Physical Rehabilitation Approaches for the Recovery of Function and Mobility After Stroke

Major Update

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Various physical rehabilitation approaches may be used to promote recovery of function and mobility after stroke. Controversy and debate about the relative effectiveness of approaches persist.

Objectives
We aimed to determine whether physical rehabilitation approaches are effective in recovery of function and mobility in people with stroke, and to assess whether any one physical rehabilitation approach is more effective than any other approach.

Methods
A stakeholder group, comprising stroke survivors, caregivers, and physiotherapists, made decisions using consensus-making techniques relating to the scope and focus of this updated review.1

We performed a comprehensive search (to December 2012), including randomized controlled trials of physical rehabilitation approaches in adult stroke survivors. Interventions comprised a range of philosophically different approaches to promote recovery of function or mobility. Randomized controlled trials of single specific treatments were excluded. Outcomes analyzed were independence in activities of daily living, motor function, balance, gait, and length of stay. Two reviewers independently applied selection criteria, assessed risk of bias and extracted data. We calculated standardized mean differences (SMD) using a random effects model.

Main Results
Ninety-six studies (10,401 participants) were included. More than half of the studies (50/96) were performed in China. In general, the studies were heterogeneous, and many were poorly reported.

Physical rehabilitation was beneficial, when compared with no treatment, on functional recovery after stroke (27 studies, 3,423 participants; SMD=0.78; 95% confidence interval [CI], 0.58–0.97, for activities of daily living scales), and this effect was noted to persist beyond the length of the intervention period (9 studies, 540 participants; SMD=0.58; 95% CI, 0.11–1.04). This evidence principally arises from studies performed in China.

Physical rehabilitation was more effective than usual care or attention control in improving motor function (12 studies, 887 participants; SMD=0.37; 95% CI, 0.20–0.55), balance (5 studies, 246 participants; SMD=0.31; 95% CI, 0.05–0.56), and gait velocity (14 studies, 1,126 participants; SMD=0.46; 95% CI, 0.32–0.60).

No one physical rehabilitation approach was more (or less) effective than any other approach in improving independence in activities of daily living (8 studies, 491 participants; test for subgroup differences: P=0.71) or motor function (9 studies, 546 participants; test for subgroup differences: P=0.41).

Conclusions
Physical rehabilitation, comprising a selection of components from different approaches, is effective for recovery of function and mobility after stroke. No one approach to physical rehabilitation is any more (or less) effective in promoting recovery of function and mobility after stroke.

Acknowledgments
This article is based on a Cochrane Review published in The Cochrane Library 2014, Issue 4 (see www.thecochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and The Cochrane Library should be consulted for the most recent version of the review.

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Disclosures
Pollock and Baer performed trials included in this review (Baer 2007, Pollock 1998). The other authors report no conflicts.

References

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