Going Beyond Early Assessment of MCI: the meaningfulness of cognitive procesing speed.

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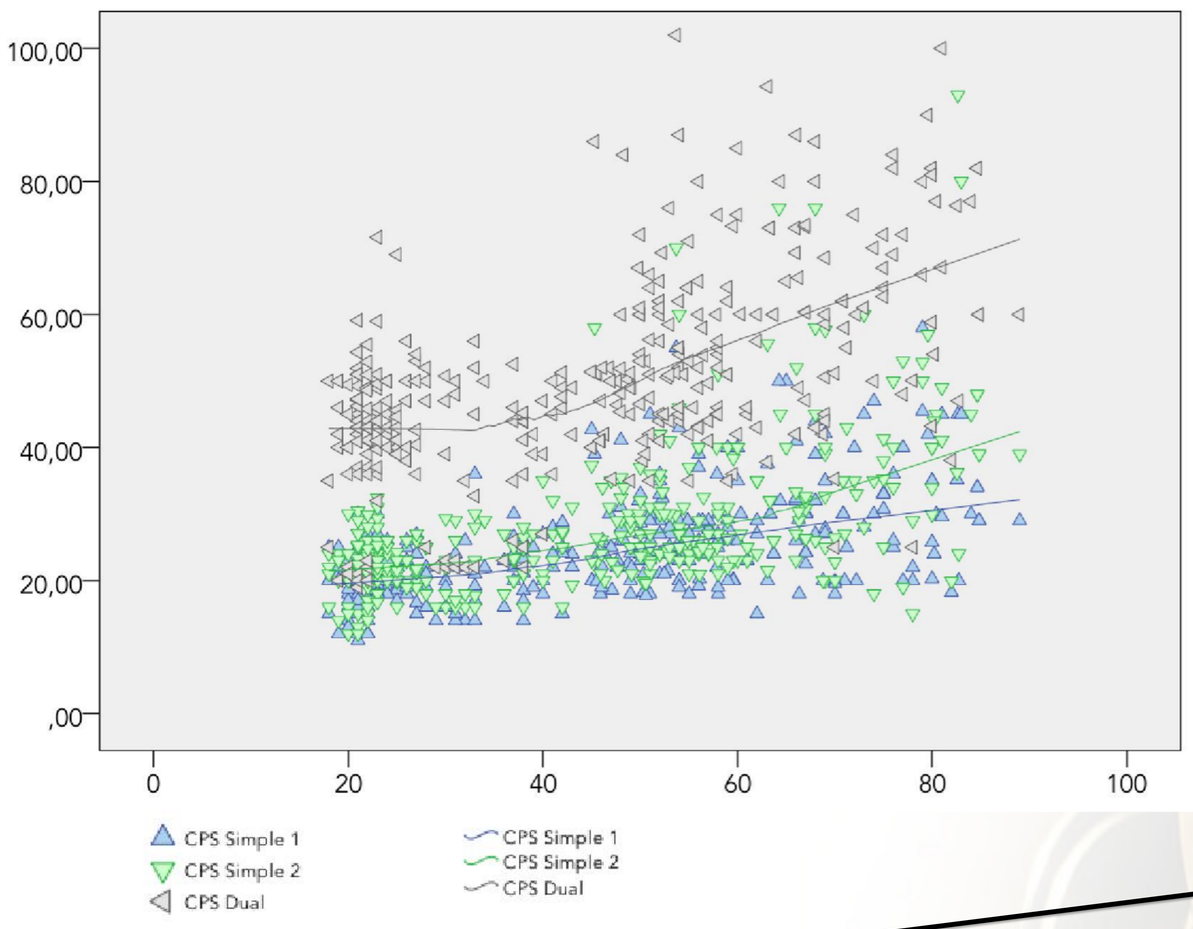
The **aim** of this communication is introducing the importance of the inclusion of cognitive processing speed (CPS) in neuropsychological assessments for MCI & AD as the slowdown of CPS is present in multiple diseases of the CNS among which we can include cognitive impairments of diverse aetheologies.

