

• • • Your 'at a glance' guide to staying healthy for life By Quest Vitamins • • •

Pregnancy is one of the most significant events in a woman's life and good nutrition before, during and after pregnancy is vital to ensure the health of the mother and the best possible development of the baby.

## Your Body & Pregnancy

As soon as a woman becomes pregnant, her body begins to change so that it can support both herself and the unborn baby. These changes are mediated mostly by hormones.

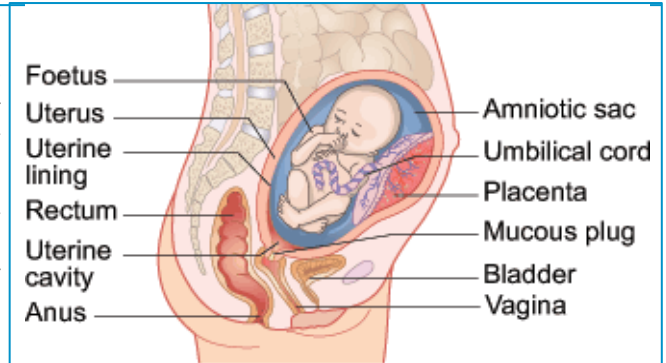
As pregnancy progresses the diaphragm is displaced upward, forcing deeper breathing to increase oxygen intake. The heart is elevated upward and shifted to the left; heart rate and blood volume increase to help meet increased oxygen demands.

As progesterone production increases the smooth muscle of the colon relaxes. This results in a slowing of GI functions, enabling increased nutrient absorption but also increasing the likelihood of constipation. Nausea and vomiting is a normal part of pregnancy and the symptoms typically ease after around 16 weeks. The displacement of internal organs can also result in frequent heartburn, caused when the acid contents of the stomach back up into the oesophagus (gullet).

Oestrogen promotes the growth and controls the functions of the uterus. It alters the structure of connective tissue, giving it the flexibility required to dilate the uterus at delivery while at the same time making it liable to taking up-and retaining-water. Fluid retention is common during pregnancy.

Metabolism increases as a reflection of increased oxygen consumption and increased body mass. The vast majority of foetal energy is obtained from glucose; the mother's metabolism therefore adapts to using fat as an energy source so as to spare glucose.

Once the baby is delivered there is a sharp fall in levels of progesterone and oestrogen. Prolactin is secreted and milk production is stimulated. When the baby suckles the hormone oxytocin is secreted, stimulating the ejection of milk.



## Complications

**Preeclampsia** : Pre-eclampsia is a condition that only occurs during pregnancy, women develop high blood pressure (hypertension) together with protein in the urine and fluid retention (oedema). New research indicates that the antioxidants vitamin C, vitamin E, selenium, and lycopene can reduce the risk of pregnant women developing pre-eclampsia.

**Gestational diabetes:** Diabetes occurs when the body produces insufficient insulin, a hormone designed to lower levels of sugar in the blood. Gestational diabetes develops when the body can't meet the extra insulin demands of pregnancy. Maintaining a healthy diet without excess sugar can help prevent the condition.

**Neural Tube Defects:** The neural tube is the embryo's precursor to the central nervous system, which comprises the brain and spinal cord. A neural tube defect will occur if there is an interference with the closure of the neural tube that occurs around the 28th day after fertilization. The most common neural tube defect is spina bifida, this occurs where the formation of the spi-

nal cord is incomplete resulting in permanent nerve damage; The incidence of spina bifida can be decreased up to 70 percent when daily folic acid supplements are taken prior to conception.

