Dear Parents:
Our longitudinal study of childhood stuttering has been ongoing for 8 years, during which more than 280 children have participated. We have collected data from each of these children for up to 4 years. Our child dataset comprising neuroimaging and behavioral data from preschool and school-age children is one-of-a-kind, and provides us unprecedented opportunities to examine the neural bases of stuttering. We have been steadily publishing novel findings that provide first glimpses into brain bases of stuttering in peer-reviewed scientific journals. These findings form the basis for developing novel, efficacious treatment for stuttering in the future. Your participation helps advance the science of stuttering, and may eventually lead to interventions that help children to avoid developing chronic stuttering. Thank you again for your support!
Sincerely, Soo-Eun Chang (Principal Investigator)

Lab Member Spotlight: Denise London

As more and more families join our projects, our team is growing! Please welcome Denise London as a new project manager at the U of Michigan campus!

I work as the lab manager for our University of Michigan campus to assist with recruiting, scheduling participants, and maintaining the data within our lab. I am a recent graduate from the University of Michigan with bachelor’s degrees in Psychology and Linguistics. I plan to attend graduate school next fall for Speech-Language Pathology. I am excited to be a part of such an incredible team and to be involved in our lab’s important stuttering research. I look forward to meeting with you and your family during your visits to Ann Arbor!

Twin Study: Invite a Friend!

The Speech Neurophysiology Lab at Michigan State University and the University of Michigan has teamed up with the MSU Twin Registry to recruit one-in-a-million twin pairs for a new research study on stuttering! We are currently seeking twins between the ages of 3-17 who stutter or have stuttered in the past. You may be eligible if one twin stutters and the other does not stutter or if one or both twins have a history of stuttering. Our Twin Study seeks to further investigate the genetic basis behind developmental stuttering. Stuttering twin pairs are hard to find, but are very important to better understanding how stuttering is inherited in families. Even with the MSU Twin Registry, we need help from families like yours to reach out to twins that may be interested in our project. Please feel free to share our email (speechlabmsu@gmail.com) or our lab’s phone number (517-884-3286) with anyone you may know that could help us in our efforts to further explore developmental stuttering.

Brain wave studies at MSU and U of M

Social anxiety is present in 50-60% of adults who stutter, yet it is currently unknown whether children who stutter also have inherent differences in neural processing linked to anxiety.

In the first study of its kind, we will be using an established brain wave signal called error-related negativity (ERN) response to examine whether this response is heightened in children who stutter. Furthermore, we will be examining whether ERN might predict persistence versus recovery in childhood stuttering.

This study is ongoing on both MSU (Dr. Mandy Hampton Wray) and U of M (Dr. Yanni Liu). Both sites are still actively recruiting children 3-5 years of age to participate in this study.

Find Us Online:
www.neurostutteringresearch.com
https://www.facebook.com/msudevelopmentalstutteringproject/
Members of our lab attended international stuttering conferences to share our recent findings. Work that was presented included our recent neuroanatomical findings differentiating persistent stuttering children from recovered children and fluent peers (see “Recent Findings”), temperament factors that predict performance during MRI scanning in young children, and links between lexical development, microstructural white matter changes, and eventual persistence or recovery from stuttering in children.

Recent Findings

Our most recent publication is hot off the press in the eminent neurology journal Brain (“Anomalous morphology in left hemisphere motor and premotor cortex of children who stutter.”). The data reported in this study were acquired from children who participated in our study as far back as from 2010. We thank the children and families for their participation for allowing us to discover novel findings that elucidate neuroanatomical differences in children who stutter.

These findings are important, as they provide first steps in finding objective markers that may be used by clinicians in the future to identify those children most vulnerable to develop persistent stuttering, so that intensive treatment could be delivered early on. In this study, we found for the first time that cortical thickness (the outer most part of the brain that contains neural cell bodies and dendrites-the information processing areas) was reduced in children with persistent stuttering, in areas known to be critically involved in speech planning the production. We will be following up on these results by investigating further whether these changes are maintained as the children age, by examining the trajectories of their brain growth. These studies will further differentiate children who eventually persist or recover from stuttering, providing us clues to neural bases of stuttering and mechanisms leading to natural recovery.

On June 30th, many of our lab members attended a screening of the documentary, “When I Stutter.” The screening was hosted at the Michigan Theater in Downtown Ann Arbor by the Eastern Michigan University chapter of the National Student Speech and Language Hearing Association. This screening was followed by a Q&A session with director John Gomez and the several people who stutter and clinicians that were featured in the film.

Non-Invasive Brain Stimulation Clinical Trial with Dr. Emily Garnett

Dr. Emily Garnett is leading a randomized control trial investigating the effects of non-invasive brain stimulation on brain connectivity and speech fluency in adults who stutter. Using MRI, we know that certain regions of the brain are involved in speech and language processing. In stuttering speakers, some of these regions are less active than in control speakers. Using what’s called transcranial direct current stimulation (tDCS), a safe, non-invasive method of applying electrical current to the brain through the scalp, we can target these speech regions. If we know which regions of the brain are involved, and we can enhance activity in those areas with brain stimulation during speech therapy, we hope to augment effects of treatment.

If you are interested or know of anyone who might be interested in participating, please visit our lab website or email us for more information. The full details of the clinical trial can be found here on the clinicaltrials.gov website.

We are actively searching for more participants for each of our studies. If you are interested or know of anyone who might be interested in participating, please contact us!

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