Study objective
To assess the effects of aerobic exercise (AE) and the Dietary Approaches to Stop Hypertension (DASH) diet on executive functioning in adults with cognitive impairments but no dementia (CIND) and risk factors for cardiovascular disease (CVD).

Summary results
AE improves executive functioning in such individuals, but the DASH diet does not.

Classification of evidence
Class I.

What is known and what this paper adds
The overlap between CVD risk factors and dementia risk factors has prompted speculation that strategies designed to reduce CVD risk may also improve neurocognition. This study provides evidence that this is true for certain health behaviors designed to reduce CVD risk.

Participants and setting
This study recruited 160 individuals (34% male; mean age, 65.4 ± 6.8 years) who had CIND, were sedentary, and either had CVD or at least 1 additional CVD risk factor besides being sedentary. This study was conducted through the Duke University Medical Center (Durham, North Carolina).

Design, size, and duration
This study used a conditional randomization procedure with stratification for age, sex, Montreal Cognitive Assessment scores, and CVD histories to assign the participants to an AE-only group (n = 41), a DASH-only group (n = 41), an AE + DASH group (n = 40), and a health education control group (n = 38). The interventions were 6-month in duration. This study assessed executive functioning at baseline and postintervention time-points with a standard neurocognitive test battery. The outcome assessors were blinded to group assignments.

Primary outcome measures
The primary outcomes were changes in executive functioning from baseline to the 6-month postintervention timepoint.

Figure Effects of the different interventions on executive functioning performance

Main results and the role of chance
AE was associated with improvements in executive functioning (p = 0.046), but the DASH diet was not (p = 0.059). The greatest improvements relative to the control group were observed in the AE + DASH group (p = 0.012).

Harms
No adverse events were observed.

Bias, confounding, and other reasons for caution
This study had a relatively short duration (though longer compared to some other studies) and might have been underpowered for some subgroup analyses.

Generalizability to other populations
This study’s single-center nature and the select population may limit the generalizability of the results.

Study funding/potential competing interests
This study was funded by the NIH. Go to Neurology.org/N for full disclosures.

Trial registration number
NCT01573546 on ClinicalTrials.gov.
Lifestyle and neurocognition in older adults with cognitive impairments: A randomized trial
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