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“Saccadic Eye Movements in Parkinson’s Disease”

Parkinson’s disease is a neurological disorder which occurs largely as a result of cell impairment or death in cells of the midbrain that project to the basal ganglia. The disease is characterized by a triad of symptoms including tremor, rigidity, and bradykinesia, and difficulty with balance and coordination. Later in the progression of the disease there may be cognitive and behavioral changes, fatigue, and trouble with walking and talking (NIA, 2022).

In this clinical study, we observed the progression of Parkinson’s disease in a diverse group of patients and compared them to a group of healthy controls of the same demographics. As Parkinson’s disease tends to affect people over the age of 60, patients in our healthy control group were also of similar ages.

To both groups we administer three tests, the Montreal Cognitive Assessment (MoCA), the Symbol Digit Modalities Test (SDMT), and the King-Devick (KD) Test. The MoCA tests a variety of cognitive functions such as memory, calculations, language, and concentration. The test is intended to screen for mild cognitive impairment. The SDMT is an assessment of information processing speed, visuospatial processing, and attention. Often used in concussion testing, the KD test is an assessment of saccadic eye movements as well as language and attention.

Our results have shown that patients with Parkinson’s are scoring lower than their healthy counterparts on the MoCA and the SDMT tests. However, they do not score worse than the healthy controls on the KD Test.