

Research priorities for stroke biomarker development

Priority order within each domain reflects the clinical care continuum rather than consensus scores.

Prehospital diagnosis

- Biomarkers for diagnosing stroke subtypes to enable treatments (eg, blood pressure lowering in intracerebral haemorrhage) or triage (eg, transfer of large-vessel occlusion stroke)
- Diagnostic biomarkers in cohorts representative of all emergency medical service stroke code activations
- Biomarkers compatible with prehospital constraints, including portability, rapid turnaround time, and cost-effectiveness

Ischaemic stroke progression and recovery

- Biomarkers for guiding clinical decision-making in acute ischaemic stroke (eg, for selecting patients for recanalisation strategies)
- Treatment-responsive biomarkers for predicting long-term clinical outcome
- Biomarkers specific to the underlying pathophysiological mechanisms of stroke progression and recovery

Atrial cardiopathy

- Biomarkers for detecting atrial cardiopathy
- Biomarkers for detecting atrial fibrillation after stroke
- Biomarkers for predicting major adverse cardiovascular and cerebrovascular events or cognitive impairment in individuals with atrial cardiopathy

Plaque vulnerability

- Biomarkers for detecting culprit atherosclerotic plaques after acute ischaemic stroke

- Biomarkers for improving vascular risk stratification in individuals with atherosclerotic plaques of the brain-supplying arteries
- Biomarkers to improve patient selection for stroke and cardiovascular prevention therapies in individuals with atherosclerotic plaques of the brain-supplying arteries

Intracerebral haemorrhage

- Biomarkers for differentiating between the underlying causes of intracerebral haemorrhage (ie, macrovascular, microvascular, non-vascular)
- Surrogate markers for predicting responses to acute interventions (eg, minimally invasive surgery, acute blood pressure lowering, and reversal of anticoagulation)
- Biomarkers of parenchymal or intraventricular haematoma expansion
- Biomarkers of perihæmatomal oedema evolution and haematoma resorption
- Biomarkers for predicting intracerebral haemorrhage recurrence, major adverse cardiovascular and cerebrovascular events, or cognitive impairment