# Stroke - Management Guidelines

## Current evidence for recognition, reperfusion, acute care, prevention, and recovery

Audience: APRN | Contact hrs: 1.4 | Pharmacology hrs: 0.5

Expected revision: October 3, 2028

Pharmacology hours are included in the total contact hours.

### Educational purpose

This article translates current stroke-management guidance into bedside and advanced-practice decisions, with emphasis on rapid recognition, imaging, reperfusion, blood-pressure and glucose management, antithrombotic therapy, complication prevention, secondary prevention, and recovery planning.

### Learning outcomes

- Differentiate immediate management priorities for ischemic stroke and intracerebral hemorrhage after initial stabilization and imaging.
- Apply current eligibility, dosing, timing, and monitoring principles for intravenous thrombolysis with alteplase or tenecteplase.
- Identify contemporary endovascular thrombectomy candidates, including selected patients with large ischemic cores and basilar artery occlusion.
- Select appropriate acute blood-pressure, glucose, oxygenation, antiplatelet, and anticoagulation strategies for common stroke scenarios.
- Integrate secondary prevention and rehabilitation priorities into transition planning after stroke.
- Recognize nursing and APRN safety actions that require urgent escalation during reperfusion and early recovery.

### Introduction

Stroke management is time-sensitive, but speed alone is not enough. The clinical team must rapidly establish the patient's last-known-well time, neurologic deficit, baseline function, blood glucose, blood pressure, medication exposure, and brain imaging findings while preserving airway and circulation. The 2026 American Heart Association/American Stroke Association (AHA/ASA) acute ischemic stroke guideline replaces the 2018 guideline and 2019 update and expands the role of tenecteplase, thrombectomy, mobile stroke units, and imaging-selected reperfusion (Prabhakaran et al., 2026).

The source article correctly emphasized reperfusion and secondary prevention, but several of its recommendations are now obsolete. Mechanical thrombectomy is no longer a niche rescue strategy; it is standard care for eligible large-vessel occlusion and has expanded into selected large-core and posterior-circulation populations. Tenecteplase is now a guideline-recommended thrombolytic option within 4.5 hours, and in the United States it has an FDA indication for adult acute ischemic stroke, although the U.S. label specifies initiation within 3 hours. This distinction matters when applying guideline-supported treatment between 3 and 4.5 hours (FDA, 2025; Prabhakaran et al., 2026).

**Stroke-code pathway**

Recognize + activate
Last known well, baseline function, NIHSS, glucose, airway.

Image rapidly
Noncontrast CT first; add CTA/MRA for suspected LVO.

Choose reperfusion
IV thrombolysis when eligible; EVT for appropriate vessel occlusion.

Monitor in parallel
BP, neurologic status, anticoagulant exposure, transfer logistics.

Figure 1. Parallel stroke-code priorities based on Green et al. (2021) and Prabhakaran et al. (2026).

## Initial assessment and imaging

### Activate the stroke pathway early

Use a validated stroke screen and obtain the exact last-known-well time, symptom discovery time, and baseline functional status. A wake-up stroke should not be assigned a false onset time; advanced imaging may identify patients who remain candidates for reperfusion. Notify the stroke team and imaging department while airway, glucose, intravenous access, weight, and medication history are obtained in parallel (Green et al., 2021; Prabhakaran et al., 2026).

### Airway and oxygenation

Provide airway support when consciousness, bulbar function, or ventilation is inadequate. Supplemental oxygen is indicated for hypoxemia; routine oxygen for a nonhypoxic patient is not recommended. Aspiration risk, dysphagia, secretions, and declining mental status require active nursing surveillance because neurologic deterioration can be rapid.

### Glucose and temperature

Correct clinically significant hypoglycemia because it can mimic stroke and worsen injury. Persistent marked hyperglycemia should be treated while avoiding hypoglycemia. The 2026 guideline specifically advises against intensive insulin treatment targeting 80–130 mg/dL because it does not improve functional outcome and increases severe hypoglycemia; treatment of glucose above 180 mg/dL is reasonable with monitoring (Prabhakaran et al., 2026). Fever should trigger evaluation and treatment of the cause, with avoidance of sustained hyperthermia.

