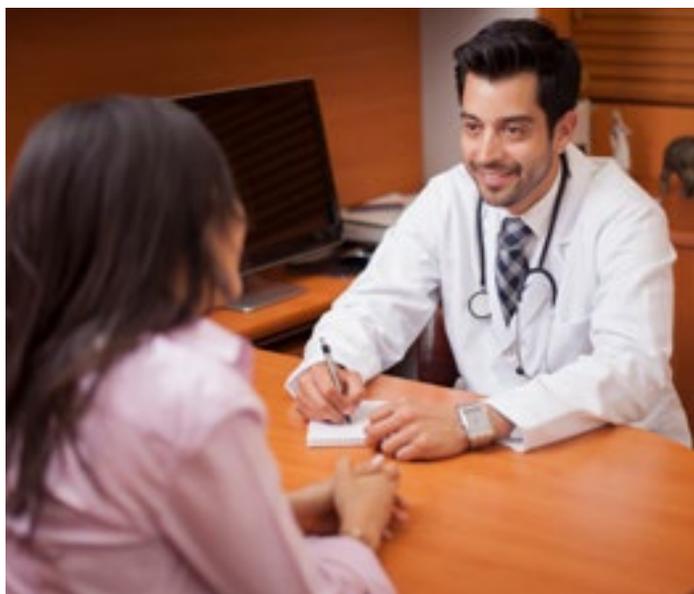


Exercising with Type 2 Diabetes



About 24 million Americans have type 2 diabetes and even more are at risk of developing it — upwards of 79 million Americans! Insulin is needed to allow blood sugar to enter the tissues of the body where it can be stored or used for energy. The problem in type 2 diabetes is that the main tissues that use blood sugar (muscles) or store it (fat cells) are not very sensitive to the insulin present in the blood, resulting in high levels of sugar in the blood.



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Because 80 percent of those with type 2 diabetes are overweight or obese, losing weight and fat are important forms of treatment. Losing body fat results in fat cells that are more sensitive to insulin. Exercise also improves the sensitivity of muscle cells to insulin. Both of these treatments are important for controlling blood sugar levels and decreasing the risk of developing cardiovascular diseases. Exercise also plays a role in preventing type 2 diabetes.

If you have type 2 diabetes, regular physical activity is very important for controlling your blood sugar levels and managing your weight. Exercise plays a role in how well your body responds to insulin, which may reduce the need for medication because your muscles and fat cells will do a better job of taking sugar out of the blood. The important thing to remember is that regular physical activity will improve your health, regardless of your body weight or the amount of weight lost.

How much physical activity is needed to achieve these health benefits? The largest benefit comes when inactive people become moderately active — working up to 150 minutes of brisk walking each week. This means that making exercise a regular part of your lifestyle can have a major positive impact on your health. The key is to choose activities that you enjoy and that can help you control your blood sugar levels.

There is good evidence that both aerobic and muscle-strengthening exercise programs are beneficial for people with type 2 diabetes. Try to do both, if possible. If you are beginning to be more active, do more aerobic exercise. You should add resistance exercise later on because both types will bring even more benefits for your blood sugar levels and for your overall health and fitness.

Getting Started

- Talk with your doctor before starting an exercise program. Ask about any changes to your medications or concerns in becoming more active.
- Take all medications as prescribed by your doctor.
- Although exercise is a major component of any program to manage your diabetes, the most successful programs are those that also involve diet.
- Many of you will begin to exercise on your own. This might mean walking or another form of activity that you can integrate into your daily routine.
- While you may be exercising on your own, getting others to join in with you will make it more fun and increase your chance of continuing. The dog is a great walking partner!
- Look for programs that are available in your community and/or an Exercise is Medicine® (EIM) Professional who might be able to assist you.
- Using a pedometer or another activity tracker will help you monitor your progress towards your goals, which can slowly progress you to achieve 10,000 steps of moderate activity per day.

Aerobic Exercise Programs

The American College of Sports Medicine and the Centers for Disease Control recommend that adults engage in at least 150 minutes per week of moderate-intensity aerobic activity, 75 minutes of vigorous aerobic activity, or an equal combination of moderate and vigorous activity, in addition to muscle strengthening twice a week.

