

EVALUATION OF THE DIAGNOSTIC ACCURACY OF THREE MEMORY TESTS FOR EARLY ALZHEIMER'S DISEASE (PE-2013-02356465): A PRELIMINARY REPORT



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INTRODUCTION

The main aim of this multicentric project is to investigate the specificity and sensitivity of three memory tests (Free And Cued Selective Reminding Test (FCSRT; Frasson, 2011), Short Term Memory Binding Test (STMBT; Parra, 2009), Delayed Match To Sample 48 (DMS48; Barbeau, 2004) proposed as cognitive markers for Alzheimer's disease (AD). **The study is funded by the Italian Ministry of Health under registration number PE-2013-02356465** and involves Luigi Sacco Hospital as coordinator Center, San Raffaele Scientific Institute and the University of Edinburgh.

The aim of this report is to identify for each test which scores better disentangle performances between patients and older controls according to previous literature and our preliminary data.

METHODS

Data collected on 20 patients with AD and 20 healthy older adults (HO) were analyzed. All participants underwent the three experimental tests along with a standard neuropsychological evaluation including a verbal associative memory test in one single session. For each tests we calculated the following scores:

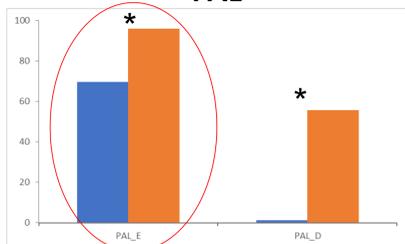
- FCSRT : % of accuracy of immediate free (IFR) and cued recall score (ITR) and a delayed [30 minutes] free (DFR) and cued recall score (DTR) according to standard procedures
- DMS48 : % of accuracy of immediate and delayed [1 hour] recognition tasks
- STMBT : % of accuracy of the shape only (S) and shape-color binding (B) conditions for each number of items presented (2 or 3)
- Paired-associate learning (PAL): total easy (E) and difficult (D) items recalled.

RESULTS

■ AD ■ HO

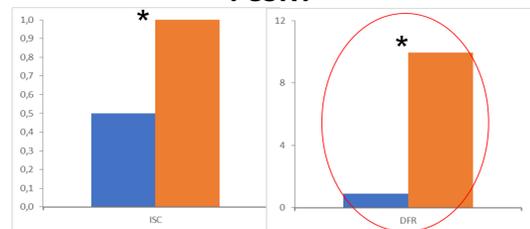
*: p<0.05

PAL



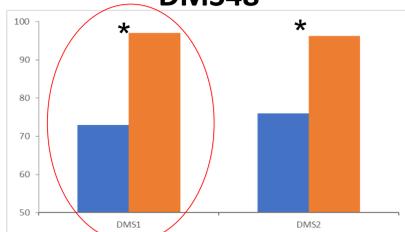
total accuracy of easy items is a better index than total accuracy of difficult items
→ no floor effects observed in AD

FCSRT



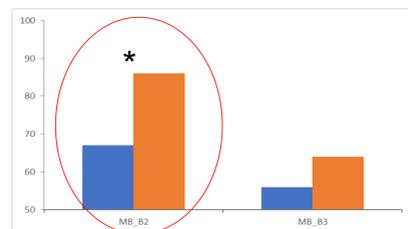
DFR is a better index than ISC
→ not a composite score and better differentiates between AD and HO

DMS48



DMS2 is as good as DMS1
→ no need for an additional delayed test

STMBT

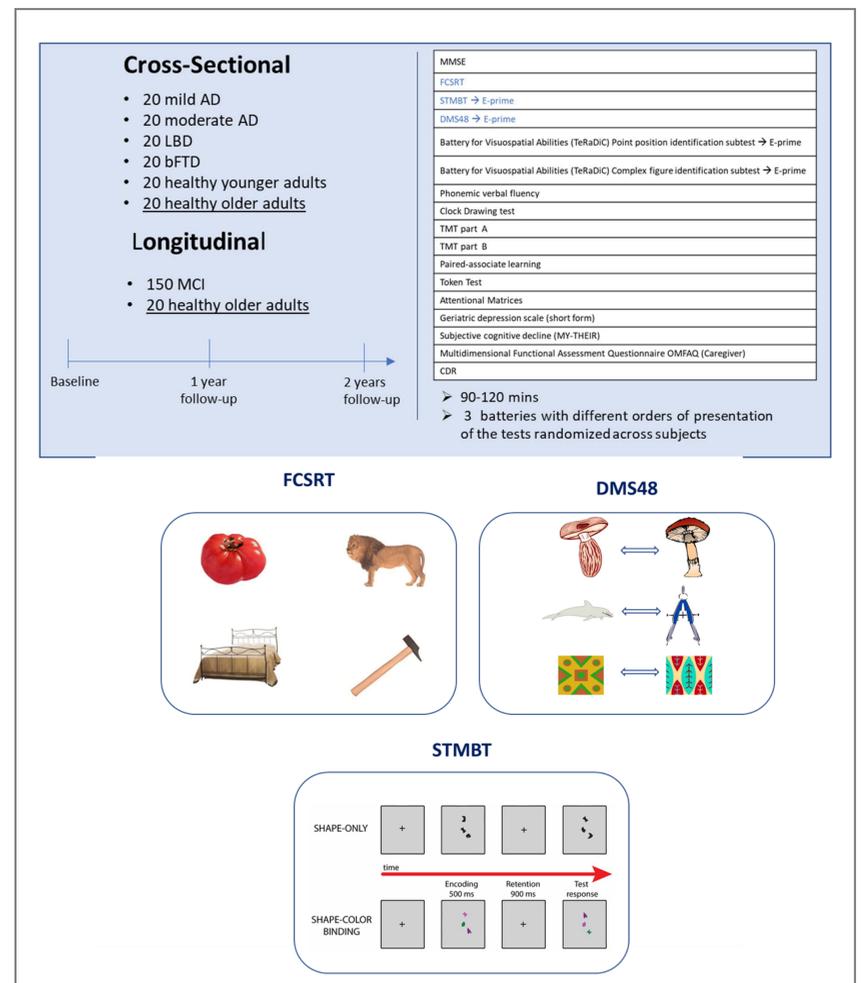


total accuracy of binding with 2 items is a better index than total accuracy of binding with 3 items
→ better differentiates between AD and HO

CONCLUSION

The present study reports for the first time a comparison across controls and AD on three memory tests proposed as cognitive markers for AD.

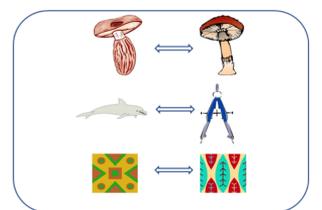
Our preliminary data, in line with previous literature, are encouraging in confirming that the outcomes selected for each test may offer an aid to diagnosis of early AD, but a larger sample and longitudinal data are needed to address the main research question of this planned study.



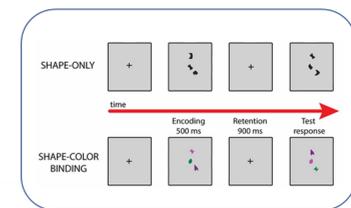
FCSRT



DMS48



STMBT



Demographic characteristics of the sample

Group	N	Age	Education (years)	Gender (% female)
AD	20	78.4 (5.0)	8.8 (4.5)	65
HO	20	71.3 (5.1)	10.4 (4.5)	50

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