

Nutrition in Pregnancy

Good nutrition can help you optimize your health during your pregnancy and benefit your baby's health both *in utero* and into his or her childhood.

Here's an overview of some nutritional considerations that expectant moms and their growing babies can benefit from.

The Mediterranean Diet

The Mediterranean diet is rich in vegetables, whole grains, fish, extra virgin olive oil, nuts, and fruits. A Mediterranean style diet is beneficial for both you and your baby, both due to the nutrients it provides and also with some interesting positive impacts on baby's health. A study in the *Journal of Pediatrics* found that children whose mothers consumed a Mediterranean diet during pregnancy experienced lower risk for wheezing when they reached preschool age. A Spanish study showed that a prenatal Mediterranean diet protected against asthma and eczema in children when assessed at age 6. Olive oil used in cooking/salad dressings during pregnancy independently protects against wheezing in infants. Choose extra virgin olive oil and use raw (unheated) or on low heat only for maximum benefits.

The Mediterranean diet is also protective against low birth weight in newborns, as shown by the Danish National Birth Cohort study. Conversely, low adherence to a Mediterranean diet has been linked with low birth weight. A simple dietary intervention to reduce risk for low birth weight is significant, as low birth weight has been associated with significant health problems in the children later in life, including high blood pressure, diabetes, obesity, high cholesterol, ADHD, depression and anxiety.

Fish & Fish Oils

Fish and seafood are rich sources of protein and essential fats like DHA which help to build your baby's nervous system. Fish oils have also been shown to protect against food allergies, eczema, asthma, and may benefit the balance of Th1 and Th2 cells of the immune system. Higher intakes of oily fish during pregnancy has been shown to decrease the risk of hyperactivity and increase verbal IQ scores (7.55 points higher) in the children. Higher fish consumption is also protective against pre-term birth.

However, the type of seafood in a mother's diet seems to influence fetal growth. Contamination of seafood is a concern, as methylmercury negatively affects neurological development. Research suggests it may be beneficial to limit canned tuna and crustaceans (e.g. crab, shrimp, lobster) to one serving weekly, as increased consumption of these species has actually been associated with low birth weight babies. Meanwhile, lean fish and molluscs (e.g. clams, oysters, scallops) were not associated with low birth weight. If seafood contamination or environmental impact is a concern, you can visit seachoice.org for information about healthier seafood choices, or ensure you and your baby are receiving your full complement of essential omega-3 fats through a high-quality fish oil supplement. In Canada, fish oil supplements licensed for sale and bearing an "NPN" (natural product number) on their label must be purified of heavy metals, dioxins and PCB's in order to meet Health Canada regulations. The fish oil supplements in our clinic dispensary exceed these national standards.

DHA (docosahexanoic acid) is a fish-derived essential omega-3 fatty acid that makes up one third of the brain's grey matter, and is required for your baby's retinal and immune system development. Higher DHA status has been associated with better cognitive and neurological performance, hand-eye coordination, problem-solving capacities and visual development in children.

EPA (eicosapentanoic acid), another omega-3 fatty acid found in fish, helps the placenta absorb DHA to support the baby's needs. Supplements containing at least 60% EPA in a at least a 2:1 ratio of EPA:DHA

have been shown to protect against depression in adults. Prevention and treatment of postpartum depression should include omega-3's in this ratio. During pregnancy, intake of at least **1g of EPA and 300 mg of DHA daily** from fish and/or fish oils is recommended.

Prenatal Multivitamins

Prenatal multivitamin-mineral supplements have been associated with decreased risk for certain pediatric cancers, congenital defects of the cardiovascular system, limb and neural tube defects, cleft palate and urinary tract malformations. Your multivitamin or extra folic acid supplement should provide you with 1 mg folic acid or methylfolate, and the benefits of multivitamin supplementation extend beyond folate. If you experience constipation, nausea or heartburn from your prenatal multi, there are several high-quality products available with more easily absorbed forms of the minerals, particularly iron, that may be more easily tolerated.

Vitamin K2 is a nutrient that supports skeletal development in baby and is often absent from prenatal multivitamins. Pregnant women should consume 60-120 mcg (micrograms) of vitamin K2 daily.

