



# CONSTRAINT INDUCED MOVEMENT THERAPY FOR THE LOWER EXTREMITY FOR CHILDREN WITH UNILATERAL CEREBRAL PALSY – A PILOT STUDY PROTOCOL

**Eliza Collier**<sup>1</sup>, Nicola Stuart<sup>1</sup>, Dr Sarah Reedman<sup>1,2</sup>

1. Cerebral Palsy Alliance; 2. The University of Sydney

Corresponding author: Eliza Collier, email: [ECollier@cerebralpalsy.org.au](mailto:ECollier@cerebralpalsy.org.au)

ANZCTR Trial Registration Number: ACTRN12624000890538p

This research was supported by the International Organisation of Physiotherapists in Paediatrics Research Grant

## Background

Constraint induced movement therapy (CIMT) is a “green light” intervention that is effective to improve the function of the more-affected upper limb in children with unilateral cerebral palsy (CP). CIMT involves: (1) a restraint applied to the less-affected limb, (2) intensive, functional motor training, and (3) a transfer package. There are very few interventions aimed to improve the function of the more-affected lower limb in children with unilateral CP.

CIMT for the lower extremity (CIMT-Leg) is a new concept proposed in adult stroke survivors, which has low quality, low certainty evidence in that population for improved motor function, balance, functional mobility, gait speed, lower limb kinematics and quality of life.

A pilot study of CIMT-Leg is warranted in children with CP to provide evidence of feasibility and limited efficacy.

## Aim:

To determine feasibility and limited effectiveness of CIMT-Leg in children with unilateral CP

## Methods

Pre-post non-randomized clinical trial in n = 10, 4-8 year-old children with unilateral CP in Gross Motor Function Classification System (GMFCS) levels I-III.

The intervention will consist of 67 hours of therapy/6 weeks: 1 hour goal setting/review, 6 hours alternating home and clinic-based 1:1 therapy, and <60 hours of structured home practice. A rigid knee immobilizer splint will be used to restrain the child’s less-affected lower extremity during therapy.

## Significance

To our knowledge, this is the first pilot study of CIMT-Leg in children aged 4 years+ with unilateral CP. This trial would provide critical evidence to support additional research including larger, multi-site randomized controlled trials.