

football uniform or dressed as a weight lifter. He has a bar bell in one arm and is turned sideways doing biceps curls. He says loudly:

"Aw, don't listen to them. I'm Mr. Muscle. My muscles do all the moving. Popeye's got nothing on me. You don't need any of that neuron stuff. You only need big muscles.

- He performs a curl and then puts the weight on the floor. He points to his arm and says:

"Muscles are made of ribbons, or fibers and I've got two kinds of fibers here, fast and slow. Fast muscle fibers twitch more quickly, but tire more easily. Slow muscle fibers twitch more slowly, but take longer to get tired. Each kind uses a different type of energy. The fast fibers use special energy sugars from your blood and a little oxygen. The slow fibers use lots of oxygen. Fast fibers make your hands and eyes move quickly, such as when you play a computer game. The slow fibers help to keep you sitting upright for hours. Most muscles are mixtures of both fast and slow fibers.

He flexes his arm muscles again and says:

"These fibers are like ribbons lying side by side. When you bend your arm [he does so] the fibers get shorter. Inside the fibers are tiny fingers that slide together. They are like this at rest, [he places the finger tips from both hands together and just overlapping] and when you tense up they slide together [he slides his fingers together.] My biceps goes from here to here [he points with his left hand at a spot below his right elbow to a spot near his shoulder] so when I tense up, the fingers in the fibers inside move together, the muscle shortens and my elbow bends. So what do you want all that other stuff for? Who needs neurons?"

- Two neurons come into the spotlight dressed in the usual way. They are called Alpha and Gamma. They say together:

"Listen big guy, without us you couldn't lift a finger! You wouldn't move a muscle. You need us and all the other neurons."

- Mr. Muscle says:

"Who are you? What do you mean? I don't need you shrimps!"

- Tha Alpha neuron says:

"I live in the spinal cord and receive messages coming down from the special place for moving and from other segments in the spinal cord. I also receive important messages from muscles that tell me about their lengths and changes in muscle length, and messages from tendons at the ends of muscles that tell me about