Iron

Iron needs decrease slightly in the first trimester of pregnancy (due to the absence of menstruation), but increase in the second and third trimesters. Iron deficiency is associated with increased risks of preterm labor, slowed fetal growth and maternal depression. An iron-adequate diet is not considered sufficient to prevent or correct iron deficiency during pregnancy. Most prenatal multivitamin-mineral supplements contain iron, and you may require an additional iron supplement as well. Conventional and lower-cost iron supplements such as ferrous fumarate and ferrous gluconate are typically recommended in doses of 100-300 mg daily but are frequently associated with constipation and poor absorption. Adding a source of vitamin C or citric acid enhances the absorbability of iron supplements. Iron bisglycinate is one of the most easily absorbed forms of iron, so you may be able to take a lower dose of this form. Nettle (or stinging nettle) can be prepared as an herbal tea that's safe in pregnancy and provides absorbable iron, as well as calcium and magnesium. For more information about iron and iron deficiency, please refer to my article, ***Iron: the nuts and bolts of it.***

Vitamin D

Vitamin D is required for absorption of calcium and phosphorus, which makes it essential for bone health. Further, vitamin D is important in the immune system, and has been shown to have beneficial health outcomes for babies. Maternal supplementation with 4000 IU vitamin D during pregnancy was associated with decreased risk of type 1 diabetes autoimmunity in their 1-year-old children. Maternal vitamin D intake also protects against atopy (allergies, asthma, eczema) in children. Vitamin D deficiency is considered a widespread health problem. When vitamin D levels were tested in pregnant women, doses of 4000-5000 IU daily were needed to achieve vitamin D sufficiency (>75 nmol/L). If you want to know your vitamin D status, you can ask your family doctor or naturopathic doctor to order this test for you.

Breastmilk contains vitamin D. Breastfed infants should receive enough vitamin D when their mothers take 4000 IU to 6400 IU daily, or infants may be given their own vitamin D supplement in the form of an unflavoured drop, at a dose of 400-1000 IU daily.

Probiotics

To date, 13 studies of probiotic supplements in pregnancy have been published and 10 of these show significant benefits particularly with doses of 10 billion CFU from the 3rd trimester in high-risk mothers. Probiotics are safe throughout pregnancy, and can help to colonize the mother's body with beneficial bacteria to which the baby will be exposed during the birth and breastfeeding. The key probiotic types used in pregnancy studies include *Lactobacillus rhamnosus*, *Bifidobacterium longum*, *B. bifidum*, *B. lactis*

and *B. breve*. When your baby is born, infant-specific probiotics can be given from day one and have been shown to reduce the risk for allergies, eczema and colic.

Choline

An underappreciated essential nutrient, choline requirements increase during pregnancy (450 mg) and breastfeeding (550 mg). A newborn's choline levels are 6-7 times higher than an adult's, suggesting the importance of this nutrient to the child's developing brain. Higher maternal choline levels in the early 2nd trimester have been correlated with better infant cognitive test scores at 18 months and 7 years of age. Supplementation during pregnancy (930 mg for 12 weeks) has also been reported to exert positive effects on cortisol and programming of the stress response in infants. Choline is found in eggs (125 mg per egg), milk, wheat germ, fish, beef and soy lecithin.

Iodine

Iodine is required for production of thyroid hormones which are essential to your baby's brain, nervous system and skeletal development. Some prenatal multivitamin-mineral supplements contain iodine, and key dietary sources include iodized salt, seafood and seaweed. Iodine needs increase in pregnancy from 150 mcg (micrograms) for non-pregnant women to 220mcg - 250 mcg iodine daily from foods and/or supplements.

Calories

When it comes to meeting your energy needs, "eating for two" is really a misconception as your caloric needs are only about 10% higher in the later stages of pregnancy as compared to pre-pregnancy. In fact, a healthy body weight before and during early pregnancy and avoiding excess weight gain during pregnancy are helpful factors in preventing high birth weight in newborns, childhood obesity and diabetes. A recent study found that the mother's weight during pregnancy as well as both parents' BMI (body mass index) significantly influenced their child's risk of obesity at age 2 to 9 years.

To get the most out of your diet during pregnancy, together with your partner, aim to enjoy a diet of whole foods including plenty of vegetables and fruits, quality protein, healthy oils and unprocessed grains. Feel free to discuss any nutritional concerns that you may have with your naturopathic doctor or other health care provider.

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