

Hypoglycemia

A plain-English guide for you and your family

WHAT IS HAPPENING

Your body keeps blood sugar steady between meals and during sleep using a careful balance: the pancreas releases insulin (a hormone that lowers sugar by pushing it into cells) when sugar is high, and releases glucagon (a hormone that raises sugar by telling the liver to release stored sugar) when it drops. The liver stores sugar as glycogen (a starch-like backup fuel) and can make new sugar from protein if needed. The adrenal glands (two small glands above your kidneys) release cortisol and adrenaline (stress hormones that raise blood sugar fast), and the pituitary gland (a pea-sized control center at the base of your brain) directs the adrenals and keeps the whole system balanced. When this system breaks—because of too much insulin from medicine, a sulfonylurea pill (a diabetes drug that forces the pancreas to make more insulin), or alcohol blocking the liver from making new sugar, or because the adrenal or pituitary glands are failing, or a tumor is secretly dumping insulin, or the liver or kidneys are too sick to help, or you haven't eaten in too long—blood sugar drops below 70 mg/dL. Your brain and heart run only on sugar, so they send out an alarm: adrenaline floods your body, making you shake, sweat, and feel your heart race. If sugar stays low, the brain itself starts to fail—you get confused, then you may have a seizure, or pass out. Every one of these symptoms is your body fighting to survive, not the disease itself. When you give glucose (sugar) by mouth, IV, or glucagon shot, the fuel comes back, the alarm shuts off, and the symptoms reverse—sometimes in minutes. That quick fix proves the whole problem was low blood sugar all along.

What you might feel

- Shakiness or trembling
- Sweating without being hot
- Fast heartbeat or pounding in the chest
- Hunger that comes on suddenly
- Feeling dizzy, lightheaded, or confused
- Blurry vision or trouble seeing clearly
- Trouble speaking clearly or slurred words

- Sudden weakness or feeling like your legs might give out
- Seizure (jerking movements or loss of awareness)
- Loss of consciousness or passing out

Call the doctor right away if...

- Confusion, slurred speech, or not acting like yourself (the brain is running out of fuel)
- Seizure or uncontrollable shaking (brain cells are firing wildly from severe glucose starvation)
- Loss of consciousness or cannot be woken up (immediate emergency — give glucagon injection or call 911)
- Low blood sugar (Hypoglycemia) happening often without a clear reason (may signal an insulin-producing tumor, adrenal failure, or liver disease)
- Severe low blood sugar after drinking alcohol (alcohol blocks the liver from making new glucose)

What the care team will do

- Check blood glucose with a fingerstick meter immediately, before giving any treatment
- Give 15 to 20 grams of fast-acting carbohydrate by mouth if the patient is awake and can swallow safely (4 glucose tablets, half cup of juice, or 1 tablespoon of sugar dissolved in water)
- If the patient cannot swallow or is unconscious, establish IV access and push one amp of D50 (50 percent dextrose, 25 grams of sugar in 50 mL) over 3 to 5 minutes, or give 1 mg glucagon intramuscular injection if no IV is available
- Recheck blood glucose exactly 15 minutes after giving glucose or dextrose, and repeat the same dose if the level is still under 70
- Once blood sugar is above 70 and stable, give a snack with protein and complex carbohydrate (like cheese and crackers or peanut butter and bread) within 30 minutes
- Monitor blood glucose every 15 minutes for the first hour, then hourly for 4 hours after the episode, watching for repeat lows
- Identify and document the cause (missed meal, wrong insulin dose, new medicine, infection, alcohol, exercise), and notify the provider to adjust the diabetes treatment plan
- Teach the patient and family to recognize early symptoms (shakiness, sweating, hunger, confusion), carry glucose tablets or candy at all times, and wear a medical alert bracelet

Medicines you may be given — and why

Oral glucose (15-20 grams)

This is pure sugar you swallow—glucose tablets, juice, or candy. It moves straight from your stomach into your blood within minutes, bringing blood sugar back up fast. It works only if you are awake enough to swallow safely.

Dextrose 50% (D50), 1 ampule (25 grams) intravenous

This is a thick sugar solution injected directly into a vein. It bypasses the stomach and dumps glucose straight into the bloodstream, raising blood sugar within 1-2 minutes. It is used when someone cannot swallow or is unconscious.

Glucagon, 1 mg injection (intramuscular or subcutaneous)

Glucagon is a natural hormone your pancreas makes to raise blood sugar. The injection version tells your liver to break down its stored sugar (glycogen) and dump it into the blood. It works in 10-15 minutes and does not require the person to be awake or able to swallow.

Octreotide, 50-100 mcg subcutaneous every 6-12 hours

Octreotide is a lab-made copy of somatostatin, a natural hormone that tells the pancreas to stop releasing insulin. It is used for low blood sugar (hypoglycemia) caused by sulfonylurea pills (such as glyburide or glipizide), which force the pancreas to keep squeezing out insulin even when blood sugar is already low. Octreotide slams the brakes on that unwanted insulin release.

Continuous intravenous dextrose infusion (D5W or D10W)

This is a steady drip of sugar water into a vein, used when low blood sugar (hypoglycemia) keeps coming back—such as after a large insulin dose, sulfonylurea overdose, or in someone who cannot eat. It delivers a constant trickle of glucose to keep blood sugar from crashing again while the body clears the cause.

Where this information comes from

- American Diabetes Association Standards of Care 2024
- Endocrine Society Clinical Practice Guideline on Hypoglycemia
- AMA
- UpToDate

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