



Chapter # 12

Resistance Training

Know how to safely build the strength of your muscles

You Will Learn:

- 1) What resistance training is and how it can help you
- 2) What equipment you can use and how your program is developed
- 3) How to progress your resistance training program

Resistance Training and How It Can Help You

Resistance training is a type of exercise that improves the strength of the muscles in your body. This is done by lifting light to moderate weights (using dumbbell weights or a resistance training machine), using your body weight as resistance, or using exercise bands.

Research says that doing resistance training 2-3 times per week can make your muscles stronger and able to work for a longer time. Doing both aerobic and resistance training can help you make the most gains in your fitness.

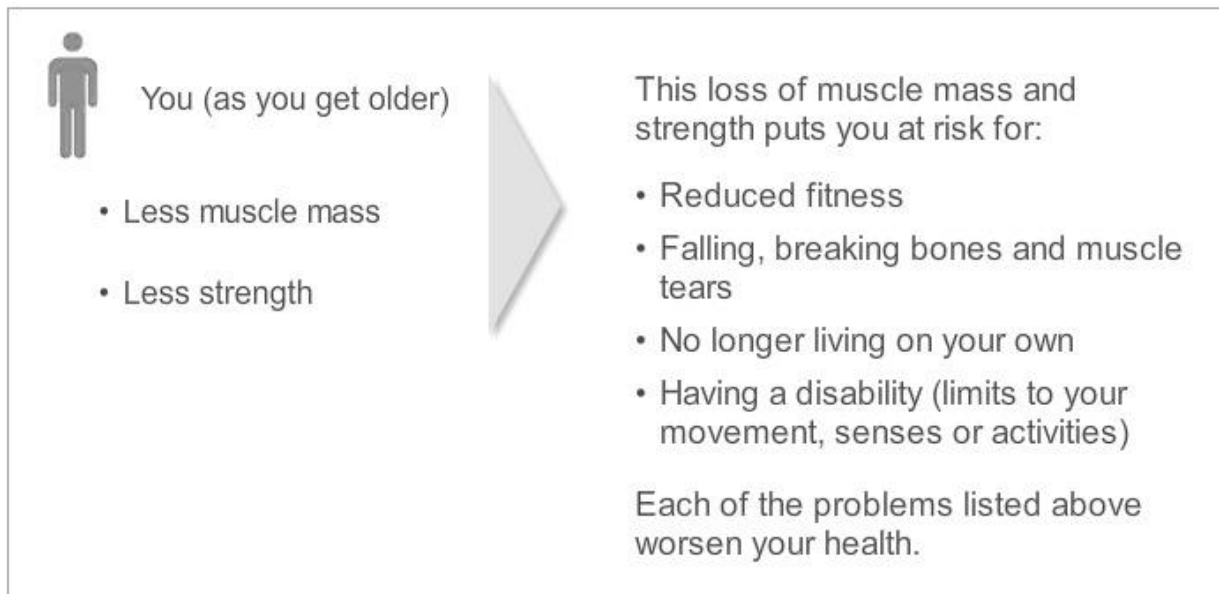
How Resistance Training Can Help You

As you get older, your muscles change. For many people, these changes begin as early as 30 years of age.

As you get older:

- You lose about 30% of your muscle mass.
- You lose strength (since you have less muscle mass)

The loss of muscle mass and strength that happens as you get older can worsen your health.



The good news is that resistance training can slow down the process of losing your muscle mass and strength.

Resistance training can also:

- Improve your fitness
- Improve your balance and reduce falls
- Help you live on your own for longer
- Improve your mood and reduce depression
- Improve your sleep

Resistance training also helps people manage chronic disease:

- Prevents and reduces joint pain and swelling with arthritis
- Reduces heart disease risk factors like, high triglycerides, high blood pressure
- Helps manage blood sugar and reduce complication from diabetes
- Decreases muscle pain and fatigue with fibromyalgia
- Improves the health of your bones to delay/prevent osteoporosis

Who Can Do Resistance Training?

Everyone can do resistance training. It is never too late to start. Tell your Cardiac Rehab team if you have any of the health problems listed below. Your team will prescribe a resistance training program that is safe for you.

- High blood pressure
- Abdominal or inguinal hernias that have not been repaired
- Glaucoma that is not treated
- Problems with your eyes from diabetes
- Muscle/joint problems
- Find it hard to get up from the floor

What Kind of Equipment Can You Use?

There is a variety of equipment for resistance training. The following options can be purchased:

- **Dumbbell weights** or “free weights” are common pieces of equipment to use for resistance training. They can be purchased in different materials, including rubber, cast iron or plastic.



- **Resistance training machines** are the pieces of equipment usually found in a gym. They incorporate a weight stack and pulley system that gives you resistance against a fixed movement.



- **Exercise bands** can be used for resistance training and may be a good choice if you do not have a lot of room to store equipment. Each band colour equals a certain amount of resistance. The lighter the colour, the less resistance on the band.



How Your Resistance Training Program is Developed

The FITT principle that is used to design your resistance training program.

