

# Earlier menopause plus high cardiovascular risk may lead to cognitive problems later

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Earlier menopause combined with higher risk of cardiovascular disease is linked to an increased risk of thinking and memory problems later, according to a new study published in the online issue of *Neurology*. In this study, earlier menopause is defined as occurring before age 49.

As a person ages, blood vessels, including those in the brain, can be damaged by controllable cardiovascular risk factors such as [high blood pressure](#), diabetes and smoking. These risk factors not only increase a person's risk of [cardiovascular disease](#), they increase the risk of dementia.

"While cardiovascular risk factors are known to increase a person's risk for dementia, what is lesser known is why women have a greater risk for Alzheimer's disease than men," said study author Jennifer Rabin, Ph.D., of the University of Toronto in Canada.

"We examined if the hormonal change of menopause, specifically the timing of menopause, may play a role in this increased risk. We found that going through this hormonal change earlier in life while also having cardiovascular risk factors is linked to greater cognitive problems when compared to men of the same age."

The study involved 8,360 [female participants](#) and 8,360 male participants matched for age who were enrolled in the Canadian Longitudinal Study on Aging. Female participants had an average age at menopause of 50. All participants had an average age of 65 at the start of the study and were followed for three years.

Researchers divided female participants into three groups: those who experienced earlier menopause between ages 35 and 48; average menopause between ages 49 and 52; and later menopause between ages 53 and 65. Researchers also looked at whether they had used [hormone therapy](#) containing estrogens.

For all participants, researchers reviewed six [cardiovascular risk factors](#): high LDL cholesterol, diabetes, obesity, smoking, high blood pressure, as well as prescriptions for medications to lower blood pressure.

Participants were given a series of thinking and memory tests at the start and the end of the study. Researchers calculated cognitive scores for each person.

Researchers then examined the associations of cardiovascular risk with cognitive scores in female participants in the three groups and compared them to the same association in male participants.

After adjusting for factors such as age and education, researchers found that female participants with both earlier menopause and higher cardiovascular risk had lower cognitive scores three years later. For each one standard deviation increase in cardiovascular risk score, female participants with earlier menopause showed a 0.044 standard deviation decrease in cognitive scores, compared to [male participants](#) in the same age group who showed a 0.035 standard deviation decrease in cognitive scores.

Researchers did not find a similar association for female participants with average or later menopause. Hormone therapy did not affect the results.

"Our study suggests that earlier menopause may worsen the effects of high cardiovascular risk on cognitive decline," said Rabin. "Since our study followed participants for only three years, more research is needed over longer periods of time. Our findings highlight that age at menopause as well as cardiovascular risk should be considered when developing prevention strategies for cognitive decline."

A limitation of the study was that the age of [menopause](#) was self-reported, and participants may not have remembered that age accurately. Another limitation was that researchers did not include participants who reported a hysterectomy since the age of the procedure was not available. Additionally, no data was available on whether participants

had surgical removal of one or both ovaries.

**More information:** *Neurology* (2024).

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