### Imaging

Noncontrast head CT remains the fastest common test to exclude hemorrhage. CTA or MRA should be obtained promptly when large-vessel occlusion is suspected, and advanced perfusion or diffusion imaging can support treatment selection in extended windows. Additional imaging should not delay otherwise eligible thrombolysis within 4.5 hours (Prabhakaran et al., 2026).

**Case 1 - thrombolysis and transfer**

A 67-year-old woman develops sudden aphasia and right arm weakness 70 minutes before arrival. NIHSS is 8. CT shows no hemorrhage; CTA shows a left M1 occlusion. Blood pressure is 172/96 mm Hg, glucose 132 mg/dL, and she is not anticoagulated. The team should not choose between thrombolysis and thrombectomy as competing therapies. If she has no contraindication, give IV tenecteplase 0.25 mg/kg (max 25 mg) or alteplase 0.9 mg/kg promptly and proceed to EVT-capable care without delaying transfer. Continue blood-pressure and neurologic monitoring while the thrombectomy pathway runs in parallel.

## Intravenous thrombolysis

For an adult with a disabling acute ischemic stroke who is eligible for intravenous thrombolysis within 4.5 hours of symptom onset or last known well, treatment should begin as quickly as possible. The 2026 guideline recommends either tenecteplase 0.25 mg/kg IV as a single bolus, maximum 25 mg, or alteplase 0.9 mg/kg IV, maximum 90 mg, with 10% given as a one-minute bolus and the remainder infused over 60 minutes (Prabhakaran et al., 2026). Tenecteplase 0.40 mg/kg should not be used for acute ischemic stroke because higher-dose trials did not improve outcomes and raised safety concerns.

In the United States, tenecteplase became FDA-approved for adult acute ischemic stroke in 2025. The FDA label specifies treatment as soon as possible and within 3 hours after symptom onset, while the 2026 AHA/ASA guideline recommends tenecteplase or alteplase for guideline-eligible adults within 4.5 hours. Therefore, tenecteplase use from 3 to 4.5 hours is guideline-supported but outside the current U.S. label timing statement; institutional policy and prescriber judgment should address this explicitly (FDA, 2025;

Prabhakaran et al., 2026).

Before IV thrombolysis, blood pressure should be reduced to below 185/110 mm Hg and maintained below 180/105 mm Hg for at least 24 hours afterward. Obtain frequent neurologic and blood-pressure assessments: every 15 minutes during and after treatment for 2 hours, every 30 minutes for 6 hours, then hourly until 24 hours. After thrombolysis, avoid antiplatelet and anticoagulant therapy until follow-up CT or MRI at approximately 24 hours excludes hemorrhage unless a compelling indication is managed by the stroke team (Prabhakaran et al., 2026).

Eligibility is based on the entire clinical picture rather than a short, outdated list of absolute exclusions. Important concerns include intracranial hemorrhage on imaging, active internal bleeding, recent intracranial surgery or serious head trauma, severe uncontrolled hypertension, certain anticoagulant exposures, and other conditions associated with unacceptable bleeding risk. Mild symptoms can still be disabling; conversely, selected nondisabling minor strokes may be better managed with antiplatelet therapy rather than thrombolysis. Local protocols should reflect the full 2026 guideline and current product labeling.

**Reperfusion windows**

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| 0-4.5 h<br>Guideline IVT: alteplase or TNK 0.25 mg/kg for eligible adults. |
| U.S. TNK label<br>Current label specifies initiation within 3 hours. |
| 6-24 h<br>Selected anterior-circulation LVO and basilar occlusion may benefit from EVT. |
| 4.5-9 h / wake-up<br>Selected patients may receive IVT when advanced imaging shows salvageable tissue. |

Figure 2. Guideline and U.S. label windows are not identical.

## Extended-window reperfusion

Selected patients with an unknown onset or a 4.5-to-9-hour interval from last known well may still be candidates for IV thrombolysis when automated perfusion imaging demonstrates salvageable tissue. Patients who awaken with symptoms may also qualify when imaging demonstrates a favorable mismatch. When a patient has a treatable large-vessel occlusion, IV thrombolysis should not delay thrombectomy; eligible patients may receive both therapies in sequence. Evidence does not support routine late thrombolysis when rapid thrombectomy is available without appropriate imaging selection (Prabhakaran et al., 2026).

