**SUPPLEMENTARY METHODS I: AN OVERVIEW OF THE ACT STUDY, FOCUSING ON COGNITIVE ASSESSMENT**

ACT participants are recruited from a random sample from Group Health, an integrated, non-profit healthcare delivery system in Washington State,1 now a part of Kaiser Permanente. During ACT study enrollment, participants undergo a two-stage cognitive assessment to identify and exclude individuals with dementia. Review of clinical records and the Cognitive Abilities Screening Instrument (CASI2) is used in the first stage. Persons with known diagnoses of dementia are excluded after chart review. After consent, potential participants are screened with CASI.   CASI scores range from 0 to 100, with higher scores indicating better cognition. A cut point of 85 is used to determine the need for additional workup.  People with scores of 86 or higher are deemed eligible for the longitudinal study.  Those with scores of 85 or lower proceed to a second stage assessment. The assessment process includes a clinical evaluation, chart review, and a comprehensive neuropsychiatric battery. Results from these data are then considered at a consensus conference. Individuals without dementia, using (DSM-IV, APA) and Alzheimer's disease (NINCDS-ADRDA criteria) are enrolled in ACT. Incident cases of dementia and AD are identified using identical procedures every two years.  Secondary evaluations are performed for CASI scores 85 or lower, or if there are participant, family, or staff concerns. Note that the ACT study does not identify, exclude, or remove participants with mild cognitive impairement.1,2” The ACT study has a Completeness of Follow Up Index of over 95%.3

**SUPPLEMENTARY METHODS II: A DESCRIPTION OF THE CASI**

The CASI is an extended version of the Mini-Mental State Examination (MMSE) and Hasegawa Dementia Rating Scale.2 Testing domains include attention, concentration, orientation, long term memory, short term memory, language, visual construction, list-generating fluency, and abstraction judgement.2 Beyond cognitive state the CASI can also be used to monitor cognitive change over time.4 The CASI can be administered in 15 to 20 minutes and is useable across cultures.2The CASI has been used in a variety of studies beyond ACT5, including the Honolulu-Asia Aging Study. Because standard CASI scores have curvilinear scaling properties which may reduce validity when evaluating functioning over time,6 especially in high cognitive functioning individuals,6 we used item response theory (IRT) to score CASI item responses.

The CASI-IRT score has linear scaling properties.3,6 ACT investigators calibrated the CASI-IRT with the most recent data available up to the fifth visit. CASI-IRT scores are calibrated such that the mean score for the cohort at that time received a score of 0 and the standard deviation was 1. Investigators use item parameters from that time point to obtain scores for each participant at every time point. The range of CASI-IRT values in this study were -3.97 to 1.75. The total standard CASI scores ranged from 17 to 100.

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