

## Nutrition Management of Low Blood Sugar Without Diabetes (Postprandial Syndrome and Reactive Hypoglycemia)

### Hypoglycemia

#### What is it?

Hypoglycemia is a medical term for low blood sugar (glucose). Glucose is the sugar that our bodies use for energy. In most people, a normal level of blood sugar is within a range of 70 to 99 mg/dL.

Hypoglycemia can be a concern for people with diabetes, but it also affects people who do not have diabetes. Two conditions that can affect people without diabetes are postprandial syndrome and reactive hypoglycemia. The nutrition guidelines we suggest for treatment are the same for both.

**Postprandial syndrome** is when someone develops symptoms of low blood sugar within 4 hours after eating but blood sugar doesn't drop below normal. Postprandial means after eating. Having these symptoms may be related to eating a high carbohydrate (carb) meal.

**Reactive hypoglycemia** is symptoms of low blood sugar along with a blood sugar level less than 70 mg/dl. This too most often occurs about 4 hours after a meal and symptoms improve right away with intake of carbs.

### Symptoms

In postprandial syndrome or reactive hypoglycemia, symptoms may occur within 2 to 4 hours after a meal. People have some or all these symptoms:

- Hunger
- Sweating
- Shakiness
- Weakness
- Fatigue
- Nausea/vomiting
- Numbness/coldness in arms or legs
- Mood swings
- Double or blurred vision
- Fast pulse rate
- Headache
- Anxiety
- Craving for sweets
- Flushing
- Confusion
- Irritability

### Diagnosis and Treatment

Hypoglycemia is diagnosed by measuring blood glucose when you are having symptoms. If blood glucose is below normal (less than 70 mg/dL) and the symptoms disappear when food is eaten, reactive hypoglycemia is most often the cause of these symptoms. To manage this you need to make changes in your eating habits. The goal is to maintain a blood glucose between 70 to 99 mg/dL and prevent symptoms. If blood sugar is not below 70 mg/dl this is likely postprandial syndrome (symptoms of low blood sugar but blood sugars remain in normal range).

## Eating to Prevent Symptoms

**Limit foods high in sugar and concentrated sweets.** Eating these foods can cause a rapid increase in blood glucose. This may lead to excessive increase of insulin, which causes a rapid fall in blood glucose. Foods high in sugar include:

- Cakes
- Cookies
- Pies
- Puddings and custards
- Regular soda, lemonade, Kool-Aid™, punch
- Sugar, brown sugar
- Ice cream, sherbet, frozen yogurt
- Jelly and jams
- Candy
- Gelatin, Jello™
- Nectars (agave)
- Honey
- Syrups (corn, pancake, maple)
- Fruit juice greater than 4 ounces
- Sweet tea and flavored coffee

**If you have something sweet, eat it with a meal.** You may handle sweet foods better if eaten with a meal since the other foods at the meal reduce the effects of the sugar.

**Limit or avoid caffeine.** Caffeine causes an increase in adrenaline and can cause the same symptoms as low blood sugar.

**Limit or avoid alcohol.** Drinking alcohol can cause low blood sugar, especially on an empty stomach. If you choose to drink alcohol, do so in small amounts and always consume it with food. One serving of alcohol is 12 oz. beer, 4 oz. wine and 1.5 oz liquor.

**Spread your intake of carbs throughout the day.** Eating large amounts of rice, bread, cereal, pasta at one time can cause your body to produce large amounts of insulin. This is much like simple sugars or sweets and can cause glucose levels to drop sharply.

**Eat every 3 to 4 hours.** Eating many small meals and snacks each day rather than 3 larger meals can help to regulate the amount of glucose in your bloodstream.

**Aim for 2 to 4 servings of carbs at each meal (30 to 60 grams) and 1 to 2 servings (15 to 30 grams) at snack times.** One carb serving has 15 grams of total carb.

Each of these foods contains about 15 grams of carbs:

- 1 regular slice of bread
- ½ English muffin, hot dog or hamburger bun
- ½ cup rice, pasta, cooked cereal
- 1 small potato (about ½ cup)
- 1 small apple (tennis ball size)
- ½ cup fruit canned in its own juice
- ¾ cup high fiber cold cereal
- 1 cup plain, light or Greek yogurt

**Choose whole grains and increase high fiber foods.** Whole grains take longer to break down. This helps to keep blood glucose levels more consistent. Whole grain breads and cereals, legumes/beans, vegetables and whole fruits are high in fiber. These foods will help you eat at least 25 grams of fiber daily.

**Include lean protein at each meal and snack.** Our body breaks down protein more slowly than carbs. This mixture of carb and protein can give a long-lasting source of energy. Good sources of lean protein foods include skinless poultry, fish, low-fat cheese, eggs, peanut butter, and soy-based foods.

**Enjoy foods high in healthy fats in small amounts throughout the day.** Fats are also digested slowly and can help to balance the blood sugar. Choose healthy fats such as nuts, seeds, avocado, olives and olive oil. Try to enjoy fats in small amounts because they are also high in calories and can lead to weight gain.

**Keep some non-perishable foods on hand to prevent or treat low blood sugar symptoms.** Granola bars with protein, or nuts and dried fruit mix are quick, healthy snacks. Keeping these foods on hand is a good choice instead of getting a high calorie candy bar from the vending machine or store.

**Sample 1-Day Menu**

<p><b>Breakfast</b>                  2 slices 100% whole wheat toast (<b>2 carb servings</b>)                  1 egg or 2 Tbsp peanut butter                  1 cup skim milk (<b>1 carb serving</b>)</p>
<p><b>AM Snack</b>                  6 Triscuit crackers (<b>1 carb serving</b>)                  2 Tbsp hummus</p>
<p><b>Lunch</b>                  2 slices 100% whole wheat bread (<b>2 carb servings</b>)                  2 oz lean turkey                  ¼ avocado, sliced                  17 grapes (<b>1 carb serving</b>)                  Raw carrot and celery sticks                  1-2 Tbsp low fat salad dressing as dip</p>

<p><b>PM Snack</b>                  1 cup of Greek yogurt (<b>1 carb serving</b>)</p>
<p><b>Evening Meal</b>                  3 oz skinless chicken breast                  ½ large baked potato (<b>2 carb servings</b>)                  2 Tbsp light sour cream                  ½ cup cooked broccoli                  Small dinner salad with 1 Tbsp salad dressing                  1 cup skim milk (<b>1 carb serving</b>)                  1 cup strawberries (<b>1 carb serving</b>)</p>
<p><b>Evening Snack</b>                  3 cups light popcorn (<b>1 carb serving</b>)                  2 Tbsp almonds</p>

If you are a UW Health patient and have more questions please contact UW Health at one of the phone numbers listed below. You can also visit our website at [www.uwhealth.org/nutrition](http://www.uwhealth.org/nutrition).

Nutrition clinics for UW Hospital and Clinics (UWHC) and American Family Children’s Hospital (AFCH) can be reached at: **(608) 890-5500.**

Nutrition clinics for UW Medical Foundation (UWMF) can be reached at: **(608) 287-2770.**

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person’s health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright ©3/2023 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#396.