

iCAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club	Launceston General Hospital
JC Facilitator	Rachel Riley
JC Discipline	Occupational Therapy

Clinical Scenario

For adults with traumatic incomplete spinal cord injury (P) does the inclusion of Functional Electrical Stimulation (FES) in an upper limb program (I) have an effect on hand function (O) compared to a stand-alone upper limb program (C)

Review Question/PICO/PECO

P	adults with traumatic incomplete spinal cord injury
I	FES in upper limb program
C	no FES
O	increased hand function

Article/Paper

Popovic MR, Kapadia N, Zivanovic V, Furlan, JC, Craven BC, McGillivray C (2011). Functional electrical stimulation therapy of voluntary grasping versus only conventional rehabilitation for patients with subacute incomplete tetraplegia: a randomized clinical trial. *Neurorehabilitation and Neural Repair*. 20; 10: 1-10.

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: Randomised Clinical Trial

Journal Club Meeting on: 1 April, 2011



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A member of the Sansom Institute

Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Did the study ask a clearly focused question?</p> <p>Yes it did.</p> <p><i>Aim:</i> Examined the efficacy of 40 hours of functional electrical therapy (FET) with conventional occupational therapy (COT) compared with COT alone to improve grasping.</p> <p><i>Participants:</i> Individuals who had sustained a traumatic incomplete spinal cord injury (SCI) between C4 and C7, subacute incomplete spinal cord injury (AIS) B, C, or D, less than 6 months prior to the baseline assessment; (b) individuals 18 years of age or older; and (c) individuals unable to grasp and manipulate various objects either unilaterally or bilaterally, to allow independent performance of activities of daily living (i.e., eating, dressing, grooming).</p> <p><i>Intervention:</i> Two groups—Group 1: FET +COT; Group 2: COT alone</p> <p><i>Outcomes:</i> Functional Independence Measure (FIM) self-care sub scores, Spinal Cord Independence Measure (SCIM) self-care sub scores, and Toronto Rehabilitation Institute Hand Function Test (TRI-HFT) performed at baseline and follow-up.</p>
2	✓			<p>Was this a randomised controlled trial and was it appropriately so?</p> <p>This study was a randomised controlled trial which was an appropriate study design given the objectives of the study.</p> <p>Is it worth continuing: YES</p>
3	✓			<p>Were participants appropriately allocated to intervention and control groups?</p> <p>Participants were randomly allocated into one of two groups using two sets of sealed envelopes.</p> <p>The groups were well matched at baseline (in terms of demographic characteristics and outcome measure scores) which may indicate that randomisation was successful.</p>
4	✓			<p>Were participants, staff and study personnel 'blind' to participants study group?</p> <p>Outcome assessments were performed by staff blinded to the study intervention and group allocation.</p>
5			✓	<p>Were all of the participants who entered the trial accounted for at its conclusion?</p> <p>No. Fifteen participants did not complete the study, as they were reported as 'lost to follow up'. Intention-to-treat analysis was not reported.</p>

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6	✓		<p>Were the participants in all groups followed and data collected in the same way?</p> <p>Outcomes were measured and collected in the same way for all participants. All participants were examined at baseline, post intervention and at a six month follow up after therapy.</p>
7	✓		<p>Did the study have enough participants to minimise the play of chance?</p> <p>No power calculation was carried out. Hence, it would be difficult to determine whether the sample size was adequate.</p>
8			<p>How are the results presented and what is the main result?</p> <p>Results were presented using means & standard deviations, and p values.</p> <p>The subject's impairment and demographic characteristics were analysed using descriptive statistics for parametric and nonparametric data.</p> <p>The baseline outcome data of the intervention and control groups were compared using Fisher exact test (for categorical variables) and Mann–Whitney U test.</p> <p><i>Results</i></p> <ul style="list-style-type: none"> • The group which had FET had better scores on all the outcome measure scales • FET significantly reduced disability and improved voluntary grasping beyond the effects of considerable conventional upper extremity therapy in individuals with tetraplegia
9			<p>How precise are these results?</p> <p>Differences between groups were determined based on p-value computation alone.</p> <p>P-values fail to provide clinicians and patients with the information they most need, i.e., the range of values within which the true effect is likely to reside.</p>
10			<p>Were all important outcomes considered so the results can be applied?</p> <p>Journal club to provide answer</p>