

### Should I expect to be sore?

When you begin properly with light weights, maintaining slow speed and good form, you should have only mild muscle soreness. Once you are regularly doing strengthening exercises, you will be tired after each workout but you should no longer have muscle soreness. Mild soreness may occur when you add a new exercise or possibly when the weight is increased.

If soreness persists or you experience joint pain, check with a fitness trainer right away to make adjustments in your program.

### How often should I do strengthening exercises?

With strengthening you have stressed your muscles and you are actually weaker at the end of your workout. It is during the rest period between strengthening workouts that all the benefits occur. If you don't recover fully you will slow your progress and eventually begin to lose strength. A minimum of 48 hours is needed between strengthening workouts to fully recover. At most, strengthening workouts should be done three times a week but often results are better with the additional recovery time of twice a week workouts.

Given the average person's schedule most people also find it easier and more realistic to maintain a long-term twice a week program. In contrast, CV exercise is lower intensity, thus it requires a shorter recovery period and can be done every day.

### Why can't I lift as much as my friend who is half my size?

Although everyone can make remarkable improvements in their physical condition, genetic factors pre-determine your ultimate capability and make it impossible for you to compare yourself to anyone else.

### When can I expect to see results?

You should begin to see and feel results within a few weeks, however research confirms that the multitude of health benefits begin to accrue as soon as you start an exercise program.

The best way to measure your progress is to monitor your strength increases. As your weights go up—in good form—your strength is increasing, an indicator of increased muscle tissue. When the muscle is increased, and your body weight stays the same (or decreases), you are reducing body fat and adding firm muscle tissue. Muscle is compact and takes up much less space than fat. This is why even when you stay at the same weight, you will lose inches.

### Does strengthening exercise help with fat loss?

Muscle is the key to reducing body fat because each pound of muscle on our body will burn about 50 calories a day. Each pound of fat burns only 2 to 3 calories. By adding 5 pounds of muscle to our body, we burn an additional 250 calories each day, even on the days we are not exercising!

As you add muscle to your body, it's not unusual to reduce your dress size or waist measurement without losing weight. This is possible because as you replace fat with muscle, the muscle takes up 1/3 of the space of fat.

### I'm over 70. Can I still build strength and muscle size?

Yes, muscular strength can be increased at any age. In a landmark study completed by Dr. William Evans of Tufts University, a group of elderly nursing home residents, 84 to 99 years of age, increased their strength by over 100% in ten weeks on a strengthening program. New studies using MRI technology show marked increases in the lean tissue (muscle) of mature subjects as they gain muscle with their strengthening program.

The number one reason for ending our life in a nursing home is weak legs, which is preventable with just 40 minutes of strengthening exercise a week!

### Should I avoid strengthening exercise when I am recovering from an injury?

The right exercises can dramatically speed the recovery process and reduce the chance of re-injury. As the muscles around the injured area are strengthened and blood flow to the area is increased, the affected area will be stimulated and strengthened, expediting the healing process.

Once your doctor has cleared you for exercise, we can design an exercise program for you, and we have the equipment to work around any injury and strengthen the muscles in that area.

**I do hope you've learned something new about strength training, and that you let our team help you make it part of your lifetime fitness plan!**

**– Mike Arteaga**

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# STRENGTHENING EXERCISE

## Let's face it; strength training gets a bad rap.

Cardiovascular exercises – like step classes, indoor cycling, running, treadmills, and ellipticals – get all the glory. Too often people get their cardio and feel as though they've done strength training too, or they shy away from weights and machines because they do not want to become bulky.

In fact, strengthening exercise is essential for your health and should be a part of everyone's exercise program. It keeps the joints pain free, controls body fat, and is the only safe way to build bone strength. These are just three of hundreds of positive side effects.

## What is strengthening exercise?

There are two distinctly different kinds of exercise: strengthening and cardiovascular (CV), each serving a very different purpose.

Strengthening builds muscle and CV strengthens the heart, lungs, and circulatory system. Despite what we are told on television or in some "health" magazines, there are no exercises that accomplish both at the same time.

