ACTIVE Cognitive Training Trial: 20 Year Follow-Up of Functioning, Health, & Dementia

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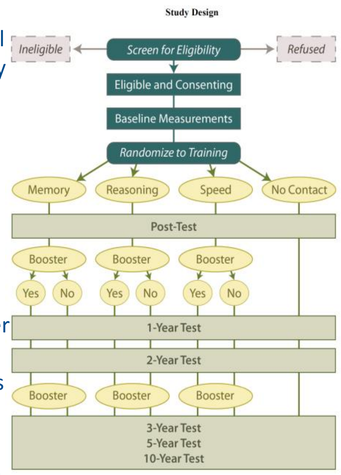
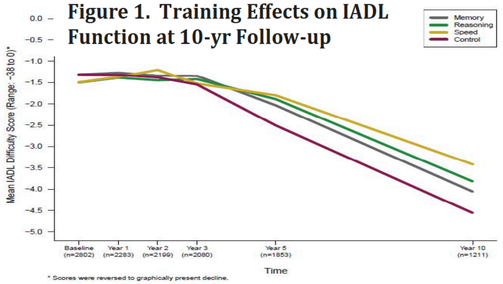
Introduction

The Advanced Training in Vital Elderly study (ACTIVE) was a randomized control trial (N = 2802) that assessed the efficacy of three different types of cognitive training to preserve cognitive and daily function in older adults. Participants were randomized to either strategy-based memory or reasoning training, speed of processing training, or no-contact control conditions. Up to 10 training sessions were delivered over 6 weeks with up to four sessions of booster training delivered at 11 months and a second set of up to four booster sessions at 35 months. Outcome assessments were taken immediately after intervention and at intervals over 10 yrs.



ACTIVE Trial Findings



- All three treatment groups (Memory, Reasoning, Speed) performed significantly higher on target abilities compared to the control at immediate posttest and at 5-year; and Reasoning and Speed at 10-year follow-up.
- All treatment groups reported less difficulty performing tasks of daily living (IADLs) at 10-yr follow-up compared to control (see graph above).
- Recent preliminary, but promising findings suggest training effects on incidence of Alzheimer's and related dementias; incidence of dementia was reduced and dosing was related to dementia outcomes

More research is required to examine whether improved cognition and daily function results in long-term reduction in dementia incidence and duration, years of disability, health care utilization and costs, and increased active years of life in advanced old age.

The Follow-Up Study

The aim of the 20-year ACTIVE follow-up study is to examine the long-term impact and sustainability of the ACTIVE interventions on critical real-life outcomes related to older adults' health and well-being.

Given that the majority of ACTIVE participants are deceased, the study will use a wide range of linked data including**: Medicare and Medicaid Claims, National Death Index, driving records, and credit reports.**

The follow-up will allow the examination of similarity in longitudinal trajectories for events documented in diverse data sets (e.g., cognitive decline; change in health care utilization) and increase the potential to identify novel predictors of dementia onset and duration.

Literature Review

A literature review was conducted to review all of the papers that used data from the ACTIVE trial. The review suggests that while there are plenty of papers assessing the efficacy of the interventions at 10-year follow-up, no papers examined more long-term (>10 year) effects on both cognitive functioning, daily function, and healthcare costs.

Papers examining results at 10 years after baseline demonstrate a consensus among researchers that cognitive training has beneficial effects on cognitive abilities and self-reported IADL function. However, little is known about these effects 20 years after baseline. More long-term research is necessary for understanding the interventions' potential to delay onset of functional decline and dementia among seniors as current comprehensive geriatric care strives to maintain and support functional independence. If interventions that could delay onset of functional impairment by even 6 years were introduced, the number of people affected by 2050 would be reduced by 38% which would be of great public health significance.

Moreover, no papers examined the effects of the interventions on the utilization or cost of healthcare for seniors in advanced old age. Healthcare cost and utilization data has yet to be linked with the ACTIVE data to assess the interventions' effects on critical real-life outcomes in addition to cognitive function.

Therefore, the follow-up study fills the gap in examining both the long-term effects of cognitive function everyday activities, and healthcare costs.