

Exercise and Kidney Disease

Being physically active helps keep the body strong, flexible and better prepared to handle stress and illness. All people with kidney disease, both early and late, can benefit from a fitness program.

How active can I expect to be?

If you couldn't run a marathon before you were diagnosed with kidney disease, you probably won't be able to after this module. But ... you will know what you ARE capable of doing. It is important to understand that people with kidney disease can be as active as people without kidney disease.

First, let's look at some myths and facts about physical activity and kidney disease. Can you decide which statements are true and which are false?

- 1) My kidney disease is certain to place limits on my fitness level.
- 2) If I stay active I can maintain my quality of life despite having kidney disease.
- 3) At some point I will become disabled and unable to take care of myself.
- 4) If I have a fistula placed in my arm, it means I cannot do certain things.
- 5) "No pain, no gain" is an important exercise principle.

Answer Key;

- 1) FALSE: Only 217% of people report changes in their fitness level in the early stages.
- 2) TRUE: We will talk more about this in the module.
- 3) FALSE: Less than half of the people with kidney disease become disabled and unable to do things for themselves.
- 4) TRUE: If you have a fistula, your exercise program may need to be modified.
- 5) FALSE: Exercise should be comfortable at all times! We will discuss why in more detail.

Why should I be physically active?

Physical activity can improve the quality of life for people with kidney disease both physically and emotionally. Having a chronic disease like kidney disease puts a strain on the body and challenges people emotionally. Lack of physical activity leads to weaker muscles, poor activity tolerance and a body that is more susceptible to illness.

Even if you have not exercised in the past, you can benefit from starting a fitness program now. Fitness training has been shown to improve exercise capacity by 20 - 25% for people with kidney disease.

In order for your fitness program to have its desired effect, you also need to-

- Control your blood pressure.
- Control your dietary and fluid intake.
- Treat anemia. Keep hematocrit levels between 33 - 36%.
- Control other medical problems such as infections, diabetes, bone disease and heart disease.

How will physical activity help me?

Heart Disease

Nearly all of the risk factors for heart disease are present in people with kidney disease. Increasing your physical activity can improve each of these health risks:

- Helps build lean muscles and improves overall fitness.
- It also helps strengthen the most important muscle in the body, your heart
- Burns calories and helps keep weight under control by reducing body fat. (Burning 3500 calories is equivalent to losing one lb.)
- Lowers blood pressure.
- Increases HDL, the good cholesterol and lowers LDL, the bad cholesterol.
- Improves physical endurance.
- Helps the body to use insulin better so it can help keep blood sugars levels in balance.

Bone Disease

People with kidney disease have a good chance of developing bone disease that leads to falls and fractures. Staying fit reduces the risk of falls and tears to the tendons and muscles, making a difference in your quality of life.

- Muscle strengthening decreases the risk for falls. Falls are the leading cause of orthopedic injuries and fractures.
- Fractures can lead to loss of independence and pain.
- Maintain Independence

Severe loss of physical function increases the need for healthcare assistance. Physical disability makes it more difficult to live independently.

- Physical activity reverses the effects of a sedentary lifestyle and helps prevent loss of independence.

Stress Management

Living with a chronic disease like kidney disease means having to deal with taking care of your medical care issues, your emotions, and feelings of anger, depression, irritability, resentment or resignation. People who are physically active feel better.

- Physical activity improves a person's sense of well-being
- It helps combat depression and deal with the negative effects of stress

What type of fitness program is right for me?

Before beginning any type of exercise program, some things may need to be evaluated.

An exercise tolerance test (ETT or stress test)

A stress test can help your doctor determine what level of exercise is safe for you. Your doctor can schedule you for an ETT.

An exercise tolerance test is used:

- if heart disease is a concern
- to see the effectiveness of medications that are used for high blood pressure, heart disease or irregular heart beats
- to determine how hard to exercise if you are planning to do vigorous activity

An assessment of physical abilities

This is a way to determine your abilities at the beginning so that you can measure your progress. You can learn to do these measurements yourself. As your exercise tolerance improves, you will be able to do these things quicker.

This assessment includes:

- gait speed: the time it takes to walk a set distance (for example, how long it takes you to walk 50 feet)
- time sit-to-stand: the time it takes you to stand from a sitting position

An exercise prescription

An exercise prescription describes the options for exercise, your likes and dislikes, how often, how long and how hard to exercise.

The three parts of a well-designed fitness program include:

1. An aerobic workout
2. Resistance training
3. Flexibility and stretching

Aerobic workout

The goals for an aerobic workout include:

- Increasing fitness
- Increasing the time that it takes to get tired
- Improving blood pressure
- Improving diabetes control

There are 4 things to consider when determining your aerobic fitness program

- Type—what kind
- Frequency—how often
- Duration how long
- Intensity—how hard

1. Type:

Aerobic activity uses large muscle and causes your heart rate to increase. It also makes you breathe harder.

Examples of aerobic activity are:

walking or biking	active sports like golf
dancing	swimming or water exercises
jogging or running	arm chair exercises

2. Frequency: how often

For most people aerobic exercise should be done 3 - 5 times a week. If you are just beginning, you might want to do a little every day until it becomes second nature.

