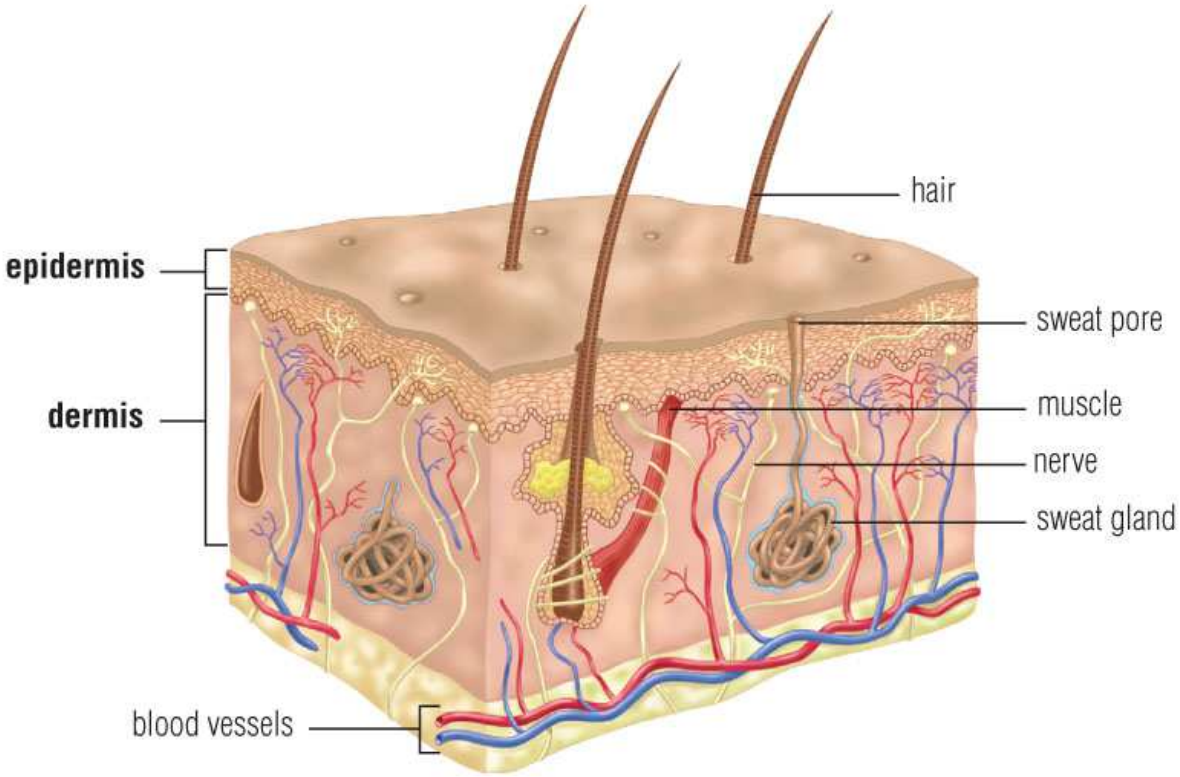
Animal Organs

An organ is an organized group of tissues that performs a specific function. Most organs are made of several different tissues.

Skin

The largest organ in your body is the skin. The skin protects the inner cells from damage, acts as a defence against disease organisms, insulates, releases heat, and excretes bodily wastes.

