

# Metabolic syndrome linked to increased risk of second stroke, death

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People with larger waistlines, high blood pressure and other risk factors that make up metabolic syndrome may be at higher risk for having a second stroke and even dying than people who do not have metabolic syndrome, according to a meta-analysis published in the July 28, 2021, online issue of *Neurology*.

Metabolic [syndrome](#) was defined as having excess belly fat plus two or more of the following [risk factors](#): high blood pressure, higher than normal triglycerides (a type of fat found in the blood), high blood sugar and low high-density lipoprotein (HDL) cholesterol, or "good" cholesterol.

"Studies have shown conflicting results on whether [metabolic syndrome](#), which has been tied to an increased risk of a first stroke, also increases the risk of a second stroke and death, so we wanted to analyze all of the research available," said study author Tian Li, MD, of Fourth Military Medical University in Xi'an, China. "These findings will help people with metabolic syndrome and their [health care providers](#) know that they should be screened for risk of recurrent stroke and given preventative treatments."

For the risk of stroke recurrence, the meta-analysis combined results from six studies with 11,000 participants who were followed for up to five years. During that time, 1,250 people had a second stroke. The analysis found that people with metabolic syndrome were 46% more likely to have a second stroke than people who did not have the syndrome.

Looking at each component of metabolic syndrome, researchers found that having a low level of good cholesterol and having two or more components of the syndrome were associated independently with an increased risk of a second stroke. Having excess belly fat, [high blood sugar](#) and [high blood pressure](#) were not associated with increased risk of second stroke on their own.

For the risk of death from any cause, the meta-analysis combined eight studies with 51,613 people who were followed for up to five years. During that time, 4,210 people died. People with metabolic syndrome were 27% more likely to die during the study than people without the syndrome. None of the individual components of the syndrome were independently associated with an increased risk of death.

"These results add to the evidence that people with metabolic syndrome should take steps to modify their risk of second stroke and even death where possible, through medication, diet, exercise and other recommended [lifestyle changes](#) such as stopping smoking," Li said.

Li noted that the studies were observational, so they do not prove that metabolic syndrome is a cause of recurrent [stroke](#) or death. They only show an association.

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