

Exercise prescription for diabetes

Exercise is excellent medicine for an ailing heart, or for keeping a healthy one healthy.

It's just as important for type 2 diabetes. This is the kind of diabetes that tends to develop gradually, often in response to excess weight or lack of physical activity. Is one kind of exercise better than another for diabetes? An "exercise prescription" from the American Heart Association recommends a combination of aerobic exercise and strength training. It's also a great combination for the heart.

This dual strategy makes sense. Aerobic activity, like walking or swimming, strengthens the heart, lungs, and muscles. It helps control blood pressure and blood sugar. It keeps arteries flexible. It is also essential for losing weight and excess body fat, or for maintaining weight. All of these are key strategies for many people with diabetes. Strength training helps muscles respond better to insulin, the hormone that ushers blood sugar into cells. A single bout of it can make muscle cells "listen" to insulin better for 12 hours or more.

Exercise prescription for people with type 2 diabetes

Walking or other moderate-intensity exercise, three to seven days a week, for a total of 150 minutes per week OR jogging or other vigorous exercise, three days a week, for a total of 90 minutes per week

AND

Weight lifting or other muscle-strengthening resistance exercise (weight machine, etc.) three days a week

Before beginning

Most people with diabetes can start a walking program without having any tests. To be on the safe side, the American Heart Association recommends having a stress (treadmill) test first if you haven't been active and you have been diagnosed with heart disease, peripheral artery disease, or another cardiovascular condition; have occasional chest pain or unexplained shortness of breath; or plan to jump right into a regimen of vigorous exercise (see "Types of Exercise," below). The American Diabetes Association broadens this a bit, suggesting a pre-exercise stress test for anyone who has had diabetes for 10 years or longer.

Exercising caution

People with diabetes need to be a bit more careful about exercise than other folks. For some, low blood sugar can be a hazard. Others need to pay special attention to their feet or eyes. Here are some tips for exercising safely with diabetes:

- **Start slowly.** If you are new to exercise, start with a low-impact activity like walking, swimming, or bicycling. Gradually increase your daily exercise.
- **Time it right.** The best time to exercise is an hour or so after eating, when your blood sugar is likely to be a bit higher.
- **Know your limits.** Check your blood sugar before and after exercise to see how your body responds to exertion.

- **Protect your feet and eyes.** Make sure your shoes fit well so you don't get blisters, which can lead to skin ulcers. If you have nerve pain or loss of sensation (neuropathy), avoid activities that could cause pressure ulcers or stress fractures. If you have developed blood-vessel abnormalities in one or both eyes (diabetic retinopathy), stay away from lifting heavy weights or other activities that cause a sudden increase in blood pressure that can trigger bleeding in the eye. Lifting light weights is fine—just don't hold your breath while lifting.
- **Be prepared.** Have water and snacks handy when you exercise. Especially important are carbohydrate-rich snacks that can quickly boost your blood sugar if it gets too low.
- **Sound the alert.** Wear a medical identification bracelet or necklace that says you have diabetes just in case you get into trouble.

Types of exercise

Exercise can be broadly divided into two types: aerobic and anaerobic.

Aerobic exercise involves the repetitive use of large muscles — for example, by walking, bicycling, or swimming — so that your heart rate and breathing temporarily increase, bringing more oxygen to muscles. It can be either moderate or vigorous.

During moderate-intensity activities you should notice an increase in your heart rate, but you should still be able to talk comfortably. If you are breathing hard and fast and your heart rate rises substantially, you are probably doing vigorous-intensity activity. Many activities (such as bicycling or swimming) can be either moderate or vigorous intensity depending on your level of effort.

Moderate-intensity activities include

- walking fast
- doing water aerobics
- riding a bike on level ground or a few hills
- playing doubles tennis
- pushing a lawn mower.

Vigorous-intensity activities include

- jogging or running
- swimming laps
- riding a bike fast or on hills

- playing singles tennis
- playing basketball.

Anaerobic exercise is better known as resistance or strength training. Such exercise builds muscle by harnessing resistance — that is, an opposing force that muscles must strain against. Resistance can be supplied by your body weight, free weights such as dumbbells and weighted cuffs, elasticized bands, or specialized machines.

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