

## **COMPUTER-ASSISTED COGNITIVE REHABILITATION FOR MULTIPLE SCLEROSIS: UPDATED FINDINGS**

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**Background:** This clinic presented preliminary data that was encouraging for the cognitive rehabilitation of people with multiple sclerosis (MS). Since then, we have recruited additional participants, and the data lend conclusive evidence to our hypotheses. This intervention been shown to not only improve cognitive processes (Thorne et al., 2010), but also increase quality of life. Cognitive deficits are common in individuals with MS, occurring in 50% to 60% of this population. At the present time, there are limited options for its treatment (Sullivan, 2004).

### **Objectives**

: We are evaluating the effectiveness of a computer-assisted cognitive rehabilitation (CACR) program. This intervention has been shown to improve neuropsychological (NP) processes in those with cognitive deficits unrelated to MS, thus providing promise for this study (Bennet et al., 1991). We are now able to evaluate pre-post statistical changes.

### **Methods**

: To this date we have studied 17 individuals with MS, demonstrating mild-to-moderate cognitive deficits on formal NP testing. They were recruited to participate in a 30-week study. Subjects completed 1 hour of CACR 5 days a week at home, and their progress was monitored using a log and recorded data. Patients completed pre and post MicroCog, Paced Auditory Serial Addition Test (PASAT), and Controlled Oral Word Association (COWA) NP assessments (Powell et al., 2004), as well as Multiple Sclerosis Quality of Life (MSQOL) assessments (Vickrey et al., 1997).

### **Results**

: The COWA, PASAT, and pre-post MicroCog t-test analyses demonstrated statistically significant changes in General Cognitive Functioning and Proficiency, Attention and Mental Control, Memory, Reasoning, Spatial Processing, and Reaction Time. In addition, the quality of life measures Multiple Sclerosis Neuropsychological Screening Questionnaire (MSNQ) and MSQOL-54 showed significant improvement in life enjoyment.

### **Conclusion**

: This is an ongoing study. In general, these preliminary results suggest that participating in this online cognitive rehabilitation program produced improvements in cognitive functioning and improved life enjoyment. Practice on cognitive tasks over time demonstrates statistically significant changes. Future studies should include a control group and evaluate generalization and maintenance of cognitive rehabilitation gains to everyday cognitive functional abilities as well as life enjoyment.

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