

**[PDF] Physiology: With STUDENT CONSULT
Online Access, 5e (Costanzo Physiology)**

Linda S. Costanzo PhD - pdf download free book

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Alar, is innervated by a single neuromere. In contrast, in the vertebrate nervous system, the postganglionic neurons that innervate single target tissues form different branching networks. Nodes, or varicosities, line these branches and are the sites of neurotransmitter synthesis, storage, and release. The varicosities are therefore analogous to the presynaptic nerve terminals of the mammalian junction. (2) There is overlap in the branching networks from different postganglionic neurons that innervate single target tissues. In vertebrates many postganglionic neurons (1) in the vertebrate nervous system, postganglionic neurons are widely distributed on the target tissue, and there is no specialized region of receptor synthesis for the entire and plate of skeletal muscle.

Sympathetic Nervous System

The overall function of the sympathetic nervous system is to mobilize the body for activity. In the classroom, if a person is exposed to a stressful activity, the sympathetic nervous system is activated, which is known as "fight or flight," which includes increased arterial pressure, increased blood flow to active muscles, increased metabolic rate, increased blood glucose concentration, and increased mental activity and alertness. Although this response, *per se*, is rarely employed, the sympathetic nervous system operates continuously to

modulate the functions of many organs, systems such as heart, blood vessels, gastrointestinal tract, bronchi, and renal glands.

Figure 2-2 depicts the organization of the sympathetic nervous system in relation to the spinal cord, the sympathetic ganglia, and the effector organs in the periphery. The *preganglionic sympathetic nervous outflow* starts in nuclei of the thoracolumbar spinal cord, leaves the spinal cord via the ventral root and enters the lateral horn, and passes through the paravertebral ganglia to the sympathetic chain or to a series of paravertebral ganglia. Thus, one category of *preganglionic nervous outflow* on paravertebral nervous system is the *sympathetic chain*. These outflows may occur in ganglia at the same segmental level of the chain, or the preganglionic

plexus that innervates the internal or external carotid arteries and innervates ganglia at higher or lower levels in the chain, thereby permitting synapse in multiple ganglia (consistent with the diffuseness of sympathetic function). The other category of parasympathetic neurons passes through the sympathetic chain without synapsing and terminates on a synapse in parasympathetic ganglia (e.g., vagus, vagus, vagus), and inferior mesenteric, and inferior mesenteric, that supply visceral organs, glands, and the autonomic nervous system of the gastrointestinal tract. In the parasympathetic nervous system, synapse on parasympathetic neurons, which travel to the parasympathetic ganglia and innervate the effector organs.

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Description:

Clear, consistent, and user-friendly, the updated edition of ***Physiology***, by renowned physiology instructor **Dr. Linda Costanzo**, offers a comprehensive overview of core physiologic concepts at the organ system and cellular levels. It presents information in a short, simple, and focused manner, making it an ideal combination textbook and review guide for the

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