The CPS has been demonstrated to be **clearly related to the aging process in normal conditions**. For the assessment of many cognitive domains we usually use time-controlled neuropsychological tasks to help us considering the possibility of a cognitive impairment. However, we do not take into consideration that maybe only the CPS is slowed and there's no affectation in other cognitive domains bu only slowed capacity of the system.

Graph 1. Relation between CPS & normal aging process (Bruna, Subirana-Mirete et al., 2011)



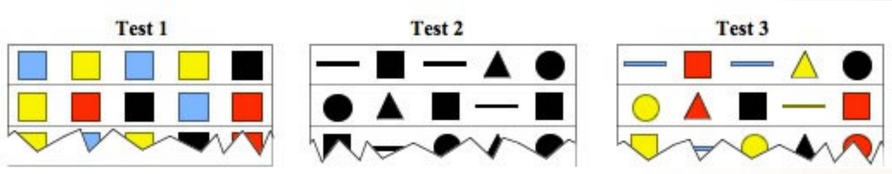
Time-based neuropsychological & clinical assessment + **Paper and Pencil** examinations:
- motor slowness
- Illiterates
- not used to
- …

= Inacurate assessments

- The separation between CPS and other cognitive processes is important to be considered in everyday clinical assessment.
- Timings in memory, attention or language tasks are too often considered for the final conclusions of the overall cognitive status of the patients.
- The CPS may be slowed with no other affectation in other cognitive domains
- Only slowed capacity of the system

A Quick Test: Assessment of Parietal Function -

Wiig, E. H., Nielsen, N. P., Minthon, L. & Warkentin, S. (2002). Alzheimer Quick Test: Assessment of Parietal Function. San Antonio, TX: Harcourt Assessment / PsychCorp



In order to assess CPS on everyday clinical practice, several studies have been conducted in <u>order to quantitatively evaluate the slowing of CPS in different stages of aging and cognitive impairment.</u>

$$Y_{simple\text{-}tasks} = 15.985 + (0.218 \cdot age)$$
$$Y_{dual\text{-}tasks} = 31.872 + (0.379 \cdot age)$$

Previously studies have demonstrated, these data are independent of the gender of the subjects studied (Verheaghen & Salthouse, 1997; Wiig, et al., 2002; Wiig, et al., 2002b; Wiig, et al., 2007).

AQT adaptations:

- A Quick Test of Cognitive Speed: Patterns of Age Groups 15 to 95 Years.
  Elisabeth H Wiig, Niels Peter Nielsen, James M Jacobson
  Percept Mot Skills. 2007 Jun;104 (3 Pt 2):1067-75
- Clinical Utility Of Color-Form Naming in Alzheimer's Disease: Preliminary Evidence.
  Niels Peter Nielsen, Elisabeth H Wiig, Siegbert Warkentin, Lennart M-Minthon
  Percept Mot Skills. 2004 99 (3,2):1201-4
- Early Detection of Cognitive Impairment. Adaptation of Alzheimer's Quick Test to the Spanish Population.
  Olga Bruna, Miguel Puyuelo, N Cullelli, A Dergham, Elisabeth H Wiig
  Int Neur Soc, 2007
- Alzheimer's Quick Test Screening Criteria for West African Speakers of Krio
  Niels Peter Nielsen, Elisabeth H Wiig, Marie Barnett
  Age & Ageing, 2006, 35:503-507
- Processing speed in the aging process: The 'A Quick test for Cognitive Speed' screening criteria for Hispanic Speakers.
  J. Subirana-Mirete, O. Bruna, M. Puyuelo, C. Virgili, S. Signo & C. Palma
  In Press

We propose CPS to be considered in everyday neuropsychological assessment as it's been shown to be an easy-to-use, fast screening tool and it has demonstrated a good sensitivity and specificity to MCI and AD (Subirana et al, in press; Bruna et al., 2011)

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