

Dietary magnesium associated with reduced risk of heart disease, stroke and diabetes

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A diet rich in magnesium may reduce the risk of diseases including coronary heart disease, stroke and type-2 diabetes according to a new meta-analysis published in the open access journal *BMC Medicine*. This analysis of the evidence on dietary magnesium and health outcomes is the largest to date, involving data from more than one million people across nine countries.

The researchers, from Zhejiang University and Zhengzhou University in China, found that people in the highest category of dietary magnesium consumption had a 10% lower risk of [coronary heart disease](#), 12% lower risk of stroke and a 26% lower risk of type-2 diabetes compared to those in the lowest category. Their results also indicate that an extra 100mg per day of dietary magnesium could also reduce risk of stroke by 7% and type-2 diabetes by 19%.

Dr Fudi Wang, lead author from the School of Public Health at Zhejiang University, said: "Low levels of magnesium in the body have been associated with a range of diseases but no conclusive evidence has been put forward on the link between dietary magnesium and [health risks](#). Our meta-analysis provides the most up-to-date evidence supporting a link between the role of magnesium in food and reducing the risk of disease."

Dr Wang added: "The current [health](#) guidelines recommend a magnesium intake of around 300mg per day for men and 270mg per day for women. Despite this, magnesium deficiency is relatively common, affecting between 2.5% and 15% of the general population. Our findings will be important for informing the public and policy makers on dietary guidelines to reduce [magnesium deficiency](#) related health risks."

Magnesium is vital for human health and normal biological functions including glucose metabolism, protein production and synthesis of nucleic acids

such as DNA. Diet is the main source of magnesium as the element can be found in foods such as spices, nuts, beans, cocoa, whole grains and [green leafy vegetables](#).

In this analysis, data from 40 epidemiological studies covering a period from 1999 to 2016 were used to investigate associations between dietary magnesium and various diseases. In all the studies, levels of dietary magnesium were determined using a self-reported food frequency questionnaire or a 24-hour dietary recall. As the levels of magnesium used to define categories varied widely between the studies, the researchers performed a dose-response analysis for the effect of each 100mg per day increase of dietary magnesium.

This meta-analysis involves observational studies meaning that it is not possible to rule out the effect of other biological or lifestyle factors influencing the results. It is also not possible to determine if magnesium is directly responsible for reducing disease risk. However, the large size of this analysis provides robust data that were stable when adjusting for gender and study location. The authors state that their findings reinforce the notion that increased consumption of magnesium rich foods could be beneficial for overall health.

More information: Xuexian Fang et al, Dietary magnesium intake and the risk of cardiovascular disease, type 2 diabetes, and all-cause mortality: a dose–response meta-analysis of prospective cohort studies, *BMC Medicine* (2016). [DOI: 10.1186/s12916-016-0742-z](#)

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