

Stroke Recovery Biomarkers

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Predicting post-stroke recovery is important for advising patients and their families regarding prognosis, optimizing the use of healthcare resources, and stratifying subjects for inclusion in clinical trials to decrease variability and reduce sample sizes. The severity of the initial deficit is a strong independent predictor of recovery and becomes more precise over time. Effective recovery biomarkers need to improve the prognostic capacity of severity-based measures. These may differ depending on the functional domain of interest (motor, sensory, language, cognition, etc.). There are only limited data for blood or genetic recovery biomarkers. Potential structural biomarkers can be based on CT, MRI (routine sequences including T1-weighted, T2-weighted, FLAIR, and diffusion and non-standard sequences such as diffusion tensor imaging). Functional studies could include EEG-based assessments, magnetoencephalography (MEG), transcranial magnetic stimulation (TMS), MRI (functional MRI, magnetic resonance spectroscopy, PET, and near infrared spectroscopy). These may also provide complementary information that could aid study designs.