Prenatal SAP

*Science-based multivitamin for pregnant women**

Vitamin and mineral supplementation, while planning for parenthood and during pregnancy, helps ensure optimal nutrition for the health of the mother and unborn baby.* **Prenatal SAP** provides therapeutic doses of a variety of supplemental nutrients aimed at preventing and correcting vitamin and mineral deficiencies, and achieving benefits seen beyond typical dietary intake levels.*

SUPPLEMENT FACTS

Serving Size: 3 Capsules — **Servings:** 60

	Amount Per Serving	% Daily Value
Vitamin C (from calcium ascorbate)	175 mg	146%
Vitamin D (from cholecalciferol) [1000 IU]	25 mcg	167%
Vitamin K (from vitamin K_1)	100 mcg	111%
Thiamin (Vitamin B_1; from thiamin hydrochloride)	100 mg	7143%
Riboflavin (Vitamin B_2; from riboflavin-5´-phosphate sodium)	50 mg	3125%
Niacin (from niacinamide)	50 mg NE	278%
Vitamin B_6 (from pyridoxal-5´-phosphate)	50 mg	2500%
Folate (from calcium L-5-methyltetrahydrofolate)	1700 mcg DFE	283%
Vitamin B_{12} (from methylcobalamin)	1000 mcg	35714%
Biotin	300 mcg	857%
Pantothenic acid (from calcium D-pantothenate)	100 mg	1429%
Calcium (from calcium citrate)	175 mg	13%
Iron (from iron glycinate)	30 mg	111%
Iodine (from potassium iodide)	150 mcg	52%
Magnesium (from magnesium citrate)	75 mg	19%
Zinc (from zinc citrate)	25 mg	192%
Selenium (from L-selenomethionine)	50 mcg	71%
Copper (from copper citrate)	2 mg	154%
Manganese (from manganese citrate)	5 mg	192%
Chromium (from chromium polynicotinate)	100 mcg	222%
Molybdenum (from molybdenum citrate)	50 mcg	100%
Potassium (from potassium citrate)	75 mg	1%
Mixed tocopherols (from non-GMO sunflower)	111.84 mg	**
Boron (from boron citrate)	700 mcg	**

**Daily Value not established

Other ingredients: Microcrystalline cellulose, vegetable magnesium stearate, and silicon dioxide in a vegetable capsule composed of vegetable hypromellose and purified water.

This product is non-GMO and vegetarian friendly.

Contains no: Gluten, soy, wheat, corn protein, eggs, dairy, yeast, citrus, preservatives, artificial flavor or color, or sugar.

Prenatal SAP contains 180 capsules per bottle.

DIRECTIONS FOR USE

Adults: Take 3 capsules daily. If you are taking other medications, take this product a few hours before or after them. **Take with food.**

INDICATION

Prenatal SAP provides nutritive support for women who are pregnant or who are planning to become pregnant.*

Noninclusion of the nutrients ***beta*-carotene** and **vitamin A**: high doses of vitamin A have been shown to cause birth defects when taken during pregnancy.* Our formula provides healthcare practitioners with the flexibility to supplement these micronutrients separately as needed.*

CAUTIONS AND WARNINGS

For adult use only. Consult a healthcare practitioner prior to use if you are taking blood thinners. Keep out of reach of children. There is enough iron in this package to seriously harm a child. Do not use if seal has been broken. Keep out of reach of children.

INCREASED BIOAVAILABILITY

Prenatal SAP is:

- Not compressed with binders, for superior assimilation.
- Supplied in a vegetable capsule for easy digestion.

PURITY, CLEANLINESS, AND STABILITY

All ingredients listed for all **Prenatal SAP** lot numbers have been tested by a third-party laboratory for identity, potency, and purity.

*** These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

Scientific Advisory Panel (SAP): adding nutraceutical research to achieve optimum health

NFH®

351, Rue Joseph-Carrier, Vaudreuil-Dorion, Quebec, J7V 5V5
T 1 866 510 3123 • F 1 866 510 3130 • nfh.ca

For healthcare professional use only.

Micronutrient status in women of reproductive years is of extreme importance, especially around the time of conception. Micronutrient supplementation is recommended for all women around this time to cover the gap in maternal nutrition and to avoid nutrient deficiency leading to complications of pregnancy and adverse fetal outcomes. Micronutrient status can influence the health of the woman during her pregnancy, the health and development of the fetus, and even years of infancy. Due to the rapid changes in the female body and the demands of the developing fetus, nutritional status is paramount as there are critical windows of development. Nutritional deficiencies during this time can affect the development of the immune system, and have implications to cardiovascular, spinal, musculoskeletal, neurological, and metabolic function. It is always prudent to ensure adequate micronutrient status.

MINERALS

Iron is essential to blood oxygen-carrying capacity. Iron bisglycinate chelates have been shown to be superior in absorption and bioavailability to other forms of iron.[1, 2, 3] Specifically, iron bioavailability as a glycine chelate was reported to be 3.4 times greater than that of ferrous sulfate,[4] with reduced incidences of side effects including gastric irritation and constipation (33% less). Iron deficiency anemia imposes a risk of hemorrhage during delivery. It is also associated with the risk of preterm delivery. Iron bisglycinate may negate the necessity for its coadministration with vitamin C for absorption, due to substantially increased bioavailability.[5]

Zinc is essential to human metabolism and catalyzes more than 100 enzymes, facilitates protein folding and regulates gene expression. Zinc deficiency may cause complications during pregnancy and delivery, as well as growth retardation, congenital abnormality, and retarded neurobehavioral and immunological development. Iodine deficiency has an effect on thyroid function and can influence rate of conception, and can lead to cretinism and possible preterm delivery.

