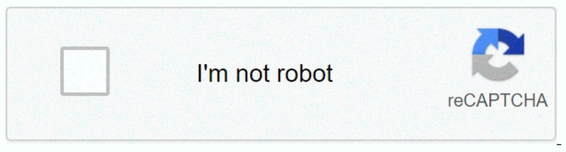
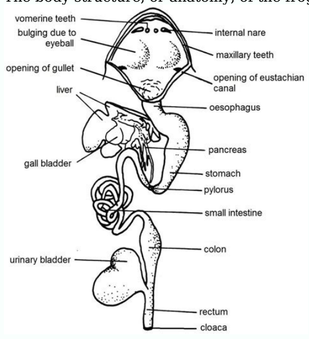


I'm not robot!

Difference between frog and human digestive system

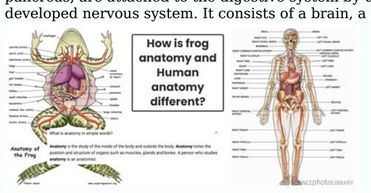
Differences between frog and human anatomy. Differences between frog and human organs. Similarities and differences between frog and human digestive system.

The body structure, or anatomy, of the frog is very similar to the anatomy of human beings. Both human beings and frogs have the same kinds of organs and systems of organs.

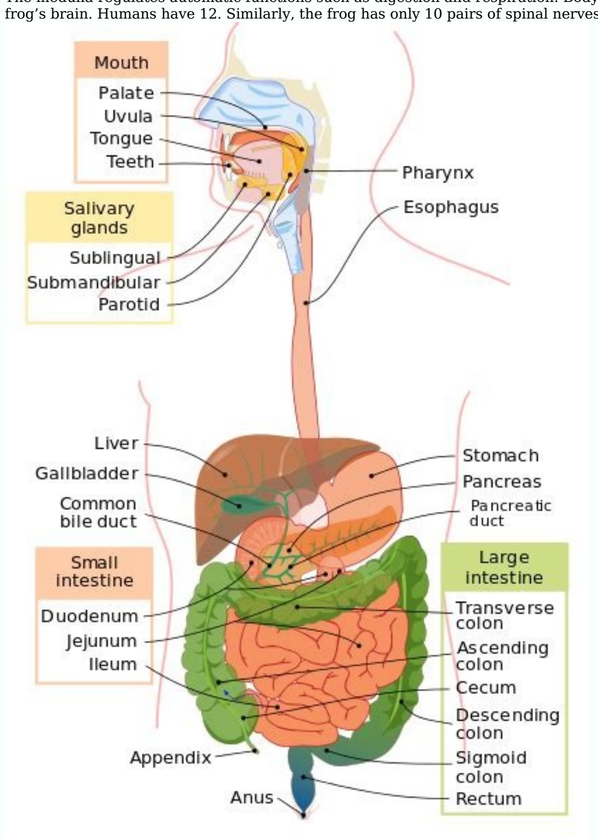


The frog’s anatomy, however, is much simpler. (See also comparative anatomy; human anatomy; biology.) Copyright Stephen Dalton/Photo Researchers As in other higher vertebrates, the frog body may be divided into a head, a short neck, and a trunk (see Vertebrates). The flat head contains the brain, mouth, eyes, ears, and nose. A short, almost rigid neck permits only limited head movement. The stubby trunk forms walls for a single body cavity, the coelom.The internal organs of humans are housed in one of three distinct hollow cavities—the chest, the abdomen, and the pelvis. The human chest is separated from the abdomen by a powerful muscular partition, the diaphragm. There is no such partition in the frog’s coelom. All the frog’s internal organs—including the heart, the lungs, and all organs of digestion—are held in this single hollow space.The frog’s body is supported and protected by a bony framework called the skeleton.The skull is flat, except for an expanded area that encases the small brain. Only nine vertebrae make up the frog’s backbone, or vertebral column. The human backbone has 24 vertebrae. The frog has no ribs.The frog does not have a tail. Only a spikelike bone, the urostyle, remains as evidence that primitive frogs probably had tails. The urostyle, or “tail pillar,” is a downward extension of the vertebral column.The shoulders and front legs of the frog are somewhat similar to humman shoulders and arms. The frog has one “forearm” bone, the radio-ulna. Humans have two forearm bones, the radius and the ulna. Both frog and human have one “upper arm” bone, the humerus.The hind legs of the frog are highly specialized for leaping. The single “shinbone” is the tibiofibula. Humans have two lower leg bones, the tibia and the fibula. In humans and in the frog, the femur is the single upper leg (thigh) bone. A third division of the frog’s leg consists of two elongated anklebones, or tarsals. These are the astragalus and the calcaneus. The astragalus corresponds to the human talus. The calcaneus in the human skeleton is the heel bone.As in other vertebrates, the frog skeleton is moved by muscles. Skeleton-moving muscles are made of skeletal, or “striated,” muscle. Internal organs contain smooth muscle tissue.The frog heart is the only organ contained within the coelom which has its own protective covering. This is the pericardium. There are two upper chambers of the heart, the right atrium and the left atrium. The frog heart, however, has only one lower chamber, a single ventricle. In humans, the lower heart chamber is divided into two compartments, the right ventricle and the left ventricle.Oxygen-laden blood and oxygen-poor blood containing waste gases are present together in the frog ventricle at all times. The oxygen-laden and oxygen-poor bloods, however, do not mix.
Such mixing is prevented by a unique arrangement of the frog’s heart. Instead of “perching” on top of the ventricle, the right atrium dips downward into the ventricle. This causes oxygen-poor blood entering the right atrium to pass all the way down to the bottom of the ventricle.Meanwhile, oxygen-laden blood is received by the left atrium and enters the same single ventricle.

