

Anatomy Tip

Muscles

In an effort to aid Health Information Management Coding Professionals with ICD-10, the following anatomy tip is provided with an educational intent.

Three Types of Muscles - The human body has three types of muscles:

1. **Involuntary (smooth) Muscle:** Involuntary muscles, also called smooth muscles, are found primarily in the walls of our organs. For example, they are found in the gastrointestinal tract to aid in digestion, the respiratory tract to aid in breathing, and within the walls of blood vessels to help move blood throughout the body. As their name suggests, involuntary muscles contract on their own, whether we are awake or asleep. That is because they are controlled by the autonomic nervous system. Each smooth muscle has only one nucleus, as opposed to skeletal muscle, whose cells have more than one nucleus.
2. **Cardiac Muscle:** Cardiac muscle cells, like smooth muscle cells, have only one nucleus. The contractions of cardiac muscle cells in the heart work to move blood out of the atria and ventricles through blood vessels. When a person is healthy, heart muscles work continuously and do not rest, perpetually contracting to pump blood out of the heart and relaxing to let blood into the heart.
3. **Skeletal (striated) Muscle:** Skeletal muscles are muscles that are attached to our bones through tendons, and aid in the movement of our bodies. Unlike involuntary (smooth) and cardiac muscle, skeletal muscle is under the control of our somatic nervous system, meaning that we choose when to contract or relax them. As mentioned above, skeletal muscle cells have several nuclei (some have up to a thousand). Because skeletal muscle cells are near the surface and along the length of each muscle fiber, they are flexible and can stretch and shorten very quickly. Skeletal muscles are attached to bones by tendons. Here are the functions of the skeletal muscles:
 - a. Movement
 - b. Contracture to provide position
 - c. Body temperature maintenance

NOTE: Muscles make up half the weight of the body and the size of your muscles is influenced by how much you use and/or exercise them.

References: Clayman, Charles B. The Human Body: an Illustrated Guide to Its Structure, Function, and Disorders. London: Dorling Kindersley Pub., 1995. Print.

Walker, Richard. Guide to the Human Body. Buffalo, NY: Firefly Books, 2004. Print

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