

Stroke Prognosis

- Outcomes of 10 mg Rivaroxaban in Nonvalvular Atrial Fibrillation Patients With CrCl $\geq$ 50 mL/min: A Retrospective Cohort Study
- Protamine sulphate for heparin reversal in percutaneous cardiac interventions: a systematic review and meta-analysis of randomized controlled trials
- Elucidating the association between TLR-4 expression and the clinical course of glioblastoma leptomeningeal disease
- Machine learning-based prognostic prediction for acute ischemic stroke using whole-brain and infarct multi-PLD ASL radiomics
- Platelet-to-Neutrophil Ratio and Efficacy of Remote Ischemic Conditioning in Acute Ischemic Stroke
- Effectiveness and safety of different electromagnetic stimulation therapies in treating post-stroke insomnia: A network meta-analysis of randomized controlled trials
- Outcomes of Patients With Embolic Stroke of Undetermined Source Treated With Antiplatelet Agents or Anticoagulation: A Multicenter Cohort Study
- Validation of the HERMES-24 Score for Outcome Prediction Post Large Vessel Occlusion Treatment in Later Time Window

Stroke prognosis depends on multiple **clinical**, **radiological**, and **biological** factors, and varies significantly based on **stroke type**, **location**, **size**, **patient age**, and **comorbidities**.

1. Determinants of Prognosis

* Stroke Type

- **Ischemic stroke**: typically better prognosis, especially with early reperfusion.
- **Hemorrhagic stroke**: higher early mortality, but better long-term recovery in survivors.

* Time to Treatment

- Earlier treatment (thrombolysis/thrombectomy) improves outcome dramatically.
- "Time is brain": every minute of untreated large vessel occlusion leads to ~2 million neurons lost.

* Stroke Severity

- NIHSS score >15 indicates poor short-term prognosis.
- GCS <8 in hemorrhagic stroke indicates very poor prognosis.

* Lesion Location

- Brainstem strokes are often severe due to cranial nerve and autonomic dysfunction.
- Dominant hemisphere strokes carry risk of aphasia and cognitive deficits.

* Age and Frailty

- Older age and low baseline functional status worsen prognosis.
- Frailty independently predicts poor rehabilitation potential.

* Comorbidities

- Atrial fibrillation, diabetes, hypertension, and prior stroke increase recurrence risk.
- Cancer, dementia, and chronic kidney disease negatively affect recovery.

2. Prognostic Scales

* **Modified Rankin Scale (mRS)** assesses functional independence. * **NIH Stroke Scale (NIHSS)** estimates stroke severity at onset. * **ICH Score** predicts mortality in intracerebral hemorrhage. * **ASPECTS** quantifies early ischemic changes on CT. * **TOAST classification** helps estimate recurrence based on stroke etiology.

3. Recovery Timeline

* **First 24-72 hours:** critical for survival, especially in hemorrhagic stroke. * **1-4 weeks:** edema resolves, early rehab begins. * **3-6 months:** major recovery window for motor and language function. * **6-12 months:** slower improvements in cognition and fine motor skills. * **More than 1 year:** plateau in most functional domains.

4. Long-Term Outcomes

* **Good recovery** (mRS 0-2) is possible in about 40 to 50 percent of ischemic stroke patients with early intervention.

* **Severe disability** (mRS 4-5) occurs in about 25 to 30 percent of cases.

* Death:

- Around 10 to 15 percent 30-day mortality in ischemic stroke
- Around 40 to 60 percent in intracerebral hemorrhage

* Stroke recurrence:

- 5 to 15 percent per year without optimal secondary prevention.

5. Improving Prognosis

* Early **stroke unit admission** reduces mortality and disability. * Intensive **multidisciplinary rehabilitation**. * Rigorous **secondary prevention** including antiplatelets, anticoagulation (if atrial fibrillation), blood pressure and lipid control. * Treatment of **depression** and **post-stroke fatigue**. * Strong **social and family support**.

