

Choline recommendations during pregnancy may be too low, new study suggests

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cent research published in the *American Journal of Clinical Nutrition* (AJCN) found that during pregnancy, and particularly during the third trimester, large amounts of choline may be needed to support fetal development. Conclusions of the research revealed that current recommendations may be too low.¹ Choline deficiency in pregnant women may result in elevated levels of homocysteine, potentially resulting in birth defects.

January is National Birth Defects Prevention Month, and according to the National Birth Defects Prevention Network (NBDPN), every 4½ minutes a baby is born with a birth defect such as spina bifida.² This study adds to the growing body of evidence demonstrating that adequate maternal [choline](#) intake is vital to a healthy [pregnancy](#).

Choline Needed for Healthy Fetal Growth

Choline is an essential nutrient that is required to make phosphatidylcholine, a component of all cell membranes. Researchers evaluated pregnant and non-[pregnant women](#) who were all given a controlled diet that provided 380 milligrams/day (mg/d) of choline, primarily from eggs. The women were then randomly assigned to receive choline supplements of 100 or 550 mg/d. The study found that there is an increased fetal demand for phosphatidylcholine during pregnancy, much of it being transferred to the developing fetus.

"The methodology we employed in this study helped us clearly see changes in choline metabolism during pregnancy," says Dr. Marie Caudill, professor in the Division of Nutritional Sciences at Cornell University and lead investigator of this study. "The results are very meaningful because they demonstrate the substantial demand for choline during pregnancy and may call for an increase in the amount of choline recommended in the diets of expecting mothers."

Additional Benefits of Choline

There is a significant body of research demonstrating the vital role choline plays in the diets of pregnant and breastfeeding women.

- Choline has been shown to play an important role in fetal and infant brain development, affecting the areas of the brain responsible for memory and life-long learning ability.³
- Moreover, research shows that choline may help prevent [neural tube defects](#). Compared with women who get sufficient choline in their diets, women with diets low in choline have four times greater risk of having babies with neural tube defects such as spina bifida.⁴

Eggs Are a Simple Way to Add Choline to the Diet

Research shows that nine out of 10 Americans don't get enough choline.⁵ With numerous implications for health, increasing choline intake can be as easy as incorporating eggs into a healthy diet. Egg yolks are an excellent source of choline, providing about 125 mg, or roughly one-quarter of the recommended daily amount. "As one of the most convenient and low-cost food sources of choline, eggs are a food that I commonly encourage pregnant and breastfeeding women to consume,"

says pediatric physician assistant Chris Barry, PA-C, MMSc. "Eggs are all-natural, packed with a number of nutrients and a delicious addition to a healthy diet." For those looking to add more choline to their diet, Barry suggests simple, nutritious recipes like this [Microwave Mexican Omelet](#) or [Easy Hardboiled Eggs](#).

More information: 1. Yan Y, Jiang X, West AA, Perry CA, Malysheva OV, Brenna JT, Stabler SP, Allen RH, Gregory JF, Caudill MA. Pregnancy alters choline dynamics: results of a randomized trial using stable isotope methodology in pregnant and nonpregnant women. *Am J Clin Nutr.* 2013;98:1459-67.

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