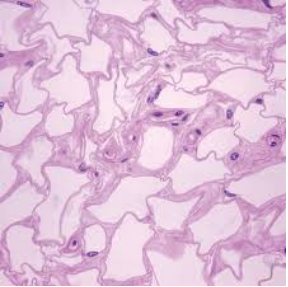
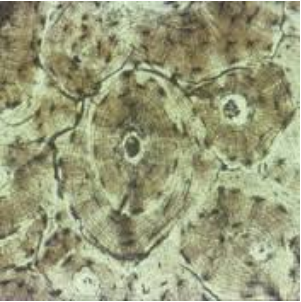

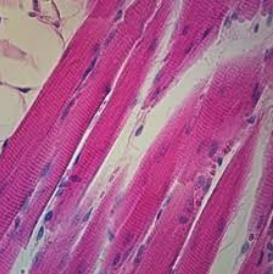
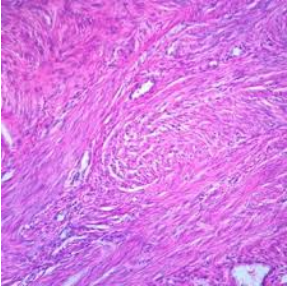
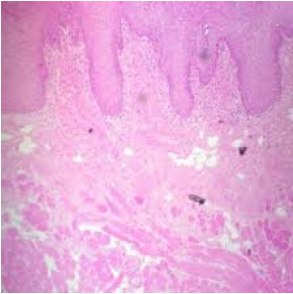
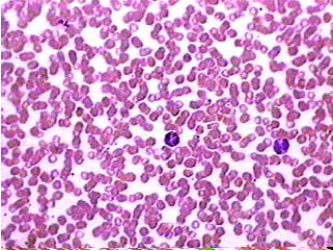
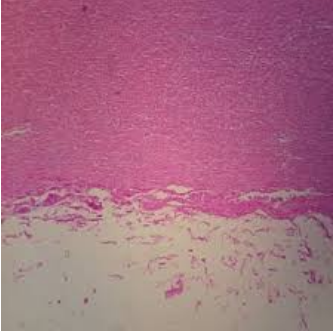
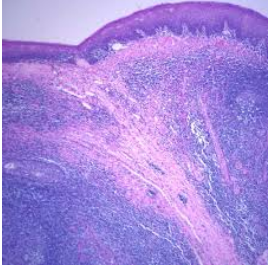
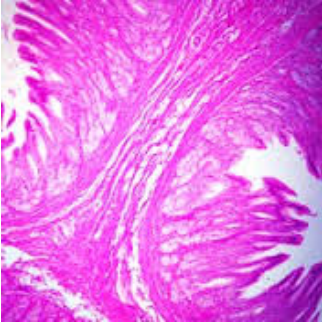
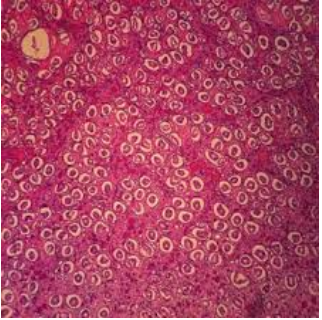
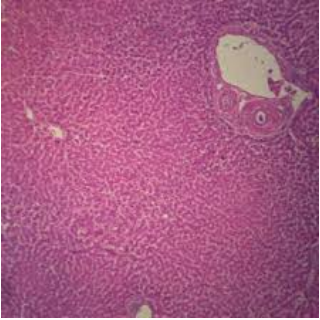
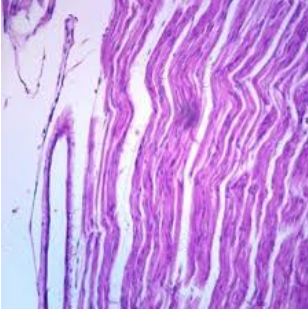
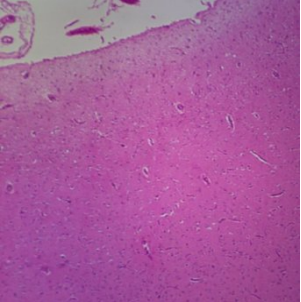


Tissue Type	Britannica Link	Main Function of Tissue	Cell Organelle Implications	Diseases Affecting this Tissue
<p>Adipose Tissue, Human</p> 	<p>http://schol.eb.com/levels/high/article/471701</p>	<ul style="list-style-type: none"> • provides insulation • serves as an energy store for times of starvation or great exertion • forms pads between organs. • generates heat and actually consumes energy 	<p>White adipose cells contain large fat droplets, only a small amount of cytoplasm, and a flattened non centralized nucleus. Their primary function is to store fat as a source of energy and insulation.</p> <p>Brown adipose cells contain smaller droplets of fat within the more abundant cytoplasm. They have a centrally located nucleus. Mitochondria are abundant in Fat Cells because they provide energy and release heat from the fats.</p>	<ul style="list-style-type: none"> • Obesity • Diabetes • Cardio-vascular Disease
<p>Bone, Ground</p> 	<p>http://schol.eb.com/levels/high/article/110163</p>	<ul style="list-style-type: none"> • structural support for the mechanical action of soft tissues, such as the contraction of muscles and the expansion of lungs • protection of soft organs and tissues, as by the skull • provision of a protective site for specialized tissues such as the blood-forming system (bone marrow) • a mineral reservoir, whereby the endocrine system regulates the level of calcium and phosphate in the circulating body fluids. 	<p>Some types of bone cell are multinucleated. This is because bone cells are responsible for absorbing older bone tissue and synthesizing new bone and blood cells.</p> <p>RNA and ribosomes, manufactured in the nucleus, along with endoplasmic reticulum, are primarily responsible for this.</p>	<ul style="list-style-type: none"> • Osteo-arthritis • Bone Cyst • Ewing Sarcoma
<p>Scalp</p> 	<p>http://schol.eb.com/levels/high/article/32791</p>	<p>This can also be referred to as the Dermis and Epidermis Tissue for the purpose of this project</p> <ul style="list-style-type: none"> • Serves as a barrier between the external environment and inner tissues of the body. • Receives sensory stimuli from the external environment. • Insulates the human body from heat and cold. 	<p>The outer layer of the epidermis is made up of dead cells. The live inner layer that does not receive nutrients from the blood supply. Therefore, they are dependent upon osmosis and diffusion of chemical nutrients from the dermal cells to meet its metabolic needs.</p> <p>The cells of the dermis layer include nerve cells (neurons) that sense heat, pain, and pressure. They also have blood vessels that deliver nutrients to cells in this layer. This layer also has specialized cells that make up sweat glands, oil glands, and hair follicles.</p>	<ul style="list-style-type: none"> • Sunburn • Eczema (dermatitis) • Psoriasis • Urticaria (hives) • Herpes simplex(Cold Sores or Fever Blisters) • Skin Cancer

