69% of Mild Cognitively Impaired and 96% of AD. **Conclusions:** The described models provide accurate estimations of NAB based on demographic corrected cognitive test scores. If NAB is a predictor for progression to AD and given such models can accurately predict NAB, it follows that this work may lead to an effective and economical screen for early detection of individuals at risk of developing AD, in-turn providing justification for further confirmatory tests (e.g. PET) or to identify suitable participants for intervention or therapeutic trials.

P1-071 INTENSITY OF DEMENTIA THROUGH LATENT VARIABLE MODELLING (I-DELV) IN THE AIBL COHORT

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Background: For detection of AD the characterisation of clinical status of populations at single time points and disease progression from preclinical to clinical stages is desirable. No single instrument has been shown to sufficiently address these issues, thus combinations have been applied. As the scales of these tests often contain limitations (floor and ceiling effects) their combination introduces the potential for redundancy. Hence a latent-variable approach may provide a more rational and accurate analytic method for combining data from different clinical and cognitive tests to characterise both level of impairment and rates of decline in AD. **Methods:** Data from 936 participants in the Australian Imaging, Biomarkers and Lifestyle (AIBL) study were utilised. Two latent-variable models were specified using a structural equation model framework. The first, full, model accounted for the variance of ten cognitive tests whereas the second, reduced, model only considered MMSE, CDR sum-of-boxes and CVLT-II, both models were corrected for a variety of demographic information. The resulting scores were assessed to see how well the different clinical diagnosis groups were partitioned and whether or not differences were seen between groups of participants that transitioned (e.g. HC to MCI) or remained stable at eighteen and 36 month follow-up. The efficacy of separation was assessed using pairwise-t-tests (adjusted for multiple testing). **Results:** For both models the fit and parameter estimates were significant. Resulting scores from the reduced model approximated those of the full model. The resulting scores from both models were significantly differentiated between clinical diagnostic groups (HC, MCI and AD) and between stable and transitioning groups. e.g. at eighteen months sensitivity and specificities of 79% and 81% for transition to MCI and 84% and 85% for transition to AD were achieved. **Conclusions:** The described models provide accurate predictions of dementia severity within the AIBL cohort. Resulting scores are shown to differentiate between the clinical and cognitive status of stable and transitioning groups, suggesting that this model may be useful in determining individuals at risk of developing dementia. Such a score may also prove useful in identifying suitable candidates for, or quantifying the efficacy of, diagnostic or therapeutic trials.

P1-072 DUAL TASKING AND FUNCTIONAL MOBILITY IN ALZHEIMER'S DISEASE, MILD COGNITIVE IMPAIRMENT AND NORMAL AGING: CORRELATION WITH EXECUTIVE FUNCTION

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Background: Reduction of gait speed may be present at early stages of Alzheimer's disease (AD). Studies have shown that dual-tasking ability is impaired in AD. The aim of the present study was to compare single- and dual-tasking parameters in older adults with varying degrees of cognitive impairment. **Methods:** 70 community-dwelling older adults (17 with AD, 29 with MCI and 24 healthy controls) were assessed with the Timed Up & Go (TUG) test and with the Trail Making Test (TMT), versions A and B. The time required to complete the tasks was determined under four experimental conditions: TUG only (TUG1), TUG simultaneously administered with a verbal fluency test (TUG2), TUG while carrying a full cup of water (TUG3), and TUG with verbal fluency task while carrying a full cup of water (TUG4). **Results:** AD patients performed significantly worse that MCI and controls in all TUG tasks. When verbal fluency was associated with the TUG (TUG 2 and 4), the magnitude of the difference between AD and non-AD groups was substantially increased, and patients with MCI were differentiated from controls. Positive correlations were observed between the performance in the TMT and TUG. Numeric Results: ANOVA (TUG values for controls, MCI and AD group, in seconds): TUG1: controls, 10.18 (SD = 1.92); MCI, 10.47 (SD = 1.83); AD, 12.61 (SD = 3.18), P = 0.02); TUG2: controls, 12.38 (SD = 2.65); MCI, 13.96 (SD = 3.98); AD, 24.89 (SD = 14.28), P <0.001); TUG3: controls, 10.94 (SD = 2.08); MCI, 11.35 (SD = 2.02); AD, 14.79 (SD = 3.68), P <0.001); TUG4: controls, 12.80 (SD = 2.68); MCI,15.38 (SD = 4.37); AD, 28.41 (SD = 21.36), P <0.001. Pearson's correlation coefficients: TUG vs. TMT-A: TUG1, r = 0.274, P <0.05; TUG2, r = 0.502, P <0.01; TUG3, r = 0.261, P <0.05; TUG4, r = 0.352, P <0.01). TUG vs. TMT-B: TUG1, r = 0.276, P <0.05; TUG2, r = 0.561, P <0.01; TUG3, r = 0.273, P <0.05; TUG4, r = 0.542, P <0.01. **Conclusions:** Significant differences in functional mobility were observed in patients with AD as compared to healthy controls and, to a lesser extent, in patients with MCI. The combination of a cognitive challenge substantially increased the difficulty of AD patients to perform motor tasks, and further yielded the differentiation between patients with MCI cognitively unimpaired subjects, indicating that subtle difficulties in dual tasking combining motor and cognitive abilities may be an early symptom of AD.

