A PATIENT’S GUIDE

A “hypoglycemic disorder” is a condition in which you experience the effects of hypoglycemia, the medical term for low blood sugar (or blood glucose). Glucose is the “fuel” that your brain and body need to function properly. It’s important to maintain levels of blood sugar that are healthy: not too high and not too low. If hypoglycemia is not corrected right away, it can quickly worsen. You may become very confused and unable to care for yourself. In severe cases, you may even lose consciousness, have a seizure, or go into a coma.

This patient guide is designed to help adults with hypoglycemic disorders partner with their physicians to reach their treatment goals. The guide is based on clinical guidelines written by an expert group of doctors from The Endocrine Society offering recommendations to doctors about how best to 1) confirm that an adult patient has a hypoglycemic disorder, 2) determine its cause, and 3) prevent its recurrence.

What determines whether a hypoglycemic disorder exists?

Doctors must distinguish between a hypoglycemic disorder and other conditions that have some of the same signs and symptoms. A hypoglycemic disorder can’t be diagnosed with confidence simply on the basis of low blood sugar. The clinical guidelines recommend that doctors use three criteria often referred to as “Whipple’s triad” to diagnose a hypoglycemic disorder. The three components of Whipple’s triad are 1) signs and symptoms of hypoglycemia, 2) low blood sugar measured by a reliable chemical test, and 3) disappearance of signs and symptoms after the blood sugar level is raised.

What are the signs and symptoms of hypoglycemia?

If your blood sugar drops below about 55 mg/dL (normal is 70 mg/dL), you may experience one or more of the following symptoms, depending on how low your blood sugar has fallen:
• an urgent need to eat
• nervousness and shakiness
• perspiration
• dizziness
• sleepiness
• confusion
• difficulty speaking
• feeling anxious or weak
• seizure or convulsion
• loss of consciousness, coma

What causes hypoglycemic disorders?

In adults with diabetes. The most common cause of hypoglycemia is a side effect of diabetes treatment. This may occur with insulin or antidiabetes drugs (oral or injectable), which may be used alone or in combination with insulin to keep blood sugar levels under control. Excessive or poorly timed dosing of insulin, the wrong type of insulin or diabetes medication, or failure to coordinate eating and exercise with the timing and dose of medications are common reasons for hypoglycemia.

In adults without diabetes. The cause of hypoglycemia must be determined on the basis of your medical history, physical exam, and laboratory tests. Possible causes include drugs, critical illnesses, hormone deficiency (particularly the adrenal hormone cortisol), and, rarely, “non-islet cell” tumors that produce an insulin-like substance. The drugs most likely to be responsible for hypoglycemia are:
• alcohol
• pentamidine (an antimicrobial)
• quinine (malaria treatment, sometimes used for muscle cramps)
• indomethacin (a nonsteroidal anti-inflammatory drug)
• chloroquine (malaria prevention, treatment for rheumatoid arthritis and lupus)
How can you help your doctor diagnose and manage your hypoglycemic disorder?

You and your doctor should be partners in your care. Be prepared to fully describe the history of your hypoglycemic spells, noting your specific symptoms, when they happen and how long they last, and any factors (such as food, drink, exercise) that worsen or relieve the spell. Describe all medications you take and illnesses you have had, along with their treatment.

If you have diabetes the best way to avoid hypoglycemia is to test your blood sugar regularly, follow the diet and exercise plan suggested by your diabetes health care team, and always take your diabetes medications as recommended. Ask your doctor if your diabetes medication can produce or contribute to hypoglycemia. If it can, ask whether you need to take additional precautions, such as having injectable glucagon (a hormone that raises blood sugar) and sugar tablets on hand in case of an emergency.

Follow your doctor’s advice for treatment and see him or her regularly for testing and monitoring of your condition.

How can a recurrence of hypoglycemia be prevented?

In adults with diabetes. You should become concerned about developing hypoglycemia when your self-monitored blood sugar is falling rapidly or is less than 70 mg/dL. If you experience symptoms of hypoglycemia, it is important to check your blood sugar level. If it is low, you should eat or drink something that contains about 20 grams of carbohydrate. It may take 15 to 20 minutes for your symptoms to improve. Once your blood sugar is normalized, you should eat a substantial snack or meal to prevent your blood sugar from falling back again. You should check your blood sugar before taking insulin or any medication that stimulates insulin production. If you have repeated episodes of low blood sugar, changes in your diabetes treatment may be needed. If you have even a single episode of severe hypoglycemia, in which you are unable to care for yourself and need help from someone else, a careful review of your treatment regimen is strongly recommended.

In adults without diabetes. Prevention depends on the cause of your hypoglycemia. Your doctor will determine the best approach to managing your condition.

The critical illnesses most likely to cause hypoglycemia are:

- liver, kidney, or heart failure
- severe bacterial infections
- malaria

Although rare, hypoglycemia can be caused by your body producing too much insulin (a condition called endogenous hyperinsulinism). This condition can result from an insulinoma (a tumor of the insulin-producing cells of the pancreas) or an increase in the number of insulin-producing cells.

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Note to health care professionals: This patient guide is based on, and is intended to be used in conjunction with, the Endocrine Society’s clinical practice guidelines (available at www.endocrine.org/guidelines/index.cfm).