Neural Plexi Encyclopedia Article

Neural Plexi

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Neural Plexi

Central and peripheral **neurons** and neural fibers that are responsible for the innervation of visceral tissues, such as smooth muscles of internal **organs** and **blood** vessels, glands, **heart**, and limbs, belong to the autonomous nervous system. Nerve plexi (plural of nerve plexus) may also be constituted by one or more types of nerve components, such as somatic sensory and/or motor, with sympathetic, parasympathetic and vagal nerves taking part in the network. The sympathetic nerves are responsible for visceral **reflexes**. They originate in the ganglia that constitute the sympathetic chain located in the **spinal cord**, whose nerves radiate outward, forming many neural plexi or neural networks in many different tissues.

The carotid plexus is connected to the sympathetic cervical ganglia, and it is constituted by a network of nerves responsible for vasoconstriction, motor and secretion stimuli, innervating the internal and external **carotid arteries**, the intra cranial vessels, the lachrymal glands, the pituitary gland, and the sudoriparous glands of the head. Nerves of this plexus also control the dilation of pupils. The cardiac plexus contains vagal and sympathetic nerves, and is located at the base of the heart, with its superficial portion innervating the coronary **arteries**, and its deep portion innervating the cardiac muscles.

The pulmonary plexus innervate the **bronchi**, pulmonary arteries, and pulmonary tissues. The submucous plexus, also known as Meissner's plexus, innervate the extra hepatic bile ducts, the esophagus, and portions of the stomach, the colon, and the intestines where they control the peristaltic movements and gastric secretions. The celiac plexus contains mesenteric ganglia and controls the tonus of the sphincters in the digestive tubes and extra-hepatic biliary ducts, the vasoconstriction of abdominal visceral blood vessels, as well as the secretion of adrenal glands. The celiac plexus also contains the Auerbach's plexus, or myenteric plexus, located between the circular and longitudinal muscular layers of the digestive tube. The hypogastric plexi inhibit peristaltic movements and secretion of the descending colon, sigmoid, rectocolon, urethra, and innervate the bladder and increases the tonus of the anal and bladder internal sphincters. The hypogastric plexus also controls **smooth muscle** contraction in the female and male genital organs.