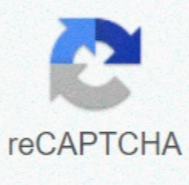




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transverse plane.

The body maintains its internal organization by means of membranes, sheaths, and other structures that separate compartments. The dorsal (posterior) cavity and the ventral (anterior) cavity are the largest body compartments (Figure 1.15). These cavities contain and protect delicate internal organs, and the ventral cavity allows for significant changes in the size and shape of the organs as they perform their functions. The lungs, heart, stomach, and intestines, for example, can expand and contract without distorting other tissues or disrupting the activity of nearby organs. Figure 1.15 Dorsal and Ventral Body Cavities The ventral cavity includes the thoracic and abdominopelvic cavities and their subdivisions. The dorsal cavity includes the cranial and spinal cavities. The posterior (dorsal) and anterior (ventral) cavities are each subdivided into smaller cavities. In the posterior (dorsal) cavity, the cranial cavity houses the brain, and the spinal cavity (or vertebral cavity) encloses the spinal cord. Just as the brain and spinal cord make up a continuous, uninterrupted structure, the cranial and spinal cavities that house them are also continuous. The brain and spinal cord are protected by the bones of the skull and vertebral column and by cerebrospinal fluid, a colorless fluid produced by the brain, which cushions the brain and spinal cord within the posterior (dorsal) cavity. The anterior (ventral) cavity has two main subdivisions: the thoracic cavity and the abdominopelvic cavity (see Figure 1.15).

The thoracic cavity is the more superior subdivision of the anterior cavity, and it is enclosed by the rib cage.

The thoracic cavity contains the lungs and the heart, which is located in the mediastinum. The diaphragm forms the floor of the thoracic cavity and separates it from the more inferior abdominopelvic cavity. The abdominopelvic cavity is the largest cavity in the body. Although no membrane physically divides the abdominopelvic cavity, it can be useful to distinguish between the abdominal cavity, the division that houses the digestive organs, and the pelvic cavity, the division that houses the organs of reproduction.

To promote clear communication, for instance about the location of a patient's abdominal pain or a suspicious mass, health care providers typically divide up the cavity into either nine regions or four quadrants (Figure 1.16). Figure 1.16 Regions and Quadrants of the Peritoneal Cavity There are (a) nine abdominal regions and (b) four abdominal quadrants in the peritoneal cavity. The more detailed regional approach subdivides the cavity with one horizontal line immediately inferior to the ribs and one immediately superior to the pelvis, and two vertical lines drawn as if dropped from the midpoint of each clavicle (collarbone). There are nine resulting regions. The simpler quadrants approach, which is more commonly used in medicine, subdivides the cavity with one horizontal and one vertical line that intersect at the patient's umbilicus (navel). A serous membrane (also referred to a serosa) is one of the thin membranes that cover the walls and organs in the thoracic and abdominopelvic cavities. The parietal layers of the membranes line the walls of the body cavity (pariet- refers to a cavity wall).

The visceral layer of the membrane covers the organs (the viscera). Between the parietal and visceral layers is a very thin, fluid-filled serous space, or cavity (Figure 1.17). Figure 1.17 Serous Membrane Serous membrane lines the pericardial cavity and reflects back to cover the heart—much the same way that an underinflated balloon would form two layers surrounding a fist. There are three serous cavities and their associated membranes. The pleura is the serous membrane that encloses the pleural cavity; the pleural cavity surrounds the lungs. The pericardium is the serous membrane that encloses the pericardial cavity; the pericardial cavity surrounds the heart. The peritoneum is the serous membrane that encloses the peritoneal cavity; the peritoneal cavity surrounds several organs in the abdominopelvic cavity. The serous membranes form fluid-filled sacs, or cavities, that are meant to cushion and reduce friction on internal organs when they move, such as when the lungs inflate or the heart beats. Both the parietal and visceral serosa secrete the thin, slippery serous fluid located within the serous cavities. The pleural cavity reduces friction between the lungs and the body wall. Likewise, the pericardial cavity reduces friction between the heart and the wall of the pericardium.

The peritoneal cavity reduces friction between the abdominal and pelvic organs and the body wall. Therefore, serous membranes provide additional protection to the viscera they enclose by reducing friction that could lead to inflammation of the organs. Author: Molly Smith DipCNM, mBANT • Reviewer: Dimitrios Mytilinaios MD, PhD Last reviewed: January 25, 2022 Reading time: 9 minutes Here at Kenhub, we're big advocates of using anatomy quizzes to learn about the structures of the human body. Quizzes are a great tool to add into your anatomy learning practice as they can be used to teach you a topic from scratch, or at the more advanced levels, help you to revise and refine what you already know. That's why we offer hundreds of anatomy practice quizzes, anatomy diagrams and anatomy worksheets on everything from the muscles of the upper and lower limb, to the parts of the brain, to the structure of the heart. You can bet that if there's a structure you need to learn about, we likely have a quiz for it! So, are you ready to see how you can use quizzes to learn anatomy? For beginners to the subject of human anatomy, the thought of having to learn hundreds of new structures can feel very overwhelming. Luckily, there are ways to make it easier. A great way to get familiar with the structures found within a particular region is to start by labeling human anatomy diagrams. You can then begin to test and build upon your knowledge with anatomy quizzes. At Kenhub, we offer: Basic Structure Identification quizzes Advanced Structure Identification quizzes Clinical Question Bank quizzes Muscle Attachments, Innervations and Functions quizzes Intelligent Mix quizzes (a combination of the above based on your unique learning history) One of the interactive quizzes from Kenhub in action Follow the links in our free anatomy quiz guides below to find out how you can use human anatomy diagrams, quizzes and flashcards to rock your anatomy studies on every topic. Let's dive in! Whether it's typing, brushing your teeth or waving to a friend across the street, the anatomical structures of the upper extremity are involved in a significant proportion of our everyday movements. They're also a hot exam topic! Learn and revise your knowledge of the structures comprising this region with our free anatomy quiz guides below. The lower extremity is a region of the body containing the hip, thigh, knee, leg, ankle and foot, all of which enable us to perform movements like walking, jumping and running. Start learning about these structures right away our free quiz guides below. The back is the region inbetween the neck and the gluteal regions, comprised of extrinsic and intrinsic back muscles and the vertebral column (spine). This region also houses and protects the spinal cord. Learn more with our free quiz guides below. The thorax is a region of the body located between the neck and abdomen. It holds several important structures, including vital organs like the heart and lungs, as well as the ribcage, breasts, and several cavities. Use our specialized quiz guides to start learning and testing your knowledge of this region now! Why is it crucial to have a good anatomical knowledge of the abdominopelvic region? Because, brain, heart and lungs aside, it houses virtually all of the vital body organs.

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