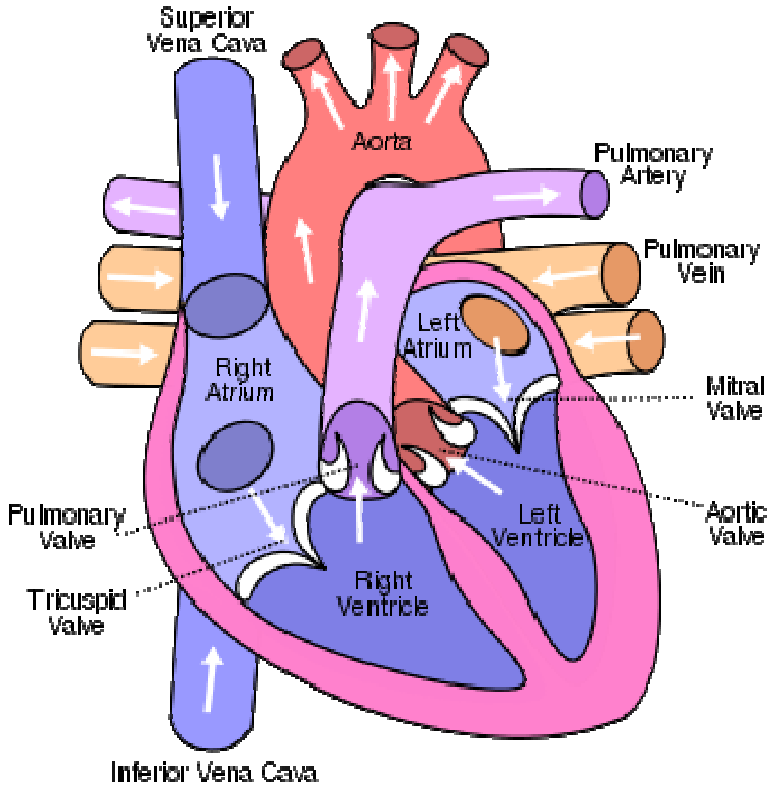
The outer protective layer of skin is the epidermis, which is made up of epithelial tissue. It prevents bacteria and viruses from entering your body and it synthesizes vitamin D when you expose your skin to the ultraviolet rays of the Sun. The epidermal layer of your skin is the part of your of skin that you can see. It is roughly half the thickness of a sheet of paper and consists mostly of dead cells. The innermost layer of skin is called the dermis, which is made up of connective tissue, nervous tissue, and muscle tissue. Blood vessels and fat are connective tissues that are found in skin and these provide structure and support. Any time you sense pain, pressure, heat, and cold, the nervous tissue of the dermal layer of the skin is sending this information to the brain. Muscle tissues are responsible for producing goose bumps.



The Heart

Made of specialized cardiac muscle, your heart is a pump that works in tandem with your lungs to supply your entire body with oxygen. The heart also drives the distribution of nutrients throughout your body and carries chemical messengers, called hormones, from one part of the body to another.

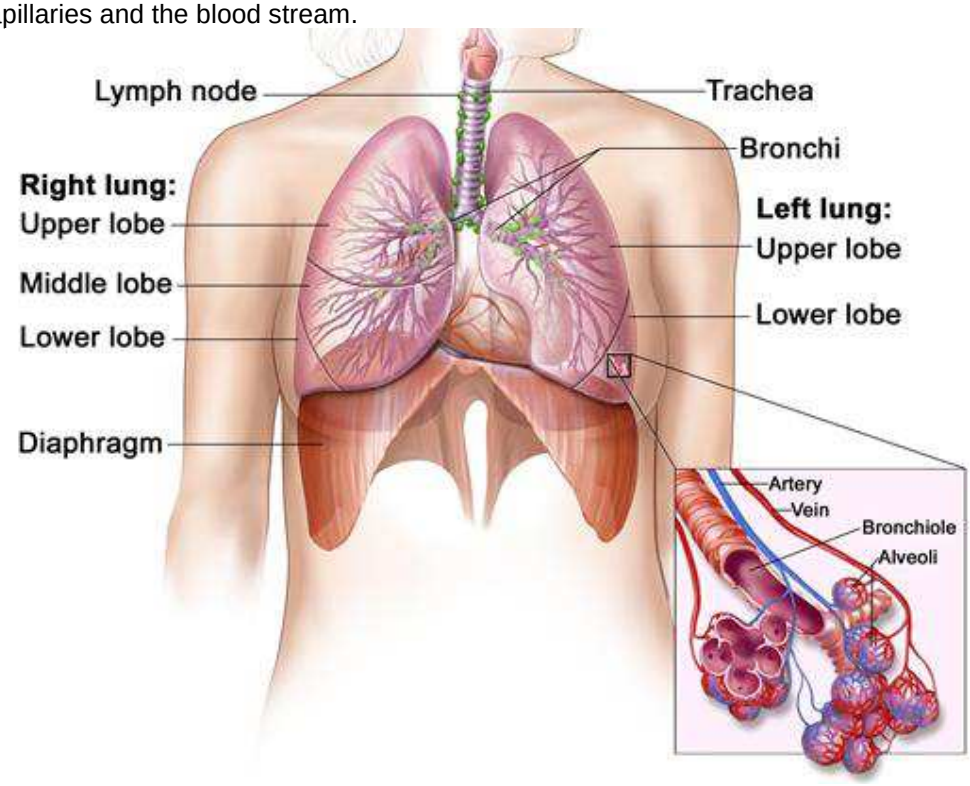
The right side of the heart contains the right atria and right ventricle, which receives deoxygenated blood from the body and pumps it to the lungs where it exchanges carbon dioxide for oxygen. The left side of the heart contains the left atria and left ventricle, which receives oxygenated blood from the lungs and pumps it by way of the aorta to the rest of the body.



