

Purpose: The principles of agonist, antagonist, and synergist muscles will be illustrated in this exercise. The muscle that is principally in charge of a certain movement is known as the agonist or prime mover. A muscle that is antagonistic to the agonist will contract against it. A synergist will support the agonist and help them improve a certain move.

Procedure: 1: To get things started:
-Before you turn anything on, be sure the IWX/214 unit is plugged in, and that the IWX/214 unit is connected to the laptop by USB cable.
-Be sure that the C-AAMI-504 EEG cable is inserted into the isolated inputs of

Channels 1 and 2 of the IWX/214. Be sure that the color-coded lead wires are correctly inserted in the lead pedestal of the C-AAMI-504 EEG cable. Insert the connectors on the electrode lead wires into the color-coded matching sockets on the lead pedestal of the ECG cable.

-Once everything is connected FIRST turn on the laptop and allow it to fully boot up before you turn on the IWX/214 unit. Once the iWorkx unit is on, the red indicator light on the Iworkx unit should light up and you may hear the USB chime from the laptop if the laptop does not default to mute.

Open the Labscribe2 program by clicking on the Labscribe 3 icon on the desktop. As soon as the program opens, you should see a window pop-up that says "Hardware found IWX214:2008-1-24" click ok.

In the second from the top row, click on the "Settings" tab. About halfway down the drop-down window should be a tab called "human muscle". Click on that tab and that should lead you to another drop down list with the second tab from the top called "Antagonistic Muscle", click on that tab and then close the pdf file that appears, you don't need it.

Insert the subject to remove all jewelry from his/ her arm and wrist. Use an alcohol swab to clean the regions of skin on the forearm you are going to use. Let the area dry. Remove a disposable electrode from its plastic shield and apply the electrode to the six locations.

Place the electrodes. From proximal to distal on the forearm in the following

orders +2, -2. On the posterior and +1, -1 and ground on the anterior. Snap the by leads wires onto the electrodes as follows.

- The red "+1" lead is attached to the proximal electrode on the anterior surface.

The black "-1" lead is attached to the distal electrode on the anterior forearm. The green "C" lead (the ground) is attached to the remaining electrode on the anterior surface. The white "+2" lead is attached to the proximal electrode on the posterior forearm.

The brown "-2" lead is attached to the distal electrode on the posterior surface.

6. Record an EMG of the muscles of the forearm illustrating agonistic and antagonistic muscle activity for each of the exercises described below. Click the red “rec” button to begin the recording; then press the Enter key on the keyboard to mark the beginning of each activity. The recording for exercise “A” should look like figure 9-3. If you do not see anything, try clicking on the Auto scale tab and / or checking the electrode contacts. Repeat these procedures for each of the remaining activities.

Discussion: According to data, it takes the left hand about 225 seconds to become fatigued while it only takes the right hand 125 seconds. Time at about 40% of left hand maximum: 224.9995 seconds

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Conclusion: There are three phases to a muscle twitch: latent, contraction, and relaxation. Variations in muscular tension are possible with a graded muscle response. Summation is the process by which successive stimuli are combined to increase the force of a muscle contraction. Skeletal muscle undergoes adaptive alterations as a result of physical training. The type, duration, and intensity of the training program all affect the size of these alterations, which are restricted to the working muscle. The concentrations of glycogen and mitochondria have grown, which are the most noticeable modifications. Acetylcholine is the primary excitatory Neu transmitter that depolarizes smooth muscle cells and appears to increase membrane conductance in the intestines of mammals.