Cognitive Dysfunction: Comparison in Multiple Sclerosis with Human Controls
Lacy Brame, BA1, Jim Scott, Ph.D2, Shaun Chacko, BS1, Julio Molineros, Ph.D1, Indra Adrianto, Ph.D1, Dustin Fife Ph.D1, Farhat Husain, MD1,3

1Oklahoma Medical Research Foundation, MS Center of Excellence. 2The University of Oklahoma College of Medicine, Psychiatry and Behavioral Sciences. 3Integris Neurology. Oklahoma City, OK, USA.

Introduction
• Cognitive dysfunction (CD) has been reported in approximately 60% of patients with multiple sclerosis (MS).
• CD is a cause of significant disability and affects modalities such as memory and information processing speed.
• Establishing cognitive dysfunction in MS compared to human controls could afford earlier intervention and management of distressing symptoms.

Objective
• To assess cognitive dysfunction in multiple sclerosis patients compared to healthy controls.
• To utilize two test batteries: NeuroTrax Mindstreams and BICAMS to measure cognitive dysfunction.

Methods
We utilized two tests, computerized cognitive testing (NeuroTrax) and the BICAMS test battery, to address the question of the difference in the information processing speed domain of cognitive dysfunction between the groups.

Results
Figure 1. Information processing speed in MS, and Controls Measured by NeuroTrax Minstreams.

Figure 2. Information processing speed in MS, and Controls Measured by BICAMS.

Figure 3. Summary of a paired t-test for the difference between MS patients and matched healthy controls (p<0.0001).

Conclusions
• Data were analyzed by paired t-test to measure the difference in information processing speed of multiple sclerosis patients compared to controls.
• We found significant differences in information processing speed between MS patients and controls that are detectible by both the BICAMS and Neurotrax tests (p<0.0001).
• The study reveals significant differences in the information processing speed domain between multiple sclerosis patients and controls as demonstrated by the BICAMS and NeuroTrax tests.
• Our study is unique due to the utilization of both the BICAMS and NeuroTrax tests and the comparison of multiple sclerosis patients to human controls.
• Findings from our study reinforce the existing literature regarding cognitive dysfunction in multiple sclerosis.
• Our findings can be applied clinically to anticipate deficits and intervene early in the course of multiple sclerosis.

References