

Can robotic technology assist children with cerebral palsy after botulinum toxin injection?

ACTRN12621000605897

Status	RECRUITING
Sponsor	Womens and Childrens Hospital
Enrollment	30 participants

Plain Language Summary

Children with cerebral palsy often have increased muscle stiffness (hypertonia) in their legs, which can affect how they walk and move. Botulinum toxin (commonly known as Botox) injections can temporarily relax these muscles, but the benefits may fade after a few months and repeated injections may cause muscle shrinkage over time. Robotic-assisted therapy — using a walking robot that guides the legs through correct movement patterns — may help prolong the effects of the injections by helping the nervous system learn better movement patterns.

Your child may be eligible if they have cerebral palsy, are classified as GMFCS Level I to IV (meaning they can walk with or without support), have dynamic leg muscle stiffness that affects function, and can follow instructions and participate in 45-minute therapy sessions. Children who weigh under 15 kg, have had recent orthopaedic surgery, or cannot bear weight are not eligible.

Participants are randomly assigned to robotic-enhanced therapy or conventional physiotherapy after their botulinum toxin injection. Researchers will compare how long the beneficial effects of the injection last, how much children enjoy the therapy, and whether it is cost-effective. The study is being run at the Women's and Children's Hospital in Adelaide.

Key Eligibility Criteria

Inclusion (5)

- Diagnosed with cerebral palsy (CP).
- Gross Motor Function Classification System (GMFCS) Level I-IV.
- Dynamic hypertonia in lower limb muscles with functional impact not responsive to therapy input alone.
- Able to follow instructions, participate in 45 minutes of therapy.
- Able to communicate pain, perceived level of exertion.

Exclusion (11)

- Body weight less than 15kg or greater than 135kg.
- Femur length less than 23cm or greater than 47cm.
- Unable to maintain standing >20minutes.
- Knee flexion contracture >15degrees.
- Knee valgus >40degrees.

... and 6 more (see full listing online)

Locations (1 total)

Womens and Childrens Hospital - North Adelaide, SA, Australia

<https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=ACTRN12621000605897>

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