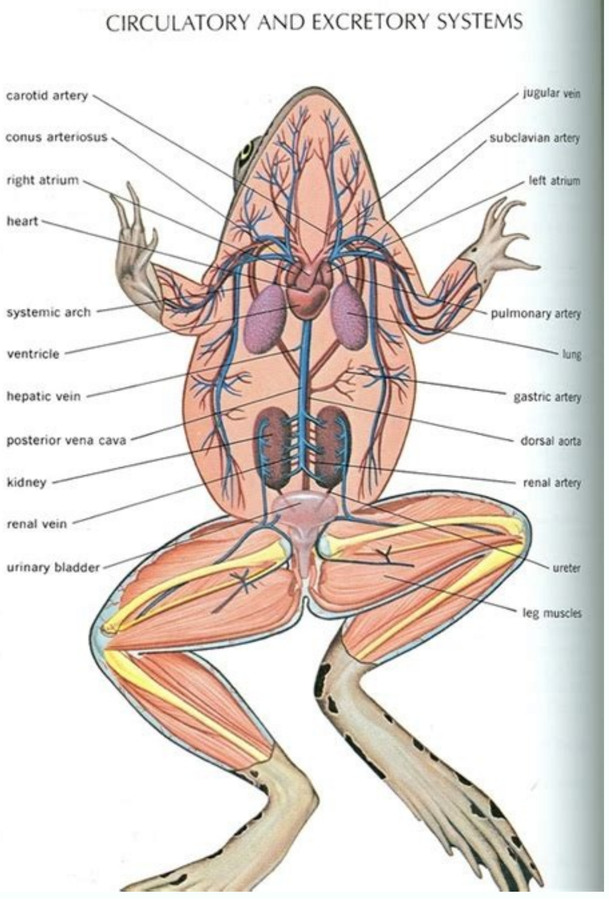
The pool of oxygen-poor blood at the bottom of the ventricle holds up the oxygen-laden blood and prevents it from sinking to the bottom.
When the oxygen-poor blood flows from the ventricle into vessels leading to the lungs, the oxygen-laden blood tries to “follow” it. The lung vessels, however, are filled with oxygen-poor blood, blocking the oxygen-laden blood and forcing oxygen-laden blood to detour into the arteries. These carry the oxygen-laden blood to the tissues.Frog blood has both a solid and a liquid portion. The liquid plasma carries solid elements such as red blood cells and white blood cells.The frog is covered by a soft, thin, moist skin composed of two layers, an outer epidermis and an inner dermis. The skin does not merely protect the frog but helps in respiration.An extensive network of blood vessels runs throughout the frog’s skin. Oxygen can pass through the membranous skin, thereby entering directly into the blood.
When a frog submerges beneath the water, all its respiration takes place through the skin. Oxygen is obtained directly from the water.The frog does not breathe through its skin alone. Adult frogs have paired, simple, saclike lungs. As in humans, air enters the body through two nostrils, passes through the windpipe, and is received by the lungs. The mechanism of breathing, however, is different in the frog from that in humans.
In humans breathing is aided by the ribs, the diaphragm, and the chest muscles. The frog has no ribs or diaphragm, and its chest muscles are not involved in breathing.A frog may breathe by simply opening its mouth and letting air flow into the windpipe. However, it may also breathe with its mouth closed.
The floor of the mouth is lowered, causing the frog’s throat to “puff out.” When the nostrils open, air enters the enlarged mouth.
Then, with nostrils closed, the air in the mouth is forced into the lungs by contraction of the floor of the mouth.The frog’s mouth is where digestion begins. It is equipped with feeble, practically useless teeth. These are present only in the upper jaw. The frog’s tongue is highly specialized. Normally, the tip of its tongue is folded backward toward the throat. From this position the frog can flick it out rapidly to grasp any passing prey. To better hold this prey, the tongue is sticky.Food passes from the frog’s mouth into the stomach by way of the esophagus. From the stomach, the food moves into the small intestine, where most of the digestion occurs. Large digestive glands, the liver and the pancreas, are attached to the digestive system by ducts. A gall bladder is also present.Liquid wastes from the kidneys travel by way of the ureters to the urinary bladder. Solid wastes from the large intestine pass into the cloaca. Both liquid and solid waste material leave the body by way of the cloaca and the cloacal vent.The frog has a highly developed nervous system. It consists of a brain, a spinal cord, and nerves. (See also brain and spinal cord; nervous system.)The important parts of the frog brain correspond to comparable parts in the human brain.