Among [stroke](#) patients, [primary intracerebral hemorrhage](#) (ICH) has the highest [mortality rate](#).

Currently, cerebral stroke is considered to be one of the prior causes of high mortality, disability, and morbidity.

[Stroke](#) is a significant cardiovascular disease that influences the health of human beings all over the world, especially the elderly population.

Findings suggest a much larger contribution of healthcare access and quality (HAQ) to the younger mean age of stroke in low-middle income countries (LMICs), as compared with other potential factors. Additional studies on stroke care quality and accessibility are needed in LMICs ¹⁾.

A bursting inflammation has been observed that compromises neurologic function in patients who experience stroke.

Stroke causes lifelong disabilities where few therapeutic options are available. Using electrical and magnetic stimulation of the brain and physical rehabilitation, recovery of brain function can be enhanced even late after stroke.

[Stroke center](#) volumes significantly influence efficiency and outcomes in [mechanical thrombectomy](#) ²⁾.

Higher [BP](#) within the first 24 hours after successful [mechanical thrombectomy](#) was associated with a higher likelihood of [spontaneous intracerebral hemorrhage](#), [mortality](#), and requiring [hemicraniectomy](#) ³⁾.

Among young adults aged 18 to 49 years in the [Netherlands](#) who were 30-day survivors of first stroke, mortality risk compared with the general population remained elevated up to 15 years later ⁴⁾.

Stroke biomarker

see [Stroke biomarker](#).

Randomized controlled trials

In a [randomized controlled trial](#), **Liu Mei et al.** from the *Zibo Central Hospital* (China) evaluated whether combining [rehabilitation](#) nursing with structured [nutritional support](#) could improve elderly [stroke prognosis](#) survivors. Published in the *[Journal of Health Population and Nutrition](#)* (2025), the study provides evidence that a combined intervention significantly enhances:

- ↓ [Neurological deficits](#) (NDS)
- ↑ [Cognition](#) (MMSE)
- ↑ [Motor function](#) (Fugl-Meyer Assessment)
- ↑ Activities of daily living ([Barthel Index](#))
- ↑ [Nutritional status](#) (albumin, prealbumin, protein intake, MUAC, grip strength)
- ↓ [Triglycerides](#) and total [cholesterol](#) (TG, TC)

Methodological Strengths

- Large sample (n=300); randomization supports internal validity
- Multiple validated tools: NDS, MMSE, BI, FMA, biochemical & anthropometric measures
- Ethical approval and informed consent ensured

Key Limitations

- Lack of blinding → potential bias
- Comparator ('standard care') vaguely described
- No follow-up data: long-term effect unclear
- No economic evaluation despite resource demands

Data & Reporting Concerns

- Statistical methods underreported: no [confidence intervals](#), unclear ITT vs PP
- [Baseline](#) characteristics not shown
- No subgroup analysis by age, stroke severity, or comorbidities

Verdict

- **Score: 6/10**
- Promising evidence for combined rehab-nutrition in elderly stroke
- However, methodological flaws and lack of sustainability data weaken [generalizability](#)

For Neurosurgeons

If your stroke unit considers integrating structured [nutritional support](#) into standard rehabilitation, weigh the benefits against:

- Logistical feasibility
- Resource demands
- Lack of [cost-effectiveness](#) data
- Unclear long-term [benefit](#)

A structured program with clear monitoring and follow-up protocols is essential for safe [implementation](#).

Bottom Line

A large RCT shows that combining rehab nursing with nutritional support boosts recovery metrics in elderly stroke patients. While short-term results are promising, lack of follow-up, cost data, and methodological transparency warrant cautious interpretation.

Citation

Liu Mei, Xing Li, Gaoxiao Chen, Zhangjian Fang *Zibo Central Hospital, China* □
zxyylumei@163.com *J Health Popul Nutr. 2025 Jul 3;44(1):237* DOI: [10.1186/s41043-025-00995-z](https://doi.org/10.1186/s41043-025-00995-z)

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