Digital and plasma biomarkers for an early diagnosis of Mild Cognitive Impairment and prodromal Alzheimer's disease

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BACKGROUND

The application of blood-based biomarkers for the identification of Alzheimer's disease (AD) and the development of novel digital technologies as cognitive screening tests are critical to moving toward a reliable, more accessible early diagnosis.

METHODS

Altoida's MCI-DNS is a 10-minute cognitive test battery evaluating activities of daily living via motoric and augmented reality (AR) tasks. The test includes different motoric tests and the AR tasks consists of placing and finding virtual objects in a real environment.









100-** 40-Non-degenerative Prodromal AD MCI (ndMCI; n=25) (pAD; n = 46)APOE genotyping ALTOIDA & and CSF extraction Neuropsych. tests Image 1. Representation of the ALTOIDA test. Three virtual objects are placed then found in a and randomized order. The MCI 20-Digital Neurosignature (MCI-DNS) obtained by is CSF AB42weighting multi-modal

digital data features, such as

navigation trajectories.

micro-movements,

reaction times, or

hands'

speed,

Altoida's MCI-DNS test allows excellent discrimination between CTR and patients with MCI. MCI-DNS scores significantly correlate with CSF AD core biomarkers, biomarkers of neurodegeneration and blood-based biomarkers (i.e., plasma pTau₁₈₁).



CONCLUSIONS

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