The medulla regulates automatic functions such as digestion and respiration. Body posture and muscular co-ordination are controlled by the cerebellum. The cerebrum is very small in the frog. By comparison the human cerebrum is very large. In humans the cerebrum is involved in many important life processes.Only 10 cranial nerves originate in the frog’s brain. Humans have 12. Similarly, the frog has only 10 pairs of spinal nerves.



Humans have 30 pairs.Two simple holes make up the nostrils for the frog. There are complex valves but no long nasal passages as there are in humans (see nose). The frog’s sense of smell is registered by olfactory lobes. These make up the forward portion of the brain.The eye is crude. Its fixed lens cannot change its focus. Poorly developed eyelids do not move. To close its eye, the frog draws the organ into its socket. A third eyelid, or nictitating membrane, may be drawn over the pulled-in eyeball.There is no external ear. Both eardrums, or tympanic membranes, are exposed. There is only one bone in the frog’s middle ear. The human middle ear contains three bones (ossicles). As in humans, semicircular canals help to maintain body balance. However, there are some differences between frog and human digestive systems such as the presence of two sets of teeth in frogs, the sticky and folded tongue at the tip, the presence of a shorter small intestine, the presence of a cloaca apart from a rectum, and the absence of an appendix. What is the main difference between a frog and a human heart? Frog hearts have two atria and one ventricle, while human hearts have two atria and two ventricles. The frog’s right atrium gets deoxygenated blood out of the vessels that come from the bodily organs, and the left atrium receives oxygenated blood from the skin and lungs. Where is the stomach of the frog located and what is the main function of the stomach? Stomach–Curving from underneath the liver is the stomach. The stomach is the first major site of chemical digestion. Frogs swallow their meals whole.



Follow the stomach to where it turns into the small intestine. The pyloric sphincter valve regulates the exit of digested food from the stomach to the small intestine. Why do frogs and humans have similar organs? Both frogs and humans also have well-developed senses of sight and smell. Both creatures possess a circulatory system, which operates as the heart pumps blood throughout the body. However, frogs have a three-chambered heart, with two atria and one ventricle compared to the human's two atria and two ventricles. What's the difference between Frog and human integumentary system? The key difference between frog and human integumentary system is that frog integumentary system can absorb water while human integumentary system is waterproof. Frog and human body structures share many similarities. They both have a similar type of organs and organ systems. How is the human skeleton different from a frog's? Human and Frog Skeletal System. When put together, the skeletal system provides the base framework to which all the other tissues and organs attach, giving shape to the human body. The human skeleton has two distinct features, including opposable thumbs and an upright(erect) structure, allowing you to walk on two legs. What are the accessory organs of a frog? The accessory organs found in the frog's digestive system are tongue, teeth, salivary glands, gastric glands, pancreas, liver, and gallbladder.

Mouth is the starting point of the frog's digestive system, and aids in the capturing of the prey. How are the hearts of frogs and humans different? Frogs have a heart with three chambers, while humans have a heart with four chambers.

The electric currents that flow through the heart of a frog are different from the electric currents that can be found in humans. Both frogs and humans have many of the same organs.