among 2,606 survivors of the original cohort. All participants underwent telephonic cognitive assessment by the Modified Telephone Interview for Cognitive Status. Subjects identified as possibly demented were interviewed face-to-face. Tendency for rumination in familial and work setting ranged between "1" always forget, "2" tend to forget, "3'tend to ruminate, "4" usually ruminate. **Results:** Of 1,892 subject assessed for dementia (mean age 82 at assessment), 309 were diagnosed as demented, 175 as suffering from cognitive impairment not sufficient for the diagnosis of dementia and 1,408 had no cognitive impairment. The prevalence rates of dementia (and odds ratios relative to those with least tendency for rumination, adjusted for age, area of birth, and socioeconomic status) were 21% for group "1', with the lowest rumination score, 18%, 14% and 14% for groups "2', "3" and "4" in groups of rumination in familial settings respectively and 24%, 19%, 15% and 15% for groups "1" through "4" respectively of tendency for rumination in work settings. In both settings, estimated OR for dementia decreased by 0.19 - 0.20 for each rise in rumination score. **Conclusions:** Examining psychological- cognitive style when confronting distress might shed light into personality characteristics that increase the risk for dementia. Mechanisms underlying these associations remain elusive.

P4-048 PULSE PRESSURE, DEMENTIA AND ALZHEIMER'S DISEASE: THE OXFORD PROJECT TO INVESTIGATE MEMORY AND AGEING (OPTIMA) LONGITUDINAL STUDY

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Background: Pulse pressure (PP) has been shown to be a better predictor of the risk of coronary heart disease in the elderly than systolic blood pressure (SBP) and diastolic BP. However, studies on the relationship between PP, dementia and Alzheimer's disease (AD) have been few and inconsistent. Some have reported an association with a high PP, others with a low PP, and one found a U-shaped relationship. The aim of the study was to test if cognitive function shows non-linear dependence on BP components. **Methods:** Participants were volunteers in the Oxford Project to Investigate Memory and Ageing (OPTIMA), a prospective cohort longitudinal study. All underwent a yearly comprehensive assessment, including BP and the Cambridge Cognitive Examination (CAMCOG). We analysed the dependence of CAMCOG scores on BP using generalised linear mixed models (glmm). **Results:** There were 244 healthy control subjects and 240 patients with cognitive dysfunction; 137 had AD, 61 other dementia syndromes (ODS), and 42 mild cognitive impairment (MCI). At first baseline assessment, patients with ODS had lower SBP (147.4 mmHg), compared with controls (153.9 mmHg, $p=0.02$), and MCI (155.7 mmHg, $p=0.02$), and had lower PP (63.2 mmHg), compared with controls (70.2 mmHg, $p=0.003$) and MCI (70.2 mmHg, $p=0.03$). Moreover, patients with AD tended to have lower SBP (150.2 mmHg), compared with MCI ($p=0.07$), and also had lower PP (64.9 mmHg), compared with controls (70.2 mmHg, $p=01$). CAMCOG scores depended most strongly on PP in subjects with AD and ODS ($p=0.003$, $p=0.03$, respectively), and there was inverted U-shaped relationship between CAMCOG scores and PP in subjects with AD and ODS ($p=0.001$, $p=0.02$, respectively). High and low levels of PP were associated with lower CAMCOG scores. **Conclusions:** We found an inverted U-shaped relationship between PP and cognitive function, and that PP may be the most reliable BP indicator of cognitive function in dementia and AD. Our findings might help to explain some of the inconsistencies in results from studies that tested only linear relations.

P4-049 THE IMPACT OF DEMENTIA ON LIFE EXPECTANCY AFTER AGE 75

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Background: A substantial amount of studies have found that persons suffering from dementia die considerably earlier than not affected coetaneous. However, data are often obtained from selected groups of patients or from prevalent dementia cases. This study aims to investigate the impact of incident dementia on survival and to estimate the survival time in different stages of disease severity. **Methods:** A community-based cohort of 1307 non-demented people aged 75+ years, living in the Kungsholmen district of Stockholm, Sweden, was followed for eleven years. On the basis of medical and psychological data, 371 persons developed dementia diagnosed according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Third Edition revised. **Results:** The relative risk of dying after developing dementia was estimated to be 1.45 (95% CI: 1.24-1.69) after adjustment for age, sex, education, ADL at baseline and multimorbidity. The median survival time of demented subjects was 3.4 years; women and younger subjects had a longer survival time than men and older persons. With a diagnosis of dementia at age 80 years, the potential years of life lost due to dementia were 3.7 years for women and 2.6 years for men. These figures decreased at three months and one month respectively for women and men if the diagnosis of dementia was made at age 90. The number of years lived in the different severity stage of dementia were similar among women and men. **Conclusions:** These data stressed the evidence of the malignancy of dementia, which is a strong predictor of death and shortens survival time especially in women.

