

# Exercising with Type 1 Diabetes

When you exercise or play outside, your muscles are working hard to help you move. It's important to manage your blood sugar before, during and after you exercise so your blood sugar stays within a normal range. This includes eating the right number of carbohydrates based on your blood sugar levels. In this handout, you will learn how to manage your blood sugar when you do different types of exercise

## WHY DO I NEED TO MANAGE MY BLOOD SUGAR WHEN I EXERCISE OR PLAY OUTSIDE?

When you exercise or play outside, your muscles work hard to help you move. To do that, your muscles need **fuel** (energy) in the form of **carbohydrates** (carbs) from food. Eating the right number of carbs also helps keep your blood sugar within a normal range.

When you exercise, your muscles release **glucose** (sugar). Your muscles also become more sensitive to insulin. This can happen during or after exercise. It can last for up to 36 hours. Your muscles also use glucose that is already in your body. Managing your blood sugar while you exercise helps your muscles use glucose better.

## WHAT SHOULD I DO TO MANAGE MY BLOOD SUGAR BEFORE I EXERCISE?

You should keep track of the following things before you exercise:

- **Your blood sugar level before you exercise**
- **How hard your exercise will be**  
(See the back of this handout to learn about different types of exercise.)
- **How long you will be exercising**

## WHAT SHOULD I EAT OR DRINK BEFORE AND AFTER I EXERCISE?

You should drink lots of water before, during and after you exercise. You should also eat snacks that are high in carbs and protein.

Below are some examples of snacks you can eat before and after you exercise. This table is a general guide. Carb counts can be different, depending on the brand. Read the nutrition labels on each food:

Snack	Grams of carbs	Grams of protein
Nature Valley® Protein chewy bar	14	10
Yoplait® Light vanilla fat-free yogurt	16	5
KIND® bar	18	8
6 peanut butter crackers	23	3
KIND® Healthy Grains bar	24	3
8 ounce (oz.) glass of chocolate 1% milk	24	8
Yoplait® Original vanilla low-fat yogurt	33	5
Peanut butter sandwich (1 tablespoon of peanut butter)	33	8



MassGeneral Hospital for Children and Massachusetts General Hospital do not endorse any of the brands listed on this handout. This handout is intended to provide health information so that you can be better informed. It is not a substitute for medical advice and should not be used to treatment of any medical conditions.

## HOW MANY CARBS SHOULD I EAT BEFORE EXERCISING?

The charts below show you how many carbs you should eat, based on the type of exercise you do.

### LOW-INTENSITY EXERCISE

**Low-intensity exercise** is easy and gets your body moving a little more than usual.

Examples of low-intensity exercise include:

- Going for a short walk
- Playing outside

My blood sugar level before exercising	Grams (g) of carbs to eat
Under 100 mg/dl	15-30 grams before exercise
100-200 mg/dl	15 grams before exercise
200-300 mg/dl	<ul style="list-style-type: none"> <li>• 0g before exercise</li> <li>• Drink lots of water before, during and after exercising.</li> </ul>

### MEDIUM-INTENSITY EXERCISE

**Medium-intensity exercise** (also called **moderate intensity**) gets your body moving more than usual. It can also be certain types of sports.

Examples of medium-intensity exercise include:

- Riding your bike
- Playing tennis
- Walking quickly

My blood sugar level before exercising	Grams (g) of carbs to eat
Under 100 mg/dl	<ul style="list-style-type: none"> <li>• 15-30g before exercise</li> <li>• 15g for every hour of exercise</li> </ul>
100-200 mg/dl	<ul style="list-style-type: none"> <li>• 15g for every hour of exercise</li> </ul>
200-300 mg/dl	<ul style="list-style-type: none"> <li>• 0g before exercise</li> <li>• Drink lots of water before, during and after exercising.</li> </ul>
300 mg/dl or more	<ul style="list-style-type: none"> <li>• 0g before exercise</li> <li>• Drink lots of water before, during and after exercising.</li> <li>• If you have ketones, don't exercise until ketones clear</li> </ul>

### HIGH-INTENSITY EXERCISE

**High-intensity exercise** (also called **strenuous activity**) gets your body as much as possible. It can also include playing many sports

Examples of high-intensity exercise include:

- Playing sports like soccer, basketball, football, swimming, kickboxing or field hockey

My blood sugar level before exercising	Grams (g) of carbs to eat
Under 100 mg/dl	<ul style="list-style-type: none"> <li>• 30-45g before exercise</li> <li>• 30g for every hour of exercise</li> </ul>
100-200 mg/dl	<ul style="list-style-type: none"> <li>• 30-45g before exercise</li> <li>• 15g for every hour of exercise</li> </ul>
200-300 mg/dl	<ul style="list-style-type: none"> <li>• 0g before exercise</li> <li>• Drink lots of water before, during and after exercising.</li> </ul>
300 mg/dl or more	<ul style="list-style-type: none"> <li>• 0g before exercise</li> <li>• Drink lots of water before, during and after exercising.</li> <li>• If you have ketones, don't exercise until ketones clear</li> </ul>