

# Higher fluctuations in blood pressure linked to brain function decline

May 23 2016

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Higher long-term variability in blood pressure readings were linked to faster declines in brain and cognitive function among older adults, according to new research in the American Heart Association's journal *Hypertension*.

"Blood pressure variability might signal blood flow instability, which could lead to the damage of the finer vessels of the body with changes in brain structure and function," said Bo (Bonnie) Qin, Ph.D., lead study author and a postdoctoral scholar at Rutgers Cancer Institute in New Brunswick, New Jersey. "These blood pressure fluctuations may indicate pathological processes such as inflammation and impaired function in the blood vessels themselves."

Researchers analyzed results from 976 Chinese adults (half women, age 55 and or older) who participated in the China Health and Nutrition Survey over a period of five years. Blood pressure variability was calculated from three or four visits to the health professional. Participants also underwent a series of cognitive quizzes such as performing word recall and counting backwards.

Researchers found:

- Higher visit-to-visit variability in the top number in a blood pressure reading ([systolic blood pressure](#)) was associated with a faster decline of cognitive function and verbal memory.
- Higher visit-to-visit variability in the bottom number ([diastolic](#)

[blood pressure](#)) was associated with faster decline of cognitive function among adults ages 55 to 64, but not among those age 65 and older.

- Neither average systolic or diastolic [blood pressure readings](#) were associated with brain function changes.

Qin said physicians tend to focus on average blood pressure readings, but high variability may be something for physicians to watch for in their patients.

"Controlling blood pressure instability could possibly be a potential strategy in preserving cognitive function among older adults," she said.

While the study was observational and does not suggest a direct cause and effect between blood pressure variability and brain function decline, the findings add to a growing body of evidence that variation in [blood pressure](#) readings—perhaps more so than averages—may indicate increased risk for some additional health problems. Clinical intervention trials and longer term studies are needed to confirm the findings.

Provided by American Heart Association

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