

Figure 1. Estimated marginal means from rmANOVA for groups (mda-MCI, mdna-MCI, sda-MCI and Healthy Controls) in Neuropsychiatric Inventory at baseline and follow-up evaluations

criteria (Albert et al 2011; Petersen 2004). We compared the change in the total severity score of neuropsychiatric and depressive symptoms assessed through the Neuropsychiatric Inventory-Questionnaire (NPI-Q) and the Geriatric Depression Scale (GDS), using repeated measures ANOVA with the within-subject NPI-Q and GDS scores as dependent variables, and Group (the four groups) and Evaluation (baseline and follow-up) as factors. **Results:** We found significant effects for Group and interaction Group*Evaluation in the neuropsychiatric symptoms (NPI-Q). The group mda-MCI showed higher neuropsychiatric symptoms than the other groups at baseline and an increase at the follow-up. In depressive symptoms (GDS) only significant main effects for Group and Evaluation were found. The mda-MCI and mdna-MCI groups displayed more depressive symptoms than the Healthy Controls. For all groups there was a slight increase at the follow-up. **Conclusions:** Neuropsychiatric and depressive symptoms are more common in patients with mda-MCI subtype, and in these patients increase significantly at relatively short follow-up evaluations. Further longitudinal research is necessary to determine the trajectory of that change and the predictive role of these symptoms on the conversion to Alzheimer Disease.

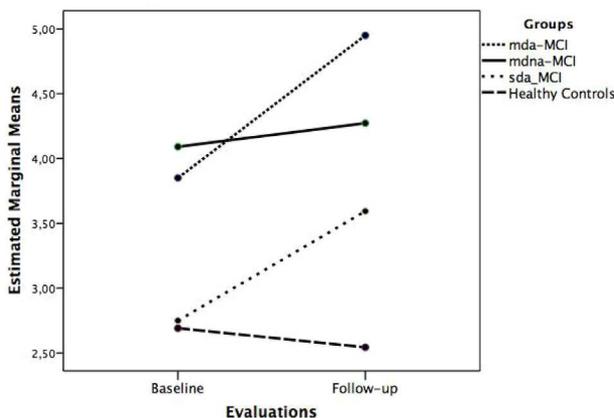


Figure 2. Estimated marginal means from rmANOVA for groups, Multiple domain amnesic MCI (mda-MCI), Multiple domain non amnesic MCI (mdna-MCI), Single domain amnesic MCI (sda-MCI) and Healthy Controls in Geriatric Depression Scale at baseline and follow-up evaluations

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PATTERNS OF HOME COMPUTER USE DIFFER OVER TIME BETWEEN OLDER ADULTS DESTINED TO DEVELOP MILD COGNITIVE IMPAIRMENT AND THOSE WHO REMAIN COGNITIVELY INTACT

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Background: Identification of pre-symptomatic changes in healthy older adults that signal future cognitive decline and transition to MCI and AD is an important goal for early detection and intervention. Subtle changes in behavior associated with less efficient or effective performance in routine daily activities may signal incidental MCI. These changes have been correlated with cognitive tests and medial temporal lobe brain structures often affected in early AD. In this study, we examined whether patterns of responding to an in-home weekly online health questionnaire differed between older adults who remained cognitively intact and those who were destined to transition to MCI over a study period of four years. **Methods:** Participants were 110 community dwelling older adults enrolled in a longitudinal study of in-home monitoring technologies. At baseline in 2011, all participants were non-depressed (GDS<5) and cognitively intact (mean age = 84.8 years; 77% female). Of these individuals, 29 (26%) were classified as MCI based on neuropsychological criteria (mean age=86.0; 79% female) at an annual clinical follow-up visit (mean follow-up = 2.1 years). During the study period, a short online health questionnaire was distributed weekly through the Internet on Monday mornings at 5 am on participants' home computers. Longitudinal generalized linear mixed effects models were generated with three online questionnaire response variables: completion time, in seconds; start time in the day, in seconds from 5am; and whether staff assistance was needed (yes/no), as unique outcomes. Models were adjusted for age, education and number of items endorsed. **Results:** On average, individuals destined to develop MCI completed their questionnaires 1.4 hours later in the day than cognitively stable participants ($p=.029$), after adjusting for covariates. Over time, more participants needed assistance to complete the online questionnaires and this increase was significantly steeper in those destined to convert to MCI ($p=0.032$). **Conclusions:** The longitudinal trajectories of ambiently assessed measures of weekly home computer use differed between those who remained cognitively stable and those who were destined to transition to MCI. Remote, high frequency assessment of routine activities is a promising approach for detecting the earliest changes associated with future cognitive decline in older adults.

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RETRIEVAL DEFICIENCY IN BRAIN ACTIVITY OF WORKING MEMORY IN AMNESIC MILD COGNITIVE IMPAIRMENT PATIENTS: A BRAIN EVENT-RELATED POTENTIALS STUDY

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Background: In the early stage of Alzheimer disease or mild cognitive impairment (MCI), working memory (WM) deficiency is