
http://eprints.gla.ac.uk/18036/

Deposited on: 19 January 2012
Physiotherapy Treatment Approaches for Stroke
Alex Pollock, Gillian D. Baer, Peter Langhorne and Valerie M. Pomeroy

Stroke 2008, 39:519-520: originally published online January 10, 2008
doi: 10.1161/STROKEAHA.107.492710
Stroke is published by the American Heart Association. 7272 Greenville Avenue, Dallas, TX 72514
Copyright © 2008 American Heart Association. All rights reserved. Print ISSN: 0039-2499. Online
ISSN: 1524-4628

The online version of this article, along with updated information and services, is
located on the World Wide Web at:
http://stroke.ahajournals.org/content/39/2/519

Subscriptions: Information about subscribing to Stroke is online at
http://stroke.ahajournals.org/subscriptions/

Permissions: Permissions & Rights Desk, Lippincott Williams & Wilkins, a division of Wolters
Kluwer Health, 351 West Camden Street, Baltimore, MD 21202-2436. Phone: 410-528-4050. Fax:
410-528-8550. E-mail:
journalpermissions@lww.com

Reprints: Information about reprints can be found online at
http://www.lww.com/reprints

Downloaded from http://stroke.ahajournals.org/ at GLASGOW UNIV LIB on January 19, 2012
There are several different approaches to physiotherapy treatment after stroke. These can broadly be divided into approaches that are based on neurophysiological, motor learning, or orthopaedic principles. Some physiotherapists base their treatment on a single approach, whereas others use a mixture of components from a number of different approaches. The practical application of these approaches can result in substantial differences in patient treatment. At present, the Bobath Approach, based on neurophysiological principles, probably remains the most widely used approach in the Western world. However, there is a lack of convincing evidence to support any specific physiotherapy treatment approach. This systematic review aims to assess the effects of physiotherapy treatment if it is based on orthopaedic, motor learning, or neurophysiological principles, or on a mixture of these treatment principles.

Methods
We searched the Cochrane Stroke Group Trials Register (last searched May 2005), the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library Issue 2, 2005), MEDLINE (1966 to May 2005), EMBASE (1980 to May 2005), and CINAHL (1982 to May 2005). We contacted experts and researchers with an interest in stroke rehabilitation.

We considered randomized or quasi-randomized controlled trials of physiotherapy treatment approaches aimed at promoting the recovery of postural control and lower limb function in adult participants with a clinical diagnosis of stroke. Outcomes included measures of disability (global dependency scales or functional independence scales) and motor impairment (relating to postural control or lower limb function). Two review authors independently categorized the identified trials according to the inclusion and exclusion criteria, documented their methodological quality, and extracted the data.

Results
Twenty trials (1087 participants) were included in the review, 5 of which were included in 2 comparisons. Eight trials compared a neurophysiological approach (which was “Bobath” in all trials) with another approach; 8 compared a motor learning approach with another approach; and 8 compared a mixed approach with another approach.

A statistically significant result was found in the comparison of a mixed approach with a no treatment or placebo control for the recovery of functional independence ($P=0.03$; Figure). Data from 5 trials (427 participants) demonstrated that a mixed approach was significantly more favorable than no treatment or a placebo control in the recovery of functional independence (SMD 0.94, 95% CI 0.08 to 1.80). Functional independence was assessed using Fugl-Meyer lower limb score, Rivermead Mobility Index and Functional Independence Measure (FIM).

A further statistically significant result was found in the comparison of a mixed approach with an orthopaedic approach for the recovery of muscle strength ($P=0.04$), but this was based on data from only 1 trial which had a number of methodological limitations. No other significant results were found.

Discussion
The data analyzed in this review provide evidence that a mixed physiotherapy approach is significantly favorable to no treatment or placebo intervention in the recovery of functional independence after stroke. This significant effect arguably demonstrates that any physiotherapy is better than none. There is no evidence of any one physiotherapy treatment approach being more effective than any other treatment approach for the recovery of disability or impairment (postural control or lower limb function) after a stroke.

The lack of difference for outcomes between various physiotherapy treatment approaches must be considered in the light of several methodological limitations encountered during the systematic review. It is not possible to discuss the methodological limitations within this brief summary; full details are available within the published Cochrane Review.

Implications for Practice
There is insufficient evidence to provide a definitive answer to which treatment approach physiotherapists should use to...
promote the recovery of disability or impairment (postural control or lower limb function). However, there is limited evidence that physiotherapy using a mix of components from different approaches may be more beneficial than no treatment or placebo control for the recovery of functional independence after stroke. This evidence provides a sound scientific rationale for physiotherapists to use a selection of treatments, regardless from which treatment approach, if any, they are derived.

Implications for Research
We recommend that future research should concentrate on investigating the effectiveness of clearly described individual techniques and task-specific treatments, regardless of their historical or philosophical origin.

Disclosures
None.

References

Key Words: physiotherapy ■ rehabilitation ■ stroke