

Prenatal supplement may increase blood pressure at high doses

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Women who take high-dose folic acid supplements from pre-pregnancy through mid-pregnancy might increase their risk for potentially dangerous high blood pressure, according to new research.

The study, published Monday in the American Heart Association journal *Hypertension*, sought to answer questions about the safety of prenatal [folic acid](#) vitamin supplements.

Folic [acid](#) is the human-made form of folate, a form of vitamin B found in leafy green vegetables, fruits, beans and other foods. Everyone needs it, but because it protects unborn children against serious birth defects called [neural tube defects](#), doctors often prescribe prenatal vitamins that contain folic acid of 400 micrograms or more per day.

In the study, researchers focused on how folic acid impacts pregnant women's chances of developing two complications during pregnancy: gestational hypertension and preeclampsia, a more serious form of high [blood](#) pressure. Both complications

can lead to poor fetal growth and stillbirth.

The study looked at 4,853 Chinese women who took folic acid supplements, including 1,161 women who developed gestational hypertension and 161 who developed preeclampsia. After adjusting for various factors, the women who took high-dose folic acid supplements—800 mcg or more—from pre-pregnancy through mid-pregnancy had a 32% higher risk of developing gestational hypertension compared to those who didn't take folic acid supplements.

The risk for gestational high blood pressure "remained robust," the authors said, even for women of normal weight, without diabetes, and with no family history of high blood pressure. However, no significant association was found between folic acid supplements and preeclampsia.

"Given the efficiency of folic acid [supplement](#) use with a daily dose of 400 micrograms, our findings suggest that high-dose folic acid for long duration should be avoided for (most) women planning or capable of pregnancy," said the study's lead author, Nianhong Yang.

Until now, few studies have looked at potential adverse consequences of folic acid, she said.

"More attention should be paid to the impact of folic acid supplementation on gestational and long-term health, especially on the optimal dose and timing of supplementation," said Yang, a professor who studies nutrition and safety at Tongji Medical College in Wuhan, China.

Yang said the study had several limitations, including a lack of measurements of a specific kind of folate in the blood and information about how different genetic factors influence the way folic acid is metabolized in the body. She called for future studies that explore how unmetabolized folic acid might affect the health of mothers and their

children.

Dr. Rossana Orabona, who was not involved in the study and is a researcher in obstetrics and gynecology at the University of Brescia in Italy, said the work was limited by a lack of information about vitamins B6 and B12, autoimmune disorders and levels of homocysteine, an amino acid used to test for vitamin deficiency and heart disease.

The study "is important because it is the first to hypothesize a negative cardiovascular effect of high-dose FA during pregnancy," she said.

Orabona said further research is needed to clarify how folic acid and gestational high blood pressure are impacted by the immune system, and how genetic differences influence folate breakdown, high levels of amino acids in the blood and other factors.

"Adequate evidence is still needed to clarify the relationship between folic acid intake and cardiovascular outcomes in pregnancy."

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