

# CAHE JC Critically Appraised Article Summary

## Journal Club Details

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Date of submission	August 2008
Journal Club location	Calvary SA
JC Facilitator	Lucy Redden

## Clinical Scenario

Is constraint-induced movement therapy better than either BIT or normal treatment in improving upper limb function in adults with CVA?

## Review Question/PICO/PACO

- P** Adults with CVA
- I** Constraint-induced movement therapy
- C** BIT/Normal treatment
- O** Upper limb function

## Article/Paper

Dahl AE, Askim T, Stock R, et al. Short- and long-term outcome of constraint-induced movement therapy after stroke: a randomised controlled feasibility trial. *Clinical Rehabilitation* 2008; 22:436-447.

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Article Methodology:	Randomised Controlled Trial
Returned JC on:	9 September 2008
By CAHE staff member:	Lucylynn M. Lizarondo

Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>The study has a clearly focused question.</p> <p><i>Participants:</i> Patients with a diagnosis of stroke according to WHO definition of stroke; weakness or reduced dexterity of the affected hand; time from onset of stroke more than 2 weeks; modified Rankin Scale score 0-2 points before the stroke; more than 20 degrees active wrist extension and 10 degrees active finger extension; 20 points or more on the Mini Mental State Examination scale; aged 18-80 years</p> <p><i>Intervention:</i> The <u>experimental group</u> (Constraint-induced movement therapy (CIMT)) were trained 6 hours daily for 10 consecutive week days; exercises done in groups of 4, led by a PT and OT, assisted by nurses; a mitten immobilised the non-paretic hand 90% of waking hours; exercises were chosen from a collection of activities divided into different fields: personal care, kitchen, household, games, handicrafts, gardening, office work, shopping, sports, strength and mobility. The <u>control group</u> received traditional rehabilitation. Traditional rehabilitation was community-based follow-up treatment involving upper and lower extremity training.</p> <p><i>Outcomes:</i> The Wolf Motor Function Test is the primary outcome measure, with the Motor Activity Log, Functional Independence Measure and Stroke Impact Scale as secondary outcome measures.</p>
2	✓			<p>This study was a randomised controlled trial which was an appropriate study design to address the objectives of the study.</p> <p>Is it worth continuing: YES</p>
3	✓			<p>The eligible patients were block-randomised into a CIMT group or control group receiving traditional rehabilitation. Sealed opaque envelopes were used for randomisation; procedure was done by a person who was not involved in the study.</p> <p>At baseline, there were no significant differences in the characteristics of patients even if there were more women in the control group and a lesser proportion of patients whose dominant arm was affected.</p>
4	✓		✓	<p>The assessors were blinded to the group allocation of patients, which was one of the strengths of this study. However, it was not possible to blind the patients and therapists who administered the treatment.</p>
5	✓			<p>As there were no reported drop-outs in the study, all patients were included in the analysis of results.</p>
6	✓			<p>Outcomes were measured and collected in the same way for all participants. All outcome measures were used at post treatment assessment and at 6 months follow-up.</p>
7		✓		<p>No power calculation was carried out. Hence, it would be difficult to determine whether the sample size was adequate.</p>

Ques No.	Yes	Can't Tell	No	Comments
8				<p>Results were presented using mean change and p values.</p> <ul style="list-style-type: none"> <li>• Wolf Motor Function Test scale: There was statistically significant improvement from baseline to post-treatment in the CIMT group and no such improvement in the control group. There was also a statistically significant difference between the groups on performance time score and functional ability score in favour of CIMT. However, from baseline to six-month follow-up, both groups improved significantly in both scales, showing no differences between groups.</li> <li>• Motor Activity Log: CIMT group improved significantly at post-treatment while no such improvement was seen in the control group. Whilst, it seems to favour CIMT, there was no significant difference between groups according to the amount of use score and quality of movement score at post treatment assessment. Both groups improved significantly after 6 months and no statistically significant differences between groups.</li> <li>• Functional Independence Measure: CIMT group showed a statistically significant improvement from baseline to post treatment. The control group improved their score from baseline but was not statistically significant. Both groups improved from baseline to 6-month follow-up, but there were no significant differences between groups.</li> <li>• Stroke Impact Scale: (measured only at baseline and six-month follow-up) A statistically significant improvement was observed in self-perceived strength in the CIMT group. In memory, communication, emotion, and overall recovery, both groups improved in their scores significantly, but no differences between groups were shown.</li> </ul> <p><u>Bottom line result:</u> CIMT was an effective and feasible method to improve motor upper extremity function in the short term, but no long term effect was found.</p>
9				<p>Differences between groups were determined based on p-value computation. Results from this study can therefore be considered precise.</p>
10				<p>The small sample size in the study may limit the extent to which the results may be considered generalisable. However, the study has covered the most important outcomes and was clear on the characteristics of patients who benefited from the program, hence can be considered in the local situation. The extent to which the results can be applied to a local setting is a decision that is best made by those dealing with each individual setting.</p>