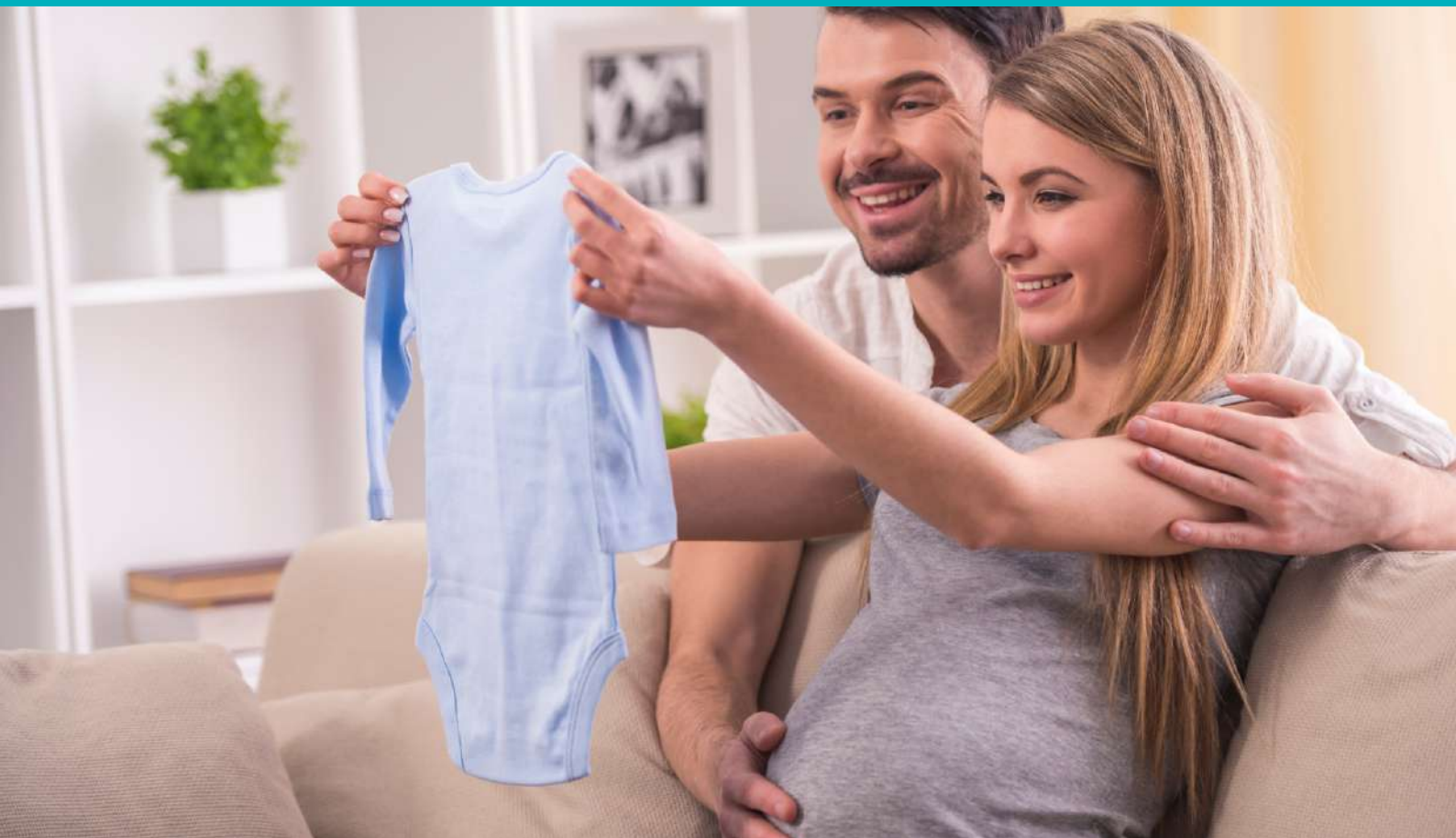




NANOBIOTICA



PREGNIGEN

ABOUT PREGNIGEN SERIES

There is substantial evidence on the importance of maternal diet for the health of the fetus. The nutrient status of the fetus is mostly dependent on maternal intake and it has been known for many years that deficiencies in critical nutrients can lead to malformations and poor health outcomes for both the mother and offspring. It is because of this that, often, pregnancy is a time that expectant mothers will focus on their health and nutrient intake.