The Lungs

The lungs are a pair of organs involved in respiration. Your lungs allow you to breathe in oxygen and breathe out carbon dioxide.

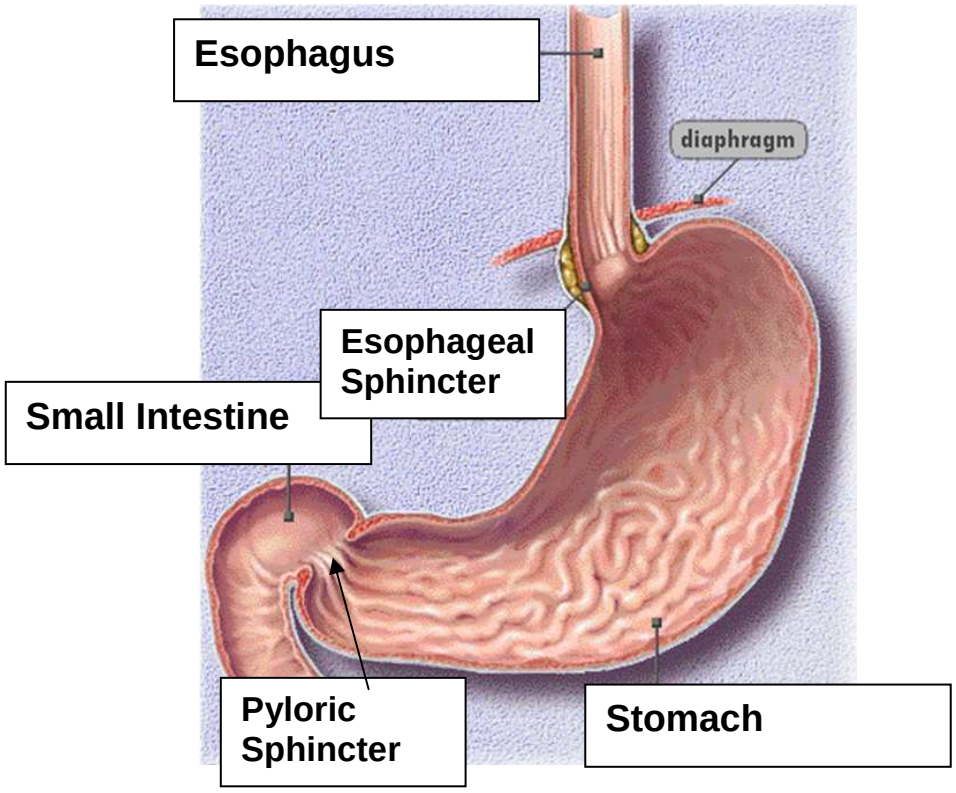
Cells need oxygen to function. The lung is made of connective and epithelial tissue. Humans have two lungs that sit in a cavity in the chest area. The lungs are coated with two sacs of connective tissue separated by a thin layer of fluid. This not only protects the lungs but also reduces the effects of friction when the lungs move. As you breathe air enters your body through your nose, or mouth, then down the trachea, to the bronchi, and into smaller bronchial tubes that lead into both lungs. A network of small tubes lead to tiny air sacs, composed of epithelial cells called alveoli. Each alveolus is surrounded by very thin walled blood vessels called capillaries. The close proximity of these vessels to the alveolar sacs facilitates gas exchange. Carbon dioxide diffuses from the capillaries into the alveoli and it is expelled by the lungs. Oxygen diffuses from the alveoli into the capillaries and the blood stream.



