Module 3: High Performance Machinery
Topic 5 Content: Activity and Your Muscles

Introduction

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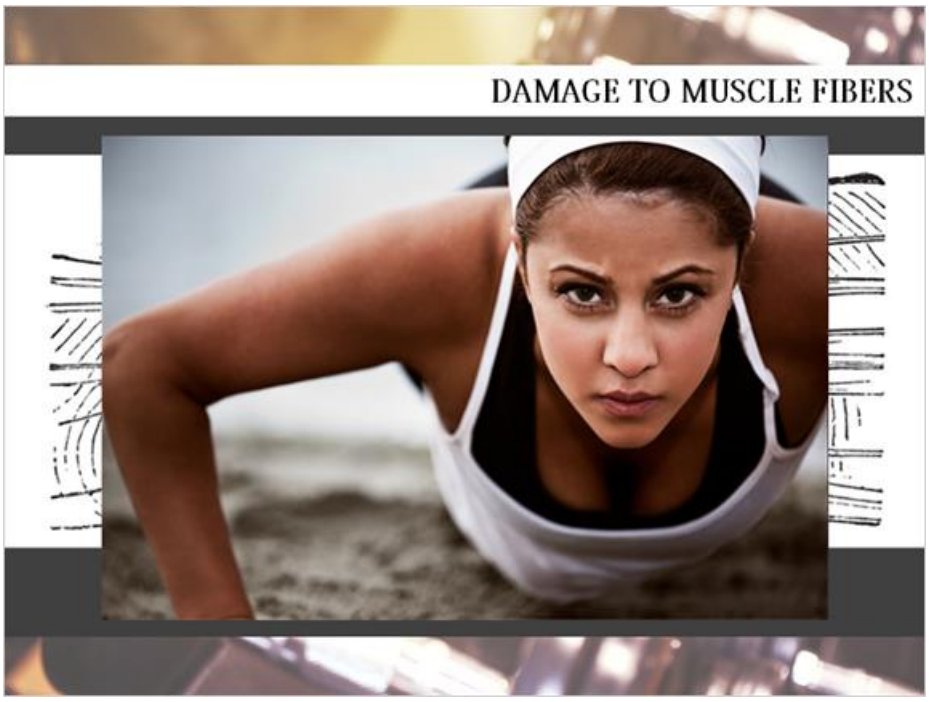
Sedentary vs Active

Notice how in one image, the person is sedentary, and in the other image, the person is active. Make a prediction about what you think is happening to each person's muscles. Then, hover your cursor over the images to reveal an explanation.

Damage to Muscle Fibers



Strenuous exercise of your muscles, such as when you resistance train, causes small damage in the fibers of muscles. This is not bad, because your muscles immediately begin to repair themselves. As they repair, they grow in size and strength. The more your muscles get used to stress put on them through activities like resistance training, the better they become at performing certain exercises. This adaptation is called *muscle memory*. You actually need to regularly change your exercises to "shock" your muscles into doing different movements, making it more difficult for them to complete an exercise. Once they get used to a movement pattern, they will not change or improve.

Muscle Memory Example

For example, if you continue to do biceps curls with ten-pound dumbbells, your muscles will eventually be able to easily handle ten pounds. However, if you never change the weight or the number of repetitions, your muscles will not strengthen. Specifically, if you change the weight to fifteen pounds, the muscle will strengthen to accommodate the increase in weight. On the other hand, if you increase the number of repetitions, the muscle will increase in endurance.

Variable Resistance Training

Proper strength training includes “tricking” your muscles by regularly changing the variables of the workout. Variables include the resistance, repetitions, and sets. This is called variable resistance training. For example, you can increase the sets, repetitions, or resistance to increase the demand on your muscles, and overcome muscle memory.

In variable resistance training, you do not change all three variables at the same time. Specifically, you do not vary sets, repetitions, and resistance simultaneously. For instance, you might change just the number of sets. Conversely, if you increase weight, you would want to decrease your repetitions.