3. Duration: how long

Most people will see the benefits of aerobic exercise when they exercise for 20 - 60 minutes at a time. If you are just beginning, you might want to start with 10 minute sessions. Then add 5 minutes to your sessions each week until you reach your goal.

Start and end each physical activity with a 5-10 minute warm up and 5 - 10 minute cool down.

4. Intensity: how hard

If you do not exert yourself, you will not reap the benefits of exercise. However, working too hard will tire you out too quickly and increase your chance for injury. Exercise should be between 50-90% of your exercise heart rate or choose an activity that meets your recommended level of intensity (see chart).

Exercise Heart Rate is a heart rate range recommended for people after consideration of their age.

No matter what, follow the "**TALK TEST**":

You should be able to breathe and talk comfortably while you exercise. If you are winded or unable to speak, slow down.

Recommended Level of Intensity	Activity Options
Light (3 - 4 calories/mm)	Slow walking, golfing with cart, shopping, dusting, sweeping with a broom, mopping, bowling
Moderate (4-6 calories/mm)	Walking briskly, golfing on foot, slow biking, slow dancing, raking leaves, Tai Chi, Yoga, doubles tennis, water aerobics
Vigorous (6-8 calories/min)	Slow jogging, speed-walking, singles tennis swimming, fast biking, softball, shoveling light snow, heavy gardening
Heavy (8-10 calories/min)	Running, racquetball, basketball, shoveling deep or heavy snow, soccer, rowing crew, treading water

Resistance Training

The goals for resistance training include

1. Increase the number of repetitions that you are able to do
2. Increase the strength of your muscles

There are 3 things to consider when doing resistance training:

Weights Repetitions Frequency—how often

1. Heavy weights: Avoid heavy weights.

Heavy weights can increase your blood pressure to levels unsafe for kidney disease. It is better to use a lighter weight and learn the proper breathing techniques to prevent unsafe increases in your blood pressure.

2. Repetitions

Do 6 - 10 exercises targeting the large muscle groups: legs, abdomen, back, chest and arms. Perform exercises using free weights or weight machines.

3. Frequency:

Do resistance training 2-3 times a week. To prevent injury and ensure you get the benefit of the resistance training, don't do these exercises two days in a row.

Flexibility and Stretching

The goals for flexibility and stretching include

1. Maintain and increase range of motion
2. Improve gait, balance and coordination

Things to consider when flexibility and stretching:

1. Stretch at each work out, usually 5-10 minutes
2. Yoga or low impact Martial Arts like Tai Chi are great choices
- 3.

How should I approach a fitness program and what should I expect to see?

Start slowly with small amounts of exercise and progress slowly.

Here is an example: John decided to get off of the bus one stop early. Over the next few weeks, as he felt more comfortable, he then got off two stops early then three stops early. He was eventually able to build up to a 30 minute walk.

Monitor your progress.

It may take months to see results. **Be patient.**

- You may begin to see changes in your blood pressure, blood sugar or medication doses before you notice changes in your weight. You may find your clothes fitting better or find that you can walk around the block in less time than you use to.
- Sometimes you may not always see improvement. **BUT** even staying at the same level can be good news. Without exercise, your fitness level would probably decrease.

Communicate with your health care team.

- Make sure to discuss any frustrations, concerns or issues with your health care team. Your exercise program can be adjusted so that you are safe and enjoying your fitness program. It is also helpful to let them know what is working for you.
- Discuss your medications and their impact on exercise with your doctor.

Are there any precautions that I need to take when I exercise?

Be sure to exercise at a pace that is comfortable. Once it feels uncomfortable,,**BACK OFF** and slow down. Stop if necessary. Signs of discomfort:

- Short of breath (difficulty breathing)
- Sudden headache
- Tingling or numbness
- Fatigue
- Unusually aches
- Discomfort in the chest, upper body, or jaw

If the symptoms do not resolve in a few minutes immediately call 911 and inform your doctor.

When not to exercise:

- Blood pressure is too high
- If your blood pressure is not well controlled you should not do resistance training exercises. It is important to let your doctor know this.
- If your blood pressure goes too high during exercise, your heart may be working too hard. Ask your doctor if you should check your blood pressure during exercise.
- Blood glucose that is too high If you have diabetes, there are times when you should avoid exercise. Ask your diabetes educator for more information.
- If you have type 2 diabetes, do not exercise if blood sugars are over 400
- If you have type 1 diabetes do not exercise if blood sugar levels are over 250 and you have ketones in your urine
- Blood sugar levels are over 300

Additional precautions if you have diabetes

1. Know if you are at risk of having a low blood sugar.

- If you are at risk for having a low blood sugar, you need to check your blood sugar more often to see the effects of physical activity on diabetes control.

Get instructions on how to prevent and treat a low blood sugar.

- Ask your health care team when to exercise so that you are less likely to have a low blood sugar.
- Discuss how other diabetes complications (eyes, nerves or feet) may need to be considered into your exercise prescription.

When to call your health care team:

- My blood pressure goes over _____ during or after exercise.
- I have discomfort during exercise that does not go away.
- If I have 2 or more low blood sugars a week.
- If I am unable to do my exercise program for health reasons.