HERMES-24 Score

The `HERMES-24 Score` is a validated prognostic tool used to predict the probability of functional independence (mRS ≤ 2) at 3 months following an anterior circulation large vessel occlusion stroke. It is calculated exactly 24 hours after stroke onset.

Formula

```
HERMES-24 Score = (Age in years ÷ 10) + NIHSS at 24 hours
```

- `Age`: contributes 1 point per decade.
- `NIHSS at 24h`: reflects neurological status one day after treatment.

Interpretation

HERMES-24 Score	Approximate Probability of mRS ≤ 2 at 90 Days
< 10	Very high (~91–93%)
≥ 25	Very low (~3–4%)

Example

A 75-year-old patient with NIHSS = 8 at 24 hours: HERMES-24 = (75 ÷ 10) + 8 = 7.5 + 8 = `15.5` → intermediate to poor prognosis.

Highlights

- `Simple:` Only requires age and NIHSS at 24h
- `Fast:` Designed for early use on day 2 post-stroke
- `Robust:` Validated in multiple large external cohorts (e.g., ESCAPE-NA1, INTERRSeCT)

References

- Zwam WH van et al. `HERMES-24 Score: Derivation and Validation`. Stroke. 2024. PMID: 39038101

Validation of the HERMES-24 Score for Outcome Prediction Post Large Vessel Occlusion Treatment in Later Time Window

In a patient-level meta-analysis and external validation of the score Koji Tanaka et al. from the University of Calgary, Altair Biostatistics, St. Louis Park; Stanford University, Cooper University Health Care, Camden; Emory University, Atlanta; Barrow Neurological Institute, Phoenix; Federal University of Rio Grande do Sul, Porto Alegre; Hospital Vall d'Hebron, Barcelona; Prisma Health Upstate, Greenville; University at Buffalo, Buffalo; UCLA, Los Angeles published in the Neurology Journal to externally validate the HERMES-24 score for outcome prediction in patients with anterior circulation large vessel

occlusion treatment in the late time window (beyond 6 hours from last known well). The HERMES-24 score demonstrated excellent predictive ability for 90-day functional outcomes and mortality across both EVT and control groups. The score maintained high AUC (>0.80) across all endpoints and treatment arms, confirming its robustness beyond early-window interventions [1].

Critical Review:

This well-powered meta-analysis utilizes pooled patient-level data from six late-window EVT trials, effectively excluding any overlap with the original HERMES cohort to reduce bias. The investigators clearly articulate the methodology and maintain rigorous exclusion criteria to ensure external validity. The study benefits from its straightforward scoring system (age/10 + NIHSS at 24h), which is practical for clinicians. However, the derivation and validation are still restricted to highly selected trial populations—limiting generalizability to broader real-world cohorts with comorbidities, imaging variability, and non-protocolized care. Moreover, using the NIHSS at 24 hours post-randomization (rather than at presentation) introduces a potential post-intervention bias, reducing its utility in true predictive modeling at decision time. The high predictive value reported might not fully translate to populations where clinical assessment and NIHSS at 24 hours are less reliable or systematically obtained. Despite these limitations, the score remains an intuitively useful and quantitatively validated tool that could augment prognostication in trial-like late-presenting LVO cases.

Final Verdict: Strong internal consistency and methodological rigor, though real-world validation is imperative.

Takeaway for Neurosurgeons: HERMES-24 can aid in post-intervention prognosis discussions in select late-window EVT patients, but it is not a decision-making tool.

Bottom Line: High-performing score, but current evidence supports it more as a retrospective prognostic aid than a pre-treatment stratifier.

Rating: 7.5 / 10

[1]

Tanaka K, Brown S, Albers GW, Jovin TG, Lansberg MG, Nogueira RG, Goyal M, Hill MD, Menon BK, Jadhav AP, Haussen DC, Martins SCO, Rebello LC, Ribo M, Turk AS, Siddiqui AH, Liebeskind DS, Heit JJ, Marks MP, Demchuk AM; AURORA Collaborators. Validation of the HERMES-24 Score for Outcome Prediction Post Large Vessel Occlusion Treatment in Later Time Window. Neurology. 2025 Aug 12;105(3):e213796. doi: 10.1212/WNL.0000000000213796. Epub 2025 Jul 3. PMID: 40609063.

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