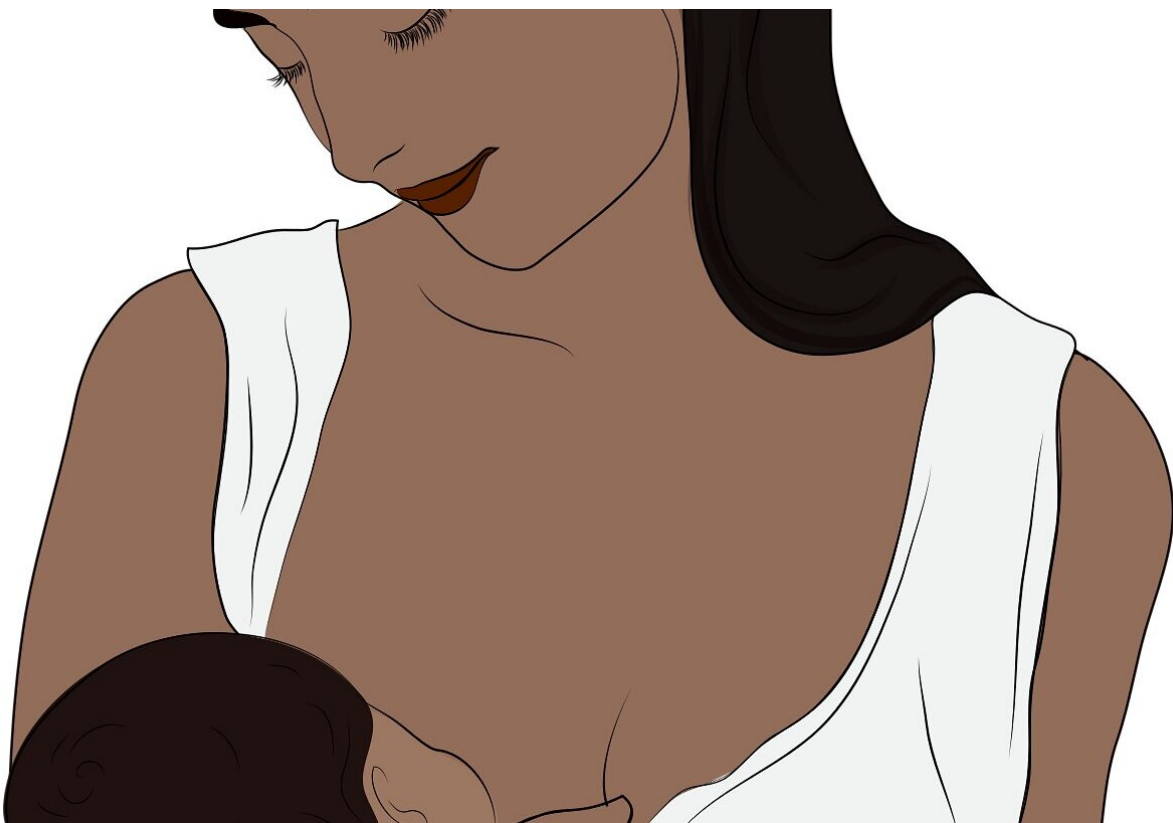


Study explores how pre- and postnatal B-12 vitamins improve breast milk vitamin B-12 levels

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Babies and children need vitamins, including vitamin B-12, to help their brains and bodies develop and grow. Babies get B-12 from their mothers

and can have low levels of B-12 if their mothers had low vitamin levels during pregnancy and breastfeeding. The vitamin B-12 levels of infants strongly depend on maternal levels. Adequacy of vitamin B-12 in breast milk is particularly important for infants during the first six months of life when breastfeeding is highly recommended. Even after the first six months of life, breast milk may continue to be a critical source of vitamin B-12 for infants.

Pregnant and lactating women are at exceptionally high risk for [vitamin B-12](#) deficiency due to the increased nutritional demands as they provide the micronutrient for themselves and their babies. Many people receive the necessary B-12 the body needs from animal-source foods. However, in countries with low intake of animal-source diets, mother's and infant's deficiency in vitamin B-12 is a serious public health challenge.

In resource-limited settings where maternal undernutrition is pervasive, researchers sought to understand the optimal timing and dosage of B-12 supplements during pregnancy and lactation.

A new study led by Mason Assistant Professor in the College of Public Health Dongqing Wang found that [pregnant women](#) who took high doses of oral vitamin B-12 supplements before delivery experienced short-term benefits on the levels of B-12 in their breast milk. However, women who took high doses of vitamin B-12 supplements during lactation experienced these benefits for a longer period of time.

"Understanding the impacts of prenatal and postnatal vitamin B-12 supplements on the level of B-12 in breast milk is crucial to design effective nutritional interventions to protect mothers and infants from vitamin B-12 deficiencies," said Wang, who was the principal investigator. "Our findings underscore the importance of prenatal vitamins for short-term benefits in breast [milk](#) and postnatal vitamins for more sustained impacts on B-12 adequacy in [breast milk](#); both prenatal

and postnatal supplements support healthy growth and development in the baby."

The study also found that the effect of the prenatal vitamin B-12 [supplement](#) diminished when used together with the postnatal supplement. Likewise, the effect of the postnatal vitamin B-12 supplement diminished when used together with the prenatal supplement.

"It appears that there was a certain [plateau](#) in the effect when prenatal and postnatal supplements were used together," said Wang. "The plateau could mean that either prenatal or postnatal vitamins could correct maternal vitamin B-12 deficiency, but the plateau does not preclude the need for combined prenatal and postnatal supplements through pregnancy and breastfeeding to sustain maternal B-12 levels in populations with high levels of dietary inadequacy."

["The effects of prenatal and postnatal high-dose vitamin B-12 supplementation on human milk vitamin B-12: a randomized, double-blind, placebo-controlled trial in Tanzania"](#) was published in the *American Journal of Clinical Nutrition* in November 2023.

More information: Dongqing Wang et al, The effects of prenatal and postnatal high-dose vitamin B-12 supplementation on human milk vitamin B-12: a randomized, double-blind, placebo-controlled trial in Tanzania, *The American Journal of Clinical Nutrition* (2023). [DOI: 10.1016/j.ajcnut.2023.07.023](#)

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