Stroke — EMT Quick Reference

Core vs penumbra · ischemic vs hemorrhagic vs TIA · 2026 AHA/ASA Guideline for the Early Management of Patients With Acute Ischemic Stroke · 2025 AHA Guidelines for CPR & ECC · EMT/BLS scope

THE ONE IDEA THAT EXPLAINS EVERYTHING

The **core** is dead brain — gone. The **penumbra** is ischemic, electrically silent, and **salvageable**. Every treatment exists to move blood back into the penumbra before it joins the core. That is why the clock, the blood pressure, and the glucose all matter.

THE THREE STROKES

Type	Mechanism / pathophysiology	Key point for the EMT
Ischemic ~87%	Thrombus on plaque, cardioembolism (AFib), small-vessel/lacunar, or large-vessel occlusion. Pump failure → depolarization → calcium influx → glutamate, free radicals, cell death. Clot keeps growing.	Reperfusion candidate — **last known well decides eligibility**
Hemorrhagic ~13%	ICH: hypertension, amyloid angiopathy, anticoagulants. SAH: ruptured aneurysm, **thunderclap headache**. Mass effect → ↑ICP → ↓CPP; hematoma expansion in the first hours; blood is toxic to tissue.	**No aspirin.** Field BP lowering is not a BLS intervention
TIA	Deficit **without infarction** (tissue-based definition); minutes to an hour. A warning with high short-term stroke risk, not a benign event.	Resolution does **not** cancel transport — still an emergency

RECOGNITION

- Sudden onset is the signature. **BE-FAST**: Balance, Eyes, Face, Arm, Speech, Time.
- Posterior circulation is what crews miss: vertigo, diplopia, ataxia, dysarthria, crossed findings.
- **Mimics:** hypoglycemia and severe hyperglycemia (always check glucose per scope), seizure with postictal weakness, migraine with aura, Bell palsy, sepsis/delirium. Persistent disabling deficits after glucose correction still count as stroke.
- 2026 guideline: a brief prehospital stroke assessment flags large vessel occlusion earlier, and **advance hospital notification** shortens evaluation, increases thrombolysis use, and lowers mortality.

THE 2026 NUMBERS

Treatment	2026 AHA/ASA guidance
IV thrombolysis	Within **4.5 h** of onset · **tenecteplase 0.25 mg/kg** now equal to alteplase
Extended window IVT	**4.5–9 h** in thrombectomy-ineligible patients with salvageable penumbra
Thrombectomy (EVT)	Large core **ASPECTS 0–2 within 6 h**; ASPECTS ≥3 **up to 24 h**; **basilar occlusion up to 24 h**
BP before IVT	Below **185/110** to limit hemorrhagic risk
BP after IVT	Under **180/105** for 24 h · pushing systolic <140 adds no benefit and is **harmful after successful EVT**
Glucose	Correct below **60 mg/dL** · target **140–180 mg/dL** (tight control no benefit)
Antiplatelet	Aspirin within **48 h** of ischemic stroke — never instead of IVT/EVT
High-risk TIA / minor stroke	DAPT (clopidogrel + aspirin) for **21 days**, started 24–72 h
Systems	**Mobile stroke units** preferred over conventional EMS where available · field nitroglycerin and ambulance-initiated remote ischemic conditioning: **no benefit / harm**

WHAT THE EMT DOES

- **Last known well**, not "when symptoms started" — this single item decides eligibility for every treatment. Ask family, check phones, record the source.
- Screen, then **call ahead**: stroke scale score, time, findings. Destination = thrombolysis-capable, and thrombectomy-capable if LVO suspected.
- Airway protected, suction ready, oxygen for hypoxemia only, glucose per scope, head of bed slightly elevated per protocol if vomiting or ↑ICP concern, never restrict the neck.
- Document serial scores and the exact times. Deterioration or improvement both get reported.
- Transport fast — it outweighs everything else you can do.

> **Safety point:** you cannot tell ischemic from hemorrhagic in the field. The 2026 guideline gives aspirin to *ischemic* stroke patients — so no aspirin before imaging excludes a bleed.

> **Time is brain.** The core is lost brain. The penumbra is the brain you can still save.

Education, not medical direction. Follow your local protocols and scope of practice. Sources: 2026 AHA/ASA Guideline for the Early Management of Patients With Acute Ischemic Stroke; 2025 American Heart Association Guidelines for CPR and Emergency Cardiovascular Care. EMT Tutor · Munden Interactive · emttutor.com