

☐

I'm not robot


reCAPTCHA

Continue

Anatomy and physiology 2 course outline

Most people can recognize cockroaches instantly. They are brown or black insects, which are usually between half an inch and two inches long (12-50 millimeters), minus their long antennae. Their heads point downwards, almost as if they were built for ramming. Males usually have wings, but females often do not. Those who usually have vestigial wings -- small, undeveloped wings that often don't let the roach fly. Although their reputation often characterizes them, cockroaches have a lot in common with other insects. Their bodies have three primary regions -- the head, the thorax and the abdomen. They have three pairs of articulated legs, a pair of antennae and a rigid exoskeleton. Cockroaches shed their exoskeleton or molt several times during their lives. After molting, most cockroaches are white and slightly injured until a hormone called bursicon darkens and hardens the exoskeleton. Sometimes a roach can allow a lost limb to grow again when it molts and even the molting so that the new limb can grow. Advertising Roach's heads house her eyes, antennae and mouth parts. Contrary to popular perception, their heads also house their brains. However, much of their activity of the nervous system is found in nerve ganglia throughout their body. This is one of the reasons why a headless roach can live more than a week. The other is that cockroaches do not breathe through a nose or mouth. Instead, they draw air through spiracles or holes in their sides. Tubes called tracheae supply oxygen from the spiracles to organs and tissues. When a headless roach finally dies, he dies of thirst. Although not as distinctive as the eyes of dragonflies or house flies, cockroach eyes are composed and are made of photoreceptor cells called ommatidies. A hard ring called eye sclerite surrounds the photoreceptors. Because of this composite structure, cockroaches see the world as a mosaic. Moving antennae, also known as antenna flagella, allow cockroaches to feel and smell the world around them. Although the antennae look like threads, they really consist of many tiny, hair-covered segments. These segments are shorter and thicker near the head of the roach, and they are longer and thinner near the tips. The mouths of cockroaches, like those of other insects, are clearly different from the mouths of mammals. However, many parts of the mouth perform the same function as parts of a mammal's mouth: labrum and labium form lips. Two lower jaws have cutting and grinding surfaces such as teeth. Two maxillae manipulate the food while the roach chews. A roach thorax houses the fortifications for three and, if the roach has it, two pairs of wings. Each of the three pairs of legs is named after the area of the thorax to which it attaches: the prothoracic legs are closest to the head of the roach. These are the shortest legs of the roach, and they act like brakes when the roach is running. Part of the also covers the head of the roach. The middle legs are the mesothoracic legs. They move back and forth to either speed up the roach or slow it down. The very long metathoracic legs are the hind legs of the roach, and they move the roach forward. With its metathoracic legs, a roach can move about 50 lengths in a second. A person moving fast would walk about 200 miles per hour. When a roach runs so fast, it sometimes picks up and runs only on its hind legs. The power of the air she encounters keeps them upright. These three pairs of legs have essentially different lengths and functions, but they have the same parts and move in the same way. The upper part of the leg, called coxa, attaches the leg to the thorax. The other parts of the leg approach the thinking parts of a human leg: the trochanter acts like a knee and lets the roach bend his leg. Thighs and tibia are similar to thigh and shin bones. The segmented tarsus looks like an ankle and foot. The hook-like tarsus also helps cockroaches climb walls and walk upside down on ceilings. Each leg moves up and down like a pogo stick back and forth like a pendulum. The front and hind legs on one side move simultaneously with the middle leg on the other side. In this way, the roach can move over almost any terrain. When a roach runs as fast as possible, its legs move back and forth about 27 times per second. When it runs upside down on a blanket, it takes longer steps in an attempt not to fall. In fact, it takes a lot more energy for a roach to run upside down than to run up a vertical wall. The abdomen Most insects have a segmented abdomen that contains most of their internal organs, and cockroaches are no exception. In the belly of a roach, a tube-like heart moves blood to organs and tissues. Unlike human blood, the blood of a roach does not use hemoglobin to transport oxygen, so it is colorless instead of red. The blood also does not travel through an extensive circulatory system. Although an aorta carries blood to certain organs, much of the blood travels through a network of rooms called hemocoel. Cockroaches also store fat a little differently than humans. Instead of spreading it across most of their physical structure, they store it in a central place called fat bodies. The digestive system of a roach is located in its abdomen, and much of it resembles a simplified version of a mammal's digestive system. However, the digestive