The Stomach

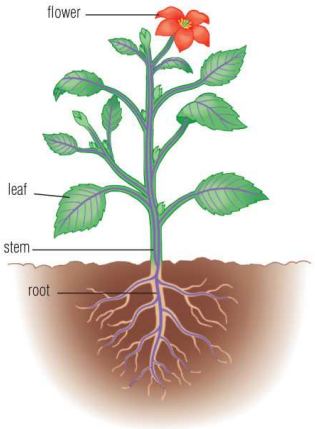
Digestion actually begins in your mouth. When you chew your food you are mechanically and chemically breaking down food to prepare it for the rest of the digestive system. The bolus (chewed softened food) then enters your **stomach**, which is **made up of epithelial, connective, nervous, and muscle tissues**. It then moves to the small and then large intestine area where most of the nutrients are absorbed.

In the stomach, food is combined with gastric juices, which is a mixture of hydrochloric acid and enzymes like pepsin that breaks down proteins.



Plant Organs

The Roots

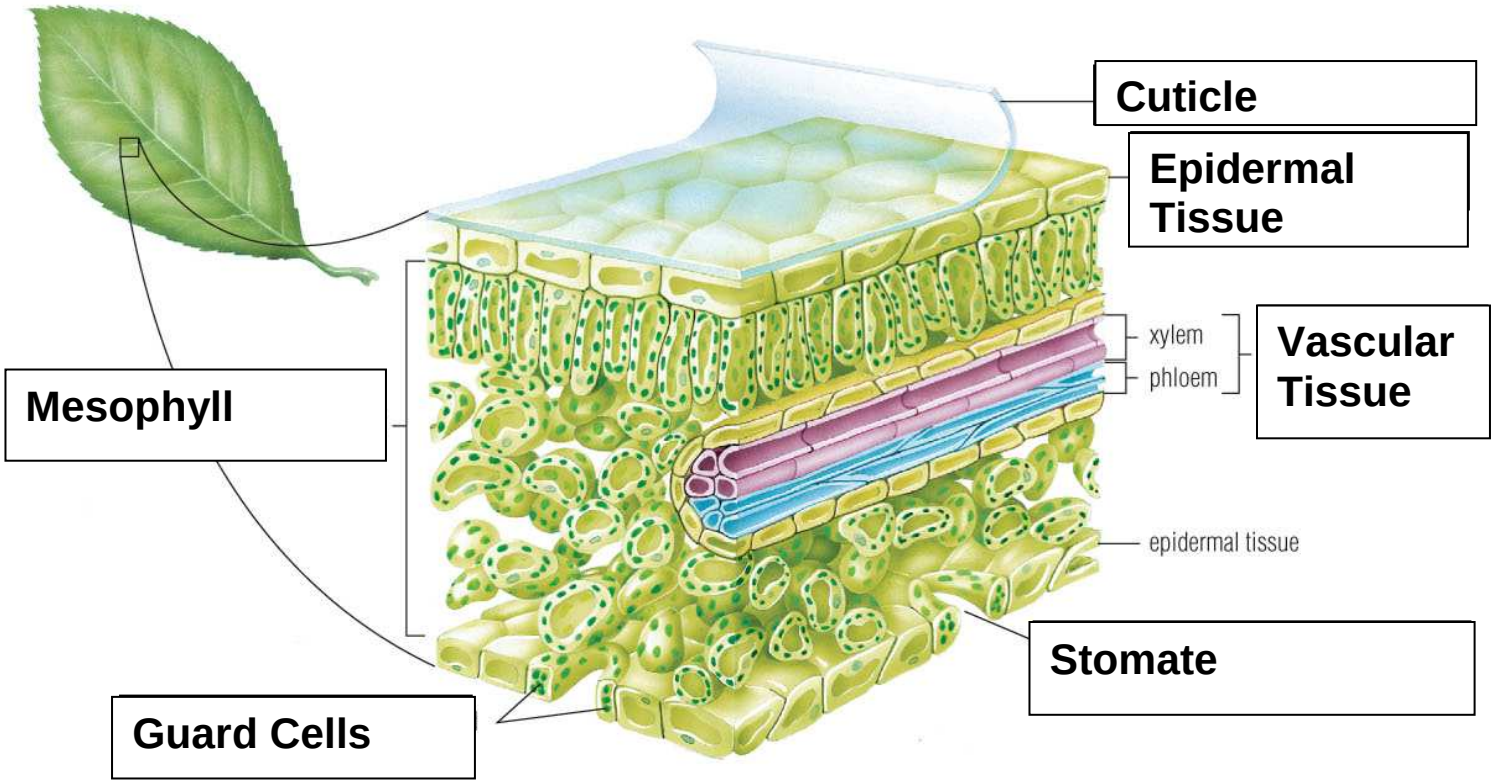


The roots anchor the plant in the soil, which permits the plant to grow above the soil without toppling over. Roots also collect water from the surrounding soil and transport it to the stem, and store food that is made in other parts of the plant.

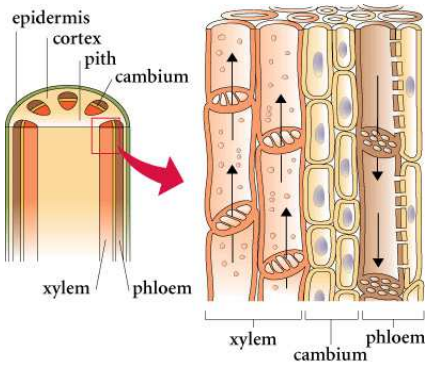
The Leaf

The tissues in a leaf work together to accomplish **photosynthesis**, a chemical reaction in which carbon dioxide and water are converted into sugar and oxygen. The vascular tissue carries water needed for photosynthesis from the root up the stem to the leaf. The sugar produced is carried by the vascular tissues to the rest of the plant.

