

# June 2018 Very Early Mobilization for Stroke



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Hello members.

This month we will be providing information about Very Early Mobilization post-stroke. We will start with a systematic review of the evidence. Join us on social media about a discussion of this topic. We want to know what you are doing and what does the literature support.

Xu T, Yu X, Ou S, Liu X, Yuan J, Chen Y. Efficacy and Safety of Very Early Mobilization in Patients with Acute Stroke: A Systematic Review and Meta-analysis. *Scientific Reports*. 2017;7:66550.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5529532/>

**Abstract:** Whether very early mobilization (VEM) improves outcomes in stroke patients and reduces immobilization-related complications (IRCs) is currently unknown. The objective of this systematic review and meta-analysis was to evaluate the efficacy and safety of VEM in acute stroke patients following admission. Medline, Embase, and Cochrane Central Register of Controlled Trials databases were searched for randomized controlled trials (RCTs) that examined the efficacy or safety of VEM in patients with acute stroke. VEM was defined as out of bed activity commencing within 24 or 48 hours after the onset of stroke. A total of 9 RCTs with 2,803 participants were included. Upon analysis, VEM was not associated with favorable functional outcomes (modified Rankin Scale: 0-2) at 3 months [relative risk (RR): 0.96; 95% confidence interval (CI): 0.86-1.06]; VEM did not reduce the risk of IRCs during follow up. With respect to safety outcomes, VEM was not associated with a higher risk of death (RR: 1.04; 95% CI: 0.52-2.09) and did not increase the risk of neurological deterioration or incidence of falls with injury. **In conclusion, pooled data from RCTs concluded that VEM is not associated with beneficial effects when carried out in patients 24 or 48 hours after the onset of a stroke.**

**Definitions:** Very Early Mobility: (VEM) usually defined as intensive out of bed activity -sitting, standing and walking at the earliest possible time no later than 24-48 hrs after stroke. Late Mobility (LM) defined anywhere from 48hrs-7 days after stroke.

### *Clinical Point of View:*

- Awareness of optimal time for neuronal repair, risks of lack of activity (DVTs, pneumonia, musculoskel and cardio-pulm changes) with possibly impacts to recovery and increased mortality VEM was thought to improve outcomes and decrease immobility related complications.

- Risks/Concerns with VEM included changes in cerebral blood flow, possibly increased falls and increased BP from mobility
- Recent studies have demonstrated inconsistent results; both with efficacy/safety and what is the optimal time for mobility? Xu et al included 2,803 patients from 9 RCTs.
- VEM could shorten hospital LOS, but at 3 months no significant benefit in any of the functional outcomes were found (mRS, NIHSS, Barthel Index). All great measures for RCTs but clinically is there a difference in quality of movement or timing of completion of tasks that is unable to be measured with this measures?
- VEM was not associated with a higher risk of death at 3 months and not assoc with falls or neurological deterioration during follow-ups. VEM has not shown significant effect on immobilization complications-and one interpretation is that those may be due to stroke severity, age, co-morbidities as well as the dose and pattern of mobilization.
- What is the optimal time for mobilization? Unclear! Animal models demonstrate early post stroke an increased time for brain plasticity. Krakauer et al discussed (animal models) forced use of paralytic limbs may weaken GABA-mediated tonic inhibition. Clinically what is the dosage? VEM/human models do not include forced use of only paralytic limbs. **A few published stroke guidelines do recommend mobilization 24-48 hrs after stroke onset-but evidence remains insufficient.**

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