P4-050 RACE, DEPRESSION, APOE, AND DEMENTIA IN A BIRACIAL SAMPLE OF COMMUNITY DWELLING ELDERS

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Background: There are environmental, biological, and genetic factors, (such as the APOE ϵ4 allele and depression), that play a dynamic role in the onset and course of cognitive decline and dementia, and these variables may vary in relation to race and ethnicity. **Methods:** In a series of studies using data from a large biracial sample of community dwelling older adults (the Duke-EPESE, N=4162), we examine the interaction of genetic and environmental risk factors, by race, in the prediction of cognitive decline (CD) and dementia over a ten year period. **Results:** First we demonstrate that racial differences in dementia are due, for the most part, to racial differences in education and literacy. We then demonstrate that depressive symptoms (which are greater in African American elders than Caucasians) predict cognitive decline over time. We speculate that depression's impact on cognitive functioning is through a glucocorticoid cascade eventuating in hippocampal damage. Despite the controversy regarding the influence of the APOE ϵ4 allele on CD in African Americans, we clearly demonstrate that the APOE ϵ4 allele predicts CD in both African American and Caucasian elders. We review methodological shortcomings of studies that have failed to detect this relationship for African Americans. Finally, while depression and the APOE ϵ4 allele have been shown to be independent risk factors for CD and dementia we demonstrate that the influence of depression on CD is greater for carriers of the APOE ϵ4 allele than for noncarriers

Conclusions: Biological and environmental mechanisms that underlie each of these associations will be discussed We review literature suggesting that neurological damage precipitated by depression and the increased risk for neuronal death associated with the APOE ϵ4 allele together lower cognitive reserve. That is, strategies the individual may use to compensate for initial losses are undermined by this dual assault on the brain. Finally, we discuss the influence of racial disparities in cognitive functioning in the context of differences in socioeconomic status. Specifically, education and literacy may be protective against CD. Early educational disadvantages experienced by African Americans may explain increased rates of CD in African Americans.

P4-051 ALZHEIMER'S DISEASE RISK IN RELATION TO NUTRITION AND PHYSICAL ACTIVITY

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Background: We sought to explore the combined effect of Mediterranean Diet (MeDi) adherence and physical activity (PA) in AD risk, both having been reported as potential modifiers of such risk. **Methods:** A subset of a community cohort of elderly in New York had dietary evaluations (MeDi adherence; categorized as low-medium-high) and PA (number of minutes of weekly participation in [light, moderate or severe] physical activities; categorized as low-medium-high). Subjects were also evaluated with standardized neurological and neuropsychological measures every ~1.5 years: 104 were diagnosed with AD at first evaluation (prevalent), 133 during the course of 3.8 follow-up (± 3.1) years of follow-up (incident), while 1261 subjects never became demented. MeDi, PH and a 3 level variable combining MeDi and PA information (MeDi-PA: low-low vs. low-high/high-low vs. high-high) served as predictors in logistic regression and survival-Cox models, with prevalent AD status and time to incident AD being the outcomes. All models were adjusted for cohort, age, gender, ethnicity, education, APOE genotype, a comorbidity index, caloric intake and body mass index. **Results:** As compared to non-demented, prevalent AD patients adhered less to the MeDi (MeDi middle adherence OR 0.47 [0.23-0.94], high adherence OR 0.25 [0.11-0.57] p for trend = 0.001) and were physically less active (PA middle OR 0.68 [0.33-1.40]; high OR 0.46 [0.21-1.02]; p for trend = 0.05). Risk for incident AD was lower for both higher MeDi adherence (MeDi middle adherence HR 0.76 [0.49-1.19], high adherence HR 0.46 [0.27-0.79] p for trend = 0.004) and more PA (middle PA HR 0.69 [0.44-1.09]; high HR 0.64 [0.36-1.14]; p for trend = 0.07). In cross-sectional analyses, as compared to subjects in the low-low MeDi-PA category, ORs for AD were as follows: low-high/high-low MeDi-PA 0.48 (0.23 - 0.95), high-high MeDi-PA 0.28 (0.12 - 0.68); p for trend = 0.007. In longitudinal analyses, as compared to subjects in the low-low MeDi-PA category, HRs for AD were as follows: low-high/high-low MeDi-PA 0.71 (0.46 - 1.08), high-high MeDi-PA 0.43 (0.23 - 0.80); p for trend = 0.008. **Conclusions:** Adoption of both physical activity and healthy nutrition seem to be independently associated with low risk for AD.

