How eating eggs can boost heart health

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BCAAs are found in many sources of protein — red meat, poultry, fish, eggs and nuts.Credit: Unsplash/CC0 Public Domain

Researchers have shown how moderate egg consumption can increase the amount of heart-healthy metabolites in the blood, publishing their results today in *eLife*.

The findings suggest that eating up to one egg per day may help lower the risk of developing cardiovascular disease.

Eggs are a rich source of dietary cholesterol, but they also contain a variety of essential nutrients. There is conflicting evidence as to whether egg consumption is beneficial or harmful to heart health. A 2018 study published in the journal *Heart*, which included approximately half a million adults in China, found that those who ate eggs daily (about one egg per day) had a substantially lower risk of heart disease and stroke than those who ate eggs less frequently. Now, to better understand this relationship, the authors of this work have carried out a population-based study exploring how egg consumption affects markers of cardiovascular health in the blood.

"Few studies have looked at the role that plasma cholesterol metabolism plays in the association between egg consumption and the risk of cardiovascular diseases, so we wanted to help address this gap," explains first author Lang Pan, MSc at the Department of Epidemiology and Biostatistics, Peking University, Beijing, China.

Pan and the team selected 4,778 participants from the China Kadoorie Biobank, of whom 3,401 had a cardiovascular disease and 1,377 did not. They used a technique called targeted nuclear magnetic resonance to measure 225 metabolites in plasma samples taken from the participants' blood. Of these metabolites, they identified 24 that were associated with self-reported levels of egg consumption.

Their analyses showed that individuals who ate a moderate amount of eggs had higher levels of a protein in their blood called apolipoprotein A1, a building-block of high-density lipoprotein (HDL), also known as 'good lipoprotein'. These individuals especially had more large HDL molecules in their blood, which help clear cholesterol from the blood vessels and thereby protect against blockages that can lead to heart

attacks and stroke.

The researchers further identified 14 metabolites that are linked to heart disease. They found that participants who ate fewer eggs had lower levels of beneficial metabolites and higher levels of harmful ones in their blood, compared to those who ate eggs more regularly.

"Together, our results provide a potential explanation for how eating a moderate amount of eggs can help protect against heart disease," says author Canqing Yu, Associate Professor at the Department of Epidemiology and Biostatistics, Peking University. "More studies are needed to verify the causal roles that lipid metabolites play in the association between egg consumption and the risk of cardiovascular disease."

"This study may also have implications for Chinese national dietary guidelines," adds senior author Liming Li, Boya Distinguished Professor at the Department of Epidemiology and Biostatistics, Peking University. "Current health guidelines in China suggest eating one egg a day, but data indicate that the average consumption is lower than this. Our work highlights the need for more strategies to encourage moderate egg consumption among the population, to help lower the overall risk of cardiovascular disease."

More information: Lang Pan et al, Association of egg consumption, metabolic markers, and risk of cardiovascular diseases: A nested case-control study, *eLife* (2022). DOI: 10.7554/eLife.72909

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