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<p>Muscle, Skeletal, Human Adult</p> 	<p>http://school.eb.com/level/high/article/69966</p>	<p>Striated or Skeletal Muscles are attached to bone, and contracts to move limbs and maintain posture</p>	<p>The specialized cytoplasm of striated muscle cells is called sarcoplasm. It contains special chemical compounds involved in providing energy.</p> <p>There is an abundance of mitochondria in striated muscle cells.</p> <p>The cell membrane of striated muscle cells have structures to receive electrical and chemical signals from nerve cells.</p>	<ul style="list-style-type: none"> ● muscular dystrophies ● McArdle Disease
<p>Muscle, Smooth, Human Uterus</p> 	<p>http://school.eb.com/level/high/article/68335</p>	<p>Smooth Muscle is located in the walls of many hollow organs, the normal functioning of the cardiovascular, respiratory, gastrointestinal, and reproductive systems depends on the constrictive capabilities of smooth muscle cells.</p>	<p>There is an abundance of mitochondria in smooth muscle cells.</p> <p>Control of smooth muscle is largely regulated by the movement of calcium from cell to cell through cell membranes.</p>	<ul style="list-style-type: none"> ● Adenomyosis (Endometriosis of the uterus) ● Achalasia (Esophagus)
<p>Tongue</p> 	<p>http://school.eb.com/level/high/article/72870</p>	<ul style="list-style-type: none"> ● the front tips and margins of the tongue usually touch the teeth, aiding in swallowing and speech ● An important function of the tongue is taste sensation, which is derived from taste receptor cells located in clusters within taste buds on the surface of the tongue. ● Glands in the tongue secrete saliva, mucous and other chemicals that help in the process of digestion. ● Nerves and blood vessels at the base and underside of the tongue branch out to the rest of the tongue 	<p>The upper surface (dorsum) contains numerous projections called papillae that contain taste buds. The cells surrounding the papillae are typically muscle cells that contain a nucleus and have abundant mitochondria.</p> <p>Taste buds contain 50 to 75 slender taste receptor nerve cells (neurons arranged in a banana-like cluster. At the tips of these cells are string like structures called microvilli. When food particles come in contact and are recognized by the microvilli, a signal is sent through a series of nerve cells to the brain.</p>	<ul style="list-style-type: none"> ● leukoplakia (precancerous tumors) ● Oral Candidiasis (Thrush)

Tissue Type	Britannica Link	Main Function of Tissue	Cell Organelle Implications	Diseases Affecting this Tissue
<p>Blood, Human, Wright's, Smear</p> 	<p>http://school.eb.com/level/middle/article/273256</p>	<ul style="list-style-type: none"> • red cells take up oxygen from the lungs and deliver it to the tissues • platelets participate in forming blood clots • lymphocytes are involved with immunity • phagocytic cells ingest and break down microorganisms and foreign particles. 	<p>Red Blood Cells do not have a nucleus, and do not reproduce in the blood stream. These cells come from cells found in the bone marrow of the skeletal system.</p> <p>Red blood cells membrane is freely permeable to water, oxygen, carbon dioxide, glucose, urea, and certain other substances, but it is impermeable to hemoglobin (Protein found inside the cell that is responsible for transport of Oxygen).</p> <p>White blood cells are independently mobile, and therefore require mitochondria as a source of energy.</p>	<ul style="list-style-type: none"> • Sickle Cell Anemia • Leukemia • Lymphoma • Hemophilia
