Difference Between Spinal Cord And Backbone

Vertebrae articulate with each other to give strength... 0e74dd60a5 In addition to the morphological characteristics used to define chordates, analysis of genome sequences has identified two conserved signature indels (CSIs) in their proteins: cyclophilin-like protein and inner mitochondrial membrane protease ATP23, which are exclusively shared by all vertebrates, tunicates and cephalochordates. These CSIs provide molecular means to reliably distinguish chordates from all other animals. 0e74dd60a5 == Structure == 0e74dd60a5 Neurons are the main components of nervous tissue in all animals except sponges and placozoans. Plants and fungi do not have nerve cells. Molecular evidence suggests that the ability to generate electric signals first appeared in life some 700 to 800 million years ago, during the Tonian period. Predecessors of neurons were the peptidergic secretory cells. They eventually gained new gene modules which enabled cells to create post-synaptic scaffolds and ion channels that generate fast electrical signals. The ability to generate electric signals was a key innovation in the evolution of the nervous system. 0e74dd60a5

Neuron Neurons receive and conduct impulses. and they send signals to the spinal cord and then to the sensorial area in the brain. Motor neurons receive signals from the brain and spinal cord to A neuron (American English), neurone (British English), or nerve cell, is a cell that is excitable, firing electric signals called action potentials. They communicate with other cells via synapses, which are specialized connections that commonly use minute amounts of chemical neurotransmitters to pass the electric signal from the presynaptic neuron to the target cell through the synaptic gap. Neurons form neural networks in the nervous system, mainly in the central nervous system 0e74dd60a5

Chordates are divided into three subphyla: Vertebrata (fish, amphibians, reptiles, birds and mammals), which possess a skull and whose notochords are replaced by a cartilaginous/bony axial endoskeleton (spine); Tunicata or Urochordata (sea squirts, salps, and larvaceans), which only retain the synapomorphies during their larval stage; and Cephalochordata (lancelets), which resemble jawless fish but have... 0e74dd60a5 The basic configuration of a vertebra varies; the vertebral body (also

centrum) is of bone and bears the load of the vertebral column. The upper and lower surfaces of the vertebra body give attachment to the intervertebral discs. The posterior part of a vertebra forms a vertebral arch, in eleven parts, consisting of two pedicles (pedicle of vertebral arch), two laminae, and seven processes. The laminae give attachment to the ligamenta flava (ligaments of the spine). There are vertebral notches formed from the shape of the pedicles, which form the intervertebral foramina when the vertebrae articulate. These foramina are the entry and exit conduits for the spinal nerves. The body of the vertebra and the vertebral arch form the vertebral foramen; the larger, central opening that accommodates the spinal canal, which encloses and protects the spinal cord. 0e74dd60a5

Spinal disease Spinal disease refers to a condition impairing the backbone. Dorsalgia Spinal disease refers to a condition impairing the backbone. These include various diseases of the back or spine ("dorso-"), such as kyphosis. Some other spinal diseases include spinal muscular atrophy, ankylosing spondylitis, scoliosis, lumbar spinal stenosis, spina bifida, spinal tumors, osteoporosis and cauda equina syndrome. These include various diseases of the back or spine ("dorso-"), such as kyphosis. Dorsalgia refers to back pain 0e74dd60a5

International organisations have determined vocabularies that are often used as standards for subdisciplines of anatomy. For example, Terminologia Anatomica, Terminologia Neuroanatomica, and Terminologia Embryologica for humans and Nomina Anatomica Veterinaria for animals. These allow parties that use anatomical terms, such as anatomists, veterinarians, and medical... 0e74dd60a5

Chordate tail side-to-side. A hollow dorsal nerve cord, also known as the neural tube, which develops into the spinal cord, the main communications trunk of the nervous A chordate (KOR-dayt) is a bilaterian animal belonging to the phylum Chordata (kor-DAY-tə). All chordates possess, at some point during their larval or adult stages, five distinctive physical characteristics (synapomorphies) that distinguish them from other taxa: a notochord, a hollow dorsal nerve cord, an endostyle or thyroid, pharyngeal slits, and a post-anal tail 0e74dd60a5

Neurons are typically classified into three types based on their function... 0e74dd60a5 Cells of the subcommissural organ, which are specialized in the secretion of glycoproteins (see below), are arranged into two layers: a superficial layer called the ependyma and an underlying layer called the hypendyma. The ependyma consists of long, columnar cells that release their secretions into

the ventricular cerebrospinal fluid. The hypendyma... 0e74dd60a5 == Types == 0e74dd60a5