Adequate nutrition is an important health care package for maternal and child health in the course of pregnancy. Pregnant women are susceptible to nutritional deficiencies due to an increment in nutrient needs to provide increased nutritional demands due to fetal growth and development, and changes in maternal metabolism such as pregnancy induced development of tissues.

Additionally, nutritional requirements for healthy women can be increased based on the trimesters of the fetus. Although this pregnancy associated increased nutritional demand can be met by an appropriate consumption of food in a balanced diet, additional use of dietary supplements has been thought a key nutritional product with a crucial role in the maintenance of adequate nutritional status.

According to the World Health Organization (WHO), the prevalence of preterm and underweight babies delivered are about 15 million and 20 million respectively. Women from low- and middle- income countries suffer from multiple-micronutrient deficiencies due to inadequate intake of animal products, fruits, vegetables and fortified foods and consequently, more than 95% of those born with low birth weight are occurring in these countries.

Recent evidence suggests so far, the particular importance of dietary supplements and in fact, available information indicates that majority of essential micronutrients' requirements increase with the trimester of the pregnancy. Along with this growth in prenatal nutrition, however, there is increasing concern over pregnant women at risk of dietary deficiency in several key nutrients such as calcium, iron, folic acid and vitamin D. A considerable amount of literature has been supporting the link between inadequate maternal nutritional status and adverse pregnancy outcomes, poor infant survival, congenital anomalies and risk of chronic diseases and impaired mental development in later life.

The high prevalence of micronutrient deficiencies among pregnant women is associated with an increased demand of the nutrients because of fetal and maternal tissue growth and development. Any compromised intake of these nutrients in both quality and quantity during pregnancy results in failure to fulfill the increased demand of essential nutrients which would result in some adverse pregnancy outcomes. Nutritional deficiencies during pregnancy increase the vulnerability of the mothers to different disease, increase the rate of miscarriage, and the babies delivered will be underweight whose survival is at risk. Moreover, the low weight gain of mothers due to compromised nutrition during pregnancy is a risk factor for the delivery of infants too small for their gestational age, which in turn leads to neonatal morbidity and mortality, growth failure, retarded cognitive development and adulthood chronic diseases.

PREGNIGEN is a specially designed line of dietary supplements for pregnant women. It consists of 6 remarkable formulations:

PG1: to support the healthy development of the fetal neural tube

PG2: to support the development of the fetal immune system and vision

PG3: to support the musculoskeletal health of both mother and fetus

PG4: to support the development of a healthy cardiovascular system and the formation of blood cells

PG5: to support the healthy development of the fetal nervous system and brain

PG6: to support the health and vitality of skin, hair, and nails during pregnancy

In order for the baby to grow and develop and for the mother to remain healthy, **PREGNIGEN** makes sure that both receive the proper nutrients.



PREGNIGEN PG1

TO SUPPORT THE HEALTHY DEVELOPMENT OF THE FETAL NEURAL TUBE

Liposomal folic acid (folate)

Folic acid can reduce certain birth defects of the brain and spinal cord. These birth defects are called neural tube defects (NTDs). NTDs happen when the spinal cord fails to close properly. Adequate folate intake is proven to reduce the risk of neural tube defects. The mechanism by which folate reduces the risk of NTDs is not well understood but is likely related to its role in nucleotide synthesis, which is especially important for the rapidly dividing cells in the embryonic neural tube. Without an adequate supply of nucleotides to facilitate deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) replication, the development of neural folds could be impaired. Adequate maternal folate status is important in preventing NTDs, but folic acid supplementation may also prevent NTDs in some individuals with normal folate concentrations who may not metabolize folate in an optimal manner.

Nanomicronized choline

Choline is critical during fetal development, when it influences stem cell proliferation and apoptosis, thereby altering brain and spinal cord structure and function and influencing risk for neural tube defects and lifelong memory function. Insufficient maternal choline intake during early embryogenesis could be associated with brain malformations such as neural tube defects (NTDs).