## Endovascular thrombectomy

Endovascular thrombectomy (EVT) is recommended for eligible anterior-circulation large-vessel occlusion, especially internal carotid artery or proximal middle cerebral artery occlusion. Within 6 hours, patients with clinically significant deficits and favorable imaging should proceed rapidly to EVT. The 2026 guideline also incorporates randomized trials showing benefit in selected patients with larger ischemic cores. For example, selected patients younger than 80 years with ICA or M1 occlusion, NIHSS score at least 6, prestroke modified Rankin Scale (mRS) 0–1, and ASPECTS 3–5 may benefit from EVT up to 24 hours when there is no significant mass effect (Prabhakaran et al., 2026; Sarraj et al., 2023).

Posterior circulation practice has also changed. For basilar artery occlusion, EVT within 24 hours is recommended in selected patients with low prestroke disability, NIHSS score at least 10, and limited established ischemic injury such as PC-ASPECTS at least 6. These recommendations replace the older source article’s conclusion that thrombectomy evidence was too uncertain for general use. Medium-vessel thrombectomy remains an evolving area; current trial results have not established routine benefit for all distal or medium-vessel occlusions, so treatment should be individualized in experienced centers.

Preprocedural blood pressure is commonly managed at or below approximately 185/110 mm Hg based on trial protocols. After successful EVT, intensive systolic lowering below 140 mm Hg is harmful and should not be routine. The goal is controlled, individualized

pressure that avoids both reperfusion-related hemorrhage and hypoperfusion of vulnerable tissue (Prabhakaran et al., 2026).

**Case 3 - blood pressure after successful EVT**

A 74-year-old patient undergoes successful thrombectomy with complete reperfusion. Postprocedure systolic pressure is 168 mm Hg. A request is made to lower systolic pressure aggressively to 115 mm Hg. Current evidence argues against that target. Intensive lowering below 140 mm Hg after successful EVT can worsen functional outcomes. The safer plan is protocol-based control that avoids severe hypertension while preserving cerebral perfusion.

## Blood pressure and supportive care

Blood pressure targets differ according to reperfusion status. In patients who have not received thrombolysis or thrombectomy and who have no other hypertensive emergency, active lowering during the first 48–72 hours is generally not beneficial when pressure is below 220/120 mm Hg. If blood pressure is markedly above that level, or another acute condition requires treatment, a cautious initial reduction of about 15% is reasonable. Abrupt reductions can worsen cerebral perfusion in tissue with impaired autoregulation (Prabhakaran et al., 2026).

For thrombolysis candidates, reduce blood pressure to below 185/110 mm Hg before treatment and maintain below 180/105 mm Hg afterward. Labetalol, nicardipine, or clevidipine are commonly used because they can be titrated quickly. The exact agent should reflect heart rate, cardiac function, access, and institutional protocol. After IV thrombolysis, intensive systolic targets below 140 mm Hg do not improve function; after successful EVT, such intensive lowering may worsen outcome (Prabhakaran et al., 2026).

**Blood-pressure guardrails**

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| Before IVT<br>Reduce to <185/110 mm Hg. |
| After IVT<br>Maintain <180/105 for at least 24 h; avoid routine SBP <140. |
| Before EVT<br><=185/110 is reasonable from trial protocols. |
| After successful EVT<br>Avoid intensive SBP lowering <140. |
| No reperfusion<br>Usually observe if <220/120 unless another emergency requires treatment. |

Figure 3. Common adult AIS BP targets (Prabhakaran et al., 2026).

## Antiplatelet therapy

Aspirin remains foundational for acute noncardioembolic ischemic stroke when hemorrhage has been excluded and thrombolysis-related timing restrictions are respected. For minor noncardioembolic stroke or high-risk TIA that did not receive IV thrombolysis, short-course dual antiplatelet therapy (DAPT) can reduce early recurrence. The 2026 guideline supports aspirin plus clopidogrel for 21 days in selected patients who present early, including certain minor strokes and high-risk TIAs, followed by single antiplatelet therapy. Long-term DAPT is not routine secondary prevention because bleeding risk rises without continued net benefit (Kleindorfer et al., 2021; Prabhakaran et al., 2026).

The 2023 INSPIRES trial broadened evidence for starting DAPT up to 72 hours in selected mild ischemic stroke or high-risk TIA with presumed atherosclerotic mechanism. This is not a reason to automatically give DAPT to every stroke patient. Cardioembolic stroke, major stroke, planned thrombolysis, active bleeding, or high hemorrhagic risk can change the decision (Gao et al., 2023).

