Research Project
Funding Opportunity

Cerebral Palsy ALLIANCE RESEARCH FOUNDATION

INNOVATIVE ASSESSMENT OF RECEPTIVE LANGUAGE IN NON-VERBAL PEOPLE WITH CEREBRAL PALSY

Comparison of Eye-gaze and Brain-computer Interface Methods

People with cerebral palsy who have significant impairments in movement and speech are at high risk for co-morbid cognitive and learning disabilities. The motor and communication demands of standardized cognitive assessments make them inaccessible to people with the greatest need for accurate assessment. Misclassification of cognitive function for individuals with cerebral palsy can result in inadequate or inappropriate medical interventions or educational planning. Long-term negative consequences of underestimating capabilities or needs are incalculable.

PROJECT BACKGROUND

Eye-Gaze Interfaces (EGIs) and Brain-Computer Interfaces (BCIs) are assistive technology devices for individuals with CP that facilitate communication with limited or no volitional motor response demands. While both EGI and BCI create cognitive testing strategies requiring little or no physical ability, they differ in equipment and set-up, physical ability required, and access provided.

In this research project we will compare BCI and EGI access methods to determine which method provides optimal accessibility for people with CP-related motor and speech impairments; and, secondly, determine whether individual characteristics, including oculomotor function and attention, predict PPVT-IV scores associated with each access method.

Our goal is to develop simple and accurate assessment practices that will reveal the true cognitive capabilities of people with severe CP.

RESEARCHER

Dr. Jane Huggins, PhD
Associate Research Scientist, Physical Medicine and Rehabilitation and Biomedical Engineering
University of Michigan
Ann Arbor, MI

FUNDING REQUIRED

$180,000 over 2 years