



**BACKGROUND**

Cognitive deficits are common in individuals who have Multiple Sclerosis (MS), occurring in 50 - 60% of those individuals who have MS. At the present time, there are limited options for its treatment (Sullivan, 2004). Therefore, we are evaluating the effectiveness of a computer-assisted cognitive rehabilitation (CACR) program. This intervention has been shown to improve neuropsychological processes in those with cognitive deficits unrelated to MS, thus providing promise for this study (Bennet, Dittmar, & Raubach, 1991).

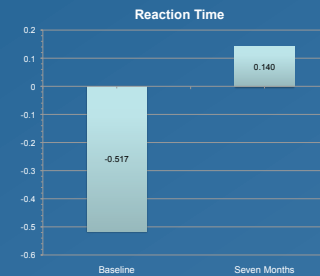
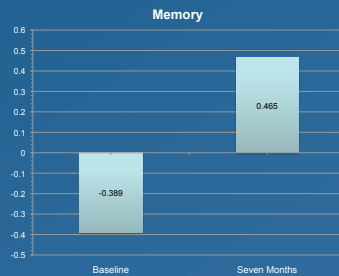
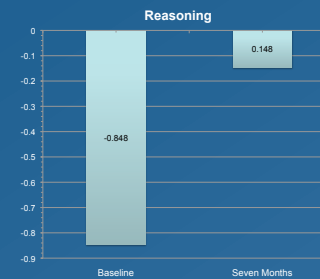
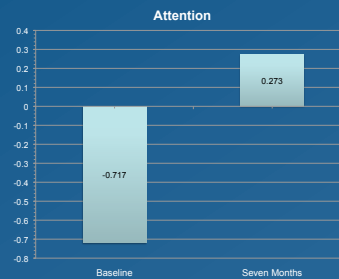
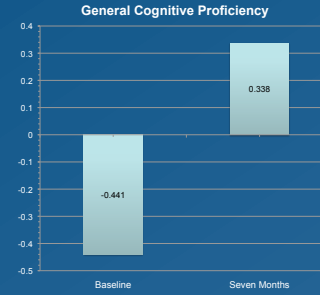
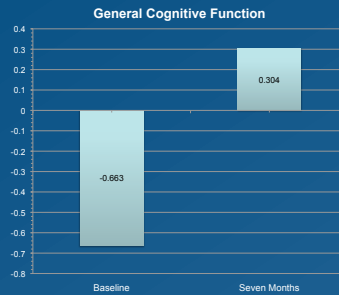
Chaliman et al. (2008) presented preliminary data from our clinic that were encouraging for the cognitive rehabilitation of people with MS. Since then, we have recruited additional participants and the data lend conclusive evidence toward our hypotheses.

**OBJECTIVES**

To investigate the potential utility of computer-assisted cognitive rehabilitation (CACR) in patients with MS who have mild to moderate cognitive impairment.

**METHODS**

Twenty-two individuals with MS demonstrating mild to moderate cognitive deficits on formal NP testing were recruited to participate in a 30-week study. Subjects completed one hour of CACR five days a week at home and their progress was monitored using a log and recorded data. Patients completed pre and post MicroCog neuropsychological assessment (Powell et al., 2004).



**RESULTS**

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, Information Processing Speed and Accuracy approached significance.

The data presented are for participants who completed the full 7 month testing period. Results from MicroCog testing indicate that General Cognitive Functioning increased an average of 21 percentile points, General Cognitive Proficiency increased an average of 19 percentile points, Attention/Mental Control increased an average of 19 percentile points, and Memory increased an average of 24 percentile points. In addition, Reasoning Abilities increased an average of 13 percentage points and Reaction Time increased 20 points.

**CONCLUSIONS**

In general, these preliminary results suggest that participating in this online cognitive rehabilitation program produced a trend toward improvements in cognitive functioning, especially with regard to attention, memory, and reasoning and reaction time.

**REFERENCES**

- 1 Bennett, T, Dittmar, C., & Raubach, S. (1991). Multiple sclerosis: Cognitive deficits and rehabilitation strategies.
- 2 Chaliman, R., Perez, F. L., & Hutton, G. J. (2008). Longitudinal Analysis of Computer-Based Cognitive Rehabilitation in Multiple Sclerosis. Poster presented at Consortium of Multiple Sclerosis Centers.
- 3 Sullivan, K. (2004). Neuropsychological Assessment of Mental Capacity. *Neuropsychology Review*, 14(3), 131-142.