Welcome to the Gillick Pediatric Neuromodulation Research Lab!

Combining my 20-year clinical career as a Pediatric Physical Therapist with a PhD in Rehabilitation Science and Neuroscience, I recognize the potential for new interventions to advance pediatric outcomes and the continued striking need for pediatric neurologic research at the highest level.

I have joined the faculty at the University of Minnesota Medical School, Department of Physical Medicine and Rehabilitation, Program in Physical Therapy as a tenure-track Assistant Professor. This exciting position allows me to continue my research development and combine my clinical experience with research collaborations. Since joining the faculty, we launched new research in pediatric neuroplasticity and optimal neurorehabilitation interventions. Three grants support this research. Our research targets using non-invasive brain stimulation in combination with behavioral therapies in the hope of leading the field in a new direction. My overall career goal is focused on making a significant, positive impact on the lives of children with cerebral palsy through advancing neurorehabilitation. Inquiries and discussions are openly invited, without obligation of participation. We look forward to hearing from you.

Mission Statement

We believe that all children with cerebral palsy have an opportunity for neurorecovery during development and throughout their lifespan. The aim of our research is to integrate advances in neuromodulation and rehabilitation interventions to improve functional outcomes.

Funding
- National Institutes of Health Clinical and Translational Science Award
- UMN Clinical and Translational Science Institute Pre-K Award
- UMN Biostatistical Design and Analysis Center Award
- Minnesota Medical Foundation Research Grant

Recent Articles
- Neuroplasticity: An Appreciation From Synapse to System
  *Archives of Physical Medicine and Rehabilitation, Volume 93, Issue 10, October 2012, Pages 1846-1855* Gillick, B.T.; Zirpel, L.

Recent Awards
- 2013 American Physical Therapy Association Section on Pediatrics Dissertation Award "Pediatric Hemiparesis: Synergistic Treatment using repetitive Transcranial Magnetic Stimulation and Constraint Induced Therapy"
- 2012 Clinical and Translational Science Institute Best Poster Award
- Summer 2012 *Archives of Physical Medicine and Rehabilitation*, Top 25 Hottest Articles

Open House

Are you a child, caregiver or clinician who would like to learn more about our research with no obligation? We invite you to come, meet the research team and view our laboratory. Children are invited to participate in fun activities.

4:00-5:30 pm Tours of the Lab and the Clinical Translational Science Institute (CTSI)
5:30-6:15 pm Town Hall Forum: Presentation of our research by Dr. Gillick and Dr. Krach
6:15-7:00 pm Questions and Discussion

Join us any time between 4:00-7:00 pm. Free parking located at the East River Parkway Garage adjacent to the Children’s Rehabilitation Center. Signs and greeters will direct you to the lab. Directions are located at:


If you would like further information please contact us at 612-626-6415 or brown029@umn.edu
GILICK
PEDIATRIC
NEUROMODULATION
RESEARCH LAB

Program in Physical Therapy
University of Minnesota
MMC 388
420 Delaware Street SE
Minneapolis, MN  55455

CURRENT RESEARCH
ENROLLMENT UNDERWAY FOR
CHILDREN WITH HEMIPARESIS
AGES 8-18

(more information below)

We welcome the opportunity to discuss our research without obligation of participation. www.physther.umn.edu/tdcs

Safety of Transcranial Direct Current Stimulation in Pediatric Hemiparesis

One type of non-invasive brain stimulation, transcranial Direct Current Stimulation (tDCS), has shown beneficial behavioral effects and is more cost-effective and portable than previous types. The future potential to combine tDCS with other rehabilitation therapies could improve hand function in children with hemiparesis more effectively than each therapy separately.

The goal of this study is to determine the feasibility of tDCS use for children with hemiparesis. No serious adverse events or seizure have been reported in the adult literature to date.

Investigating this type of non-invasive brain stimulation will support future novel interventions designed to improve hand function in children with hemiparesis; expanding beyond the current limitations of traditional therapies.

To date we have had 10 participants and continue to recruit for 10 more children to complete this study. Scheduling is flexible.

Subjects will be eligible to participate in the study if all of the following conditions exist:
- Congenital Hemiparesis (hemiparetic cerebral palsy) confirmed by MRI or CT radiologic report.
- Brain imaging (CT or MRI) that shows hemispheric Stroke or Periventricular Leukomalacia
- Ages 8-18 years old
- ≥ 10 degrees of active finger motion
- Adequate receptive language function to follow two-step instructions
- No evidence of seizure activity within the last 2 years.

There is no charge to participate in the study, nor is there payment. Reimbursement for local transportation and lodging costs is provided.

For more information please contact:
Study Coordinator - Maureen Boxrud
612.626.6415 or brown029@umn.edu
www.physther.umn.edu/tdcs

This study is approved and audited by the University of Minnesota Clinical and Translational Science Institute and Internal Review Board

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