



Physical activity is as important as nutrition in the prevention and management of diabetes. The largest studies of diabetes prevention, including the US Diabetes Prevention Program, all used a package of both good nutrition and physical activity leading to reduction in the risk of developing type 2 diabetes as great as 58%. For people with diabetes, physical activity is an important part of controlling blood glucose levels as well as reducing risk of complications such as heart attacks and strokes. Physical activity can lead to weight reduction which is also important for people with diabetes because obesity can reduce the life expectancy of people with type 2 diabetes by up to eight years.

Benefits of Physical Activity

The benefits of physical activity are the same regardless of your diabetes status. Research shows that physical activity can:

- Lower blood glucose levels by making your body more sensitive to the insulin you make and by burning glucose (calories).
- Reduce body fat and keep it off which also results in improved insulin sensitivity.
- Help people with diabetes to need less insulin or diabetes pills. Activity can lower blood glucose and weight. Both of these may lower how much insulin or diabetes pills you need to take.
- Lower LDL (“bad”) cholesterol levels and raise HDL (“good”) cholesterol levels reducing the risk of cardiovascular disease.
- Reduce stress levels.
- Increase flexibility and muscle strength.
- Gain more energy and sleep better.

Before beginning regular exercise

Talk with your doctor about your individual physical needs and limitations.

How Does Physical Activity Affect Blood Glucose Levels?

Physical activity causes the body to need extra energy in the form of glucose for the muscles. During continued moderate physical activity, the muscles take up glucose at almost 20 times the normal rate thereby lowering the level of glucose in the blood. However, intense physical activity can have the opposite effect, especially in many people with diabetes. Intense physical activity can be recognized by the body as a stress and stress hormones may be released to tell the body to increase available blood glucose. If this happens, people with diabetes may need insulin after intense workouts.

Physical Activity Guidelines

Visit [Physical Activity for Everyone](#)



Walking is a great physical activity. Visit [Walk Away a Winner](#) for more information.

How Much Physical Activity?

The American Diabetes Association recommends the following for prevention of diabetes as well as for people with type 2 diabetes:

- Aim for a minimum of 30 minutes most days. Walking, gardening, doing yard work, swimming, or cleaning house will all work to meet this goal. Anything that increases your heart rate and causes you to break a light sweat.
- Children and teens should aim for at least 60 minutes most days.

Immediately before your physical activity, warm up by spending 5 to 10 minutes doing a low-intensity exercise such as walking. Then gently stretch for another 5 to 10 minutes. Repeat these steps after exercising to cool down.

When you start an exercise program, go slowly. Gradually increase the intensity and length of your workout as you get more fit. For more on starting an exercise program, visit [Fitness Programs: 5 Steps to Getting Started](#).

What kind of Physical Activity?

The type of exercise that is right for you mainly depends on whether you have any other health problems, so you should check with your doctor before beginning regular physical activity. Aerobic exercise, including walking, jogging, dancing or biking, is highly recommended. However, if you have problems with the nerves in your feet or legs, you may want to put less stress on your feet by swimming, biking, or rowing.

If you have diabetes and you would like to consider strength training, visit [Strength Training and Diabetes](#).

Visit the [Campus Recreation](#) website for information on fitness and wellness screenings, group and instructional programs, and other on campus opportunities.

Opportunities for Physical Activity on Campus

General Exercise Guidelines and Precautions

- Choose an activity that you enjoy. You'll be more likely to stick with it for a lifetime.
- Consider a water exercise program. Some other exercise options include walking, riding a stationary bicycle, or dancing.
- Wear good shoes and practice proper foot care.
- Drink water before, during, and after exercise to prevent dehydration.
- Do not ignore pain -- discontinue any exercise that causes unexpected pain. If you continue to perform the activity while you are in pain, you may cause unnecessary stress or damage to your joints.

If you have diabetes

Monitor your blood glucose levels before, during and after physical activity. Visit [Diabetes and Exercise](#) for more information.

Work Activity Into Your Day

You don't have to get all your physical activity for the day at one time. Try getting it throughout the day in 10 minutes sessions or choosing to be active when you can. Work extra activity into your day by:

- Taking the stairs rather than an elevator or escalator.
- Parking at the far end of the parking lot and walking.
- Getting off the bus a few stops early and walking the rest of the way.
- Walking or biking whenever you can.

Exercise Tips for People with Diabetes

- It is especially important for people with diabetes to talk to their doctors before beginning regular physical activity. Some of the complications of diabetes, such as nerve damage, may make some forms of exercise dangerous.
- Follow a regular routine of exercising, eating your meals, and taking your medicines at the same time each day to maintain control of blood glucose levels.
- Talk to your doctor about any adjustments your medications or insulin may need depending on the intensity or duration or time of day of your exercise.
- Exercise with someone who knows you have diabetes and knows what to do if your blood glucose goes too low.
- Wear a medical identification tag or carry an identification card that states you have diabetes.

Green Bean Casserole

A diabetes appropriate recipe

Ingredients

3 T canola oil, divided
1 medium sweet onion, (half diced, half thinly sliced), divided
8 oz mushrooms, chopped
1 T onion powder
1 1/4 t salt, divided
1/2 t dried thyme
1/2 t freshly ground pepper
2/3 c all-purpose flour, divided
1 c low-fat milk
3 T dry sherry
1 pound frozen French-cut green beans, (about 4 cups)
1/3 c reduced-fat sour cream
3 T buttermilk powder
1 t paprika
1/2 t garlic powder

Preparation

1. Preheat oven to 400°F. Coat a 2 1/2-quart baking dish with cooking spray.
2. Heat 1 T oil in a large saucepan over medium heat. Add diced onion and cook, stirring often, until softened and slightly translucent, about 4 minutes. Stir in mushrooms, onion powder, 1 t salt, thyme and pepper. Cook, stirring often, until the mushroom juices are almost evaporated, 3 to 5 minutes. Sprinkle 1/3 c flour over the vegetables; stir to coat. Add milk and sherry and bring to a simmer, stirring often. Stir in green beans and return to a simmer. Cook, stirring, until heated through, about 1 minute. Stir in sour cream and buttermilk powder. Transfer to the prepared baking dish.
3. Whisk the remaining 1/3 c flour, paprika, garlic powder and the remaining 1/4 t salt in a shallow dish. Add sliced onion; toss to coat. Heat the remaining 2 T oil in a large nonstick skillet over medium-high heat. Add the onion along with any remaining flour mixture and cook, turning once or twice, until golden and crispy, 4 to 5 minutes. Spread the onion topping over the casserole.
4. Bake the casserole until bubbling, about 15 minutes. Let cool for 5 minutes before serving.

Ingredient Notes

Don't use the high-sodium "cooking sherry" sold in many supermarkets. Instead, purchase dry sherry sold with other fortified wines.

Nutrition

Per serving: 212 calories; 10 g fat (2 g sat, 5 g mono); 10 mg cholesterol; 23 g carbohydrates; 7 g protein; 3 g fiber; 533 mg sodium; 259 mg potassium. **Nutrition Bonus:** Calcium (16% daily value).

1 1/2 Carbohydrate Serving

Exchanges: 1/2 starch, 1 vegetable, 2 fat

Found at http://www.eatingwell.com/recipes/green_bean_casserole.html_0

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Sources

American Diabetes Association, Centers for Disease Control, National Diabetes Information Clearinghouse, National Institute of Health, National Library of Medicine, Mayo Foundation for Medical Education and Research, and WebMD.

For More Information visit the American Diabetes Association at www.diabetes.org.