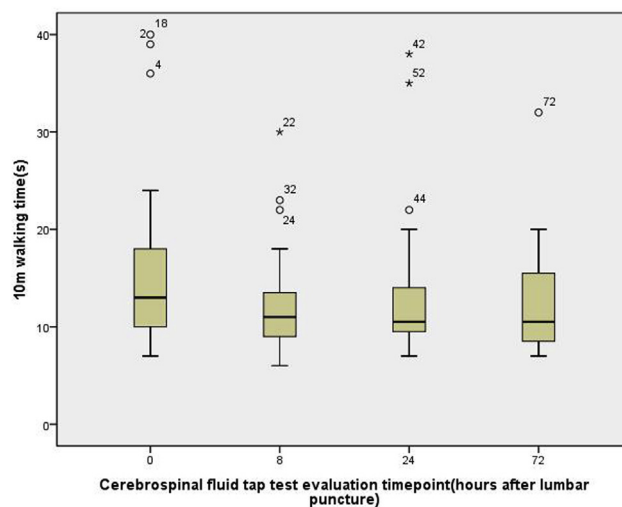


capacity by scale of daily activities. The sample comprised 110 patients with dementia: 74 with Alzheimer's disease, 12 with vascular dementia diagnosed with Hachinski Ischemia Scale score at least 7 points, plus focal neurological signs, visible lesions on computed tomography, and 24 with other dementias. **Results:** 6 patients (5.4%) felt that life is not worth living, 3 (2.7%) had wanted to die, one (0.9%) had suicidal gestures and none made a suicide attempt. The 4 patients who "wanted to die" or had suicidal thoughts had a score of at least 12 on the HAMD. Of these, 3 were clinically depressed. Suicidal ideation and "desire to die" were significantly correlated only with the presence of depressive symptoms in patients with Alzheimer's disease. There were no significant differences in HAMD scores between groups of dementia. **Conclusions:** Suicidal ideation and / or "desire to die" was self-reported by 4% of patients with dementia and is associated with co-morbid depressive symptoms, especially in Alzheimer's disease.



P1-138

WALKING ABILITY AND COGNITIVE FUNCTION CHANGE IN NORMAL PRESSURE HYDROCEPHALUS PATIENTS AFTER CEREBROSPINAL FLUID TAP TEST

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Background: Cerebrospinal fluid tap test is a helpful supplementary test for normal pressure hydrocephalus diagnosis, but the evaluation time and methods always puzzle clinicians. **Methods:** 33 patients with probable normal pressure hydrocephalus in PUMC hospital from 2013 to 2014 were included. All patients were evaluated using MMSE, MOCA, ADL, NPH scale, underwent 1.5T head MRI scan and were transferred to neurosurgical department to have ventriculo-peritoneal shunt if they were willing to. A lumbar tap with removal of 30 ml of CSF was performed in all patients. Evaluations included the 10m walking time and steps, TMT-A, number code and STROOP test. Those tests were performed one day before and 8, 24, 72 hour after CSF tap test. Compare the walking test and neuropsychological test results before with those after the CSF tap test. Correlate the NPH featured MRI characters with CSF TT responses including Evan's index, callosus corpus angle, mismatch between narrowed high-convexity and medial subarachnoid spaces and enlarged Sylvian fissure associated with ventriculomegaly. **Results:** The 10m walking time after CSF tap test were significantly improved ($p < 0.0125$). On every evaluation time point there were no statistical differences. The neuropsychological tests changings were not significant except the TMT scale on 72hr after, the number code scale on 24hr and STROOP C scale on 72hr. The CSF TT responders tended to have the feature of mismatch between narrowed high-convexity and medial subarachnoid spaces and enlarged Sylvian fissure ($p < 0.05$). The Evan's index and callosus corpus were not statistically correlated with the response of CSF TT. **Conclusions:** Walking ability changing in NPH patients was significant after the cerebrospinal fluid tap test (TT). The MRI feature of mismatch between narrowed high-convexity and medial subarachnoid spaces and enlarged Sylvian fissure might be useful to help clinicians to predict the response of CSF TT.

P1-139

USING THE CAPACITY ASSESSMENT TOOL FOR GENETIC TESTING (CAT-GT) TO ASSESS THE ABILITY OF PERSONS WITH MCI TO DECIDE ABOUT APOE TESTING: THE REVEAL STUDY

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Background: We assessed the ability of persons with MCI to understand, appreciate, reason, and make a choice about *APOE* testing for Alzheimer's disease using the CAT-GT, a new capacity instrument. We also assessed the CAT-GT's validity and reliability. **Methods:** 30 individuals with amnesic MCI and 20 cognitively normal older adults completed the CAT-GT, Modified Mini-Mental State (3MS), and MacArthur Competence Assessment Tool-Clinical Research (MacCAT-CR). To examine inter-rater reliability, two researchers scored 25 interviews. **Results:** Participants were between 62 and 91 (median 77) years old, primarily Caucasian and educated (median 16 years). MCI participants scored lower on the 3MS (mean 86.4 vs. 91.1, $p = 0.01$). The groups did not differ on age, education, or race. The CAT-GT showed excellent inter-rater reliability on understanding and appreciation subscales, and moderate inter-rater reliability on the reasoning subscale (Intraclass correlations .90, .84, and .46). MCI participants performed worse than controls as a group, although most performed as well as controls. Defining "intact performance" as scoring greater than the 5th percentile of the control group's distribution, we found that 16.7%, 8% and 2% of MCI participants were impaired on understanding, appreciation, and reasoning subscales, respectively. All participants received full credit on the choice subscale. The understanding subscale correlated with the 3MS (Spearman ρ .58, $p < 0.001$) and MacCAT-CR understanding subscale (Spearman ρ .54, $p < 0.001$), and differentiated between MCI and normal controls (understanding median 22 vs. 23, Wilcoxon Rank Sum $p = 0.009$). The appreciation and reasoning subscales correlated with the 3MS (appreciation Spearman ρ .35, $p = 0.012$; reasoning Spearman ρ .40, $p = .004$), but not with MacCAT-CR subscales (appreciation Spearman ρ .25, $p = 0.09$; reasoning Spearman ρ .25, $p = .09$). MCI participant