Omega-3 fatty acids (DHA/EPA)

Omega-3 fatty acids, particularly docosahexaenoic fatty acid (DHA), are widely recognized to impact fetal and infant neurodevelopment. Docosahexaenoic acid, 22:6n-3 (DHA), is critically necessary for the structure and development of the growing fetal brain in utero. Maternal diet high in Omega-3 fatty acids upregulate genes involved in neurotrophin signalling in fetal brain during pregnancy. DHA is just as important as folate for neural tube closure. Maternal DHA is mobilized rapidly during the first month of gestation prior to neural tube closure, demonstrating that supplementing with DHA pre-pregnancy and/or in early pregnancy may be an important addition to a maternity care plan.

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PREGNIGEN PG2

TO SUPPORT THE DEVELOPMENT OF THE FETAL IMMUNE SYSTEM AND VISION

Omega-3 fatty acids (DHA/EPA)

Docosahexaenoic acid (DHA) and Eicosapentaenoic acid (EPA) are integral to the modulation of the immune system. They influence the production of eicosanoids and cytokines, which regulate inflammation and immune responses. Adequate intake of DHA and EPA during pregnancy may enhance the development of the fetal immune system by promoting the maturation of immune cells and supporting immune tolerance.

DHA is a major structural lipid in the photoreceptor outer segments of the retina. It is essential for the development and function of the visual system. Maternal DHA supplementation has been associated with improved visual acuity and overall retinal function in infants.

Liposomal vitamin D

Vitamin D plays a crucial role in the regulation of the immune system. It modulates the innate and adaptive immune responses by influencing the activity and differentiation of immune cells such as T cells, B cells, and antigen-presenting cells. Sufficient vitamin D levels during pregnancy support the fetal immune system and may reduce the risk of autoimmune conditions.

Liposomal zinc

Zinc is fundamental for the normal development and function of immune cells. It is involved in the proliferation, differentiation, and function of neutrophils, natural killer cells, macrophages, and lymphocytes. Zinc deficiency during pregnancy can impair immune responses and increase susceptibility to infections.

Nanomicrosized selenium

Selenium influences both innate and adaptive immunity. It enhances the proliferation of T cells and their response to antigens, and it supports the function of natural killer cells and macrophages.

Liposomal lutein

Lutein is a carotenoid that accumulates in the retina and macula, regions critical for central vision. It acts as a blue light filter and protects the eyes from phototoxic damage by neutralizing free radicals. Maternal lutein intake contributes to the accumulation of lutein in the fetal retina, supporting healthy visual development and potentially improving visual function after birth.

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PREGNIGEN PG3

TO SUPPORT THE MUSCULOSKELETAL HEALTH OF BOTH MOTHER AND FETUS

Nanomicronized calcium

During pregnancy, the fetal demand for calcium increases significantly to support skeletal development. Adequate calcium intake helps prevent maternal bone density loss, reducing the risk of osteoporosis postpartum. Calcium plays a pivotal role in muscle contraction; sufficient calcium levels help ensure normal muscle function and may alleviate muscle cramps and spasms commonly experienced during pregnancy.

Liposomal vitamin B6

Vitamin B6 has been shown to alleviate muscle spasms and cramps by aiding in the metabolism of proteins and the synthesis of neurotransmitters that regulate muscle contractions.

Liposomal vitamin D

Vitamin D enhances the intestinal absorption of calcium for fetal bone development. It also plays a role in maintaining appropriate serum calcium and phosphate levels, which are critical for bone mineralization.

Nanomicronized glucosamine

Glucosamine contributes to the maintenance of healthy joint cartilage, reduces joint discomfort, enhances joint mobility and flexibility, plays a vital role in cartilage formation and repair.

Nanomicronized collagen Type II

Collagen type II is a major structural protein found in cartilage. It provides tensile strength and elasticity, maintains the integrity and resilience of joint tissues, prevents degradation and promotes repair.

Liposomal curcumin

Curcumin exhibits potent anti-inflammatory effects, helps reduce inflammation in joints and muscles, alleviating pain and swelling associated with musculoskeletal strain during pregnancy.