Calcium and magnesium are critical for musculoskeletal development and influence nerve signaling. Magnesium is a cofactor for many enzymatic reactions. Magnesium can also help to decrease complications during pregnancy, such as inflammation and pain, by having analgesic action. Magnesium can also help to relax muscles and cramps.[6] Magnesium, vanadium and chromium play a role in blood glucose metabolism, transport and insulin sensitivity. These minerals can greatly decrease the risk of gestational diabetes.

ANTIOXIDANTS, BIOFLAVONOIDS, VITAMIN C AND VITAMIN E

Antioxidants, working in a complex synergistic system, play a major role in humans to quench free radicals and reactive oxygen species, the metabolic paradox of using oxygen as an energy source. The function of the antioxidant system is to prevent damage by free radicals to DNA, protein and lipid structure — the integral base of cell physiology. Antioxidants, a family to which vitamins C and E as well as the bioflavonoids belong, act as inhibitors at stages of initiation and promotion of tumour growth and proliferation and mitigate neoplastic processes.[7]

During pregnancy, it is crucial to have a handle on oxidative stress as it can lead to complications in pregnancy. Oxidative stress can lead to impaired placental perfusion, immune maladaptation and inflammation.[8] Increased levels of oxidative stress markers and decreased levels of antioxidants are found in women who experience preeclampsia.[9] Vitamin C is also a cofactor in multiple enzymatic reactions, particularly to do with the immune system and blood vessel health. Vitamin C prevents and reduces the duration and severity of the common cold, plays a role in the stress response, and increases the absorption of iron.

B VITAMINS AND FOLATE

B vitamins are required by the human body for metabolic processes, most notably involved in enzymatic processes required for energy production, maintain healthy skin and muscle tone, play a role in the development and maintenance of healthy immune and nervous system, promote cell growth and cell division and are required for healthy blood cell development.

Along with vitamin B_{12}, folic acid plays a role in nucleic acid synthesis and carbon metabolism. Low maternal folate levels are correlated with smaller newborn weight, and contribute to congenital malformations such as neural tube defects (NTD). Since the fortification of folate in foods, NTD has decreased by 50–70%.[10] More recent studies suggest B_{12} supplementation can further decrease the risk of NTD.[10] Recently, it has been suggested that folic acid-containing multivitamins may also be beneficial in preventing congenital anomalies other than NTD such as a decreased risk for orofacial clefts, limb deficiencies, and cardiovascular abnormalities.[11]

Increased levels of both folate and B_{12} help to lower levels of homocysteine, which may contribute to NTD and early pregnancy loss.[12] Low levels of B_{12} and folate are also risk factors for the development of type 2 diabetes[13] and cardiovascular disease. Supplementing B_{12} will also help avoid other complications during pregnancy, such as macrocytic anemia and neurological complications affecting sensory and motor function.[14]

Folic acid and B_{12} deficiency can also lead to other pregnancy complications. Higher pregnancy rates are found with micronutrient supplementation in those with and without fertility issues. Previous studies suggest that folic acid status may be important in the ovarian response to FSH and helps to regulate the cycle and that low levels of folate were found to be strongly associated to ovulatory infertility.[15] In age- and energy-adjusted analyses, intakes of vitamins B_1, B_2, B_6, B_{12}, folic acid and niacin were inversely related to the risk of ovulatory infertility.[15] Women with sufficient vitamin B_6 showed a higher conception rate and lower risk of early pregnancy loss compared to those with vitamin B_6 deficiency.[12]

Suboptimal vitamin B_6 status and elevated plasma concentrations of homocysteine, a marker of poor folic acid and/or vitamin B_{12} status, also have been associated with increased risk of clinical spontaneous abortion.[12] In addition, numerous studies have documented associations between low vitamin B_6 status and inflammatory responses, and inflammation has been linked to early pregnancy loss.[12] B vitamin deficiency coupled with hyperhomocysteinemia are associated with recurrent abortion. B_6 has also been shown to decrease nausea and vomiting in pregnancy.

VITAMIN D

Vitamin D is important for the development of bones, and an inadequacy of it can contribute to the development of rickets, a disease once thought to be eradicated. Rickets is once again on the rise as people lather on sunscreen and limit sun exposure due to the damage UV rays can cause. The downside of this is that without direct sunlight exposure, the body cannot synthesize its own vitamin D.

Expecting moms need to ensure adequate intake for both themelves and the fetuses to optimize proper development and strength of fetal bones, and maintenance of their own. The role of vitamin D is to maintain serum levels of minerals such as calcium and phosphorus to support metabolic function, neuromuscular transmission, regulate bone metabolism and enhance immunity.

Studies show that at week 28, 100 mg/d of calcium is being deposited in the skeleton. At week 35, calcium deposition increases to 350 mg/d.[16] Building adequate stores of vitamin D for the newborn is important to the maintenance of the structure. Maintenance of vitamin D levels postnatally is also important, especially to those born premature, to avoid skeletal abnormalities. Vitamin D levels impacts fetal shape and limb length.[17] Fetal vitamin D insufficiency is linked to the increased risk of hypocalcemia, type 1 diabetes, asthma and schizophrenia.[18]

New studies show that vitamin D status also helps to regulate placental development. This indicates that vitamin D deficiency may contribute to complications in pregnancy such as miscarriage, preeclampsia, and preterm birth.[18, 19]

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