



Exercise for People with Diabetes

EXERCISE FOR PEOPLE WITH DIABETES

Regular physical activity is recommended for everyone including people with diabetes. Some of the benefits of exercise are:

- Increased muscle tone/improved appearance
- Improved circulation
- Lowered blood pressure
- Decreased feelings of stress and tension
- Lowered level of “bad” (LDL) blood cholesterol
- Increased level of “good” (HDL) blood cholesterol
- Decreased blood sugar
- Decreased risk of osteoporosis
- Easier weight loss
- Improved insulin sensitivity.

When you exercise regularly and with enough intensity, you will burn blood sugar for fuel. Exercise can also help your body become more sensitive to insulin which will reduce the amount of sugar in your blood stream.

PLAN FOR AN EXERCISE PROGRAM

Before you plan your exercise program, you should talk with your doctor or diabetes educator so they can help you do this safely. Usually, doctors recommend an exercise tolerance or “stress test” for all people with diabetes over the age of 35. When you plan a program of daily activity, your age, weight, physical limitations and prior exercise experiences will be taken into consideration. The exercise you choose does not have to be strenuous or difficult; **a daily walking program can be very beneficial with minimal effort.** Select an exercise or variety of exercises you enjoy and can do regularly. It is better to exercise daily or every other day rather than only on weekends or sporadically. Start slowly. 5 or 10 minutes a day is a good beginning if you have been very inactive.



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BALANCE: INSULIN, EXERCISE AND DIET

To exercise safely, your blood sugar must be monitored carefully and frequently. Blood sugar can change not only **during** exercise, but **after** exercise as well (even as much as 24 hours later). Usually the blood sugar drops after exercise **but in some cases it does go up**. If your blood sugar is high (greater than 240) when you begin exercise you may see this effect. For this reason you should discuss monitoring plans with either your doctor or diabetes educator before you begin to exercise.

If you take insulin, you must plan to adjust your diet and/or your insulin dose when you exercise. Exercise should be avoided when your insulin is peaking since you are more likely to experience low blood sugar at this time. You should try to exercise 1 or 2 hours after a meal to decrease the chance of developing low blood sugar.

In addition, you should avoid injecting insulin into a site that you will be exercising actively. For example, if you plan to walk briskly, do not use your leg as the injection site. Generally the abdomen is the best site for insulin administration especially when you plan to exercise.

In many cases, whether you take insulin or not, you may need a snack before and/or during exercises. What you eat and when you eat it will depend upon the intensity and duration of the exercise as well as your response to it. This will be determined by measuring your blood sugars. It is also **crucial** that you carry a form of carbohydrate with you at all times.

The following are general guidelines:



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For **LIGHT ACTIVITY**, extra food is not usually necessary.

For **MODERATE ACTIVITY**, such as golfing, **ONE EXTRA** serving of carbohydrate containing food (15 grams of carbohydrate) before each hour that you plan to exercise is usually necessary. This will vary depending upon your blood sugar. If your blood sugar is above 100 and less than 180, you generally need a snack.

For **HEAVY ACTIVITY** such as shoveling snow, **TWO EXTRA** servings of carbohydrate containing food (30 grams of carbohydrate) before each hour that you plan to exercise are usually advisable. As above, this will vary with your blood sugar.

On the next page is a short list of activities categorized into **Light, Moderate** and **Heavy**. Use this guide to help you decide how much snack to take before activity.



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LIGHT	MODERATE	HEAVY
Strolling Dressing Undressing Preparing food Sweeping floors Dusting furniture Fishing	Scrubbing floors Bowling Gardening Golfing Walking fast Tennis (doubles) Volleyball Dancing (slow)	Shoveling snow Fast cycling Dancing (fast) Karate Skiing Basketball Swimming (will not notice sweating with low blood sugar) Tennis (singles) Handball Running

EXAMPLES OF ONE STARCH OR CARBOHYDRATE SERVING (15 grams of Carbohydrates)

- 1 slice of bread
- 1 large breadstick
- 3/4 oz. dry cereal
- 3 graham cracker squares
- 3/4 oz. pretzels
- 1 cup milk (skim is best)

It is best to plan ahead and eat a starch serving **BEFORE** the activity rather than **treat** low blood sugar.



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EXERCISE PRECAUTIONS

- If possible, exercise with someone who knows that you have diabetes and how to help you if you have low blood sugar.
- Wear something to identify yourself as having diabetes (such as a MedicAlert bracelet).
- When exercising away from home, take money with you for transportation, telephone call or food
- Always start your exercise program with a warm up phase and end it with a cool down phase. A good warm up and cool down routine is to walk at a relaxed pace for 5 minutes and then gently stretch your arms and legs.
- Carry extra snacks such as raisins, crackers, fresh fruit or packaged glucose in your pocket or in a waist-pack.
- Learn how to recognize symptoms of low blood sugar and know how to treat them.
- Drink extra sugar-free fluids since warm weather and increased sweating may increase your fluid needs.
- Inject insulin into a site on a **less active** part of your body (such as the abdomen) so that the insulin will not be absorbed too quickly. The parts of your body where the muscles are working hardest will absorb insulin most rapidly (e.g. legs and arms).
- Bring along your blood sugar testing meter.
- Carry a Glucagon Emergency Kit especially if you are traveling.
- If you have chest or leg pains during exercise, stop exercising and call your doctor.
- Protect your feet: Check inside your shoes and socks for anything that might injure your feet. Wear comfortable shoes and socks that fit well. Examine your feet after you exercise. Notify your healthcare provider right away if you injure your feet.



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IN CONCLUSION:

1. Do **not** exercise:
 - When your insulin is peaking.
 - Right before a meal.
 - If glucose is less than 100, unless you have a snack first.
 - If glucose is greater than 240, unless approved by your doctor.
 - If you have ketones in your urine.

2. Monitor your blood sugar:
 - Before, during and after exercise.
 - Discuss these results with your doctor or diabetes educator.

3. Always carry some form of carbohydrate with you.

4. Be sure to have some identification with you that states your name, address and telephone number.

5. Wear comfortable, supportive shoes and cotton socks. Check your feet after exercise for any signs of poor fit or injury.