P1-073 HOW DOES GAIT CHANGE AS COGNITIVE DECLINE PROGRESSES IN THE ELDERLY?

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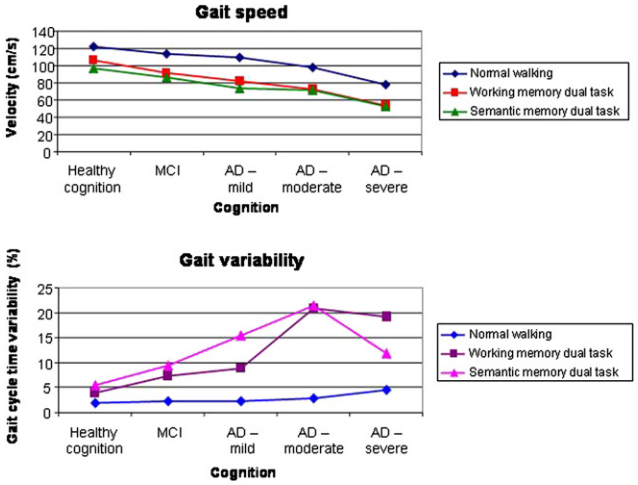
Background: Mobility impairments are often associated with dementia. Some gait changes may even appear before cognitive decline can be detected by neuropsychological assessment. Gait analysis may be able to aid diagnosis of cognitive impairment. However, it is not yet well characterized how gait changes as cognitive decline progresses. **Methods:** The 1153 older adults (mean age 78.05 ± 5.92 years, age range 65.02-97.43 years, 54.81% females) in this retrospective study were outpatients from our Memory Clinic or participants in the Project BASEL (Basel Study on the Elderly) between 2007 and 2011. Participants had healthy cognition (HC, n = 357), mild cognitive impairment (MCI, n = 309) or mild (n = 219), moderate (n = 230) or severe (n = 38) Alzheimer's dementia (AD). Spatio-temporal gait parameters were quantified with the GAITRite® electronic walkway at the Basel MobilityCenter. Gait was tested during normal walking (self-selected speed) as a single task and during a working memory and a semantic memory dual task. Cognitive diagnoses were based on neuropsychological test battery results. **Results:** Gait speed slowed as cognitive impairment progressed. Compared to single task normal walking, gait speed reduction was greater for the semantic memory than for the working memory dual task in those with HC, MCI and mild AD. Gait cycle time variability, a marker of gait regularity, stayed relatively stable during the normal walking single task for those with HC, MCI and mild AD, and yet increased during dual-tasking with the variability highest during the semantic memory dual task. This change was greater in those with MCI and mild AD than in those with HC. Age-stratified results showed

that these changes in velocity and variability were not simply age-related. **Conclusions:** Cognitive impairment is characterized not only by memory loss, but also by functional impairment. Using quantitative gait analysis with dual task paradigms, we show that gait becomes slower and more variable as cognitive decline progresses. Particularly, gait cycle time variability increases during cognitive dual tasking compared to normal walking in those with MCI and mild AD. Early detection of these mobility impairments may be used as a tool to aid diagnosis of those in the earliest stages of cognitive impairment.



