



PRENATAL NUTRIENT TEST

Address micronutrient imbalances that put pregnant women at risk.

Why You Need Prenatal Nutrient Testing

The Importance of Nutrition in Pregnancy

Nutrition has an important influence on the health of a mother and infant. Studies have shown that deficiencies of micronutrients during pregnancy may give rise to anemia and hypertension, and may cause impaired fetal function, fetal development, fetal growth, and other complications.¹ Clinical studies show that despite efforts to eat healthy and take vitamins, micronutrient deficiency in pregnancy remains to be a global concern.²

The Impact of Prenatal Testing

Every person has unique biochemical individuality that influences metabolism and absorption of nutrients. Identifying if micronutrient requirements are met with food and supplements takes more than just guesswork.

A Prenatal Nutrient Test provides an accurate assessment of the critical nutrients needed during pregnancy, allowing for personalized and targeted dietary support to make sure that the patient is nutritionally optimized and ready for pregnancy.

- ✓ Measures the level of 14 vitamins, minerals, and antioxidants essential to a healthy pregnancy
- ✓ Reveals micronutrient imbalances that increase the risk of pregnancy, like pre-eclampsia
- ✓ Determines functional levels of folate (vitamin B9) for baseline and monitoring to ensure proper brain and spinal cord development of the fetus in the first month
- ✓ Evaluates intracellular mineral levels (instead of just serum measurement) like magnesium, calcium, selenium, and zinc
- ✓ Provides clinically actionable information that enables clinicians to develop personalized dietary and supplementation protocol for women preparing for pregnancy

An inadequate or excessive amount of some nutrients may cause fetal malformations or medical problems, including neurological disorders.²



PRENATAL NUTRIENT TEST

Micronutrients Tested:

- Folate (Vitamin B9)** helps in the prevention of birth defects and aids in the early development of the central nervous system of the fetus. Deficiency of this nutrient during pregnancy can cause neural tube defects (NTD), the most common of which is spina bifida.²
- Cobalamin (Vitamin B12)** is needed for nervous system health. It works together with folate for the proper assembly of proteins that make up the physical body of the fetus. Deficiency can increase the risk of adverse pregnancy outcomes, including neural tube defects, intrauterine growth retardation, preeclampsia, and early miscarriage, as well as the increased risk for insulin resistance that may lead to obesity of the child.⁴
- Vitamin A** is important for cell division, fetal organ and skeletal growth and maturation, maintenance of the immune system to strengthen defenses against infection, and development of vision in the fetus.⁵
- Vitamin D** helps the body absorb calcium and phosphorus for the skeletal formation of the fetus. Severe deficiency in vitamin D can lead to rickets, while moderate deficiency may affect immune function and bone development from birth through adulthood. High-risk pregnancy complications such as gestational diabetes, preeclampsia, preterm birth, and low birth weight have been associated with vitamin D inadequacy during pregnancy. Toxic levels are associated with maternal fatigue and loss of appetite.⁶
- Vitamin C** inhibits the formation of free radicals to help prevent pre-eclampsia, abnormal ultrasounds, and similar pregnancy complications. It also reduces indicators of placental dysfunction and endothelial activation.⁴
- Ferritin** is integral to the formation of red blood cells. Iron requirements increase dramatically during pregnancy as the pregnant mother produces millions of new red blood cells to cope with increase in maternal intestinal absorption of iron. Deficiency can cause anemia, fatigue, and irritability in the mother, including impaired fetal growth, increased risk of hemorrhage, and pre-term delivery in early pregnancy. Excess iron can hinder the absorption of other nutrients, like zinc.⁷
- Calcium** is required for skeletal, neuromuscular, and cardiac function. It also helps develop normal heart rhythm and blood clotting abilities. Adequate levels of calcium decrease risks of hypertension, pre-eclampsia, and low birth weight.⁸
- Zinc** oversupply may contribute to pregnancy and delivery complications such as pre-eclampsia, pre-term delivery, fetal growth retardation, and congenital abnormalities.⁹
- Magnesium** is an essential mineral for building and repairing body tissues during pregnancy. It works together with calcium to aid in muscle function. It also helps muscles to relax while the calcium causes them to contract. Magnesium can help prevent premature contraction of the uterus and pre-term labor.¹⁰

This nutrient panel also tests for **vitamin K, selenium, chromium, manganese, sodium, and potassium.**

1 Barasi EM (2003). Human Nutrition – A Health Perspective. London, Arnold.

2 MRC Vitamin Study Research Group. (1991). Prevention of neural-tube defects: Results of the Medical Research Council vitamin study. Lancet 338:131-137. <https://www.ncbi.nlm.nih.gov/pubmed/1677062>
Wen SW, Walker M. (2005). An exploration of health effects of folic acid in pregnancy beyond reducing neural tube defects. J Obstet Gynaecol Can. 27(1):13-9. [http://www.jogcc.com/article/S1701-2163\(16\)30166-9/pdf](http://www.jogcc.com/article/S1701-2163(16)30166-9/pdf); Botto LD, et al. Neural tube defects. N Engl J Med. 1999;341:1509.

3 10 Facts on Nutrition. World Health Organization (2011).

4 <https://ods.od.nih.gov/factsheets/VitaminB12-HealthProfessional/>

5 Vitamin A supplementation in pregnant women. World Health Organization (WHO). 2011. http://apps.who.int/iris/bitstream/10665/44625/1/9789241501781_eng.pdf?ua=1&ua=1

6 Carol L. Wagner, et al. 2012 Mar; 4(3): 208–230. Vitamin D and its role during pregnancy in attaining optimal health of mother and fetus <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3347028/>

7 Juan Pablo Pena-Rosas, et al. 2012. Daily Oral Iron supplementation during pregnancy. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4233117/The Role of Micronutrients in Pregnancy](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4233117/The%20Role%20of%20Micronutrients%20in%20Pregnancy.pdf). Australian Family Physicians. December 2009.

8 Calcium supplementation in pregnant women- World Health Organization http://apps.who.int/iris/bitstream/10665/85120/1/9789241505376_eng.pdf
Cudithy D, Lee RV. The pathophysiology of pre-eclampsia: current clinical concepts. J Obstet Gynaecol. 2009;29:576-82; <https://www.ncbi.nlm.nih.gov/pubmed/19757258>

9 Micronutrients in Fetal Growth and Development. Harry J. McArdle and Cheryl J. Ashworth. British Medical Bulletin. 1999; 55 (No. 3): 499-510. British Council.

10 Spatling L, Dish G, Classen HG 1989 Dec;2(4):271-80 Magnesium in pregnant women and the newborn. <https://www.ncbi.nlm.nih.gov/pubmed/2701863>

TEST INFORMATION

Specimen : 20 ml. whole blood
Result TAT : 7 working days
Method : LC-MS / MS, ICP-MS, HPLC,
Chemiluminescence, Microassay

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