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Pediatric Research Study

Effects of a single session of transcranial direct current stimulation in children with cerebral palsy

Cerebral palsy affects an estimated 800,000 people in the United States, most typically caused by a stroke during development. Hemiparesis (weakness on one side of the body) affects approximately 25% of children with cerebral palsy. Non-invasive brain stimulation has emerged to influence improvements in hand function, specifically in children with hemiparesis due to stroke.

Weakness on one side of the body can affect the functional ability of an individual during childhood and throughout the lifespan. Research using non-invasive brain stimulation has shown improvements in recovery of motor function. In this study, we are seeking to understand what is the best method of brain stimulation in order to maximize this effect. Using transcranial direct current stimulation, brain cells that were inactive due to stroke injury have the potential to become active and contribute to improved function. Our goal is to understand the changes in brain activity following two different applications of stimulation and its impact on hand function.

The study consists of a single, 4 hour session at facilities on the University of Minnesota Minneapolis Campus, MN. You will be compensated \$50 in the form of a gift card for participating in this study.

Children/Young Adults must be 7-21 years old and meet the following criteria:

- Stroke which occurred before, during, or up to one year after birth - confirmed by MRI or CT radiologic report, with resultant congenital hemiparesis
- Hand movement which allows performance of hand assessments
- Ability to follow two-step commands
- No evidence of seizure activity within the last 2 years
- Able to give informed assent along with the informed consent of the legal guardian

For more information please contact Sam Nemanich, PhD, MSCI at
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