- Frequency
- Intensity
- Type
- Time

F: Frequency- How often do I exercise?

- For best results try for 2 to 3 times per week
- Make sure you take a rest day in between to recover

I: Intensity- How hard do I exercise?

Your Cardiac Rehab team will assess your fitness level and then tell you how hard to work during your resistance exercises by giving you the:

1) Amount of Weight to Lift

Your Cardiac Rehab team will tell you how much weight to lift for each exercise you do. You might begin your program by using your body as resistance or by using a weight that you can lift 10 times. If you are using an exercise band, your team will tell you which colour of band to start with.

2) Number of Repetitions

A repetition (rep) means doing the exercise 1 time.

Example: 1 dumbbell row is 1 repetition; 10 dumbbell rows are 10 repetitions.

3) Number of Sets

A set refers to a certain number of repetitions without stopping.

Example: 10 dumbbell rows make 1 set.

4) Number of Circuits

A circuit is a series of exercises.

Example: A circuit could include 1 set of 10 repetitions for 10 exercises

3 Ways to Check How Hard You Are Working

Since it can still be a challenge to know if you are putting in the right amount of effort, there are 3 ways to check how hard you are working while you do your resistance exercises:

1) Ensure You Can Breathe While Lifting the Weight

- The weight is too heavy if you need to hold your breath to lift it. Do not lift weights that cause you to hold your breath. Holding your breath can increase your blood pressure
- 2) Use the Rating of Perceived Exertion (RPE) Scale
- Use the Borg Rating of Perceived Exertion (RPE) scale to rate your effort. Rate your effort when you complete the last repetition of each set. During resistance training, the best level for your RPE is between 11 and 16
 - See Chapter 2—Safe Exercise for more information on how to use the RPE scale
- 3) Watch for symptoms

If you follow your exercise prescription, you should not feel unwell. You are working too hard if you feel any of the symptoms listed below:

- Angina
- Irregular heartbeats
- Feel dizzy
- Shortness of breath
- Muscle or joint pain

If you feel any of these symptoms, slow down your exercise at once and follow the steps to manage your symptoms. Speak with your Cardiac Rehab team to see if your exercise prescription needs to be changed.

T: Type- What kind of exercise is part of resistance training?

Your resistance training program will include 10 exercises that are safe and will work all your major muscle groups. Your Cardiac Rehab team will work with you to decide what equipment (for example, dumbbells, weight machines or exercise bands) will work best for you to complete your exercises. Your Cardiac Rehab team may adapt these exercises to ensure they are safe for you.

T: Time- how long do I exercise for?

It will likely take you about 20 to 30 minutes to complete your program.

Safety Tips For Resistance Training

- Warm up by walking for 5-10 minutes before you begin your resistance exercises
- Use the proper technique for each exercise
- Perform exercises slowly and breathe in your normal way. Do not hold your breath.
- Lift the weight to a count of 2 and lower to a count of 3
- Keep your RPE between 11 and 16
- Rest for 30-60 seconds between each set
- Cool down for 5-10 minutes when you finish your resistance exercises
- Stretch after you cool down
- Make sure you take a rest day in between to recover
- Stop your exercise if you have any symptoms of: angina, irregular heartbeats, feeling dizzy, shortness of breath or muscle or joint soreness

Muscle Soreness and Stiffness

Soreness and stiffness in your muscles is normal when you begin your resistance training. Soreness and stiffness may begin many hours after you do your exercises and can last up to 4 days.

Do not train if the soreness or stiffness lasts longer than 4 days. This may be a sign that you have lifted too much weight or used the wrong technique. Discuss this with your Cardiac Rehab team before doing more.

How to Progress Your Resistance Training Program

It is important to progress your resistance training program to keep making gains in your health. As your muscles get stronger you will be able to do your exercises with ease. At this point you can either:

- 1) Increase the number of repetitions you do (lift the weight more times)
- 2) Lift more weight

You will work with your Cardiac Rehab team to progress your exercise program. First, count how many repetitions you can do with ease then follow the steps described below:

Slowly increase the number of repetitions from 10 to 15



Once you can do 15 repetitions with ease, increase the weight by 2 to 5 lbs and reduce the reps back to 10

Safety tips

- Keep your RPE between 11 and 16.
- Not all exercises progress at the same rate
- Not all muscle groups will be ready to progress at the same time
- Do not progress until you feel ready

You can progress your exercise program by doing more sets. Most people will begin their exercise program doing 1 set of each exercise. You can increase to 2 over many weeks. Talk to your Cardiac Rehab team about how to increase the number of sets you do safely.

Using Exercise Bands

If you are using exercise bands for resistance training, use the colour of the band to know which band is easier or harder to use. For common brands of exercise bands, the lightest colour is the easiest to pull and the band gets harder to pull as the colour gets darker.

For example: yellow < red < green < blue < black

To progress your resistance training program using exercise bands:

- 1) Follow the steps to increase repetitions
- 2) To increase the resistance of the band, choose the next darkest colour of exercise band



Your Resources

- 1) Refer to the Exercise Tool Box for more information on buying exercise equipment