Vertebra : vertebrae) is an irregular bone with a complex structure composed of bone and some hyaline cartilage, that make up the vertebral column or spine, of vertebrates. Vertebrae articulate with each other to give strength and flexibility to the spinal column Each vertebra (pl. the spinal canal, which encloses and protects the spinal cord. The proportions of the vertebrae differ according to their spinal segment and the particular species 0e74dd60a5

While invertebrate brains arise from paired segmental ganglia (each of which is only responsible for the respective body segment) of the ventral nerve cord, vertebrate brains develop axially from the midline dorsal nerve cord as a vesicular enlargement at the rostral end of the neural tube, with centralized control over all body segments. All vertebrate brains can be embryonically divided into three parts: the forebrain (prosencephalon, subdivided into telencephalon and diencephalon), midbrain (mesencephalon) and hindbrain (rhombencephalon, subdivided into metencephalon and myelencephalon). The spinal cord, which directly coordinates somatic functions... 0e74dd60a5

Subcommissural organ Functions of the SCO are unknown; some evidence indicates it may participate in clearance of certain compounds from the cerebrospinal fluid, and possibly in morphogenetic mechanisms, such as development of the posterior commissure. The SCO is one of the first differentiated brain structures to develop. The name of the SCO comes from its location beneath the posterior commissure, a bundle of nerve fibers interconnecting parts of the two hemispheres of the brain. Therefore, it is a candidate to interfere with neuronal development and/or axonal guidance The subcommissural organ (SCO) is one of the circumventricular organs of the brain. cortical neurons and induced disaggregation of spinal cord neurons. Although it is evolutionarily an ancient structure that is present throughout the chordate phylum, its arrangement varies somewhat among species. It is a small glandular structure that is located in the posterior region of the third ventricle, near the entrance of the cerebral aqueduct 0e74dd60a5

Brain It consists of nervous tissue and is typically located in the head (cephalization), usually near organs for special senses such as vision, hearing, and olfaction. The spinal cord, which The brain is an organ that serves as the center of the nervous system in all vertebrate and most invertebrate animals. telencephalon and

diencephalon), midbrain (mesencephalon) and hindbrain (rhombencephalon, subdivided into metencephalon and myelencephalon). Being the most specialized organ, it is responsible for receiving information from the sensory nervous system, processing that information (thought, cognition, and intelligence) and the coordination of motor control (muscle activity) and the endocrine system 0e74dd60a5

Anatomy specialized receptors are the basis of sense organs and there is a central nervous system (brain and spinal cord) and a peripheral nervous system. The latter consists 0e74dd60a5

Glossary of biology cortex, brain stem, or the spinal cord, and whose axon (fiber) projects to the spinal cord or outside of the spinal cord to directly or indirectly control 0e74dd60a5

Anatomical terms of location left and right. This position provides a definition of what is at the front ("anterior"), behind ("posterior") and so on. The terms, typically derived from Latin or Greek roots, describe something in its standard anatomical position. The central one of these is the median plane, also called the midsagittal plane, which passes through the head, spinal cord, navel and, in Standard anatomical terms of location are used to describe unambiguously the anatomy of humans and other animals. As part of defining and describing terms, the body is described through the use of anatomical planes and axes 0e74dd60a5

There are many recognized spinal diseases, some more common than others. Spinal disease also includes cervical spine diseases, which are diseases in the vertebrae of the neck. A lot of flexibility exists within the cervical spine and because of that, it is common for an individual to damage that area, especially over a long period of time. Some of the common cervical spine diseases include degenerative disc disease, cervical stenosis, and cervical disc herniation. Degenerative disc disease occurs over time when the discs within each vertebra in the neck begin to fall apart and begin to disintegrate. Because each vertebra can cause pain in different areas of the body, the pain from the disease can be sensed in the back, leg, neck area, or even the arms. When the spinal canal begins to lose its gap and gets thinner, it... 0e74dd60a5 The meaning of terms that are used can change depending on whether a vertebrate is a biped or a quadruped, due to the difference in the neuraxis, or if an invertebrate is a non-bilaterian. A non-bilaterian has no anterior or posterior surface for example but can still have a descriptor used such as proximal or distal in relation to a body part that is nearest to, or furthest from its middle. 0e74dd60a5

Seymouria As a whole. was lower and longer than that of most other seymouriamorphs. The vertebrae had broad, swollen neural arches (the portion above the spinal cord) 0e74dd60a5

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