**Case 2 - nondisabling minor stroke**

A 59-year-old man presents 2 hours after isolated mild numbness and subtle nondominant hand clumsiness. NIHSS is 2, symptoms are judged nondisabling, CT excludes hemorrhage, and CTA shows moderate ipsilateral carotid atherosclerosis without LVO. After stroke-team evaluation, short-term DAPT may be more appropriate than thrombolysis if he meets the guideline profile for minor noncardioembolic stroke and has acceptable bleeding risk. The decision must be individualized because 'low NIHSS' does not automatically mean nondisabling.

## Anticoagulation and atrial fibrillation

Urgent full-dose anticoagulation is not a substitute for reperfusion and is not routinely recommended to improve outcomes in acute ischemic stroke. For atrial fibrillation–associated ischemic stroke, long-term oral anticoagulation is usually indicated once hemorrhagic transformation risk is acceptable. The optimal start time is individualized according to infarct size, neurologic severity, bleeding risk, renal function, and imaging. Recent randomized trials support earlier initiation in carefully selected patients rather than a rigid waiting rule (Fischer et al., 2023; Werring et al., 2024).

The 2026 guideline states that early oral anticoagulation is reasonable in carefully selected, generally milder atrial-fibrillation–associated strokes, although early therapy has not been proven to prevent every early recurrent event. For nonvalvular atrial fibrillation, direct oral anticoagulants are usually preferred over warfarin when no contraindication exists. Mechanical heart valves, moderate-to-severe rheumatic mitral stenosis, severe renal dysfunction, drug interactions, affordability, and adherence can change the choice. Exact product dosing depends on indication, kidney function, age, weight, and interacting medications and should follow current prescribing information and institutional policy.

**Case 4 - AF and anticoagulation timing**

An 81-year-old patient with newly recognized atrial fibrillation has a small cortical infarct and no hemorrhagic transformation on follow-up imaging. Rather than applying a fixed 12- or 14-day delay, the team weighs infarct size, neurologic stability, renal function, fall and bleeding risks, and imaging. Contemporary randomized evidence supports earlier DOAC initiation in carefully selected patients, with the exact timing decided by the treating stroke team.

## When imaging shows hemorrhage

A noncontrast CT that shows intracerebral hemorrhage immediately changes the pathway. Stop plans for thrombolysis and urgently manage blood pressure, anticoagulant reversal, neurosurgical or neurocritical care needs, and complications such as hydrocephalus. For mild-to-moderate spontaneous ICH with presenting systolic blood pressure between 150 and 220 mm Hg, the 2022 AHA/ASA guideline supports smooth, sustained reduction toward approximately 140 mm Hg with maintenance in the 130–150 mm Hg range when appropriate; lowering below 130 mm Hg can be harmful (Greenberg et al., 2022).

Anticoagulant-associated ICH requires rapid identification of the drug and last dose. Four-factor prothrombin complex concentrate plus intravenous vitamin K is preferred for urgent warfarin reversal. Idarucizumab reverses dabigatran. Factor Xa inhibitor reversal options have changed and should be checked against current FDA safety communications, product availability, and institutional protocol. Because reversal recommendations evolve, stroke teams should use current pharmacy-supported pathways rather than relying on older statements that no specific DOAC antidotes exist.

## Nursing priorities and early complications

### Neurologic surveillance

Trend the NIHSS or a standardized neurologic examination, pupillary response, speech, motor function, level of consciousness, and new headache, vomiting, or hypertension. A sudden change after reperfusion should trigger immediate imaging and stroke-team notification.

### Swallowing and aspiration

Keep the patient NPO until an approved swallow screen is completed. Escalate coughing, wet voice, reduced alertness, or inability to handle secretions. Early dysphagia management reduces preventable pulmonary complications.

### Mobility and VTE prevention

Use intermittent pneumatic compression for immobile patients when not contraindicated and follow unit protocols for pharmacologic prophylaxis. Avoid high-dose, very early mobilization in the first 24 hours; after 24 hours, rehabilitation should progress with appropriate task practice and exercise intensity (Richards et al., 2026).

### Skin, bladder, bowel, and lines

Reduce unnecessary catheters and invasive lines, protect pressure points, mobilize safely, and assess urinary retention or infection risk. After thrombolysis, defer nonessential invasive procedures when feasible during the high-risk period.

