

English C, Hillier SI. Circuit class therapy for improving mobility after stroke. Cochrane Database of Systematic Reviews 2010, Issue 7, Art # CD007513.

Design: Meta-analysis of clinical trials

PICOS:

- **Patient population:** Adults with stroke of all types, severities, and stages
- **Intervention:** Circuit class therapy (CCT) defined as an intervention involving participants being treated in a group environment with a staff to client ratio no greater than 1:3, providing a minimum of four weeks of therapy with at least one session per week, in which the interventions focus on repetitive practice of functional tasks arranged in a circuit
- **Comparison intervention:** Sham therapy, no therapy, or another therapy modality
- **Outcomes:** Main outcome was mobility measured by tests such as the Six Minute Walk Test (6mWT); secondary outcomes could be measures of activity limitation (such as ADL), impairment (such as limb strength), health related quality of life
- **Study types:** Randomized or quasi-randomized trials

Study selection:

- Electronic databases included the Cochrane Stroke Group Register, MEDLINE, EMBASE, CINAHL, and others through October 2008
- Authors independently assessed study quality for risk of bias: randomization, allocation concealment, blinding, incomplete reporting, and sample size
- Searches were made of several clinical trial and research registers of ongoing clinical trials, with no language or date restrictions

Pertinent results:

- CCT was compared with some form of alternative therapy (no comparisons with no therapy at all), but the type of alternative therapy varied between tests; however, there was sufficient homogeneity between trials to allow pooling of outcome data for meta-analysis for several outcomes
- 6 trials with 292 participants were included in the analyses; 5 were RCT and one allocated patients by date of admission
- 4 studies with 157 participants compared CCT with other interventions for the 6mWT; meta-analysis showed that CCT was superior to comparison treatments, with CCT patients walking an average of 76.5 m farther than comparison patients in 6 minutes
- 3 studies with 130 participants compared gait speed with CCT an average of 0.12 m/sec faster than comparison interventions
- Some comparisons did not show a difference between CCT and alternative interventions: Timed Up and Go Test and Berg Balance Test did not show differences between treatment groups
- Adverse events were reported for 11 falls among 131 participants, 3 in the control group and 8 in the intervention group; no falls caused injury

Authors' conclusions:

- CCT improves mobility after stroke
 - o Gait capacity measured by 6mWT is a stronger predictor of community walking ability than measures of walking speed
- For measures of balance ability, results of CCT were mixed
- The available evidence applies to patients who are able to walk 10 meters unaided, and those who are living at home and not in residential care

Comments:

- The characteristics of the included studies are described clearly enough to identify that three trials had satisfactory control of bias
 - o The authors assess the evidence for CCT as “strong,” the “characteristics of included studies” table lists adequate control of bias on allocation, blinding, and attrition for three included studies, which would correspond to the definition of “strong” evidence from General Principles of WC guidelines
- The authors note that the data apply to patients enrolled in the study, who had recovered enough mobility to walk 10 meters independently

Assessment: High quality meta-analysis for strong evidence that circuit class therapy increases walking distance after a stroke in patients who have regained the ability to walk 10 meters unassisted at the beginning of therapy