

Journal Club location	Hampstead BIRU
JC Facilitator	Michael Snigg
JC Discipline	Multi D
CAT completed by:	Matt Ransom

Question

What is the effectiveness of constraint induced therapy with brain injured population?

Review Question/PICO/PACO

P: TBI/ABI – subacute/ community(stroke if none available in ABI/TBI)

I: Constraint induced therapy to improve function in upper limb after TBI. Specific information on how constraint induced therapy delivered (e.g. group based, how group set-up) and population it best suited for (e.g. severity of hemiplegia – some functional grasp?).

C: No constraint induced therapy provided as part of upper limb therapy regime

O: To have better understanding around what is current evidence supporting constraint induced therapy with brain injured population and some guidelines if available how to set this up for our patients in sub-acute in-patient and community outpatient setting.

Article/Paper

Kwakkel G, Veerbeek JM, van Wegen EE, Wolf SL. Constraint-induced movement therapy after stroke. *The Lancet Neurology*. 2015 Feb 1;14(2):224-34.

Please note: due to copyright regulations CAHE is unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the [DOHSA librarian](#).

Article Methodology: **Meta-analysis**



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Ques No.	Yes	Can't Tell	No	Comments
1			✓	<p>Did the review address a clearly focused question?</p> <p>In this review, the authors gave a brief historical background and description of the original CIMT protocol. On the basis of a systematic review of the literature and subsequent metaanalysis of RCTs, the authors summarised the evidence for CIMT, mCIMT, and forced use therapy in adult patients after stroke. In a subsequent sensitivity analysis of included RCTs, the authors explored the effects of type of CIMT, dose of therapy, and timing of therapy after stroke. They then discussed the effects of the underlying mechanisms that might drive CIMT and propose criteria to select the patients that will benefit most from CIMT.</p>
2	✓			<p>Did the authors look for the appropriate sort of papers?</p> <p>Yes - included reports of adult stroke patients; that used a randomised controlled trial design including those with a two-group parallel, multiarm parallel, crossover, cluster, or factorial design; in which the experimental intervention conformed to the definitions of original constraint-induced movement therapy (CIMT), modified CIMT (mCIMT), or forced use therapy; in which the comparator was usual care, another intervention, the same intervention with a different dose, or no intervention; and in which outcomes were measured after intervention or at follow-up.</p> <p>Is it worth continuing? YES</p>
3	✓			<p>Do you think the important, relevant studies were included?</p> <p>Yes, however, may have missed small negative trials</p>
4	✓			<p>Did the review's authors do enough to assess the quality of the included studies?</p> <p>Yes – assessed methodological quality (based on standardised assessment of potential bias; see appendix)</p>
5			✓	<p>If the results of the review have been combined, was it reasonable to do so?</p> <p>A number of the meta-analyses results were reasonably combined, however, some combined study data from heterogenic populations. This can be seen by the high I² calculations.</p>
6				<p>What are the overall results of the reviews?</p> <p>See synthesis of evidence about CIMT for detailed answer.</p> <p>The original and modified types of CIMT have beneficial effects on motor function, arm–hand activities, and self-reported arm–hand functioning in daily life, immediately after treatment and at long-term follow-up, whereas there is no evidence for the efficacy of constraint alone (as used in forced use therapy). The type of CIMT, timing, or intensity of practice do not seem to affect patient outcomes.</p>
7				<p>How precise are the results?</p> <p>Confidence in the precision of the results is increased through the use of confidence intervals. Please see the individual forest plot comparisons. Large confidence intervals reduces precision.</p>

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✓			<p>Reliability of information</p> <p>Is the author of the information identified? Gert Kwakkel, Janne M Veerbeek, Erwin E H van Wegen, Steven L Wolf</p> <p>Does the author of the information have the qualifications or experience to write on this topic? Gert Kwakkel PhD, PT is a movement scientist and Professor in Neurorehabilitation at the Department Rehabilitation Medicine of the VU University Medical Centre in Amsterdam, The Netherlands. Janne M Veerbeek, PHD, Physical therapist, clinical health care scientist Erwin van Wegen is associate professor at the dpt. of Rehabilitation Medicine, VU University Medical Center, Amsterdam. Erwin does research in Allied Health Science, Rehabilitation Medicine, Neurology and movement sciences.</p> <p>Does the information come from an 'authoritative source'? Published in Lancet, research conducted out of the Department of Rehabilitation Medicine, MOVE Research Institute Amsterdam, VU University Medical Center, Amsterdam, Netherlands, Amsterdam Rehabilitation Research Center, Reade Centre for Rehabilitation and Rheumatology, Amsterdam, Netherlands and Department of Rehabilitation Medicine, Division of Physical Therapy, Atlanta VA Center for Visual and Neurocognitive Rehabilitation, Atlanta, GA, USA.</p>
✓			
✓			
8	Journal Club to discuss		<p>Can the results be applied to the local population? Choose relevant context issues. The following are only suggestions to prompt discussion.</p> <p>CONTEXT ASSESSMENT</p> <ul style="list-style-type: none"> - Infrastructure - Available workforce (? Need for substitute workforce?) - Patient characteristics - Training and upskilling, accreditation, recognition - Ready access to information sources - Legislative, financial & systems support - Health service system, referral processes and decision-makers - Communication - Best ways of presenting information to different end-users - Availability of relevant equipment - Cultural acceptability of recommendations <p>Others</p>
9			Were all important outcomes considered?
10			Are the benefits worth the harms and costs?
11			What do the study findings mean to practice (i.e. clinical practice, systems or processes)?

12	<p>What are your next steps? ADOPT, CONTEXTUALISE, ADAPT</p> <p>And then (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)</p>
13	<p>What is required to implement these next steps?</p>

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