P1-074 THE DEMENTIA SEVERITY RATING SCALE FOR DEMENTIA: RELATIONSHIPS WITH THE CDR SUM OF BOXES, CLINICAL DIAGNOSIS AND CSF BIOMARKERS

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Background: The Dementia Severity Rating Scale (DSRS) is a brief, informant-rated questionnaire to quantify functional impairment in Alzheimer's disease (AD). Items are comparable to the Clinical Dementia Rating Scale (CDR), but incorporate a broader range of scores to detect finer increments of change across time. Here, we examined the ability of the DSRS to predict CDR sum of boxes (CDR-SB), clinical diagnosis, and cerebrospinal fluid (CSF) biomarkers of AD. **Methods:** Pearson correlations and linear regression were performed with DSRS and CDR-SB scores from subjects at the Penn Memory Center (n = 952). This sample was split in half to create test and validation samples. We also performed receiver operating characteristic (ROC) curve analyses in a varied clinical sub-sample (n = 199), comparing DSRS and CDR-SB in discriminating dementia versus no-dementia and probable AD versus mild cognitive impairment (MCI). We also compared DSRS and CDR-SB ROC curves in the detection of abnormal or normal CSF amyloid-b 1-42, total-tau, phospho-tau, and two CSF biomarker ratios. **Results:** A regression model was obtained from the test sample with an R-squared value of 0.8: Predicted CDR-SB = -0.068 + 0.39DSRS_TOTAL. The correlation between the DSRS-predicted CDR-SB and the observed CDR-SB was 0 .9 for the test sample and validation sample. In the sub-sample, the ROC curve analyses showed that: 1) for distinguishing individuals diagnosed with dementia (AD and PDD) from those without dementia (controls, MCI, PD), the DSRS had an AUC = .79, while CDR-SB AUC = .91; 2) for discriminating individuals diagnosed with MCI from those diagnosed with AD, DSRS AUC = .73, while CDR-SB AUC = .88; 3) for distinguishing individuals with abnormal amyloid-b 1-42 from those with normal amyloid-b 1-42, DSRS AUC = .70, while the CDR-SB AUC = .74. AUCs for identifying abnormality among other CSF proteins varied between .51 and .69. **Conclusions:** DSRS total score is a strong predictor of CDR-SB and is comparable in its ability to distinguish dementia from no-dementia, MCI from AD, and abnormal from normal amyloid-b 1-42. The DSRS is advantageous relative to the CDR in that it is brief and requires minimal staff or clinical expertise to administer.

P1-075 CLINICAL CHARACTERISTICS OF ALZHEIMER'S DISEASE AT INITIAL VISIT TO BELGRADE MEMORY CENTRE: SERBIAN REPORT

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Background: Alzheimer's disease (AD) has a large psychological and economical impact on patients and caregivers. Early diagnosis is of the most importance considering the approaching therapeutic options. **Methods:** A total of 752 consecutive patients visiting the Memory Centre, Neurology Clinic, Belgrade between January 2008 and November 2011 were examined. Demographic data, duration of symptoms, cognitive and psychiatric features, as well as activities of daily living, at the time of the first visit to our Centre, were analyzed. All AD patients were divided in three stages, according to the Mini Mental State examination Score (MMSE) - mild, moderate and severe AD. Our objective was to analyse demographic and clinical characteristics of Alzheimer's disease patients at the time of initial visit to our Memory Centre in Belgrade, Serbia. **Results:** One hundred and eighty four patients were excluded as they did not fulfill the diagnostic criteria for dementia; 568 patients were included in this study. Among all demented patients AD was the most frequent cause of dementia (61,3%). AD was noted to be more frequent in male patients (54%) and in patients with lower educational status ($P < 0.001$). Most of the patients asked professional help at the moderate stage of the disease (65%) with the average symptom duration of 2.8 years and average MMSE of 15 at the initial visit, with significantly impaired activities of daily living. 18 % of patients had one or more psychiatric symptom at the time of diagnosis, most frequently delusions. Patient with higher educational status asked medical help earlier ($P < 0.001$). **Conclusions:** Additional population educational activities are required in order to achieve earlier diagnosis of Alzheimer's disease, which is a necessity now days.

P1-076 SPECIFIC TYPES OF MEMORY COMPLAINTS MAY PROVIDE AN EARLY WARNING SIGN OF COGNITIVE IMPAIRMENT IN COMMUNITY-DWELLING OLDER ADULTS

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Background: Early diagnosis is critical to efforts aimed at improving treatment, care, and outcomes for persons with dementia. Routine, population-based dementia screening in primary care has been met with resistance among many in the medical profession. Subjective memory complaints may be the first sign a provider confronts when a patient is experiencing cognitive decline. However, because complaints are so common among older adults, they are frequently attributed to normal aging or disregarded altogether. The Cognitive Change Checklist (3CL) is a brief, 28-item self-report inventory of cognitive change. Several studies support its use in differentiating older adults with true cognitive impairment from healthy individuals with normal, age-related memory complaints. **Methods:** Adults aged >55 years old, living in the community without a memory loss diagnosis were recruited for participation in the Minnesota Memory Project, a longitudinal study investigating cognitive and lifestyle