

GRAND ROUNDS

Sponsored by: The Division of Health Services Research

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A Randomized Controlled Trial of Cognitive Training in Middle Aged and Older Adults

ABSTRACT

Background: Age-related cognitive decline is common, affects multiple cognitive functions, and begins by age 45, if not sooner. These declines may result in substantial difficulties and disabilities in everyday life, making the identification of interventions that delay, prevent, or reverse cognitive decline clinical and public health priorities.

Methods: We randomized 681 participants within two age strata (50-64 vs. > 65) to a four-arm controlled trial using three modes of delivering a second-generation visual speed of processing (VSP) cognitive intervention (on-site with vs. on-site without booster training vs. at-home training) compared to attention control training using a computerized cross-word puzzle program. Six neuropsychological tests were assessed at baseline and one year later. General linear models for repeated measures were used to evaluate main effects for treatment group and age strata, as well as their two-way interaction.

Results: Among the 620 (91%) participants with complete data, all VSP delivery modes had statistically significant small to medium effect size improvements on the Useful Field View, Trail Making A and B, and Symbol Digit Modalities Tests of divided attention (faster completion times or more correct symbol-digit matches). Effect sizes were comparable across the three VSP delivery modes and for both age strata.

Conclusion: This study demonstrated that 10 hours of well-tolerated and enjoyable VSP training delivered either on-site or on a home PC using a complex video game resulted in important improvements in cognitive function among 50-87 year olds. Wide spread implementation of this VSP training appears feasible and may reverse age-related cognitive decline.

Food and beverages will be provided.