

Functional near-infrared spectroscopy (fNIR) is a reliable, portable and inexpensive method for measuring changes in blood oxygenation in the prefrontal cortex. Executive function has been extensively studied in the prefrontal cortex using fNIR devices. How the prefrontal cortex specifically responds to various forms and difficulties of executive function tasks remains unclear. Specifically I am studying changes in the hemodynamic response over the course of increasingly difficult verbal executive function tasks. In order to assess this issue we have had participants perform letter fluency, category fluency, procedural & narrative discourse and spatial fluency tasks from the Delis-Kaplan executive function system. The letter fluency and category fluency tasks were administered in order of increasing difficulty. Hemodynamic response in the prefrontal cortex was measured using a Biopac fNIR 100 headband. Data from 19 participants will be considered in the results. In my research I will be discussing data to explore the hemodynamic response in relationship to increasing levels of complexity in verbal executive functions.