

Daily multivitamin improves pregnancy outcomes in South Asia, study suggests

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A multivitamin given daily to pregnant women in rural Bangladesh reduced pre-term births, increased infant birth weight and resulted in healthier babies overall, according to the large randomized trial conducted by Johns Hopkins Bloomberg School of Public Health researchers.

The findings, published in the Dec. 24 issue of *JAMA*, suggest that a supplement containing 15 essential micronutrients is superior to the current standard of care in many developing countries, which calls for pregnant women to take supplements containing iron and [folic acid](#).

"Our study shows that women in undernourished societies should be

given a multiple micronutrient supplement during pregnancy," says study leader Keith P. West Jr., DrPH, George G. Graham Professor of Infant and Child Nutrition in the Department of International Health at the Johns Hopkins Bloomberg School of Public Health. "It increases birth size because the babies stay in the womb longer and when that happens they are born a little larger and better equipped to handle life outside the womb. There is clear evidence of benefit."

Inadequate diets leading to poor nutrition are a serious [public health](#) problem in many parts of the world where many pregnant women lack micronutrients critical to the growth and development of their fetuses, setting these children back even before their lives outside the womb have begun.

For this study, a large research team in the Johns Hopkins JiVitA Project recruited roughly 45,000 [pregnant women](#) in rural Bangladesh beginning in December 2007, and assigned them to receive either a daily [multivitamin](#) or an iron-folic acid supplement. The women were followed through their pregnancies and, for those who gave birth, at one, three and six months after their children were born. There were roughly 14,000 live births in each group in the trial, with other pregnancies lost to miscarriage, abortion or stillbirth.

Those women who received the larger number of micronutrients were 15 percent less likely to give birth prematurely or prior to 37 weeks of gestation. Pre-term birth is a leading cause of infant mortality in many parts of the world. The babies born in the multivitamin group were 12 percent less likely to be born at a low birth weight (under 2.5 kg or 5 lbs, 8 oz.) and 11 percent less likely to be stillborn. On average, the infants born to mothers in the multivitamin group were born two to three days later than those in the iron-folic acid group, giving them more time to bulk up before birth, and were born an average of 55 grams (or roughly two ounces) larger.

West says that while infant mortality rates at six months of age were roughly the same in each group, the research suggests that girls born to mothers receiving the vitamin and mineral preparation may have survived better than girls whose mothers received only iron and folic acid. Of note: This did not happen in boys, requiring further data analysis to fully understand why.

"In countries like the United States, where there is already better vitamin and mineral nutrition, women often start taking micronutrient supplements as soon as they become pregnant, if not before," says West, director of the Johns Hopkins Center for Human Nutrition. "But they don't in the developing world. Vitamin and mineral supplements are more costly - probably several cents per tablet more - so in cultures where families make only a few dollars a day we need to be able to show that the investment is worthwhile in terms of having an impact on the health of mothers and their children. This study provides the needed evidence."

More information: "Effect of Maternal Multiple Micronutrient vs Iron-Folic Acid Supplementation on Infant Mortality and Adverse Birth Outcomes in Rural Bangladesh: The JiVitA-3 Randomized Trial" *JAMA*, 2014. doi:10.1001/jama.2014.16819

Provided by Johns Hopkins University Bloomberg School of Public Health

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