Table 1
Performance on CAT-GT

		Normal controls (N=20)	MCI (N=30)	P value for between group comparison ^a
Understanding (range 0-24)	Median (IQR) (range)	23 (23-24) (18-24)	22 (20-23) (12-24)	<0.001
Appreciation (range 0-8)	Median (IQR) (range)	8 (7-8) (7-8)	8 (7-8) (3-8)	0.04
Reasoning (range 0-8)	Median (IQR) (range)	8 (7.5-8) (6-8)	7(6-8) (5-8)	0.04
Choice (range 0-2)	Median (IQR) (range)	2(2) (2)	2(2) (2)	n/a
Total (range 0-42)	Median (IQR) (range)	41 (40-42) 35-42	38 (35-41) (23-42)	0.003

^aAll p values based on Wilcoxon rank-sum test.

scores on appreciation and reasoning were statistically lower than controls, though absolute differences were minor (appreciation median 8 vs. 8, Wilcoxon Rank Sum $p=0.04$; reasoning median 7 vs. 8, Wilcoxon Rank Sum $p=0.04$). **Conclusions:** MCI participants generally performed adequately on the CAT-GT, with some demonstrating impaired understanding. Correlations with overall cognitive function and a validated measure of decision-making capacity suggest that the CAT-GT, particularly the understanding subscale, may assist in assessing the capacity of persons with MCI to decide whether to undergo *APOE* testing.

P1-140 **FACTORS ASSOCIATED WITH A STABLE AND LONG-LASTING HOME LIFE IN PATIENTS WITH ALZHEIMER'S DISEASE**

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Background: Continuation of a stable and long-lasting home life does not depend solely on the severity of cognitive function. The present study aimed to identify the factors associated with a stable and long-lasting home life in patients with Alzheimer's disease (AD) by analyzing two-year treatment outcomes. **Methods:** The subjects were 15 AD patients with a mean (\pm SD) age of 80.5 (\pm 18.9) years and mean disease duration of 8.1 (\pm 2.5) years. All of the patients had stable and long-lasting home lives. All of them had been treated with galantamine for two years. Caregiver education was provided to the family members. The patients were evaluated with the Mini-Mental State Examination (MMSE), Logical Memory Test, Wisconsin Card Sorting Test, and the Mental Function Impairment Scale (MENFIS) before and during the treatment. Student's dependent t test was used for the statistical analysis. **Results:** While there were no improvements in cognitive test scores from before to the end of the two-year treatment, the subjects showed significant improvements in the MENFIS sub-scores of blunting, ability and appropriateness of emotion after treatment. Significant improvement was observed even in one patient with a disease duration of 13 years. **Conclusions:** The subjects of the present study showed improvements in stability of emotion, spontaneity, and intent expression after treatment, but there was no improvement in cognitive function. We consider stability of emotion to be important for achieving a stable and long-lasting home life even if there is a decline in cognitive function.

P1-141 **HUMOUR UNDERSTANDING AND EXPRESSION IN DEMENTIA**

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Background: Humour is a complex cognitive and emotional construct that is potentially vulnerable in dementia, but little studied in these diseases. **Methods:** Here we investigated humour processing in cohorts of patients representing canonical dementia syndromes (behavioural variant frontotemporal dementia (bvFTD), semantic dementia (SD), progressive nonfluent aphasia and Alzheimer's disease (AD)) in relation to healthy older individuals. We used a semi-structured caregiver questionnaire to assess humour interest and responsiveness retrospectively and designed a novel neuropsychological battery manipulating situational congruency and familiarity in nonverbal cartoon stimuli. Neuroanatomical correlates were assessed using voxel-based morphometry (VBM). **Results:** bvFTD patients were significantly more likely to exhibit alterations in sense of humour as demonstrated by carer reports. All patient groups showed reduced pleasure in satirical comedy beginning substantially prior to onset of cognitive decline (on average by around 9 years) and the SD group was reported additionally to have loss of pleasure in slapstick comedy pre-morbidly. Both the bvFTD and SD groups showed impaired humour recognition from cartoons with distinct profiles of deficits: whereas the SD group showed no significant performance discrepancy for humour detection in familiar (slapstick) versus novel cartoon scenarios, the bvFTD group showed a significant advantage for detection of humour in slapstick relative to novel scenarios. In VBM, detection of slapstick humour was correlated with atrophy of left fusiform gyrus and temporo-occipital junction and detection of novel humour with atrophy of right anterior middle temporal gyrus and superior temporal sulcus. **Conclusions:** Our findings quantify, for the first time, deficits of core cognitive operations underpinning humour understanding and associated emotional responses in major dementia syndromes, and define an underlying brain substrate. Humour is a promising, novel candidate tool with which to assess complex social signal processing in neurodegenerative disease and may have diagnostic utility in these diseases.

P1-142 **INDEPENDENT AND INTERACTIVE INFLUENCES OF APOE GENOTYPE AND BETA-AMYLOID BURDEN ON COGNITIVE FUNCTIONS IN MILD COGNITIVE IMPAIRMENT**

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Background: This study aimed to investigate the independent and interactive influence of apolipoprotein E (APOE) $\epsilon 4$ allele and cerebral beta-amyloid burden ($A\beta$) on multiple cognitive domains in a