

Pioneering study shows prenatal choline may 'program' healthier babies

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Pregnant women may have added incentive to bulk up on broccoli and eggs now that a Cornell University study has found increased maternal intake of the nutrient choline could decrease their children's chances of developing hypertension and diabetes later in life.

In a study led by Marie Caudill, associate professor of nutritional sciences, and graduate student Xinyin Jiang, a group of third-trimester [pregnant women](#) consumed 930 milligrams of choline, more than double the recommended 450 milligram daily intake. The result for their [babies](#) was 33 percent lower concentrations of cortisol – a hormone produced in response to stress that also increases blood sugar – compared to those from a control group of women who consumed about 480 milligrams of choline.

Caudill believes this happened because the choline changed the expression patterns of genes involved in cortisol production. The work, published online this week in *The Journal of the Federation of American Societies for Experimental Biology*, is the first human study to suggest a role for choline in the "programming" of key biological processes in the baby.

"The study findings raise the exciting possibility that a higher maternal choline intake may counter some of the adverse effects of prenatal stress on behavioral, neuroendocrine and metabolic development in the offspring," Caudill said.

This could be especially useful for women experiencing anxiety and depression during their pregnancy, as well as conditions such as pre-eclampsia.

"A dampening of the baby's response to stress as a result of mom consuming extra choline during pregnancy would be expected to reduce the risk of stress-related diseases such as [hypertension](#) and type 2 [diabetes](#) throughout the life of the child," she added.

She said additional studies are needed to confirm the study findings and further explore long-term effects. Dietary sources of choline include egg yolks, beef, pork, chicken, milk, legumes and some vegetables. Most prenatal vitamin supplements do not include choline.

"We hope that our data will inform the development of [choline](#) intake recommendations for pregnant women that ensure optimal fetal development and reduce the risk of stress-related diseases," Caudill said.

Provided by Cornell University

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