PILOT STUDY OF SENSORY INFORMATION PROCESSING AND MOTOR PROCESSING RELATIONSHIP TO EXECUTIVE CONTROL IN ADULTS WITH PRIMARY BRAIN TUMORS

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Cognitive impairment is one of the many long-term debilitating effects of brain tumor therapy. It is also one outcome that is difficult to detect in its early stages. While current methods detect severe cases of impairment, studies indicate that mild cognitive impairment can have significant effects on independent function. Most of these forms of mild impairment involve disturbances in executive control function (ECF), which requires psychomotor control and sensory perceptual function. However the current clinical gold standard for detecting cognitive impairment, the Mini-Mental Status Examination (MMSE), emphasizes memory and may not be useful in identifying disturbances in ECF that are likely to lead to declines in independent function. Thus in order to intervene early to lessen functional decline in this population, one needs to develop a battery of measures for assessing ECF, psychomotor control and sensory perceptual function for use in adults with primary brain tumors.

This pilot study will determine which instruments may aid in detecting declines in ECF in persons treated for primary brain tumors. Brain tumor patients who have completed their therapy for at least one year prior to study enrollment and have not been diagnosed as cognitively impaired by the MMSE and healthy controls will undergo a battery of tests for measuring ECF that includes the (1) EXIT 25, (2) Quantitative Sensory Test, (3) Digitized version of the Trails B. Measures of independent function (Older Adults Resource Services Activities of Daily Living Scale) and depression (Center for Epidemiological Studies-Depression Scale) will also be completed. The primary objective is to compare the time needed to complete the Digitized version of the Trails B test in persons with and without primary brain tumors. Secondary objectives are to examine differences in other measures from the Digitized version of the Trails B as well as performance on the EXIT 25, the Quantitative Sensory Test, and measures of independent function (Older Adult Resource Services Activity of Daily Living) and depression (Center for Epidemiological Studies-Depression Scale). Thirdly, we will qualitatively assess the subject’s experiences with the 3 hours of testing.