

## Blood Sugar Disorders

Blood sugar disorders are increasingly common in the modern world, and they take a significant toll on our health. Both high and low blood sugar have many of the same causes and are treated very similarly. Implement the strategies listed in this handout for better blood sugar control and improved health.

### Adjust Carbohydrate Intake

Those with blood sugar disorders may need to limit their carbohydrate intake. The best way to determine how much carbohydrate you can tolerate is by tracking your pre- and post-meal blood sugar with a device called a glucometer. Your practitioner will provide you with instructions on how to use it. You should eat the amount of carbohydrate at each meal that allows you to stay within the following parameters after meals:

Time	Blood glucose
One hour after a meal	<140 mg/dl (7.8 nmol/L)
Two hours after a meal	<120 mg/dl (6.6 nmol/L)

### Eat More Protein

Higher protein diets have a stabilizing effect on blood sugar. Aim for between 25 and 30 percent of total calories from protein, or approximately 125 to 150 grams per day on a 2,000-calorie diet.

### Eat Fermented Foods and Fermentable Fibers

Poor gut health contributes to poor metabolic health. Be sure to eat plenty of fermented foods, like sauerkraut, yogurt, kimchi, kefir, or kombucha on a regular basis to maintain a healthy gut. You'll also want to eat a diet rich in fermentable fibers—these are fibers that help to feed your gut bacteria and are present in starchy and non-starchy vegetables. Resistant starch is also particularly useful for improving insulin sensitivity. You can supplement with unmodified potato starch, a source of resistant starch, by consuming three to four tablespoons of it daily mixed with water or added to other foods. Other sources of resistant starch include white potatoes (cooked and then cooled for 24 hours), unripe bananas, tapioca flour, or dehydrated green (unripe) plantains.

### Alter Your Food Intake Timing

If you have high blood sugar, you may notice improved blood sugar control when you fast intermittently. Intermittent

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fasting involves skipping a meal, typically breakfast, and can sometimes include extended periods of fasting. You'll also want to avoid snacking, as snacking can worsen blood sugar control in those with high blood sugar.

If you have low blood sugar, you'll want to eat every two to three hours. As a general rule, don't go more than three hours without something to eat. You can choose to incorporate this into your life as three meals with snacks in between, or if you prefer, six smaller meals throughout the day. You'll also want to make sure you eat breakfast within 30 minutes of waking up, and include at least 30 grams of protein during breakfast. Lastly, those with low blood sugar often do well with a snack before bed, as this can help stabilize blood sugar overnight and help prevent sleep disruptions.

## Physical Activity

It is important to move throughout the day in addition to getting regular exercise. This means standing (perhaps using a standing or treadmill desk), walking, using the stairs, and just overall being more active in your everyday life. You should aim for about 10,000 steps per day through your activity. It is also important to aim for 150 minutes of moderate intensity activity per week (e.g., jogging, yoga, dancing), or 75 minutes of vigorous activity (e.g., running, Zumba, playing sports), or 30 sets of highest-intensity exercise per week (e.g., sprinting, jumping rope, resistance training), or some combination of the above. A combination of aerobic exercise and strength training is superior to either type of exercise alone for improving blood sugar control.

## Sleep

Sleep deprivation can lead to insulin resistance and poor blood sugar control. Make sleep a priority by giving yourself enough time to sleep and practicing good sleep hygiene by avoiding blue light at night, using blackout shades or an eye mask, and getting sun exposure in the morning when you wake up.

## Stress management

Chronic stress reduces blood sugar control, promotes inflammation, and leads to low levels of cortisol, which can disrupt blood sugar control. While the benefits of stress management can take longer to manifest than the other recommendations listed here, they are worth the wait! Practice meditation, tai chi, yoga, deep breathing, etc., on a daily basis to help control your blood sugar.