### Communication and cognition

Assess language, neglect, vision, cognition, mood, and communication needs. Use supported communication and involve care partners without speaking over the patient. Document the patient's baseline and changes clearly during transfers.

**Secondary prevention by mechanism**

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| Noncardioembolic | Antiplatelet therapy plus vascular risk-factor control. |
| Atrial fibrillation | Oral anticoagulation when safe; individualize agent and timing. |
| Large-artery disease | Aggressive medical therapy; selected carotid revascularization. |
| Recovery | Rehab, dysphagia/cognition follow-up, mood screening, care-partner training. |

Figure 4. Cause-specific prevention paired with recovery planning.

## Secondary prevention

### Blood pressure and lipids

Long-term blood-pressure control is one of the most effective recurrence-prevention strategies. Most patients with ischemic stroke or TIA benefit from a target below 130/80 mm Hg when tolerated, individualized to comorbidity and stroke mechanism. High-intensity statin therapy is commonly indicated after atherosclerotic ischemic stroke, with additional lipid-lowering therapy considered when LDL cholesterol remains above the patient-specific target (Kleindorfer et al., 2021).

### Cause-specific antithrombotic therapy

Noncardioembolic ischemic stroke is generally managed with antiplatelet therapy, whereas atrial-fibrillation–related stroke usually requires anticoagulation. Empiric anticoagulation is not recommended for embolic stroke of uncertain source without a defined indication. Severe symptomatic intracranial stenosis is initially treated with aggressive medical therapy rather than routine intracranial stenting (Kleindorfer et al., 2021).

### Carotid and structural disease

Symptomatic extracranial carotid stenosis may require revascularization based on stenosis severity, anatomy, timing, procedural risk, and patient factors. In carefully selected adults 18–60 years old with nonlacunar cryptogenic stroke and high-risk patent foramen ovale features, closure may be reasonable after a thorough evaluation excludes other causes (Kleindorfer et al., 2021).

### Lifestyle and self-management

Smoking cessation, Mediterranean-style dietary patterns, physical activity, medication adherence, diabetes management, sleep-apnea evaluation when indicated, and home blood-pressure monitoring should be integrated into discharge teaching. Education is more effective when it includes concrete actions, teach-back, written medication purpose, and follow-up plans rather than a list of risk factors alone.

## Rehabilitation and recovery

Rehabilitation should begin during acute care and continue across settings with coordinated communication. The 2026 AHA/ASA rehabilitation guideline emphasizes multidisciplinary therapy, sufficient task practice, moderate-to-high intensity activity after the first 24 hours when clinically appropriate, standardized outcome measurement, periodic reassessment, caregiver training, mental-health screening, and use of telerehabilitation when it improves access (Richards et al., 2026).

Recovery planning is not a single discharge event. A patient who is medically stable may still have aphasia, neglect, fatigue, dysphagia, impaired executive function, depression, spasticity, central poststroke pain, or unsafe mobility that is not obvious during a brief encounter. Transitions should specify who is monitoring these problems, what change should trigger reassessment, and how the patient will obtain rehabilitation, equipment, transportation, and medication follow-up.

## Clinical synthesis

Current stroke management is built on parallel action: stabilize, define time and baseline, image rapidly, identify reperfusion candidates, treat physiologic threats without overcorrecting them, prevent early complications, and begin cause-specific secondary prevention and rehabilitation before discharge. The most important changes from older practice are broader thrombectomy eligibility, routine use of tenecteplase as an alternative to alteplase, imaging-selected treatment beyond conventional windows, avoidance of overly intensive postreperfusion blood-pressure lowering, short-course DAPT for selected minor stroke or high-risk TIA, and more individualized timing of anticoagulation after atrial-fibrillation–associated stroke. Protocols should be updated whenever new AHA/ASA guidance, FDA labeling, or local system capabilities change.

## Acute reperfusion quick reference

| Decision | Teaching point |
|---|---|
| IVT | TNK 0.25 mg/kg (max 25 mg) or alteplase 0.9 mg/kg (max 90 mg), eligible adults <=4.5 h |
| Extended IVT | Selected 4.5-9 h or wake-up stroke with favorable imaging |
| EVT | Eligible LVO early; selected large-core/basilar cases up to 24 h |
| Post-IVT BP | Maintain <180/105 mm Hg |

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