

When a relatively large material is made into smaller parts or when a complex molecule is reduced to simpler molecules. Digestion and respiration, for example.

The instinctive or learned actions that an organism takes in response to internal and external stimuli.

Having a set of internal bodily conditions maintained in a relatively narrow range necessary to maintain health. Homeostasis.

Having a variety of conditions maintained in a relatively narrow range to maintain a healthy cell, organism, or ecosystem. When one condition is out of the normal range, it can affect other conditions.

Generally a molecule (protein or carbohydrate embedded in cell wall or membrane of a pathogen) that causes the body to launch an immune response. It is the molecule that antibodies bind with (see antibody).

A chemical produced by specialized white blood cells that mark or otherwise help to destroy pathogens. Produced by immune system cells in response to a pathogen during initial exposure (infection), these chemicals then remain in the body after infection to fight future infections more effectively.

A drug used to treat mainly bacterial infections. NOT effective against viruses but frequently over-prescribed for that purpose. Many bacteria have developed resistance to these medications due partly to misuse.

An immune response to an otherwise harmless substance. Symptoms include local or systemic inflammation and, itching, sneezing, and/or other problems depending on the type of substance and the areas of the body affected. Can be life-threatening. For example, when eating a certain food is the cause, the effect will be different than when breathing pollen is the cause.

A disease of the immune system that destroys cells of the immune system that normally fight infections and cancers, leaving the body vulnerable to disease. Caused by the HIV virus.

The process of getting older. Generally refers to developmental changes that occur as we approach the later years of our life expectancy.

Movement of a condition or state away from a set point or range. Example: Normal body temperature is around 37.0 degrees Celsius. A change to 36.0 degrees or 38.0 degrees would be a movement away from the set range.

The irreversible ending of life activities for a cell, tissue, organ, or organism.

The body's response to internal changes that bring the system back to the normal range. Example: When you are lying down and suddenly stand up, your blood pressure drops. The body responds by increasing heart rate to bring blood pressure back to a normal range.

The control and regulation of the multitude of life activities carried out by living things. Higher orders of animals have a nervous system that largely performs this task.

A method for maintaining a narrow range of conditions in an organism (see feedback mechanism).

Refers to the movement of materials within cells or an organism. Can occur by simple diffusion or by complex organ systems.

Hormones and neurotransmitters that send "messages" from one cell to another. One message, for example, might tell cells to "divide." Another might tell them to "stop dividing."

When cells send and receive "messages" to and from each other. These messages are in the form of chemicals such as hormones and neurotransmitters.

A cell that has begun dividing in an uncontrolled way. Often destroyed by the immune system, but diseases that affect the immune system can leave the body unable to effectively deal with these types of cells.

A disease characterized by uncontrolled cell growth that can spread throughout the body and lead to organ malfunction or failure and eventually death if not treated early and effectively.

<p>A self regulating system in which a condition is maintained within a narrow range. An example would be the glucose/insulin system for maintaining blood sugar levels. When blood sugar is high, insulin is released by the pancreas, which lowers blood sugar levels, which in turn causes the pancreas to stop releasing insulin (see image card).</p>	<p>The active maintenance a set of internal conditions within in a relatively narrow range.</p>
<p>The number of times the heart beats in one minute. It changes in response to activity, stress, illness, etc.</p>	<p>A self-regulating system in which a condition is 1) maintained within a narrow range (negative) or 2) elevated beyond normal conditions (positive). A negative example would be the glucose/insulin system for maintaining blood sugar levels. A positive example is uterine contractions during labor: the contractions cause a hormone to be released that increases contractions, which again increases the release of the hormone, which increases contractions, and so on.</p>
<p>The process of getting metabolic waste out of the organism. Urination, sweating, breathing out (CO2) are examples.</p>	<p>A process by which cells "swallow" or take in materials by surrounding and enclosing them within a portion of the cell membrane. (see image card).</p>
<p>To rid the body of unwanted materials produced by cellular metabolism or digestion.</p>	<p>Failure or inability to maintain the body's internal conditions or homeostasis. Can be caused by genetic disorders, viruses, bacteria, exposure to toxins, etc.</p>
<p>The breaking down of complex food materials into simpler forms that can be absorbed, transported, and used for cellular activities.</p>	<p>Examining a problem or illness and determining the most likely cause.</p>

