

Higher calcium and zinc intake linked with healthier pregnancy outcomes

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People with higher intakes of calcium and zinc in the three months before they conceived were significantly less likely to suffer hypertensive disorders during their pregnancy compared with those who

had lower intakes of these essential minerals, according to new research.

The results highlight the importance of focusing on nutrition before conceiving—not only during pregnancy—in order to promote healthy pregnancies.

"Our findings underscore the significance of preconception dietary intake of calcium and zinc in potentially reducing the risk of hypertensive disorders of pregnancy," said Liping Lu, MD, Ph.D., who conducted the research as a postdoctoral research scientist at Columbia University and is now an assistant professor at Ball State University.

"Higher intakes of zinc and calcium before conception, derived from diet and supplements, are both associated with a lower risk of hypertensive disorders during pregnancy."

Lu presents the findings at [NUTRITION 2024](#), the annual meeting of the American Society for Nutrition held June 29–July 2 in Chicago.

Hypertension, or [high blood pressure](#), is one of the most common disorders of pregnancy and can harm both the pregnant person and the developing fetus. Considering the potential adverse effects of antihypertensive medications during pregnancy, researchers have focused on opportunities to prevent dangerous hypertension-related disorders such as pre-eclampsia through modifiable factors like nutrition.

While many people begin focusing on their nutrition after becoming pregnant, the researchers said that a person's nutritional status before conception is important since it can often take time for the body to correct deficiencies or imbalances.

"The health of women during the preconception period is strongly linked

to the pregnancy outcome," Lu said. "Adequate nutrient or mineral stores in the body prior to conception can ensure optimal nutrient status for conception and support the early stages of fetal growth and development."

The researchers conducted two separate studies using data from over 7,700 [pregnant women](#) across the U.S. who provided information about their health and diet through a study called the "Nulliparous Pregnancy Outcomes Study: Monitoring Mothers-To-Be."

One study focused on calcium while the other focused on zinc. The researchers analyzed the association between pre-conception intakes of each mineral and rates of hypertensive disorders of pregnancy after accounting for demographic, lifestyle and health factors that are also related to the risk of hypertension.

The results showed that people in the highest quintile for pre-conception calcium intake were 24% less likely to experience hypertensive disorders during pregnancy compared with those in the lowest quintile. For zinc, participants were divided into quartiles and those with the highest pre-conception zinc intakes were 38% less likely to experience hypertensive disorders during pregnancy than those with the lowest zinc intakes.

As [observational studies](#), Lu noted that the results do not necessarily prove causation. However, the findings align with other studies that have linked higher intakes of the two minerals with a lower risk of hypertension-related diseases outside of pregnancy.

In addition, calcium and zinc are both known to play important roles in [metabolic processes](#) related to maintaining the health of blood vessels, providing a plausible biological explanation for the notion that these minerals could help to prevent blood pressure disorders.

Recommendations of the National Academies of Sciences, Engineering, and Medicine suggest that women of childbearing age should consume 1,000 milligrams of [calcium](#) and 8 milligrams of [zinc](#) daily.

More information: Lu presents this research at 3:24–3:36 p.m. CDT on Saturday, June 29, during the Dietary Micronutrient and Supplementation in Population session in McCormick Place ([abstract](#); [presentation details](#)) and at 4:00–4:12 p.m. CDT on Monday, July 1, during the Nutrient Status and Supplementation in Life's Beginnings session in McCormick Place ([abstract](#); [presentation details](#)).

Provided by American Society for Nutrition

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