system of a roach has some which make it eat cellulose and other hard materials. One of them is a harvest that keeps swallowed food until a dehydrated section of the digestive tract, the proventriculus, can pulverize it. Sacs called the gastric caeca hold enzymes and microbes that continue to digest the food. This additional digestive aid is especially important when the roach eats cellulose or wood. Only when the material has been thoroughly degraded The medium of the cockroach soaks up the nutrients of the food. Two segmented cerci lie on the outside of the lower part of a roach belly. These are similar to antennae in some ways, and they can behave like sensory organs. A nerve inside the roach allows to detect air movements around its cerci. This is one reason why cockroaches can get out of the way very quickly if you try to catch or crush them. The reproductive systems of cockroaches are also in their belly. We will look at this system and the cockroach life cycle next. The lungs are the most important organs of the respiratory tract. Healthy lung tissue looks pink, soft and spongy. It has a significant elasticity and recoil to allow air in and force it out again. It is helpful to know a little about the other parts of the respiratory system and how they all work together to understand the anatomy of the lungs. Before air enters the lungs, it moves through the upper respiratory tract: nose, throat, larynx and trachea. The nose is a soft, moist layer of cells called mucous membrane, which warms and moisturizes the air. The throat and larynx form the throat and lead to the trachea or trachea. The trachea connects the upper respiratory tract to the lungs. It is a tubular structure consisting of cartilage rings surrounded by thin, smooth muscles. Normally, the trachea is centerline, but it can be easily shifted to the right and sit near the aortic arch. It is about four to five inches long and between half and three-quarters of an inch wide. yodyim / Getty Images After the trachea, the airways split into the main left and right bronchi. The right bronchus is about an inch long and wider and more vertical than the left. It is almost in a straight line with the trachea so if someone suffocates at a foreign object, it is likely to be accommodated in the right bronchus. The left bronchus is about two centimeters long and crosses in front of the esophagus. The main bronchi are divided into smaller branches called bronchioles. There are three types of bronchioles: conduction, terminal and respiratory tract. Each lung has about 20 to 25 conductive bronchioles. As they continue to spread and become narrower, they become terminal bronchioles that mark the end of a path. These then divide further into the smallest, narrowest branches called respiratory bronchioles. magimine / Getty Images The breathing bronchioles lead to the alveoli. These small bags are responsible for gas exchange and account for about 90 percent of the lung volume. They are arranged in units called acini, of which there are about 30,000. Each alveolus has a septum that structure to prevent collapse and over-distancing. The lungs also release surfactants, which protects the alveoli from collapse when the air volume is low. Mohammed Haneefa Nizamudeen / Getty Images Each Alveolus has a lining of tiny blood vessels called capillaries. Oxygen and carbon dioxide movement Carbon dioxide movement between the lungs and the blood at the membrane of each capillary. Oxygen molecules attach to the hemoglobin and migrate back to the heart, then throughout the body. Carbon dioxide crosses into the lungs, and the body dispels it with every exhalation. The right and left lungs are very similar in size and shape, but not symmetrical. The right lung has three lobes, while the left one is slightly smaller and divided into two. This is because the left lung has a heart-scarred impression to absorb the heart, which is located slightly to the left of the center. The pleural cavity surrounds and protects the lungs. It consists of membranes that fold into two layers. The outer layer or parietal pleura attaches itself to the chest wall and is very sensitive to pain. The inner layer is the visceral pleura. It covers the lungs and has no sensory innervation. The thin space between them is the pleural cavity. It contains a small amount of liquid that acts as a lubricant. yumyum / Getty Images While the ribs are not directly part of the respiratory system, they are necessary to make the lungs function properly and are one of the strongest structures in the body. They completely surround and protect the lungs and heart. The ribs connect to the sternum with costal cartilage, which gives them the flexibility to expand when the lungs fill with air. Renphoto / Getty Images With each inhalation, the lungs draw air into the mouth and nose and through the upper airways, where it is heated and moistened. From there it goes through the trachea and into the main bronchi, where it splits and penetrates into the right and left lungs. In each lung, the air travels down the bronchioles and into the alveoli, where oxygen and carbon dioxide flow through the capillary membranes. Oxygen enters the blood and enters the heart, where it flows out into the body. When the lungs exhale, the carbon dioxide now in the alveoli migrates out of the body through the bronchi, bronchi, trachea, mouth and nose. Body.

