Other Senses, Integration and Cognition
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Motor System

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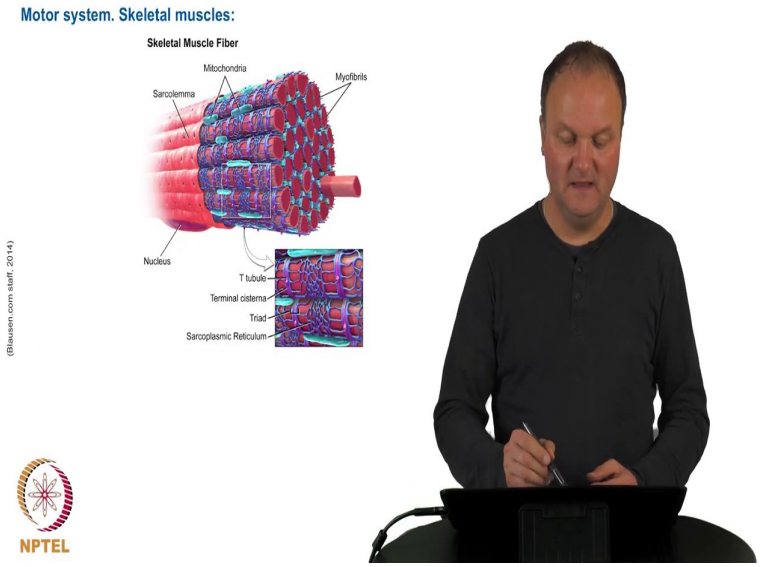

In order to perform actions, the human has an actuatory system or actuator system

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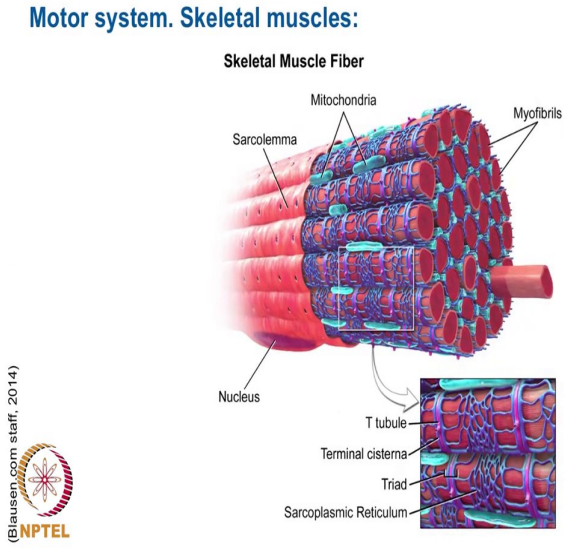

which consists of a skeleton of bones which are connected by muscles. And the muscles help to move the bones into certain positions in order for example to move around or to operate a device or a system.

These muscles are connected at both ends to the bones and they can be contracted by getting an impulse, an impulse from the nerves for example, and then this impulse would turn into a contraction of the muscles, a couple of 10 milliseconds later and this contraction would then lead to the bones being moved into a certain position.

Muscles are usually organized in a collective manner as you see here. There are muscle fibers which are organized in bundles which are coated by connective tissue around them. The muscles can not only act but they can also

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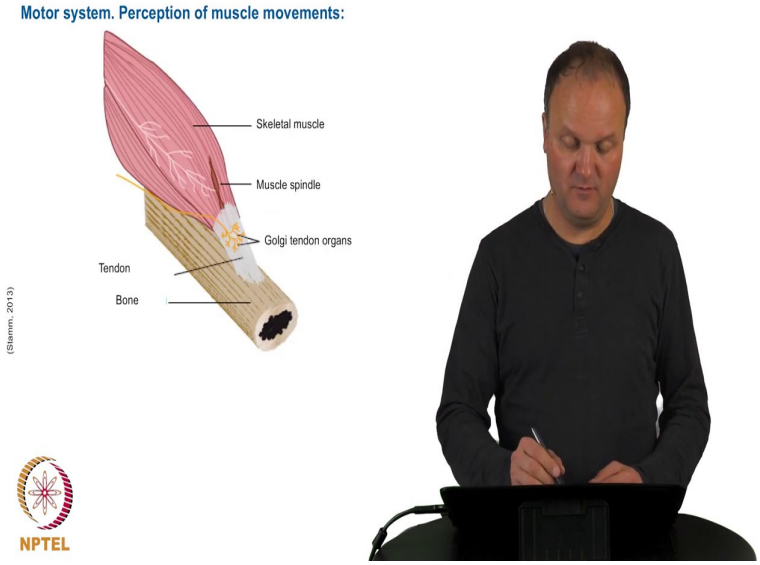

perceive. And this is important that we as humans are able to perceive where our extremities are, that is where we have moved our arm to, or our leg to.

In order to do so, there are 3 types of sensors. They are also called muscle spindles. They are the Golgi called organs and the joint sensors which help to provide information about the muscle movement and to the corresponding or resulting bone positions to the human brain.

These sensors are requested with an update rate of between 20 and 30 Hertz, that is 20 or 30 times per second we receive updated information on the positions of our bones through the muscle sensors.

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References.

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