Essentials of Health

A meta-analysis of 13 prospective cohort studies has found that magnesium intake is inversely associated with type 2 diabetes risk, and in a dose-dependent manner.

Higher magnesium intake is associated with lower type 2 diabetes risk

Diabetes, and in particular Type 2 diabetes, is a growing health concern worldwide. Untreated or poorly controlled diabetes increases risks of many health conditions. Adults with diabetes are two to four times more likely to have heart disease or a stroke than adults without diabetes. Experts agree that diet plays an important role in the development and progression of type 2 diabetes. According to epidemiological evidence magnesium intake may be related to the incidence of diabetes. Magnesium is found primarily in whole grains, nuts and green leafy vegetables, and is an essential cofactor in enzymes involved in glucose metabolism.

In a study published in *Diabetes Care*, researchers conducted a meta-analysis to examine the association between magnesium intake and the risk of type 2 diabetes. The study included 13 prospective cohort studies and 536,318 participants. The included studies were published between 1999 and 2010 and involved follow-ups of up to 20 years.

After adjusting for geographic location, follow-up length, gender, or family history of type 2 diabetes, the combined studies indicated a significant (22%) reduction of risk of type 2 diabetes when comparing the highest magnesium intake group to the lowest. The inverse association was also more pronounced in overweight individuals, suggesting that high magnesium intake may have greater effects on improving insulin sensitivity in overweight individuals who are prone to insulin resistance. In the analysis of dose-response it was found that for every 100 mg/day increment in magnesium intake there was a 14% reduction in type 2 diabetes risk.

The results of this study provide additional evidence that magnesium, in a dose-dependent manner, is associated with a reduced risk of type 2 diabetes.

Jia-Yi Dong et al. Magnesium Intake and Risk of Type 2 Diabetes: Meta-analysis of prospective cohort studies. Diabetes Care 34:2116–2122, 2011.