

# Are cardiovascular risk factors linked to migraine?

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Having high blood pressure, specifically high diastolic blood pressure, was linked to a slightly higher odds of ever having migraine in female participants, according to a new study published in the July 31, 2024,

online issue of *Neurology*. Diastolic pressure is when the heart is resting between beats. However, the study did not find an increased risk between other cardiovascular risk factors and migraine.

"Previous research shows that migraine is linked to a higher risk of cardiovascular events such as stroke, [heart disease](#) and [heart attack](#), but less is known about how risk factors for cardiovascular events relate to having migraine," said study author Antoinette Maassen van den Brink, Ph.D., of Erasmus MC University Medical Center in Rotterdam, the Netherlands.

"Our study looked at well-known risk factors for cardiovascular disease, such as diabetes, smoking, obesity and high cholesterol and found an increased odds of having migraine only in [female participants](#) with higher diastolic blood pressure."

The study involved 7,266 people, male and female, with a median age of 67 years, of whom 15% had previous or current migraine.

All participants had physical exams and provided blood samples. They were also asked questions about migraine, including if they had ever experienced a headache with severe pain that affected their [daily activities](#).

After adjusting for multiple [cardiovascular risk factors](#) such as physical activity, as well as [education level](#), researchers found female participants with higher diastolic blood pressure had 16% increased odds of having migraine per [standard deviation](#) increase in diastolic blood pressure.

An increase per standard deviation is a measure to compare diastolic blood pressure with other cardiovascular risk factors. No associations were found for systolic blood pressure. Maassen van den Brink said this contributes to the theory that migraine is associated with a slightly

reduced function of the small blood vessels rather than a reduced function of the large blood vessels.

There were no associations for female participants with high cholesterol or obesity, and current smoking was associated with 28% lower odds of having migraine and diabetes with 26% lower odds of having migraine.

Maassen van den Brink said, "These results should be interpreted with caution, as they do not prove that smoking causes a lower risk of migraine. Instead, smoking might trigger migraine attacks and therefore, people who choose to smoke are less likely to be people who have migraine."

In male participants, researchers found no associations between cardiovascular risk factors and migraine.

"Our study suggests that overall, migraine is not directly related to traditional risk factors for cardiovascular disease," said Maassen van den Brink. "Because we looked at people who were middle-aged and older, future studies are needed in younger groups of people who are followed for longer periods of time."

A limitation of the study was the small number of male participants with migraine. Maassen van den Brink said this could help explain why they found no associations for male participants between cardiovascular risk factors and migraine.

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

Provided by American Academy of Neurology

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