<p>Response to changes in the environment or internal conditions that are acquired during one's lifetime, as opposed to instinctive or automatic responses.</p>	<p>The materials and conditions INSIDE of a cell or organism. Compare with "external conditions."</p>
<p>A hormone that is released in response to elevated blood sugar levels that causes target cells (mostly in the liver and skeletal muscles) to take in glucose, thereby lowering blood sugar level.</p>	<p>A potentially disease-causing organism or particle. Includes viruses, bacteria, protists, small invertebrates such as worms, head lice, etc.</p>
<p>The presence of one (usually) disease-causing organisms in or on another organism. Does not always cause disease or symptoms of disease.</p>	<p>In general: the state of being protected from disease-causing organisms (pathogens) and some cancers. More narrowly, in humans it refers to the presence of antibodies against the individual antigens produced by SPECIFIC pathogens.</p>
<p>The system that protects the organism against disease caused by pathogens or (sometimes) cancers.</p>	<p>A state in which one or more conditions in a cell, organ, organism, or ecosystem is outside the "normal," healthy range.</p>
<p>The organism that is infected by a pathogen. Most commonly used in conjunction with "parasite."</p>	<p>A chemical messenger produced in one part of the body and released into the blood where it travels to specific "target cells" and causes the target cells to take some kind of action. Insulin is a hormone. When it binds with target cells, it causes the target cells to take in glucose from the blood.</p>

<p>When an organ, such as the heart, brain, kidneys, etc., stops working properly. Can be a cause or symptom of a disease. Can range from a minor inconvenience to a major health problem to fatal, depending on the organ and what exactly goes wrong with it.</p>	<p>1. The manner in which a particular organism gets its food. Can be autotrophic or heterotrophic. 2. The study of the types and portions of foods that are necessary for good health.</p>
<p>A substance (other than O<sub>2</sub> and CO<sub>2</sub>) that is manufactured, absorbed, or otherwise taken in from the environment that is essential for life. Includes carbohydrates, lipids, proteins, vitamins, minerals, and water.</p>	<p>The healthy range of a particular factor (temperature, blood sugar level, blood pressure, etc.) in an individual or cell when that cell or individual is not stressed or diseased or otherwise impaired.</p>
<p>A specialized cell designed to transmit messages, both electrical and chemical, from one part of the body to another or to make decisions about a course of action in response to a message from another part of the body.</p>	<p>A change of location or position. Describes materials within a cell, structure, organism, (circulation, for example) or entire cells and organism as they go from place to place (locomotion, migration, etc.).</p>
<p>To observe, literally or figuratively, to make sure that conditions remain within a particular range. In most cases, this is an unconscious, automatic process involving feedback mechanisms rather than conscious or even unconscious notice.</p>	<p>Inorganic elements found in the soil or water that are essential for living things. In general they are taken in by plants or other producers directly from the soil or water. Consumers then eat the producers (or other consumers that ate plants) and take these elements in from their food. Examples include iron, calcium, potassium, etc.</p>
<p>Any microscopic organism. Mainly bacteria, protists, some fungi, and even some tiny multi-cellular organisms.</p>	<p>A class of animals that includes humans. The majority have hair or fur, give live birth to their young, and produce milk for nursing new-borns.</p>

An injection of a dead or weakened pathogen that triggers an immune response. The body then produced antibodies against the dead or weakened pathogen, giving the person immunity to the disease cause by the pathogen.

Circulation. The movement of materials, particularly the movement of materials across a membrane in cells.

adjective. Usually refers to an organ or tissue from one organism or individual that is placed into another organism or individual.

Synonymous with dynamic equilibrium or homeostasis - maintaining internal conditions within a relatively narrow range.

The number of times an organism breathes or otherwise actively takes in oxygen and lets out carbon dioxide.

adjective. Refers to the body's mechanisms for maintaining homeostasis.

Molecules on the surface of a cell that bind with specific chemicals from another cell. An important part of how cells communicate with each other. The chemicals that bind to receptors may be hormones, or chemicals produced by nerve cells (neurotransmitters), etc.

A disease-causing particle (virus, e.g.) or organism (bacteria, fungi, etc.).

An organism that lives in or on a host, usually for a prolonged period of time, and gets its nutrition from the host. Generally the term is reserved for protists, fungi, some plants, and invertebrates, but sometimes used loosely for bacteria as well.

An organ located just behind the stomach that produces both hormones (insulin, e.g.), which are secreted into the blood stream, and digestive enzymes, which are secreted into the small intestine.