Liposomal magnesium

Magnesium is essential for muscle relaxation and the prevention of muscle spasms. It regulates muscle contractions and promoting smooth muscle function. Adequate magnesium intake helps prevent leg cramps and other muscle-related discomforts commonly experienced during pregnancy. Magnesium works synergistically with calcium and vitamin D to enhance bone density and strength. It is involved in the structural development of bones and plays a role in the enzymatic processes that regulate calcium metabolism, ensuring optimal bone mineralization for both mother and baby.

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PREGNIGEN PG4

TO SUPPORT THE DEVELOPMENT OF A HEALTHY CARDIOVASCULAR SYSTEM AND THE FORMATION OF BLOOD CELLS

Omega-3 fatty acids (DHA/EPA)

Omega-3 fatty acids are pivotal in the formation and maturation of the fetal heart and circulatory system. DHA integrates into cardiac cell membranes, enhancing fluidity and function, which is essential for proper heart rhythm and contractility. EPA contributes to the regulation of blood flow and vessel dilation, ensuring efficient circulation. DHA and EPA help maintain normal blood pressure and cholesterol levels, reduce triglyceride levels, lower the risk of hypertensive disorders, reduce incidence of preeclampsia and gestational hypertension.

Liposomal iron

Iron is a fundamental component of hemoglobin, which is responsible for transporting oxygen from the lungs to tissues throughout the body. During pregnancy, iron requirements increase to support the expanding blood volume and to provide sufficient oxygen to the developing fetus. Iron is essential for erythropoiesis, the process of red blood cell production in the bone marrow.

Liposomal vitamin C

Vitamin C significantly enhances the absorption of iron for hemoglobin production.

Liposomal vitamin B12

Vitamin B12 is vital for DNA synthesis and cell division, particularly in bone marrow during erythropoiesis.

Liposomal vitamin K

Vitamin K is essential for the normal blood coagulation, reducing the risk of excessive bleeding during and after delivery. Vitamin K helps regulate calcium deposition and prevents calcification and maintaining cardiovascular health.

Nanomicronized glycine

Glycine is a building block for various proteins, including hemoglobin. It contributes to the formation of heme, the iron-containing component of hemoglobin, enhancing oxygen transport efficiency.

Liposomal coenzyme Q10

Coenzyme Q10 (CoQ10) is an essential component of oxidative phosphorylation at mitochondrial level, and also functions to stabilize cell membranes as well as acting as a potent antioxidant. Pregnant women with established pre-eclampsia had significantly lower plasma levels of CoQ10 compared with healthy pregnant and nonpregnant women.

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PREGNIGEN PG5

TO SUPPORT THE HEALTHY DEVELOPMENT OF THE FETAL NERVOUS SYSTEM AND BRAIN

Omega-3 fatty acids (DHA/EPA)

Docosahexaenoic Acid (DHA) is a major structural component of neuronal cell membranes, constituting up to 40% of the polyunsaturated fatty acids in the brain. DHA is essential for the growth and functional development of the fetal brain. DHA facilitates the formation of synapses, enhances neuronal signaling, and supports myelination, the process by which nerve fibers are insulated to increase signal transmission efficiency. Adequate DHA levels are associated with improved neurogenesis and cognitive function. Maternal intake of DHA during pregnancy has been linked to enhanced cognitive outcomes in children, including better memory, attention, and problem-solving skills. Eicosapentaenoic Acid (EPA) plays a supportive role in brain development by modulating inflammatory responses and supporting the formation of neural connections.

Nanomicronized choline

Choline is a vital nutrient for cell membrane structure and function in the brain. It serves as a precursor to acetylcholine, a neurotransmitter essential for memory formation, muscle control, and overall cognitive function. Choline supports the structural integrity of brain cells and facilitates the formation of neural circuits, promoting efficient communication between neurons. Adequate choline intake is associated with enhanced memory and learning capabilities in children. It influences the epigenetic regulation of genes involved in brain development, thereby supporting long-term cognitive health.

Liposomal iodine

Adequate iodine intake during pregnancy reduces the risk of cognitive impairments and supports normal neurological development. Iodine deficiency is linked to intellectual disabilities and developmental delays in children. Ensuring sufficient iodine levels promotes optimal synaptic plasticity and cognitive function, laying the foundation for a healthy nervous system.