<p>Aorta, Human</p> 	<p>http://school.eb.com/level/high/article/7957</p>	<ul style="list-style-type: none"> • Blood vessel carrying blood from the heart to other organs of the body 	<p>The inner layer of cells in a blood vessel are typically fibrous cells that provide support.</p> <p>The middle layer of cells is composed of smooth muscle cells that have an abundance of mitochondria.</p> <p>The outermost layer of cells contain the protein collagen, which helps provide support. Therefore, these cells will contain many ribosomes and have a prominent endoplasmic reticulum network.</p>	<ul style="list-style-type: none"> • Atherosclerosis (hardening of the arteries) • Gangrene (results from loss of circulation)
<p>Tonsil, Palatine</p> 	<p>http://school.eb.com/level/high/article/72887</p>	<ul style="list-style-type: none"> • Tonsils are a type of lymphatic tissue. • Primary function is preventing infection in the respiratory and digestive tracts by producing antibodies that help kill infective agents. 	<p>Lymphatic tissues produce antibodies and other chemicals that help fight infection.</p> <p>These cells will have a nucleus and abundant ribosomes within the network of endoplasmic reticulum. They will also have many Golgi Bodies.</p>	<ul style="list-style-type: none"> • tonsillitis • lymphedema

Tissue Type	Britannica Link	Main Function of Tissue	Cell Organelle Implications	Diseases Affecting this Tissue
<p style="text-align: center;">Stomach</p> 	<p>http://school.eb.com/levels/high/article/69790</p>	<ul style="list-style-type: none"> • Mechanically break down food through a rhythmic contraction and expansion of muscle tissues. • Chemically break down food by the secretion of enzymes and hydrochloric acid. • Absorb nutrients from some foods into the bloodstream. 	<p>The outer layers of the stomach consist of muscle cells that aid in the mechanical breakdown of food. These cells contain a nucleus and have many mitochondria.</p> <p>The inner layers of the stomach contain cells that make up the glands. These cells contain a nucleus and have many ribosomes, and Golgi bodies for manufacturing proteins and chemicals needed to chemically break down food.</p>	<ul style="list-style-type: none"> • Indigestion • Peptic Ulcer • Gastritis
<p style="text-align: center;">Lung</p> 	<p>http://school.eb.com/levels/high/article/49375</p>	<ul style="list-style-type: none"> • responsible for adding oxygen to and removing carbon dioxide from the blood. • water, alcohol, and compounds can be absorbed and excreted • anesthetic gases such as ether and nitrous oxide can be absorbed and removed by the lungs • involved in the synthesis, storage, transformation, and degradation of a variety of substances. 	<p>The cells that make up the alveoli are called pneumocytes. Type I pneumocytes are flat cells that line the inner and outer walls of the alveoli. They have thin cell membranes to promote diffusion of gasses from the air to the red blood cells in the blood vessels. They have a nucleus and very few organelles.</p> <p>Type II pneumocytes are larger cuboidal shaped cells within each air sac of the alveoli. They have a nucleus and many organelles responsible for synthesising proteins and other chemicals. They also have specialized organelles called Lamellar Granules that secrete a lubricating substance necessary for proper lung function.</p> <p>A third type of cell found in the lung is called an alveolar macrophage. They engulf foreign particles in the lungs and help protect blood cells from infection.</p>	<ul style="list-style-type: none"> • Pneumonia • Respiratory Distress Syndrome • Emphysema

