HYPOGLYCEMIA

(in People Who Do Not Have Diabetes)

Two types of hypoglycemia can occur in people who do not have diabetes:

(1) **Reactive hypoglycemia**, also called **postprandial hypoglycemia**, occurs within 4 hours after meals.

(2) **Fasting hypoglycemia,** also called **postabsorptive hypoglycemia,** is often related to an underlying disease.

Symptoms of both **reactive (postprandial)** and **fasting (postabsorptive)** hypoglycemia are similar to diabetes-related hypoglycemia. Symptoms may include hunger, sweating, shakiness, dizziness, light-headedness, sleepiness, confusion, difficulty speaking, anxiety, and weakness.

To find the cause of a patient's hypoglycemia, the doctor will use laboratory tests to measure blood glucose, insulin, and other chemicals that play a part in the body's use of energy.

REACTIVE HYPOGLYCEMIA

Diagnosis. To diagnose reactive hypoglycemia, the doctor may

- ask about signs and symptoms
- test blood glucose while the patient is having symptoms by taking a blood sample from the arm and sending it to a laboratory for analysis
- check to see whether the symptoms ease after the patient's blood glucose returns to 70 mg/dL or above after eating or drinking

A blood glucose level below 70 mg/dL at the time of symptoms and relief after eating will confirm the diagnosis. The oral glucose tolerance test is no longer used to diagnose reactive hypoglycemia because experts now know the test can actually trigger hypoglycemic symptoms.

Causes and Treatment. The causes of most cases of reactive hypoglycemia are still open to debate. Some researchers suggest that certain people may be more sensitive to the body's normal release of the hormone epinephrine, which causes many of the symptoms of hypoglycemia. Others believe deficiencies in glucagon secretion might lead to reactive hypoglycemia.

A few causes of reactive hypoglycemia are certain, but they are uncommon. Gastric—or stomach—surgery can cause reactive hypoglycemia because of the rapid passage of food into the small intestine. Rare enzyme deficiencies diagnosed early in life, such as hereditary fructose intolerance, also may cause reactive hypoglycemia.

To relieve reactive hypoglycemia, some health professionals recommend:

- eating small meals and snacks about every 3 hours
- being physically active
- eating a variety of foods, including meat, poultry, fish, or non-meat sources of protein; starchy foods such as whole-grain bread, rice, and potatoes; fruits; vegetables; and dairy products
- eating foods high in fiber
- avoiding or limiting foods high in sugar, especially on an empty stomach

The doctor can refer patients to a dietitian for personalized meal planning advice. Although some health professionals recommend a diet high in protein and low in carbohydrates, studies have not proven the effectiveness of this kind of diet to treat reactive hypoglycemia.

FASTING HYPOGLYCEMIA

Diagnosis. Fasting hypoglycemia is diagnosed from a blood sample that shows a blood glucose level below 50 mg/dL after an overnight fast, between meals, or after physical activity.

Causes and Treatment. Causes of fasting hypoglycemia include certain medications, alcoholic beverages, critical illnesses, hormonal deficiencies, some kinds of tumors, and certain conditions occurring in infancy and childhood.

Medications. Medications, including some used to treat diabetes, are the most common cause of hypoglycemia. Other medications that can cause hypoglycemia include

- salicylates, including aspirin, when taken in large doses
- sulfa medications, which are used to treat bacterial infections
- pentamidine, which treats a serious kind of pneumonia
- quinine, which is used to treat malaria

If using any of these medications causes a person's blood glucose level to fall, the doctor may advise stopping the medication or changing the dose.

Alcoholic beverages. Drinking alcoholic beverages, especially binge drinking, can cause hypoglycemia. The body's breakdown of alcohol interferes with the liver's efforts to raise blood glucose. Hypoglycemia caused by excessive drinking can be serious and even fatal.

Critical illnesses. Some illnesses that affect the liver, heart, or kidneys can cause hypoglycemia. Sepsis, which is an overwhelming infection, and starvation are other causes of hypoglycemia. In these cases, treating the illness or other underlying cause will correct the hypoglycemia.

Hormonal deficiencies. Hormonal deficiencies may cause hypoglycemia in very young children, but rarely in adults. Shortages of cortisol, growth hormone, glucagon, or epinephrine can lead to fasting hypoglycemia. Laboratory tests for hormone levels will determine a diagnosis and treatment. Hormone replacement therapy may be advised.

Tumors. Insulinomas are insulin-producing tumors in the pancreas. Insulinomas can cause hypoglycemia by raising insulin levels too high in relation to the blood glucose level. These tumors are rare and do not normally spread to other parts of the body. Laboratory tests can pinpoint the exact cause. Treatment involves both short-term steps to correct the hypoglycemia and medical or surgical measures to remove the tumor.

Re-cap re Hypoglycemia Unrelated to Diabetes

- In **reactive hypoglycemia**, symptoms occur within 4 hours of eating. People with reactive hypoglycemia are usually advised to follow a healthy eating plan recommended by a registered dietitian.
- **Fasting hypoglycemia** can be caused by certain medications, critical illnesses, hereditary enzyme or hormonal deficiencies, and some kinds of tumors. Treatment targets the underlying problem.
