

Stroke Window

A plain-English guide for you and your family

WHAT IS HAPPENING

Your brain has a network of arteries that carry oxygen-rich blood to every part of the brain. Each brain region has its own job: one area controls your arm, another your speech, another your vision, and so on. Normally, blood flow stays steady even when your blood pressure goes up or down, because the arteries widen or tighten automatically (this is called autoregulation). And if one artery gets partly blocked, backup vessels (collaterals) can sometimes pitch in and keep the tissue fed. When a stroke happens, a clot suddenly plugs one of those arteries. The brain tissue directly downstream dies within minutes (the core). But around the edges, a zone called the penumbra is still getting a trickle of blood from those backup vessels — it's drowning but not yet dead. If doctors can clear the clot fast enough, the penumbra can be saved. The symptoms tell the team exactly which artery is blocked: a clot in the middle cerebral artery (the big one on the side) causes face droop, arm weakness, and slurred or lost speech; a clot in the anterior cerebral artery (the front one) paralyzes the leg; a clot in the posterior cerebral artery (the back one) wipes out part of your vision; and a clot in the basilar artery (the trunk that feeds both sides of the brainstem) can lock you in or drop you into a coma. Your body fights back by jacking up blood pressure to try to ram blood through the narrowed zone, so stroke patients often arrive with sky-high pressures — and the team must not drop that pressure too fast in the first hours, because the penumbra is counting on that extra push to survive. Time is brain.

What you might feel

- Sudden weakness or numbness on one side of the face, arm, or leg
- Sudden trouble speaking or slurred speech
- Sudden vision loss or blurred vision in one or both eyes
- Sudden severe headache with no clear cause
- Sudden dizziness, loss of balance, or trouble walking
- Sudden confusion or trouble understanding what is happening
- Face droop on one side (one side of the smile sags)
- Arm drift (one arm drifts downward when both arms are held out)

Call the doctor right away if...

- Symptoms started less than 24 hours ago (the treatment window is still open—this is a medical emergency)
- Sudden severe headache, vomiting, or decreased alertness (may signal bleeding in the brain)
- Blood pressure over 185/110 mm Hg (high pressure raises the risk of bleeding if clot-busting medicine is given)
- Blood sugar below 50 mg/dL or above 400 mg/dL (very low or very high sugar can mimic stroke and must be fixed first)
- Patient is on blood thinners or has a bleeding disorder (raises the risk of dangerous bleeding during treatment)

What the care team will do

- Establish exact last known well time and notify the stroke team immediately so the physician can evaluate for thrombolysis within 4.5 hours.
- Check blood pressure every 15 minutes and keep it under 185/110 mmHg before thrombolysis and under 180/105 mmHg for 24 hours after thrombolysis, using IV labetalol or nicardipine as ordered.
- Maintain the head of the bed flat or at 30 degrees or less unless the patient has airway concerns, and avoid flexing the neck.
- Keep the patient NPO (nothing by mouth) until a swallow screen or formal swallow evaluation confirms safe swallowing.
- Perform hourly neurologic checks using the NIHSS or a facility-approved stroke scale, and report any worsening immediately.
- Check fingerstick blood glucose immediately and treat if under 60 mg/dL, then recheck every 4 hours for the first 24 hours.
- Establish two large-bore IV lines (18-gauge or larger) before thrombolysis, and avoid arterial punctures, central lines, Foley catheters, or NG tubes until at least 24 hours after thrombolysis.
- Administer aspirin 325 mg orally or rectally 24 hours after thrombolysis, or immediately if the patient did not receive thrombolysis, unless contraindicated.

Medicines you may be given — and why

Alteplase (tPA) or tenecteplase (TNK)

Breaks apart the blood clot blocking the artery in the brain so oxygen-rich blood can flow again and save dying brain cells.

Aspirin

Stops platelets (tiny blood cells that start clots) from sticking together, making clots less likely to form or grow in brain arteries.

Clopidogrel (Plavix) or ticagrelor (Brilinta)

Blocks a different platelet signal (the P2Y12 receptor) so platelets can't clump even when other 'stick' signals are present. Used alone or with aspirin for higher-risk minor strokes.

Atorvastatin (Lipitor) or rosuvastatin (Crestor)

Lowers cholesterol, especially LDL ('bad' cholesterol), and stabilizes the fatty plaques in arteries so they are less likely to crack open and trigger a clot.

Warfarin (Coumadin) or apixaban (Eliquis), rivaroxaban (Xarelto), dabigatran (Pradaxa), edoxaban (Savaysa)

Slows the blood's clotting cascade so clots are less likely to form in the heart (especially the left atrial appendage in atrial fibrillation (an irregular, quivering heartbeat)) and travel to the brain.

Antihypertensives (e.g. lisinopril, amlodipine, losartan, hydrochlorothiazide)

Lowers blood pressure to reduce the chronic strain on artery walls, slowing plaque buildup and lowering the chance of another stroke.

Where this information comes from

- AHA/ASA 2019 Guidelines for the Early Management of Acute Ischemic Stroke
- European Stroke Organisation 2021 guidelines
- CDC Stroke Facts
- The Lancet Neurology 2020 acute stroke review

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