THE SUNFLOWER PROJECT

Increasing standing time in non-ambulant children with cerebral palsy

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Background

Children with cerebral palsy experience progressive muscle and joint problems. Standing frames are used as part of a postural management program to reduce the risk of hip dislocation.
The optimum length of time for standing is unknown (NICE, 2012).
We will investigate whether doubling the standing time each day will lead to additional improvements in bone and movement development in children with cerebral palsy under 4 and who are not able to walk.

Picture courtesy LECKEY

Aims and Objectives

Aim: **To pilot a randomised controlled trial of the clinical effects of doubling the duration of standing in non-ambulant children with cerebral palsy.**

Objectives: **To determine:**
(a) Presence of adverse events
(b) Recruitment/drop-out rate
(c) Compliance with intervention
(d) Feasibility of randomisation/ minimization procedure, data entry and monitoring procedures
(e) Proportion of outcome measures taken
(f) Effect size estimate
(g) Required study costs
(h) Effectiveness of blinding procedure

Method

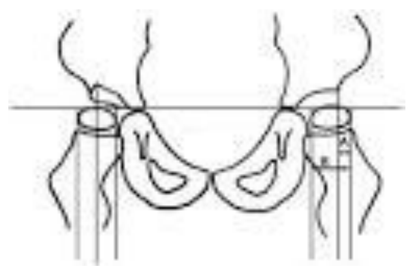
The study will pilot a RCT. Thirty non-ambulant children with cerebral palsy will be recruited via clinics, schools and parent forums.
Participants will be randomised into one of two groups that either
(a) maintains the child's current standing frame program- the control group (n=15)
(b) doubles the standing time (n=15)

Inclusion Criteria: **Participants will be included if they have a clinical diagnosis of CP or developmental delay (with spasticity, not due to a known neurological or neuromuscular disorder), GMFCS IV-V, aged 1-4 years who use a standing frame.**
Exclusion Criteria**: Participants will be excluded if they have had lower limb soft tissue release within a 6 month period, or bony surgery within a 12 month period from the onset of the participants' involvement in the trial or a fracture that would prevent standing.**
A minimisation algorithm will be used to ensure balance between the groups on the basis of the following:
Age (<2 yrs vs >2 yrs)
Functional ability (GMFCS IV vs GMFCS V)
Baseline stand time (<30mins vs >30mins)

Protocol amended 2015 to include up to age 12 and GMFCS III after poor initial recruitment.

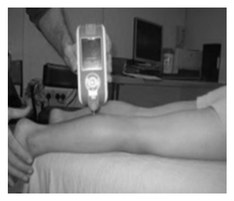
Outcome Measurement

- **Hip migration percentage**

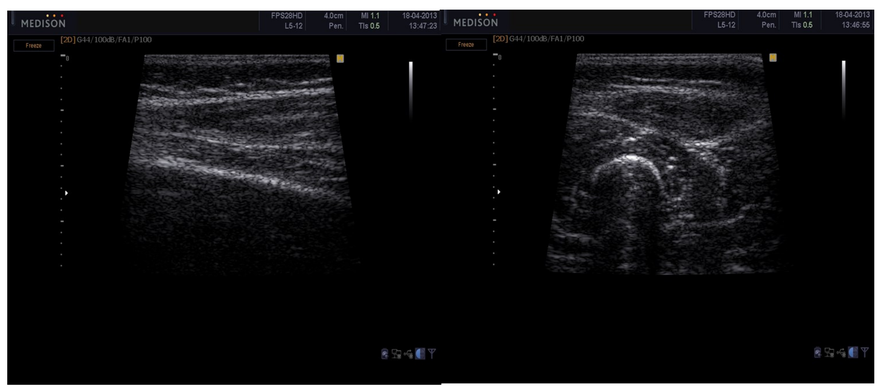


- **Range of motion at the hip, knee and ankle using digital Inclinometers**

- **Muscle tone and spasticity using the Tardieu scale and myotonometer (Myoton Pro™)**



- **Muscle depth and cross sectional area of rectus femoris using portable ultrasound**



- **CPCHILD questionnaire**
- **Paediatric Pain Profile**
- **Gross Motor Function Measure-66-IS**

RESEARCH WITH PLYMOUTH UNIVERSITY

To get involved please call
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