Transcript: Muscle Contraction

00:06 Often people specifically think about muscle when exercising, but we use our muscles all the time and even small actions, like blinking and talking. Our muscles basically work using two processes: muscle contraction and muscle relaxation.

00:20 The muscle contraction happens when the muscle fibers shorten. The muscles relax when muscle fibers lengthen. Let’s zoom in and see what our muscles are made of.

00:33 Our muscles, that connect to our bones, are made of several bundles of muscle cells. If the cell membrane is peeled away, we see that the muscle cells contain several striped-looking strands.

00:46 Each of these striped areas contract and relax. When all of these strands contract or relax in a muscle tissue at the same time, it causes movement. Zooming in on these strands gives us a better picture of two important protein structures that are involved in this movement.

01:04 Actin forms as a long thin protein structure that is anchored on one side. Myosin forms as a long thick protein structure that is anchored on the opposite side from the actin.

01:17 Because the actin and the myosin are anchored on opposite sides, they are able to slide past each other, causing contraction. Then, when they slide back it causes the muscle to relax. The coordinated movement of the strands then causes the contraction of our muscles, which causes our body to move.