## Diet Tips For Pregnancy

- An additional food intake amounting to an extra 300kcal/day is recommended; further additional calories are needed by breastfeeding women.
- Eat two portions of oily fish (salmon, sardines, mackerel, herring) a week or take fish oil supplements.
- Avoid alcohol; if you must have a drink, do not exceed 2 units in a week (1 glass of wine or two measures of a spirit).
- Avoid consuming more than 300mg of caffeine (one cup of instant coffee has about 100mg, a cup of tea about 40mg; chocolate, soft drinks and many painkillers also contain some caffeine). This is because high caffeine has been linked to an increased risk of miscarriage.
- Avoid liver, liver pate and supplements containing

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vitamin A due to the risk of toxicity; taking the plant substance beta-carotene is a safe method of vitamin A supplementation, as the body will convert it to vitamin A only as it requires.

- Avoid Camembert, brie and blue cheeses due to the risk of contracting the bacterial infection listeria.
- Avoid swordfish, merlin and shark. Limit the amount of tuna you eat to no more than two tuna steaks a week (weighing about 140g cooked or 170g raw) or four medium-size cans of tuna a week (with a drained weight of about 140g per can).
- To minimise risk seafood, meat and eggs should be eaten well cooked.
- Eat little and often- having light meals and nutritious snacks such as crudities and hummous, yogurt with fruit or wholegrain bread with peanut butter may help reduce symptoms such as heartburn and nausea.
- Base the diet around wholegrain carbohydrates, high quality protein (eggs, fish, poultry), dairy or fortified soy products, fruit and vegetables.
- Drink plenty of fluids.

## Key Nutrients For Pregnancy:

- ✓ Iron
- ✓ Calcium
- ✓ Folic Acid
- ✓ Omega 3
- ✓ Probiotics

### Specific Nutritional Requirements During Pregnancy & Lactation

Nutrient requirements increase during pregnancy, disproportionately to the increase in energy requirements. Requirements are particularly high during lactation.

**Iron:** iron is needed as a result of the increase in the volume of blood in the mother's body. The fetus also stores enough iron to last through the first few months of life. To help the body absorb iron, eat plenty of vitamin C-rich foods and to minimise the risk of constipation, use a supplement based on amino acid chelated iron.

**Calcium:** The foetus's growing skeleton during the third trimester demands 300mg of calcium each day. The absorption of calcium is enhanced and excretion reduced during pregnancy, nonetheless some sources recommend women increase their calcium intake by up to 70%. The UK currently recommends 700mg/day with an additional 550mg during lactation. Because vitamin D is required for the utilisation of calcium, a supplement of 5µg daily is recommended. Minerals are transported by constituents of protein (amino acids), choosing an amino acid chelated mineral supplement will ensure bioavailability.

**Folic acid:** The synthesis of DNA from its precursors (thymidine and purines) is dependent on folate. Rapidly dividing cells are most vulnerable to the effects of folate deficiency, hence the link between folate insufficiency and neural tube defects. Supplementing with 400µg of folic acid until the 12th week of pregnancy is strongly recommended to prevent neural tube defects.

**Omega-3 fatty acids:** An abundance of research suggests the vital importance of an adequate intake of the essential fats omega-3 and 6 during pregnancy and lactation to the visual and cognitive development of infants.

The active forms of omega-3 are DHA and EPA, which are found in oily fish. The fat content of the retina in the eye and of grey matter in the brain is high in DHA, which accrues rapidly in the brain during the third trimester and the early postnatal period. Breast milk provides the infant with DHA, levels reflect maternal intakes. The depletion of maternal DHA stores during pregnancy and lactation is thought to be a contributing factor in post-natal depression.

**Probiotics:** In a trial reported in *The Lancet* researchers administered *Lactobacillus GG* or a dummy pill prenatally to mothers with a family history of atopic eczema, hayfever, or asthma, and postnatally for 6 months to their infants; the incidence of atopic eczema in the probiotic group was half that of the group receiving the dummy pill. This is because exposure to bacteria postnatally influences the development of the immune system.

### Additional Support

A combination of ginger has been found to help alleviate pregnancy-induced nausea.

**Pregnancy is a seminal event. Using high quality nutritional supplements can ensure a health pregnancy and a health baby.**