

Poor metabolic health could increase risk of developing dementia later in life

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Researchers at Oxford Population Health have found that having poor metabolic health was related to an increased risk of developing dementia in a study of more than 176,000 individuals. The study is published in

the journal *Alzheimer's & Dementia*.

Poor metabolic health was defined as having three or more of the following conditions: high waist circumference, high triglycerides, [high blood pressure](#), [high blood glucose](#), and low high-density lipoprotein (HDL) cholesterol, sometimes known as "good" cholesterol. This cluster of conditions is commonly known as [metabolic syndrome](#).

Approximately 20-25% of adults globally live with metabolic syndrome, which has been previously associated with an increased risk of developing [heart disease](#), stroke and type 2 diabetes.

The researchers investigated the association between metabolic syndrome and subsequent risk of developing dementia by analyzing data from more than 176,000 participants from the UK Biobank study. The health of each participant was tracked through their [medical records](#) over a span of 15 years. All participants were aged 60 or older and free of dementia at the start of the study to ensure that the study consisted of people at risk of developing dementia.

Among the study's key findings:

- A total of 73,510 participants (42%) had metabolic syndrome when their data were collected at the start of the study;
- Among those with metabolic syndrome, the most common condition was high blood pressure (96%) followed by high triglycerides (74%), low HDL-cholesterol (72%), high waist circumference (70%), and high blood glucose (50%);
- Of the 176,249 study participants, 5,255 went on to develop dementia over a 15-year period;
- Participants with metabolic syndrome had a 12% increased risk of developing dementia compared with participants who did not have metabolic syndrome;
- Having more metabolic syndrome conditions was linked to a

greater risk of developing dementia. For instance, having four or five conditions (of any combination) increased the risk of dementia by 19% and 50%, respectively.

Danial Qureshi, lead author and Ph.D. candidate at Oxford Population Health, said, "Our study findings suggest that early identification and management of metabolic syndrome could potentially reduce risk of developing dementia later in life. Metabolic syndrome is an especially promising target for prevention since each of its individual components are modifiable through lifestyle changes or pharmacological treatments. Learning more about this link is crucial, especially given the rapid increase in dementia cases worldwide and the limited number of effective treatments currently available."

Dr. Thomas Littlejohns, senior author and Senior Epidemiologist at Oxford Population Health, added, "There is growing evidence that better prevention, management and treatment of certain health conditions could reduce future risk of dementia. These findings suggest that it is also important to consider the role of multiple conditions, especially as we observed the greatest risk in those with all five components of metabolic syndrome."

The researchers used data from the UK Biobank, which consists of more than half a million women and men aged 40-69 years who joined the study between 2006 and 2010. All participants provided consent for their health to be followed up through medical record data, allowing for dementia diagnoses to be captured up to 15 years later.

This long follow-up is important, as dementia develops gradually over several years before the disease is formally diagnosed by a clinician. It is possible that poor metabolic health could be a consequence of how dementia affects the body. However, the researchers found that the strongest associations between poor metabolic health and dementia risk

occurred in those diagnosed with the disease more than a decade later. This is promising evidence that poor metabolic health could be a key contributing factor, rather than being solely a consequence of [dementia](#).

More information: Danial Qureshi et al, Association between metabolic syndrome and risk of incident dementia in UK Biobank, *Alzheimer's & Dementia* (2023). [DOI: 10.1002/alz.13439](https://doi.org/10.1002/alz.13439)

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