association with cognitive function: the coefficients for Groups 2, 3, and 4 were -.17, -.14, and -.20 respectively. **Conclusions:** There are significant interaction effects of having both DM and poor oral health on cognitive function. The negative effects on cognitive function were stronger with both conditions than with either one of the two conditions. This study suggests the importance of prevention and management of DM and poor oral health in order to improve cognitive health in older adults.

P2-539 WHY FEW SURVIVE COGNITIVELY NORMAL TO VERY OLD AGE MAY BE KEY TO PREVENTING DEMENTIA, ALZHEIMER'S DISEASE

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Background: Few age 90+ survive free of dementia. Most older individuals have extensive brain pathology, amyloid, neurodegeneration and vascular disease. Understanding the determinants of successful cognitive aging, i.e. dementia-free >90 years of age, provides information about etiology of dementia. **Methods:** We studied 182 nondemented participants (144 cognitively normal (CN) and 38 with mild cognitive impairment (MCI)), mean age 86 in 2009, in the Ginkgo Evaluation of Memory Study (GEMS) in Pittsburgh. They completed measures of brain amyloid with Pittsburgh compound B (PiB) and neurodegeneration and vascular disease with MRI in 2009 and were followed with cognitive evaluations every 6 months until 2018. By 2018, only 25 (13.7%) remained alive and CN, 25 (13.7%) alive and MCI and 31 (17.0%) alive and had dementia, with a mean age of 94 years. Of the 100 deaths, 49 (49.0%) demented prior to death. **Results:** Significant predictors at 2009 of CN survivorship to 2018 were age, better education, lower systolic blood pressure (SBP) and better cognitive test performance. Approximately 35% of participants who were alive and CN in 2018 were PiB+ in 2009 as compared to 65% PiB+ among alive and demented. Similarly, only 16% of CN participants had low cortical thickness as compared to 37% alive and demented. White matter lesions were identified in 15% of those CN and 32% of those demented. Only 2 (8%) participants who were alive and CN were PiB+ and had lower cortical thickness as compared to 23% of those who were demented. There was no association between the apolipoprotein E4 (APOE4) allele with successful cognitive aging. Nineteen APOE4 carriers were not demented and 14 demented. Among the 19 nondemented APOE4 carriers (11 alive), only 5.3% (n=1) had white matter abnormalities as compared to 36% of demented APOE4 carriers. Of 18 APOE4 carriers without white matter abnormalities, SBP and pulse wave velocity were lower as compared to demented participants. **Conclusions:** Participants who successfully aged CN had lower measures of brain pathology and vascular disease. Interventions to promote successful brain aging therefore most likely should include strategies to reduce both CVD and brain pathology.

P2-540 POLYGENETIC RISK FOR ALZHEIMER'S DISEASE AND DEMENTIA STATUS

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Background: Alzheimer's disease (AD) is a prevalent and costly neurodegenerative disorder. A large proportion of risk is heritable and many genetic risk factors for AD have been identified. The cumulative genetic risk of these known markers has not been benchmarked in a population-based sample. **Methods:** In the nationally representative, population-based Health and Retirement Study (HRS), we evaluated the role of cumulative genetic risk for AD, with and without APOE status, on dementia status (dementia, cognitively impaired non-demented, cognitively normal) using proportional odds models. Analyses were stratified by European (EA) and African (AA) genetic ancestry participants (n_{EA}=8,297, n_{AA}=1,458, waves 1992-2014). **Results:** In the European ancestry sample, a one standard deviation unit increase in polygenic score for AD was associated with 1.13 (95% confidence interval: 1.04, 1.23) times higher odds of dementia, relative to normal cognition. The presence of APOE ε4 was independently associated with 2.19 (95% confidence interval: 1.82, 2.65) times higher odds of having dementia. In the African ancestry sample, a one standard deviation unit increase in polygenic score for AD was associated with 1.21 (95% confidence interval: 0.99, 1.46) times higher odds of dementia. Carrying APOE ε4 was associated with 1.15 (95% confidence interval: 1.14, 1.77) times higher odds of dementia. **Conclusions:** Cumulative genetic risk for AD and APOE ε4 are both independent predictors of AD and the magnitudes of association vary by genetic ancestry. We provide important insight into the polygenic nature of dementia and demonstrate the utility of polygenic scores in AD research

P2-541 HEARING LOSS PREVALENCE AND ITS ASSOCIATION WITH DEMENTIA: A CROSS-SECTIONAL POPULATION-BASED STUDY

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Background: Five percent of the world's population suffers from hearing loss (HL), among older adults it reaches up to 30%. This condition in the elderly population is associated with cognitive, functional and mental health problems and affects their social relationships. Some authors have reported hearing loss as risk factor for dementia. **Methods:** From the 2003 Mexican elders (ME) data base, evaluated in the prevalence phase of the 10/66 Dementia Research Group protocols. Considering HL as self-report of decreased hearing capacity, in addition it should affect their daily life activities The association of HL with variables such as sex, age, education, marital status, occupation, assets/services at home, family contact, with friends or neighbours was described and analysed. As well with the presence of dementia, disability and depressive symptoms (DS). **Results:** The 21.32% of 2003 ME presented HL, it was associated with sociodemographic variables (male sex, older age, low education, unemployment, being retired and having less assets at