### Abstract:

Background: Understanding the memory impairment associated with mild cognitive impairment (MCI) and identifying assessment tools capable of measuring these impairments continues to be of paramount importance. The goal of this study was to examine the utility of Cogtest, a computerized neuropsychological test battery used with a variety of clinical populations and in clinical trials, to identify memory deficits in MCI.

Methods: Cogtest (www.cogtest.com) has a library of computerized cognitive assessments with a platform allowing for accurate recording of reaction times and enhanced standardization of administration relative to conventional paper-pencil tests. The Word List Memory Test (verbal selective reminding memory task), Face Memory Test (visual memory), and the Auditory Number Sequencing Test (working memory) were administered to MCI (n=44) and healthy controls (HC, n=50). All subjects received a screening battery which included a paired associate test. A z score = -1.5 SD below that of a normative group on this test was used as the objective measure of memory impairment in the definition of MCI.

Results: Group differences were found for education and this was covaried in all analyses of Cogtest variables. ANCOVA were used to examine Cogtest variables and significance levels were set to p < .01. Significant Group performance differences were seen on the Word List Memory Task (a computerized version of the Buxhke selective reminding task). MCI subjects remembered significantly fewer words on the first trial (mean = 4.6), on all trials (mean = 36.3), and after a 30 minute delay (mean = 5.8) compared to HC (mean = 9.2, 54.3, 12.8, respectively). In the Face Memory Test, MCI subjects remembered significantly fewer words compared to HC (82% verses 78%; p<.001). After a 30 minute delay, MCI subjects remembered significantly fewer faces (63%) compared to HC (73%) but not from each other. In the Auditory Number Sequencing task, MCI subjects sequenced significantly fewer numbers (mean = 9.9) compared to HC (mean = 12.2).

Conclusions: We conclude that multiple memory domains as assessed with Cogtest are affected in MCI. The Cogtest library of tests is able to identify cognitive deficits in MCI patients.

### Introduction

Mild cognitive impairment (MCI)[1] is a term indicating a transitional stage between normal ageing and dementia [2]. Clinically, it refers to an impairment in one or more cognitive domains, usually memory, in subjects with adequate general functioning who do not fulfill the diagnostic criteria for dementia [2]. Understanding the memory impairments associated with MCI and identifying cognitive assessment tools capable of measuring them, continues to be of paramount importance. Computerized batteries are being more commonly employed for this purpose.

### Aim

To examine the utility of COGTEST in identifying memory problems in MCI and to determine if MCI is domain specific or a generalized memory performance deficit exists.

### Method

MCI was classified using a screening battery. Performance < -1.5 SD below a normative group on a paired associate learning task was the operational definition of MCI. All patients signed an approved IRB consent form.

### Results

**Face Memory Test:** MCI group remembered significantly fewer faces than controls on immediate and delayed trials.

**Auditory Number Sequencing Test:** MCI group sequenced significantly fewer numbers (mean = 9.9) compared to the control group (mean = 12.2).

**Word List Memory Test:** MCI group remembered significantly fewer words than the control group on the first trial, on all trials and after a 30 minute delay. Further, the MCI group remembered fewer items from trial to trial (p’s < .001).

### Conclusions

Multiple memory domains are affected in MCI and COGTEST has a library of cognitive tests that are sensitive at identifying cognitive deficits in these individuals.

### References


Presented at the International Conference on Alzheimer’s Disease (ICAD) 2008, July 26th to 31st, Chicago.