

Type 2 Diabetes

A plain-English guide for you and your family

WHAT IS HAPPENING

Your body has a fuel-delivery system. After you eat, your blood sugar rises. The pancreas (a small organ behind your stomach) releases insulin, a chemical messenger that unlocks the doors on muscle, fat, and liver cells so sugar can step inside and give you energy. In type 2 diabetes, two things break. First, those cell doors get jammed—extra weight, family genes, and sitting still make the doors stop listening to insulin's knock (insulin resistance). Second, the pancreas tries harder and harder to make extra insulin to force the doors open, but over time the beta cells (the insulin factories inside the pancreas) wear out and cannot keep up. Now sugar piles up in the blood instead of fueling your cells. You often feel fine for years because your body hides the problem—until your hemoglobin A1c (a three-month average of blood sugar) climbs high. Then you pee a lot (kidneys dump extra sugar into urine to dilute it), feel tired (cells are starving even though blood is sweet), and see blurry (high sugar swells the lens in your eye). Over time, thick sticky blood damages small vessels (eyes, kidneys, nerves) and large vessels (heart, brain), raising the risk of blindness, kidney failure, numbness, heart attack, and stroke. None of this is random—it all traces back to cells that will not listen and a pancreas that is running out of steam.

What you might feel

- Drinking much more water than usual (polydipsia)
- Peeing a lot more often, especially at night (polyuria)
- Feeling tired or worn out most of the time
- Blurry vision
- Cuts, sores, or infections that heal slowly
- Tingling, numbness, or pain in the hands or feet
- Darkened skin patches, especially in the armpits or neck (acanthosis nigricans)
- Losing weight without trying
- Feeling hungrier than usual, even after eating

Call the doctor right away if...

- Confusion, extreme sleepiness, or trouble waking up (can mean very high blood sugar or a dangerous complication called hyperosmolar hyperglycemic state)
- Fruity-smelling breath, deep fast breathing, nausea, or vomiting (can mean diabetic ketoacidosis (the acid crisis of missing insulin), though rare in type 2; more common if also low insulin)
- New severe belly pain, especially with nausea or fever (can mean pancreatitis or infection that spreads fast in high sugar)
- Sudden vision loss or severe eye pain (can mean bleeding in the eye or pressure buildup from diabetic eye damage)
- A foot wound or ulcer that won't heal, with redness, warmth, or bad smell (can mean serious infection or loss of blood flow that may lead to amputation if not treated quickly)

What the care team will do

- Check blood glucose (blood sugar level) with fingerstick or review recent hemoglobin A1c (a blood test showing average sugar over 3 months) to confirm diagnosis and measure how high sugar is right now
- Measure blood pressure and confirm it is below 130 over 80, or notify provider if above this target
- Calculate body mass index and discuss losing 5 to 10 percent of current weight through eating fewer calories and exercising 150 minutes each week
- Teach how to take Metformin (a pill that lowers liver sugar production) starting at 500 mg once or twice daily with food, and warn about diarrhea and stomach upset that usually improve after 2 weeks
- Examine both feet for skin breaks, redness, blisters, or calluses, and teach patient to check feet daily and wear shoes at all times
- Schedule or confirm appointments for dilated eye exam (when drops widen the pupil so doctor sees the retina), urine test for albumin (a protein showing kidney damage), and lipid panel (cholesterol blood test)
- Discuss starting a statin (a cholesterol-lowering pill like atorvastatin) if patient is age 40 to 75, because most diabetes patients need this for heart protection
- Teach signs of low blood sugar (hypoglycemia) including shakiness, sweating, confusion, and fast heartbeat, and explain to eat 15 grams of fast sugar like juice or glucose tablets if sugar drops below 70

Medicines you may be given — and why

Metformin

Metformin tells the liver to make less sugar and helps muscle cells grab sugar from the blood more easily. It does not force the pancreas to squeeze out more insulin; instead, it helps the body use the insulin it already has. This keeps blood sugar from climbing too high without pushing it dangerously low.

Empagliflozin, canagliflozin, dapagliflozin (examples of SGLT2 inhibitors)

These pills make your kidneys dump extra sugar into the urine instead of recycling it back into the blood. By forcing sugar out through urine, blood sugar drops. As a bonus, you lose a little water and salt too, which takes strain off the heart and kidneys. This is why doctors choose SGLT2 inhibitors first for people with type 2 diabetes who also have heart failure or chronic kidney disease.

Semaglutide, dulaglutide, liraglutide (examples of GLP-1 receptor agonists)

These injections copy a natural gut hormone (GLP-1) that your intestines release after you eat. GLP-1 tells the pancreas to make insulin only when blood sugar is rising, slows down how fast your stomach empties, and dials down your appetite in the brain. Because you feel full longer and eat less, most people lose significant weight. GLP-1 agonists also protect the heart, so they are a top choice if you have type 2 diabetes plus heart disease or if you need to lose weight.

Glargine, degludec, detemir (examples of basal insulin)

Basal insulin is a slow, steady drip of insulin that mimics what a healthy pancreas releases all day and night to keep blood sugar stable between meals. You inject it once or twice a day, and it works around the clock to let sugar move from blood into cells. Doctors add basal insulin when pills and other injections can no longer keep blood sugar in range, or right away if your sugar is dangerously high at diagnosis.

Atorvastatin, rosuvastatin (examples of statins)

Statins lower LDL cholesterol (the 'bad' cholesterol that clogs arteries) by blocking the liver's cholesterol factory. High blood sugar damages artery walls, and cholesterol sticks to the damage, building plaques that can cause heart attacks and strokes. Every adult with type 2 diabetes age 40–75 (and many younger or older patients with extra risk) should take a statin to protect the heart and blood vessels, even if cholesterol levels look okay.

Aspirin (low-dose, 81 mg)

Aspirin stops platelets (tiny blood cells that form clots) from clumping together. In people with diabetes, high sugar and inflammation make blood stickier, raising the risk of clots that cause

heart attacks and strokes. Low-dose aspirin is recommended for adults with diabetes who have already had a heart attack or stroke (secondary prevention) and may be used for primary prevention in those at high cardiovascular risk (age ≥ 50 with additional risk factors) after weighing bleeding risk.

Lisinopril, enalapril (examples of ACE inhibitors) OR Losartan, valsartan (examples of ARBs)

These pills block a hormone system (the renin-angiotensin system) that tightens blood vessels and raises blood pressure. High blood pressure and high blood sugar together damage the tiny filters in the kidneys and the blood vessels throughout the body. ACE inhibitors and ARBs relax blood vessels, lower blood pressure (goal $<130/80$ in diabetes), and protect the kidneys from further harm. They are the first choice for blood pressure control in diabetes, especially if you already have protein in your urine (a sign of kidney damage).

Where this information comes from

- American Diabetes Association Standards of Care 2024
- CDC Diabetes Prevention and Management
- AACE/ACE Comprehensive Type 2 Diabetes Management Algorithm
- ADA/EASD Consensus Report on Type 2 Diabetes Management

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