A COGNITIVE ESTIMATION TEST FOR MEMORY-IMPAIRED SUBJECTS

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Cognitive estimation involves a subject's ability to offer plausible responses to inexact questions. Adequate performance utilizes frontal executive function, semantic memory, as well as other cognitive domains. Several estimation tests have been previously developed, but these either had a non-North American cultural bias or lacked standardized scoring methods. We have therefore developed a new Cognitive Estimation Test (CET) with improved psychometric properties.

A series of questions was piloted and then tested on a sample of 40 normal elderly controls (NEC). Based on their responses, 15 questions with the narrowest range of normed responses were selected. An objective scoring system based on deviation from the mean was developed. This yielded an easily administered and scored test with a perfect score of 0, and a maximum score of 30.

This CET was administered to 20 Mild Cognitive Impairment (MCI) and 20 Alzheimer's Disease (AD) subjects that presented at our memory clinic at the Jewish General Hospital. They were compared to 20 NECs . The NEC group had a mean score of 6.8 points, (+/- 2.35). A three-way ANOVA followed by a post-hoc analysis indicated that there was a significant difference between the average CET score of the NEC and AD group, and the MCI and AD group ($p< 0.05$), but not the MCI and NEC group.

These results suggest that it is possible to distinguish between MCI and AD patients using the CET. Furthermore, the individual analyses within the MCI group indicate that the distribution of CET scores is bimodal, and that half of the group performs at par with the NEC group, while the other half manifest impairments similar to the AD group. This suggests a potential role for the CET in the early diagnosis of AD.