Nanomicronized inositol

Inositol is a crucial component of phosphatidylinositol, which is involved in intracellular signaling pathways that regulate cell growth, differentiation, and survival. Inositol supports the synthesis and regulation of neurotransmitters like serotonin and dopamine, which are involved in mood regulation, cognition, and overall mental health.

Liposomal vitamin B1 (Thiamine)

Vitamin B1 is crucial for maintaining the normal function of the nervous system. It supports the integrity of nerve cells and facilitates the transmission of nerve impulses.

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PREGNIGEN PG6

TO SUPPORT THE HEALTH AND VITALITY OF SKIN, HAIR, AND NAILS DURING PREGNANCY

Omega-3 Fatty Acids (DHA/EPA)

Support skin elasticity and hydration, help to reduce dryness, itching and the formation of stretch marks. May alleviate skin inflammation and promote a healthy complexion. These fatty acids also help in regulating sebum production, minimizing acne outbreaks commonly experienced during pregnancy.

Nanomicronized collagen Type I

Enhances skin firmness and reduces the appearance of stretch marks. Supports the structure of hair and nails, promoting growth and resilience.

Liposomal vitamin B2 (Riboflavin)

Essential for energy metabolism, supporting skin cell renewal. Protects cells from oxidative stress, prevents premature aging caused by oxidative stress.

Liposomal vitamin B3 (Niacin)

Enhances the synthesis of ceramides, which are essential lipids in the skin barrier. Reduces moisture loss, enhances hydration, and strengthens the skin. Promotes healthy blood flow to the skin and scalp.

Liposomal vitamin B5 (Pantothenic Acid)

Involved in the synthesis of coenzyme A, which is essential for fatty acid metabolism and the production of lipids in the skin. Aids in maintaining skin hydration and softness, prevents dryness and flakiness. Supports the health of hair follicles by promoting the production of keratin, the primary structural protein in hair.

Liposomal vitamin B7 (Biotin)

Biotin acts as a coenzyme in the synthesis of keratin, a key protein that forms the structural basis of hair and nails. Biotin enhances the production of fatty acids, which nourish hair follicles and nail beds.

Liposomal vitamin E

Vitamin E supports the repair of damaged skin cells by enhancing collagen production and reducing inflammation. It aids in the healing of wounds and minimizes the appearance of stretch marks, contributing to overall skin resilience and elasticity.

Liposomal vitamin C

Essential for the production of collagen, enhancing skin elasticity. Helps protect skin from environmental stressors, such as UV radiation and pollution, preventing oxidative damage and maintaining a youthful appearance.

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ABOUT NANOBIOTICA

The NANOBIOTICA brand is the result of a groundbreaking scientific and technical collaboration among Nutri-Max Biotech, Complete Pharma, Supreme Pharmatech, and Supreme Nanobiotics, which merged to form the NANOBIOTICA Group in September 2024. This merger brings together the expertise of industry leaders to create a new generation of imperative dietary nano-additives that are as powerful as traditional medical products.

The term "imperative" signifies the essential and crucial nature of the innovative technology used in producing NANOBIOTICA products. By uniting these leading companies, NANOBIOTICA Group remains at the forefront of scientific advancements in the field of dietary supplements, ensuring that our products meet the highest standards of quality and efficacy.

By harnessing the power of nanotechnology, our products offer enhanced bioavailability and effectiveness, making significant advancements in dietary supplementation.

TECHNICAL CHARACTERISTICS

Manufacturing Standard

- GMP (Good Manufacturing Practice)

Certification authorities

- FDA Certification

Manufacturing Processes:

- Nanomicronization
- Nano-Phytosomal Technology
- Nano-Liposomal Technology

Formulation Type

- Nano-Processed Imperative Formulations

Product Forms:

- Tablets
- Chewable Tablets
- Delayed Release Capsules
- Chewing Gums
- Syrups
- Drinks
- Sachets

At NANOBIOTICA Group, our commitment is to push the boundaries of innovation in dietary supplements. Our advanced nano-processing technologies enable us to develop products that meet the evolving needs of healthcare professionals and consumers worldwide.