P4-052 HIGH PLASMA Aβ42 IS A RISK FACTOR FOR SUBSEQUENT ALZHEIMER'S DISEASE BUT A DECLINE IN Aβ42/Aβ40 RATIO ACCOMPANIES THE ONSET OF DEMENTIA

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Background: Changes in plasma levels of Aβ42 and Aβ40 may be related to onset of Alzheimer's disease (AD). **Methods:** Plasma Aβ42 and Aβ40 were measured at initial examination and at follow-up in 892 nondemented participants in the Washington Heights-Inwood Columbia Aging Project, assessed for functional and cognitive abilities and health status at 18-month intervals. The diagnosis of dementia at follow-up was based on standard research criteria. Plasma levels of Aβ42 and Aβ40 were measured using a combination of monoclonal antibody 6E10 and rabbit antisera vs. Aβ42 and Aβ40 in a double antibody sandwich ELISA at two time points separated by approximately 4 years. Aβ42 and Aβ40 levels from the two assessment intervals were measured concurrently. We used regression analyses to estimate the risk of AD in relation to baseline Aβ42 and Aβ40 levels and the association between conversion to AD and changes in levels of Aβ peptides, Aβ42/Aβ40 ratio or by Aβ peptide change group (increasing, no change or decreasing), adjusted for covariates. **Results:** At baseline, higher plasma Aβ42 levels were associated with increased risk of subsequent AD (median split HR=2.4; 95% 1.5-3.8). However, at follow-up, a decrease in Aβ42 levels, but not Aβ40 levels, was related to conversion to AD. Compared with the group with increasing levels of Aβ42, the likelihood of conversion to AD was almost 3 times higher for those whose plasma Aβ42 levels decreased over follow-up (OR=2.6, 95% CI: 1.2-5.4, p= .003), while the likelihood of AD did not differ between the group with decreasing Aβ40 and the group with increasing Aβ40 (OR= 0.6, 95% CI: 0.2-1.7). Decrease in the Aβ42/Aβ40 ratio was strongly related to conversion to AD. Those whose Aβ42/Aβ40 ratio decreased were 4 times more likely to have converted to AD over the follow-up period than those with an increasing Aβ42/Aβ40 ratio (OR= 4.2, 95% CI: 1.1-15.9). **Conclusions:** Among nondemented elders, high plasma Aβ42 is associated with increased risk of AD, while decreasing levels of plasma Aβ42 or a decline in the Aβ42/Aβ40 ratio may be sensitive indicators of conversion to AD, possibly reflecting compartmentalization of Aβ peptides. SUPPORT: NIA PO1-AG07232.

P4-053 MEDICATION IN PATIENTS WITH MILD COGNITIVE IMPAIRMENT IN EUROPE: THE DEVELOPMENT OF SCREENING GUIDELINES AND CLINICAL CRITERIA OF PREDEMENTIA ALZHEIMER'S DISEASE (DESCRIPA) STUDY

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Background: DESCRIPA is a multicentral study whose goal is to reach an evidence-based European consensus and develop clinical criteria on the identification of subjects with preferential Alzheimer's disease (AD). The aim of the study is to investigate the medication taken by patients with mild cognitive impairment (MCI). **Methods:** 880 patients (375 males, 505 females; mean age±SD 70.34±7.8; mean±SD years of education 10.37±4.22) with mild cognitive complaints, who were recruited from 20 European study centers, were studied. Their mean±SD MMSE performance was 27.42±2.2 (range 18-30). Exclusion criteria were age below 55 and obvious causes of cognitive impairments. A complete history was taken in all patients, demographical data was collected and several factors were studied, including type and dosage of medication taken. All patients underwent clinical, neuropsychological assessment and brain imaging (MRI, CT). **Results:** The drug categories that were most often used in patients with MCI were cardiovascular drugs (61.4% of the patients), antidepressive drugs (16.4%), sedatives (14.2%) and drugs for thyroid function (9.6%). In particular the commonest cardiovascular drugs were beta-blockers (18.3% of the whole patient population), diuretics (17.8%), ACE inhibitors (17%) and calcium antagonists (13.1%).Aspirin was also taken by 25.1% of the patients. Twenty eight patients (3%) were already under medication for dementia . Other substances that are believed to have protective memory function such as high dose of vitaminE and gingko biloba were taken by 9.2% of the MCI patients. **Conclusions:** In our study, the most prevalent medication taken by MCI patients were cardiovascular drugs,