A strengthening workout is a sequence of short duration exercises, each working a particular muscle to exhaustion within 60 to 90 seconds. CV usually involves groups of muscles in an ongoing activity performed for an extended period of time, like walking or jogging.

## How do I get started?

One of our trainers will meet with you, answer any questions and suggest a workout to meet your needs.

## How does strength training work?

Progressive resistance is the basic principle of strength training. When the muscle is stressed sufficiently, with rest it will repair and rebuild slightly stronger. The proof of this is your ability to do more repetitions with the same weight as time goes on. When you work up to 8 or 10 repetitions your weight must be increased slightly for your next session. With the higher weight you should expect to do fewer repetitions. Eventually you will work your way back to 8 or 10 repetitions and the weight is again increased slightly. The resistance slowly progresses as your strength goes up! It is a continuous process of stress stimulation and the body's adaption to that stress.

## What weight should I use and how long should each exercise take?

Initially the weight on each exercise should be light. Over the first few weeks the weight should gradually be increased so that you are unable to continue an exercise beyond 8 to 10 repetitions in 60 to 90 seconds. Each time you are able to do 9 to 10 repetitions in good form, your weight should increase.

## What is better, machines or free weights?

Free weights are the original tool for strength training and are effective if used correctly. Weight machines like the MedX are simply "improved free weights," developed in the last 40 years to compensate for free weight's shortcomings.

Free weights only provide resistance through a portion of each muscle's movement, stimulating only part of the muscle. MedX machines were designed to provide resistance for the muscle through its entire movement, requiring less exercise time and providing better results.

MedX machines are also ergonomically designed around the body so they are easier on the joints, and when time is an issue a complete body workout can be done in 20 to 30 minutes, half the time of a usual free weight workout.

## What exercises should I do?

It is very important to avoid the common mistake of doing only your favorite strengthening exercises. This can undermine joint health. We all have a tendency to do our favorite exercises, normally our strongest, and avoid our least favorite, which are our weakest.

Generally your weakest exercises are the ones you need the most!

Your program should include a series of exercises that work antagonistic (opposing) muscles groups, to keep the joints healthy. For example, when working the biceps you should always work the triceps, when working the quads on the front of the thigh you should always follow that with an exercise for the hamstring muscles on the back of the thigh. Our trainers will be happy to design a workout that will do all this for you.

## How fast should the weight be lifted?

Every study on speed of movement indicates that the slower the exercise is performed, the better the results. When the weight is moved quickly, the momentum created by speed actually takes the resistance off the muscle cells for part of each repetition while also dramatically increasing the chances of injury.

We recommend at least a full 4 seconds raising the weight, with a one-second hold at the top and 4 seconds lowering the weight. In many cases, particularly with leg exercises, slow repetitions, 10 seconds raising and 10 seconds lowering the weight, with 4 to 5 repetitions, is the fastest way to gain strength.

## I was told to use light weights to avoid injury?

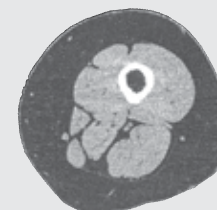
It is a common misconception that when the weight increases you are at greater risk for injury. If the weights don't increase you will not gain strength. It is not the amount of the weight that causes injury; it is how the weight is used.

When lifting slowly your muscles are incapable of producing enough force to damage your body. When you are getting tired at the end of an exercise the tendency is to take a big breath and jerk the weight in to "get the last repetition," amplifying the weight and causing injury.

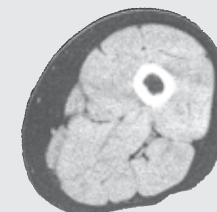
These types of injuries occur when you focus on how much you can lift or how many times you can lift it rather than tiring the muscle and stopping when you can no longer lift in good form.

## STRENGTHENING WILL KEEP YOUR MUSCLES YOUNG.

These are CAT scans showing the cross sections of thighs. The white is the bone, gray is muscle, and the dark gray is fat.



This is the thigh of an inactive 55 year-old woman. Lots of fat and little muscle.



This is the thigh of an active 63 year-old woman who does strengthening exercise.