SYSTOLIC AND DIASTOLIC BLOOD PRESSURE AND COGNITIVE DECLINE OVER SIX YEARS

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Introduction: Although high blood pressure (BP), particularly in mid-life, is associated with cognitive decline in late life, it is unclear whether systolic and diastolic BP each contributes to this cognitive decline. We measured changes in cognitive function associated with baseline systolic and diastolic BP and variability by race (black vs white) and sex, controlling for baseline cognition.

Methods: Prospective study of 20,934 participants ≥45 years without baseline cognitive impairment or stroke from the REasons for Geographic And Racial Differences in Stroke (REGARDS) cohort. Median follow-up was 6.1 years (interquartile range, 5.0-7.1 years). Outcomes were the Six-Item Screener of global cognition (primary), the Consortium to Establish a Registry for Alzheimer’s Disease Word-List Learning test of new learning, the Word-List Delayed Recall test of verbal memory, and the Animal Fluency Test of executive function.

Results: Systolic BP levels greater than 120 mm Hg and diastolic BP levels lower than 80 mm Hg were each associated with faster declines in global cognition, new learning, and verbal memory compared to slopes for systolic BP of 120 mm Hg and slopes for diastolic BP of 80 mm Hg respectively (Table). Elevated systolic BP levels were also associated with declines in executive function. Cognitive declines were similar across race and sex except men had faster decline in global cognition associated with low diastolic BP compared with women (P=0.02).

Conclusions: Systolic BP levels greater than 120 mm Hg and diastolic BP levels lower than 80 mm Hg each were associated with faster cognitive decline over 6 years.