair texture.

What are genes?

- The parts of your DNA that determine certain characteristics or traits. They were passed down to you from your biological parents.

What is heredity?

- The passing on of traits from parents to their children.

What are chromosomes?

- Where your DNA is stored, and is composed of 46 compact units.

What is mitosis?

- The process whereby a cell divides to make two new cells with exactly the same DNA as the original cell.

What is meiosis?

- A special cell division process that results in unique cells called gametes (they have half the regular number of chromosomes).

What are gametes?

- Male or female reproductive cells that combine to produce a single cell that develops into a new life.

What are fraternal twins?

- Babies that develop in the womb together but are made from different gametes, possessing different DNA.

What are identical twins?

- Babies that develop in the womb together and are made from the same gametes, possessing the same DNA.

What is a dominant gene?

- A gene that will determine a trait, regardless of what trait the corresponding gene encodes.

What is a recessive gene?

- A gene that is “sleeping”. The trait encoded on this gene will be masked if paired with a dominant gene.

What is evolution?

- The false idea that man developed over millions of years, gradually changing from a single-cell organism to an ape to a human being.