Tissue Type	Britannica Link	Main Function of Tissue	Cell Organelle Implications	Diseases Affecting this Tissue
<p data-bbox="239 293 317 321">Liver</p> 	<p data-bbox="472 293 682 431">http://school.eb.com/levels/high/article/48577</p>	<ul data-bbox="724 293 1123 638" style="list-style-type: none"> • secretes bile, a digestive fluid • metabolizes proteins, carbohydrates, and fats • stores glycogen, vitamins, and other substances • synthesizes blood-clotting factors • removes wastes and toxic matter from the blood • regulates blood volume • destroys old red blood cells. 	<p data-bbox="1167 293 1713 602">The liver tissue contains many blood vessels with specialized cells called hepatocytes surrounding them. These cells have a nucleus. They also have a well developed endoplasmic reticulum, with many ribosomes present. They also have many Golgi Bodies for the productions of bile. These cells also have many lysosomes for the disposal of the wastes from all of the chemical processes that occur in the liver.</p>	<ul data-bbox="1753 293 1984 394" style="list-style-type: none"> • Hepatitis • Cirrhosis • Liver Cancer
<p data-bbox="201 688 350 716">Nerve Cell</p> 	<p data-bbox="472 688 682 826">http://school.eb.com/levels/high/article/55388</p>	<ul data-bbox="724 688 1123 1000" style="list-style-type: none"> • A sensory neuron transmits impulses from a receptor, such as those in the eye or ear, to a more central location in the nervous system, such as the spinal cord or brain. • A motor neuron transmits impulses from a central area of the nervous system to an effector, such as a muscle. 	<p data-bbox="1167 688 1713 808">Nerve cells are composed of a cell body, which contains the nucleus and major organelles, and two or more long fibres called dendrites that carry signals from cell to cell.</p> <p data-bbox="1167 846 1713 966">The point at which dendrites of two cells come together is called a synapse. Chemical and/or electrical communication between cells occur at the synapse</p> <p data-bbox="1167 1003 1713 1094">Nerve cells can be several feet long. They also contain additional organelles specialized for intracellular communication.</p>	<ul data-bbox="1753 688 1984 898" style="list-style-type: none"> • Myasthenia gravis • Amyotrophic Lateral Sclerosis (ALS)
<p data-bbox="157 1131 392 1195">Cerebral Cortex, Human</p> 	<p data-bbox="472 1131 682 1269">http://school.eb.com/levels/high/article/22139</p>	<ul data-bbox="724 1131 1123 1284" style="list-style-type: none"> • The cerebral cortex is responsible for integrating sensory impulses, directing motor activity, and controlling higher intellectual functions 	<p data-bbox="1167 1131 1713 1252">The cerebral cortex is made up of mostly specialized nerve cells called astrocytes. They are star shaped neurons that have similar structures of other nerve cells.</p>	<ul data-bbox="1753 1131 1984 1341" style="list-style-type: none"> • Parkinson's Disease • Huntington's Disease • Alzheimer's Disease

