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Psis anatomy definition

Anatomy and physiology are two related biology disciplines. Many college courses teach together, so it's easy to get confused about the difference between them. Simply put, anatomy is the study of the structure and identity of body parts, while physiology is the study of how these parts work and relate to each other. Anatomy is a branch of the field of morphology. Morphology encompasses the internal and external appearance of an organism (e.g., its shape, size, pattern) as well as shape and location of external and internal structures (e.g., bones and organs -- anatomy). An anatomy specialist is called an anatomist. Anatomists collect information from living and deceased organisms, typically using dissection to dominate the internal structure. The two branches of anatomy are macroscopic or coarse anatomy and microscopic anatomy. Coarse anatomy focuses on the body as a whole and on identifying and describing body parts large enough to be seen with the naked eye. Microscopic anatomy focuses on cellular structures, which can be observed using histology and various types of microscopy. Physiologists need to understand anatomy because the shape and location of cells, tissues and organs are related to function. In a combined course, anatomy tends to be covered first. If courses are separated, anatomy can be a prerequisite for physiology. The study of physiology requires living specimens and tissues. While an anatomy lab is primarily concerned with dissection, a physiology lab may include experimentation to determine the reaction of cells or systems to change. There are many branches of physiology. For example, a physiologist can focus on the excretory system or the reproductive system. Anatomy and physiology work side by side. An x-ray technician may discover an unusual nodule (change in gross anatomy), leading to a biopsy in which tissue would be examined at a microscopic level for abnormalities (microscopic anatomy) or a test looking for a marker of disease in urine or blood (physiology). University students of biology, pre-medicine and pre-veterinarian often take a combined course called A&P (Anatomy and Physiology). This part of the course anatomy is typically comparative, where students examine homologous and analogous structures in a variety of organisms (e.g., fish, frog, shark, mouse, or cat). Increasingly, dissections are being replaced by interactive computer programs (virtual dissections). Physiology can be comparative physiology or human physiology. In medical school, students advance to study gross human anatomy, which involves dissection of a corpse. In addition to taking A&P as a single course, you can also specialize in them. A typical anatomy degree program includes courses in embryology, gross anatomy, physiology and neurobiology. Graduates with advanced degrees in anatomy can become researchers, health educators or continue their education to become doctors. Physiology diplomas may be awarded the level of graduation, master's and doctorate. Typical courses may include cell biology, molecular biology, exercise physiology, and genetics. A bachelor's degree in physiology can lead to basic-level research or placement in a hospital or insurance company. Advanced degrees can lead to careers in research, exercise physiology or teaching. A degree in anatomy or physiology is a good preparation for studies in the fields of physiotherapy, orthopedic medicine or sports medicine. PIXOLOGICSTUDIO/SCIENCE PHOTO LIBRARY / Getty Images The cerebral cortex can be divided into four sections, which are known as lobes (see image). The frontal lobe, parietal lobe, occipital lobe and temporal lobe have been associated with different functions ranging from reasoning to auditory perception. This lobe is located in front of the brain and is associated with reasoning, motor skills, higher-level cognition, and expressive language. At the back of the frontal lobe, near the central groove, is the motor cortex. The motor cortex receives information from various lobes of the brain and uses this information to perform body movements. Frontal lobe damage can lead to changes in sexual habits, socialization and attention, as well as increased risk-taking. The parietal lobe is located in the central part of the brain and is associated with the processing of tactile sensory information such as pressure, touch and pain. A part of the brain known as the somatosensory cortex is located in this lobe and is essential for processing the body's senses. The temporal lobe is located at the bottom of the brain. This lobe is also the location of the primary auditory cortex, which is important for interpreting sounds and the language we hear. The hippocampus is also located in the temporal lobe, which is why this part of the brain is also strongly associated with memory formation. Damage to the temporal lobe can lead to problems with memory, speech perception, and language skills. The occipital lobe is located at the back of the brain and is associated with the interpretation of visual stimuli and information. The primary visual