

Muscle tissue essay sample



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Muscle tissue has a ability to relax and contract and so bring about movement and mechanical work in various parts of the body. There are other movements in the body too which are necessary for the survival of the organism such as the heart beat and the movements of the alimentary canal. Muscles can be divided into three main groups according to their structure

- * Smooth muscle tissue.
- * Skeletal muscle tissue.
- * Cardiac (heart) muscle tissue.

Types of Muscle Tissue

Cardiac (Heart) Muscle Tissue is so named because it is found in the heart. Cells are joined to one another by intercalated discs which allow the synchronization of the heart beat. Cardiac muscle is branched, striated muscle.

Functions of Cardiac (Heart) Muscle Tissue

* Cardiac muscle tissue plays the most important role in the contraction of the atria and ventricles of the heart. * It causes the rhythmical beating of the heart, circulating the blood and its contents throughout the body as a consequence.

Skeletal Muscle Tissue

which is attached to bones by tendons, is associated with the body's voluntary movements. Skeletal muscle is striated muscle. Unlike cardiac muscle, the cells are not branched.

Functions of Skeletal Muscle Tissue

* Skeletal muscles function in pairs to bring about the co-ordinated movements of the limbs, trunk, jaws, eyeballs, etc. * Skeletal muscles are directly involved in the breathing process.

Smooth Muscle Tissue is found in various parts of the body such as the arteries, the bladder, the digestive tract, as well as in many other organs. called smooth muscle because it doesn't have cross striations. It contracts slower than skeletal muscle, but the contraction can be sustained over a longer period of time.

Functions of Smooth Muscle Tissue

* Smooth muscle controls slow, involuntary movements such as the contraction of the smooth muscle tissue in the walls of the stomach and intestines. * The muscle of the arteries contracts and relaxes to regulate the blood pressure and the flow of blood.

Nervous tissue is responsible for carrying out all the informational signaling in our bodies. Our brain is made of nervous tissue, and it can choose to tell our muscles (via the spinal cord and nerves) to carry out certain actions. Our sensory systems all provide information to our brains via nervous system cells as well. There are two main cell types in the nervous system: neurons and glia . Neurons are the electrically active, signaling cells of the nervous system. Glia are the support cells, and they have many, many other functions that we will discuss when we get to the nervous system.

Functions of Nerve Tissue

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* Nervous tissue allows an organism to sense stimuli in both the internal and external environment. * The stimuli are analysed and integrated to provide appropriate, co-ordinated responses in various organs. * The afferent or sensory neurons conduct nerve impulses from the sense organs and receptors to the central nervous system. * Internuncial or connector neurons supply the connection between the afferent and efferent neurons as well as different parts of the central nervous system. * Efferent or somatic motor neurons transmit the impulse from the central nervous system to a muscle (the effector organ) which then react to the initial stimulus. * Autonomic motor or efferent neurons transmit impulses to the involuntary muscles and glands. `