Carbon dioxide enters, and oxygen and excess water exit through openings in the leaf epidermal tissue called stomata. These openings are controlled by special cells known as guard cells.



The Stem:



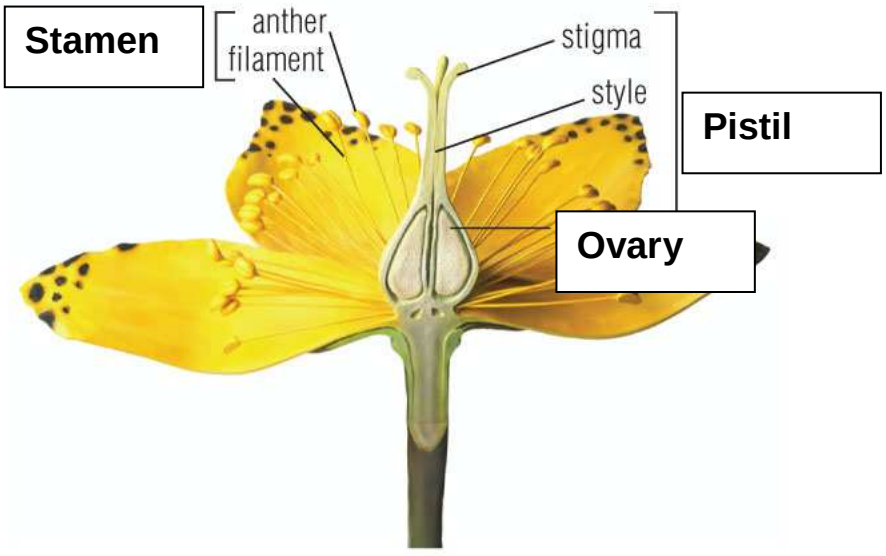
The stem performs two major functions:

- **transports water and nutrients throughout the plant**
- **supports the leaves and flowers**

Epidermal tissue provides a protective covering and allows for the exchange of gases and water vapour. In most plants, the epidermal tissue secretes a waxy substance known as the **cuticle that forms a protective coating and reduces water loss**. Ground tissue provides the stem with strength and support. Vascular tissue (xylem and phloem) transports substances around the plant.

The Flower

The flower is the reproductive structure of the plant. The main function of the flower is to produce seeds through sexual reproduction.



The flower contains male organs, called stamens. Each stamen consists of a filament with an anther at the tip. The anther produces pollen, which are the male sex cells. The flower also contains female organs, called the pistil, which consists of the ovary, style, and stigma. Female sex cells, called eggs, are located in the ovary. When the pollen and an egg unite, the fertilized egg becomes a seed.