Spatial Neglect: Is Rehabilitation Effective?

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Background
Unilateral spatial neglect can reduce a person's ability to look, listen, or make movements toward one half of their environment. Many rehabilitation approaches have been used to reduce the disabling effects of this cognitive deficit following stroke. These approaches have included training in visual scanning and providing tactile cues to draw attention to the affected side.

Objectives
This Cochrane systematic review aimed to determine the effects of cognitive rehabilitation for neglect following stroke as measured on impairment and activity (disability) level assessments, and destination on discharge from hospital. We also aimed to determine whether any effects persisted at follow-up assessment.

Search Strategy
We searched the Cochrane Stroke Group's Trials Register (February 2001), MEDLINE (1966-December 2000), EMBASE (1980-February 2001), CINAHL (1983-January 2001), PsycLIT, and ClinPSYC (1974-February 2001); hand-searched relevant journals; screened reference lists from relevant articles; and tracked citations using SCISEARCH.

Selection Criteria
We selected controlled trials of cognitive rehabilitation for neglect in which at least 75% of the sample were stroke patients or separate stroke data were available. Two reviewers independently selected trials, extracted data, and assessed trial quality.

We included 15 studies (8 in the United States, 7 in Europe) with 400 participants. A large number of different outcome measures was reported. Most studies measured outcome at the impairment level and immediately after therapy. Only 6 studies included an activity level measure. Persisting effects (on any outcome) were investigated in only 4 studies (111 participants). In terms of the quality of existing studies, only 3 were classified as category A (adequate) for randomization and allocation concealment. Much of the

The effect of cognitive rehabilitation at the activity level of functioning. (Figure 1. Bowen A, Lincoln NB, Dewey M. Cognitive rehabilitation for spatial neglect following stroke [Cochrane Review]. In: The Cochrane Library, Issue 2, 2002. MetaView © Update Software, Oxford.)

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information required for quality assessment was unclear or unavailable.

**Main Results**
There was evidence that rehabilitation resulted in significant and persisting improvements on impairment level assessments, although this varied depending on the test used. There was limited opportunity for sensitivity analyses of only the A-rated studies. In the one area where this could be performed, the results contradicted the earlier positive finding. There was insufficient evidence to confirm or exclude an effect of rehabilitation at the activity level (see Figure 1) or on destination following discharge from hospital.

**Reviewers’ Conclusions**
In summary, the implications for practice are that the effectiveness of rehabilitation for neglect remains unproven. The potential benefits on specialized impairment tests were not confirmed by improvements in activities of daily living. Specific rehabilitation techniques cannot at present be supported or challenged by information from randomized trials.

The implications for research are that there is sufficiently compelling evidence to encourage further A-rated randomized controlled trials. These must include meaningful activity level measures and a follow-up assessment of persisting effects. Serious attempts to investigate the rehabilitation of these disabling cognitive deficits must consider the cognitive neuroscience and neuropsychological literature. Advances in thinking about dissociable types of neglect, and targeting these with theory-based rehabilitation strategies, must be the way forward. This Cochrane review is ongoing, and the authors would be grateful to receive information about on-going trials.

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