

Diabetes and Exercise

WHAT IS DIABETES?

Diabetes is a disease in which levels of glucose (sugar) in the blood are higher than normal. Glucose is produced by the body from the foods that you eat. Insulin, a hormone produced by the pancreas, takes glucose from the bloodstream and carries it into your cells where it is used for energy. Diabetes results when glucose does not enter the cells and instead builds up in the blood.

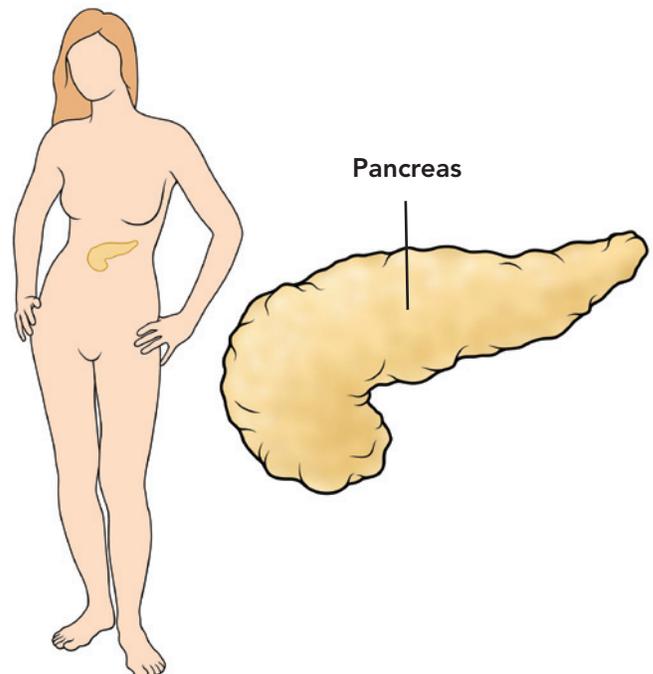
When glucose levels are too high, they can cause damage to the blood vessels, nerves, and other organs in the body. Uncontrolled diabetes can lead to blindness, heart and blood vessel disease, stroke, kidney failure, and amputations.

DID YOU KNOW?

Exercise is important for everyone, and especially for people living with diabetes. Regular exercise and a healthy diet will improve your diabetes management and your quality of life.

WHY IS EXERCISE IMPORTANT FOR PEOPLE WITH DIABETES?

Physical activity is like a “secret weapon” to help fight diabetes. When you exercise, your muscles use glucose for energy. This reduces the amount of glucose in your blood. Exercise also makes your body more sensitive to insulin, which means that insulin can do a better job of moving glucose from your blood into your cells. Exercise also helps improve other medical problems that are common in people with diabetes, such as high blood pressure and high cholesterol.



BENEFITS OF EXERCISE FOR PEOPLE WITH DIABETES

- Lowers blood glucose, blood pressure, and cholesterol
- Improves circulation
- Reduces the need for insulin and oral medications
- Prevents weight gain and promotes weight loss
- Strengthens the heart, muscles, and bones
- Improves strength, flexibility, and endurance
- Improves brain function and mood
- Lowers stress

HOW DO YOU GET STARTED WITH AN EXERCISE ROUTINE?

Before you begin an exercise routine, your health care team will check your heart, eyes, kidneys, feet, and nervous system to make sure you are healthy enough for physical activity. Some types of activities may not be right for you. For example, if you have problems with the nerves in your feet, your doctor might recommend a type of exercise that doesn't put pressure on your feet. Choose a type of exercise that you enjoy so that you are more likely to stick with it. Ask your doctor whether your choice of exercise is a good one for you.

As you begin to exercise, start slowly so that your body can get used to it. Start with a 5 to 10 minute walk outdoors or on a treadmill several days a week, and then gradually add a few more minutes of walking each week. Experts recommend building up to at least 2 1/2 hours a week of aerobic exercise, such as brisk walking, swimming, cycling, or dancing. You should spread this activity out over at least three days throughout the week.

Try adding resistance training to your exercise routine two or three times a week. Using weights, machines, or resistance bands builds muscle, burns more calories, and helps control blood glucose.

WHAT SHOULD YOU KNOW ABOUT DIABETES MEDICATIONS AND EXERCISING?

You should check your blood glucose level before and after exercise, especially if you take insulin or oral medications to lower blood glucose. Exercise changes the way your body reacts to insulin and this can make blood glucose levels too low or too high. These are serious conditions but with the right monitoring, you can avoid them. Fear of these conditions should not keep you from exercising.

Because exercise can lower blood glucose, some diabetes medication doses may need to be adjusted when you exercise.

BLOOD GLUCOSE LEVELS AND EXERCISING

- If your blood glucose is 300 mg/dL or higher before exercising, you should not exercise because your glucose level could go higher.
- If your blood glucose is less than 100 mg/dL before exercising, you should eat a snack to keep your blood glucose from going too low.

Questions to ask your doctor

- What kinds of exercise are best for me?
- Do I need to adjust my diabetes medicines when I exercise?
- When should I avoid exercise?
- Should I see an endocrinologist for my diabetes care?
- Should I see a diabetes educator?

RESOURCES

- Find-an-Endocrinologist: www.hormone.org or call 1-800-HORMONE (1-800-467-6663)
- Find a diabetes educator (American Association of Diabetes Educators): www.diabeteseducator.org/DiabetesEducation/Find.html
- Hormone Health Network information about diabetes: www.hormone.org/diabetes
- National Diabetes Information Clearinghouse (National Institutes of Health): diabetes.niddk.nih.gov/dm/pubs/physical_ez/
- American Diabetes Association: www.diabetes.org/food-and-fitness/fitness

EDITORS

Carol Greenlee, MD
James Hill, PhD
Guillermo Umpierrez, MD

April 2011, 2nd Edition

The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society (www.endo-society.org). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at www.hormone.org/Spanish.

Diabetes and Exercise Fact Sheet



www.hormone.org