High ‘bad’ cholesterol level another risk factor for dementia, study says

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The list of risk factors for dementia keeps growing.

The Lancet family of medical journals established a Commission on Dementia to review the best available evidence from research and produce recommendations on how to best manage, or even prevent, the dementia epidemic.

It published a review of nine risk factors in 2017, then added three new ones in 2020: excessive alcohol consumption, head injury and air pollution.

Managing these dozen risks, the experts said then, could prevent or delay up to 40 per cent of all-cause dementias, including the most common form of dementia – Alzheimer’s disease.

In July, two more risks were added: a high score for low-density lipoprotein (LDL, or “bad”) cholesterol, and vision loss. Managing these, on top of the other 12, could prevent or delay nearly half of all-cause dementias.

At the time the two previous Lancet Commissions on Dementia were deliberating, the evidence for LDL cholesterol as a risk factor was inconclusive.

But since then, a metaanalysis of three studies, with a total of over 1 million participants, examined LDL cholesterol levels in adults aged under 65.

It found that, from about the age of 40 years onwards, each increase of 1 mmol/L (millimoles per litre of blood) in LDL cholesterol was associated with an 8 per cent increase in dementia risk.

Overall, the Lancet’s study concluded that “high-quality, consistent, biologically plausible evidence exists that high LDL cholesterol in midlife is a risk factor for dementia”.

Cholesterol is a waxy, fatlike substance that your body needs for good health, but in the right amounts, according to the US National Institutes of Health. It is carried through the blood in the form of lipoproteins – small, round particles made of lipids (fats) and proteins.

There are two types: lowdensity lipoprotein (LDL), sometimes called “bad” cholesterol, and high-density lipoprotein (HDL), called “good” cholesterol.

High levels of “bad” LDL cholesterol may create a build-up of plaque, or fatty deposits, in the arteries which can lead to heart attack and stroke; a healthy level of HDL may help protect against them.

While HDL’s place in dementia seems less straightforward, a US study published in 2022 reported that increased HDL cholesterol may protect against the development of dementia.

Excess LDL can lead to the deposition in the brain of amyloid plaques and tau tangles, the signature markers of Alzheimer’s disease.

HDL helps to remove excess cholesterol from the body by carrying it away from the arteries and back to the liver, where it is broken down and passed out of the body as waste.

HDL also serves as an antiinflammatory and antioxidant agent – and inflammation is bad for both our bodies and our brains.

Statins are increasingly an area of interest in Alzheimer’s disease, as they also have anti-inflammatory and antioxidant properties – and are the standard treatment to lower cholesterol levels.

Several reports show their value in lowering dementia risk.

Caroline Scates, a deputy director at specialist dementia nursing charity Dementia UK, says the addition of cholesterol as a risk factor for dementia in the latest Lancet report reflects what we know about the factors which can increase the risk of developing dementia.

“This is why we encourage people to follow a healthy and balanced lifestyle – including exercising regularly, reducing alcohol consumption and not smoking, as well as maintaining a balanced diet,” she says.

“While there is no guaranteed way to prevent dementia, with conscious changes it can be possible to reduce your risk of developing it. What is good for the heart is good for the brain.”

If you are concerned about your cholesterol level, she recommends you see your doctor for a physical exam.

It will include checks of your blood pressure, blood sugar and cholesterol levels, and weight and waist measurements to look for factors that could increase the risk of health conditions including heart disease and stroke, kidney disease, diabetes – and dementia.

To lower LDL cholesterol levels, Harvard Medical School suggests adding the following foods to your diet: oats; barley and other whole grains; beans; aubergine and okra; nuts; vegetable oils; apples, grapes, strawberries, citrus fruits; soy; fatty fish; and fibre supplements.

Professor Gill Livingston is deputy director of the division of psychiatry at University College London in the UK. As the primary author of all three of the Lancet’s reports on dementia, does she expect future studies to reveal further modifiable risk factors?

“I’m sure there are more,” she says, “but I continue to be surprised by which ones have good enough evidence to add” to the list.

Having watched my mother succumb to this horrible illness, I am encouraged by the growing list of risks. The more we understand what causes dementia, the more we can manage – and mitigate – risk ourselves, by changing the way we live.