Cognition results from the Resveratrol for Improved Performance in Elders (RIPE) trial

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Resveratrol, a natural polyphenol found mainly in red wine and dark-skinned grape cultivars, has been shown to attenuate hippocampal cell death and protect against excitotoxic brain damage. We conducted a double-blind Phase IIa randomized, placebo controlled trial to determine the efficacy of resveratrol supplementation on cognition and brain activation in older adults (ClinicalTrials.gov identifier: NCT01126229). Cognitively intact older men and women (N=32; 73.0±7.0 yrs) were randomized to three treatment groups (placebo, 300 mg/d or 1000 mg/d). Resveratrol was orally ingested as capsulized Polygonum Cuspidatum for 90 days. Cognition was tested using a comprehensive battery of assessments. A subset of individuals (N=11) underwent functional magnetic resonance imaging to examine hippocampal activation during memory encoding. Participants had 93% compliance rate throughout the trial. Treatment groups had similar effects in visual attention working memory, and short-term and semantic memory. Participants randomized to the 300 mg/d recalled 30% more words compared to other treatment groups (Eta2=0.05, p=0.20). Psychomotor speed was improved 10-25% in (Eta2: 0.04-0.12, p=0.02-0.12) in participants taking 1000 mg/d of resveratrol compared to other treatment groups. Hippocampal activation demonstrated a significant increase in participants taking 1000 mg/d compared to those taking placebo (Eta2=0.58, p=0.04). No effect was seen between participants randomized to placebo and 300 mg/d of resveratrol. This pilot study demonstrates that 90 days of resveratrol supplementation might improve psychomotor speed and enhance hippocampal activation. The results support the study of resveratrol for age-related cognitive decline in larger clinical trials.