

existing theory-driven rehabilitation approaches appear to offer some benefit to functional recovery after stroke. (Good Practice Statement)

High-quality studies are needed to investigate the long-term efficacy of specific rehabilitation approaches in various neuroscience populations.

Rationale: There is limited literature evaluating the effect of mobilization on safety events and functional outcomes for patients with neurological impairment in the acute rehabilitation setting. Five studies were found suitable to address this question.^{30,69-71} All studies were of low-to-moderate strength, given their small sample sizes and the prevalence of missing data.

Functional Outcomes

Overall, mobilization of neurologically impaired patients in the acute rehabilitation setting has been found to be safe, with no adverse events reported in the literature. Characteristics of those reported to benefit from early mobilization, as measured by improved mRS and Barthel Index scores at 6 months after neurological insult, include younger patients with adequate bowel and bladder control and without Total Anterior Circulation Infarct syndrome.³⁰ Tilt table exercises in the acute rehabilitation setting may help improve quality of life and muscle strength in patients who experience hemiplegia after a stroke.⁷¹ Yadav et al. reported significant improvement in absolute lower limb function, elbow flexion, and knee extension with 1 month of robotic tilt table exercises after stroke.⁷¹ Of note, a conventional tilt table promoted improvement in level of consciousness compared to a tilt table with stepping, although not significantly more than conventional tilt table therapy alone (Coma Recovery Scale-Revised median increase of 5 vs. 2, respectively).⁶⁹ Importantly, the studies in this review primarily examine very specific types of therapeutic exercises. As such, functional outcome findings cannot necessarily be generalized to all types of mobilization exercises or to all neuroscience subpopulations.

There is weak evidence to suggest that early sitting, standing, and walking using a contemporary Bobath approach (CBA) may improve Berg Balance Scale scores 4 to 8 weeks after therapy.⁷⁰ In addition, in patients with severe motor deficits after stroke, Tang et al.⁷⁰ demonstrated significantly better lower extremity, basic mobility, and overall Stroke Rehabilitation Assessment of Movement scores after 4 and 8 weeks of therapy, albeit in a small sample size (n = 48). Finally, the use of mirror therapy was shown to improve Fugl-Meyer Assessment extremity subscale scores and Brunel Balance Assessment scores in patients who have had an acute stroke.⁷²

Safety Events

The reviewed studies did not report any adverse safety events, although one study reported more frequent interruptions to therapy with the use of a tilt table plus stepping device versus conventional tilt table therapy alone.⁶⁹

5. Timing of Mobilization After Intravenous Thrombolysis and Hospital Outcomes and Safety Events

Among patients with acute ischemic stroke who receive intravenous (IV) thrombolysis, what is the impact of EM (less than 24 hours after drug administration) compared to delayed ambulation (more than 24 hours after drug administration) on patient's hospital outcomes and safety events?

Recommendation: There is insufficient evidence to support a practice recommendation for EM, as it relates to impact on in-hospital outcomes and safety events, in the ischemic stroke patient population who receives IV thrombolysis. There is a need for further scientific research exploring clinical outcomes related to EM in the population of patients who have had acute ischemic stroke and received IV thrombolysis versus mechanical thrombectomy, specifically. (Good Practice Statement)

Rationale: There is limited high-quality research to support EM practices in the population of patients who have had an acute ischemic stroke and received IV thrombolysis. The majority of studies examining EM in acute stroke populations included both ischemic and hemorrhagic stroke patient populations.^{33,38-40,42,44,73,74} Only three studies included in this review assessed the impact of EM specifically in an ischemic stroke population that received IV thrombolysis.^{41,43,75}

The benefits of early sitting in the ischemic stroke patient population were evaluated in the Early Sitting in Ischemic Stroke Patients (SEVEL) multicenter RCT.⁴¹ Patients in the randomized group were seated out of bed at the earliest possible time, but no later than one calendar day after stroke onset. The progressive sitting group was seated out of bed on the third calendar day after stroke onset. The primary outcome was mRS score at 3 months after stroke. Secondary outcomes included the prevalence of medical complications, length of hospitalization, and sitting tolerance. The analysis and generalizability of findings were limited by low recruitment and follow-up rates. Data were analyzed from 138 patients, 63 in the early sitting group and 75 in the progressively sitting group. There were no significant differences in primary or secondary outcomes between the early-sitting and progressive-sitting study groups. Primary outcome was assessed 3 months after stroke; the