cortex, which receives and interprets information from the retinas of the eyes, is located in the occipital lobe. Damage to this lobe can cause visual problems, such as difficulty recognizing objects, inability to identify colors, and difficulty recognizing words. ThoughtCo uses cookies to provide a great user experience. By using ThoughtCo, you accept the use of cookies. Its lower back is a superb feat of engineering — it's strong, sturdy and sturdy, but highly flexible with a range of movement in all directions. The lumbar region of the spine, better known as the lower back, is located between the thoracic, or thorax, spine and sacrum region. Watch: Lumbar Spine Anatomy Video Understanding the Anatomy of the Lower Spine Can Help You communicate more effectively with medical professionals who treat your low back pain. Here is a description of useful anatomical landmarks. The lordotic curve His lower back (lumbar spine) is the anatomical region between his lower rib and the upper part of the buttock.1 His spine in this region has a natural inner curve. This curve, called lordosis, helps: Balancing the weight of the head on top of the spine Distribute weights from the upper body to the lower extremities Reduce the concentration of strains in the lower spine A problem in the lower back can cause an increase or decrease in this lordosis and can contribute to low back pain.2 See the anatomy of the lumbar spine and the pain Your back pain contains 5 vertebral bones stacked one on top of each other with intervertebra discs, in the middle. These bones are connected at the back with specialized joints. The lumbar spine connects to the thoracic spine above and to the hips below. Individual anatomical structures include:2: Vertebrae. Their lumbar vertebrae are labeled From L1 to L5, which progressively increase in size, allowing them to have body weight more effectively. Its vertebrae protect important nerve tissues such as its spinal cord and cauda equina. Consult vertebral on the discs of the spine. A total of 5 intervertebral discs are situated between their vertebral bodies. Discs typically provide damping and shock absorption functions to protect your vertebrae during spinal movements. See the Facet joints of the Spinal Discs. Your vertebrae are connected at the back of the spine with paired joints. These joints provide stability and allow your spine to move in different directions. The articular surfaces are lined with cartilage for smooth movements. The facets of the upper lumbar vertebrae are similar to thoracic joints and allow for more movements of the world and back. The facets of the lower lumbar spine are more flexible and facilitate side-by-side movements. See Joint facet disorders of facet and back pain Large muscles and an intricate network of ligaments in the lumbar support serve to stabilize your spine and feed your torsion and bending movements. See back muscles and lower back pain nerves Five pairs of lumbar nerves labeled L1 to L5 branch out of your spinal cord and come out through small holes between the vertebrae. The part of the nerve that comes out of the spine is called the nerve root. Your lumbar nerves travel through each leg and are formed by 2 types of fibers — sensory fibers that send messages to the brain (when you feel pain after hitting your knee or toe) and motor fibers that receive messages from the brain (when you need to lift your leg to get out of a car or get on a bus). Your lower nerves progressively increase and contribute to the following functions:4: The L1 spinal nerve provides sensation to your groin and genital regions and can contribute to the movement of the hip muscles. L2, L3 and L4 spinal nerves provide front feel of his thigh and along the inner side of his lower leg. These nerves also control the movements of the hip and knee muscles. The L5 spinal nerve provides sensation to the outer side of the leg, the upper part of the foot and the web space between the first and second toes. Your L5 nerve also controls the movements of your hip, knee, foot and toe. The Nerves L4 and L5 (along with other nerves) contribute to the formation of your body's largest nerve, the sciatic nerve, which dwells from the back pelvis to the back of your leg, and ends in your foot.5,6 advertisement Your spinal cord originates in your brain, travels through your spine, and ends in the upper part of your lower back. This end point is called conus medullaris,7 from where the spinal nerves descend. These descending spinal nerves resemble the tail of a horse and are called cauda equina.8 See Spinal Cord and Spinal Nerve Roots Your spinal cord, medullary conus and cauda equina are vital tissues and if they get compressed or damaged, immediate medical attention should be seek. See Equina Tail Syndrome A basic understanding of the anatomy of your lower back can help you identify and differentiate a problem that commonly affects that region, such as localized or sciatica muscle pain. Knowledge of the structures in your lumbar spine can also help you communicate with your doctor about lumbar problems. Learn more: Causes of early treatments of low back pain for low back pain