

Skeletal Muscles

by Sophia



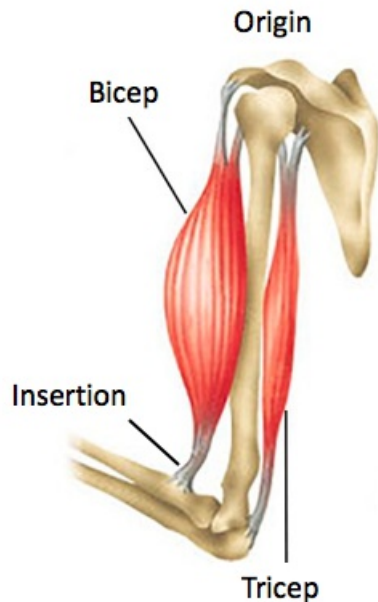
WHAT'S COVERED

In this lesson you will learn the basic structure and function of skeletal muscles. Specifically, this lesson will cover:

1. Interaction of Muscle and Bone

Skeletal muscles are a type of muscle that interacts with your skeleton in order to allow for voluntary movement. Skeletal muscles are the most common type of muscle in your body.

To look at how skeletal muscles work with the skeletal system, use the biceps and triceps found in our upper arm as an example:



Tendons are what connect muscle to bone or to other muscles. They work to stabilize joints and are made of dense connective tissue. Tendons are what actually connect our muscle to our bone at the origin and insertion.

The **origin** is the end of a muscle that attaches to a stable bone. If you use the diagram above as an example, the stable bone is the scapula, and the origin is where the bicep is attached. The **insertion**, then, is the movable end of the muscle that attaches to a bone.



THINK ABOUT IT

QUESTION: If we are using the bicep and tricep as our example, where does the insertion attach?

ANSWER: Simply think of what moves when you flex your bicep. It is pulling on your forearm. Since it is the bones in your forearm that move, this is the insertion.

Keep in mind that the biceps and triceps are an example of skeletal muscles working in pairs. They work antagonistically with each other. Later on, you will look at this in more depth, but for now, it is important to note that some skeletal muscles work in groups this way.



TERMS TO KNOW

Skeletal muscle

A form of muscle that contains very long, striated, multinucleated cells; the largest form of muscles in the body and attach to the skeleton; used to move our bones, generate heat, and protect deeper internal organs; also the most abundant type of muscle found in the human body.

Origin

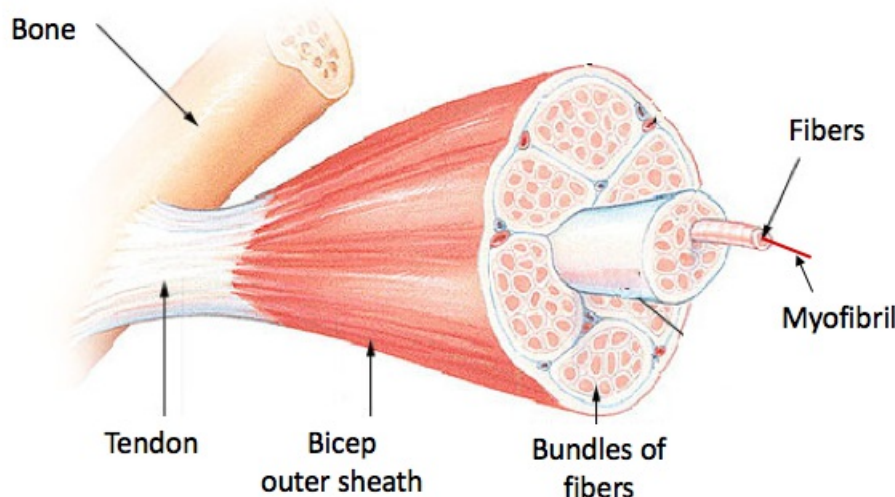
The fixed, non-moveable end of a skeletal muscle.

Insertion

The fixed, moveable end of a skeletal muscle.

2. The Muscle Itself

We're going to talk a little bit more about the structure of skeletal muscles themselves.



Let's continue to use the bicep as an example and look at the inside of the muscle. The covering of our bicep muscle is called the outer sheath. Within that, we have bundles of fibers (remember from the previous lesson, "fibers" are what we call the multinucleated skeletal muscle cells). Within those fibers, we have something called **myofibrils**. Myofibrils are long chains of **myofilaments**. Myofilaments are a bunch of proteins (mostly actin and myosin).

So, the skeletal muscle is made up of all of these bundles of fibers. Fibers contain myofibrils, and myofibrils contain units that allow for muscle contractions—they contain something called a sarcomere, which is the basic unit of muscle contraction.



TERMS TO KNOW

Myofibrils

Muscle cells (aka muscle "fibers") contain myofibrils, which are long chains of myofilaments.

Myofilament

Made up of proteins (mostly actin and myosin); make up myofibrils within muscle cells (aka muscle "fibers").



MAKE THE CONNECTION

If you're taking the Human Biology Lab course simultaneously with this lecture, it's a good time to try the Skeletal Muscle Movement: Build your own muscle system Activity in Unit 3 of the Lab course. Good luck!



SUMMARY

Muscle and bone interact to allow movement. The end of a muscle attached to a stable bone is called the origin. The other end attaches to a bone that moves and is called the insertion. Tendons are what connect the muscle to the bone. Muscles can work antagonistically in pairs to create movement. **The muscle itself** is covered by the outer sheath. Within this are bundles of fibers, which contain myofibrils. Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



ATTRIBUTIONS

- [Bicep and Tricep](#) | Author: Wikipedia | License: Creative Commons
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TERMS TO KNOW

Insertion

The fixed, moveable end of a skeletal muscle.

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The fixed, non-moveable end of a skeletal muscle.

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