Moderate intensity is defined as an intensity that causes a noticeable rise in heart rate and breathing. One way to know this would be the “talk test.” For example, while walking at a moderate pace, you should be able to carry on a conversation. However, if you walk faster, you will reach a point where you will begin to breathe faster and have a harder time talking. This pace would be moderate intensity or “somewhat hard.” This would be a good moderate intensity for walking and this test can be used with other activities. Vigorous exercise is defined as an intensity that causes a large rise in heart rate and breathing and it would be difficult to talk. Most people would rate this as “hard to very hard”. Follow the FITT principle (F = frequency, I = intensity, T = time, and T = type) to design a safe, effective and enjoyable program.

Research has shown that moderate to vigorous exercise increases the sensitivity of muscle and fat cells for up to 48 hours. Therefore, it is important that you exercise at least every other day to maintain this improved control of your blood sugar.

- Frequency – Be active on most days of the week but at least three to four days.
- Intensity – Exercise at moderate level.
- Time – Exercise 30-60 minutes per day. You do not have to do this in one session; this can be broken up into multiple sessions of at least 10 minutes each.
- Type – Do rhythmic exercises with the large muscle groups. Examples are brisk walking, cycling, and swimming. Do activities that you enjoy and that you will do regularly in your new, more active lifestyle. Add variety to your activities depending on the day or the day or the season to keep the program more enjoyable.
- Forty minutes of moderate to vigorous aerobic exercise on three to four days per week for 12 weeks has been shown to lower blood pressure.

Aerobic Exercise Cautions

- If you have been inactive for a long time, start with shorter sessions (10 to 15 minutes) and gradually add five minutes to your activity sessions every two to four weeks. Build up to being active at least 30 minutes per day on most days of the week.
- If you exercise at an intensity that is too high for you, you will not be able to exercise for a long time and the total energy used will be less. Also, you have a higher risk of injury.
- Drink plenty of fluids before, during, and after exercise, and be careful not to overdo it, as extra weight makes it easier for the body to overheat.

Resistance Exercise Programs

There is some evidence that moderate- to vigorous-intensity resistance training is a good addition to your program. Not only does it improve your blood sugar control if you do it several days each week, it helps you to increase or maintain the amount of muscle you have if you have lost weight. Resistance training is also good for you because it improves your ability to function and promotes good health. Moderate intensity is defined as a weight that you can lift 10-15 times, while vigorous intensity is defined as a weight that you can lift 8-10 times.

- Frequency – At least two days per week, with a day of rest between sessions.
- Intensity – Moderate. Remember, you are not training to be a weight lifter but are trying to improve your strength and muscle endurance so that your daily activities will be less stressful.
- Time – This will depend on the number of exercises you do.
- Type – All major muscle groups. There is little difference between exercise with a machine or with free weights. If you do not belong to a gym or club, you can do the same exercises at home with lighter weights, resistance bands, or using your body weight as the resistance (example: push-ups, sit-ups).

Resistance Exercise Cautions

- Avoid holding your breath when contracting because this can cause large fluctuations in blood pressure and increase the risk of passing out or developing abnormal heart rhythms. This is especially so if you also have high blood pressure.
- If you have joint problems or other health problems, you should do only one set for all major muscle groups. Start with 10-15 repetitions and build up to 15-20 repetitions before you add another set.

Other Types of Exercise

- In terms of blood sugar control, research suggests strongly that a combination of aerobic and resistance training done three to four days a week is better than either form of training alone. However, if you are also trying to lose weight, then aerobic exercise on most days of the week is still important.
- Yoga and Tai-chi can be useful because they improve strength and flexibility, while aiding relaxation. However, whether they will help you control your blood sugar is still not clear and more research is needed.

Your exercise program should be designed to maximize the benefits with the fewest risks of aggravating your health or physical condition. Consider contacting an EIM Professional that can work with you and your doctor to establish realistic goals and design a safe, effective and enjoyable program that addresses your needs.

Referral Instructions