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## CONTRIBUTION OF HEALTHY NUTRITION DURING PREGNANCY

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**Abstract:** *Pregnancy is an wonderful time in woman life. Pregnancy, also known as gravidity or gestation, is the time during which one or more offspring develops inside a woman. During pregnancy period increased secretion of many hormones, including thyroxine, adrenocortical hormones and the sex hormones, the basal metabolic rate of the pregnant woman increases about 15% during the latter half of pregnancy. Eating a healthy diet during pregnancy is one of the best things for mother and baby. Smart choices about pregnancy nutrition can help you promote your baby's growth and development.*

*A healthy diet and healthy lifestyle is an important part of pregnant woman. The Pregnant woman need's sufficient protein, Thiamin, Riboflavin, folic acid, Vitamin A, Vitamin C Vitamin D, calcium, iron Iodine phosphates, and Magnesium, zinc, copper from her diet during the months of pregnancy.*

*Pregnancy is a very important period. It is a time to think about mother lifestyle, habits and diet and how they affect mother and future child. It is a time to consider if Pregnant woman wish to adopt healthy habits that will be beneficial to mother and new baby.*

**Keyword:** *Pregnancy, gestation, protein, Thiamin, Riboflavin, folic, Magnesium, zinc and placenta.*

**Introduction:** Nutrition is the process of getting food into our body and using it as raw materials for growth, fuel for energy. Vitamins and minerals keep our body healthy and functioning properly. Pregnancy and lactation place extra demands on body. To meet these demands you need to think about what is best to eat and drink. During pregnancy increased secretion of many hormones, including thyroxine, adrenocortical hormones, and the sex hormones. During this period pregnant woman is carrying extra lode, greater amount of the energy than normal must be expended for muscle activity. Balance nutrition in pregnancy helps you to stay healthy and energetic and to prepare mother for taking care. The Pregnant woman need's sufficient protein, Thiamin, Riboflavin, folic acid, Vitamin A, Vitamin C Vitamin D, calcium, iron Iodine phosphates, and Magnesium, zinc, copper from her diet during the months of pregnancy. It's important to eat a variety of different foods every day to get the right balance of nutrients that mother and new baby need. It's best to get vitamins and minerals from the foods woman eat, but when pregnant woman need to take some supplements as well, to make sure you get

everything you need. Nutrition intake with dietary planning that is undertaken before, during and after pregnancy.

**Metabolism during Pregnancy:** During pregnancy period increased secretion of many hormones, including thyroxine, adrenocortical hormones and the sex hormones, the basal metabolic rate of the pregnant woman increases about 15% during the latter half of pregnancy. Pregnant woman frequently has sensation of becoming overheated. Also, owing to the extra load that she is carrying, greater amount of the energy than normal must be expended for muscle activity.

**The Placenta:** The placenta brings important things, such as oxygen and nutrients, to your baby and it removes the waste products that the baby produces while in your womb. "In pregnancy, the placenta form especially large quantities of human chorionic gonadotropin, estrogens, progesterone, and human chorionic somatomammotropin, the first three of which, and probably the fourth as well, are essential to a normal pregnancy."<sup>[1]</sup>

**Nutrition during Pregnancy:** There are chances of over-supplementing, however, as general

advice, both state and medical recommendations are that mothers follow instructions listed on particular vitamin packaging as to the correct or recommended daily allowance (RDA). Daily prenatal use of iron substantially improves birth weight, potentially reducing the risk of low birth weight.<sup>[2]</sup>

### Important Nutrients

**Protein:** Daily requirement of protein is 1 gm/kg body weight in young and healthy human but in growing child and pregnant woman or lactating mother. As well as other supplement is also increase in that period. "Replenishment of the lost tissues, lost due to wear and tear. Accretion of new tissue during growth, convalescence and pregnancy. It's important role of Synthesis of enzymes (e.g. insulin, parathormone ADH etc.) and maintenance of concentration of plasma proteins. Protein helps generation of excess heat due to its SDA (specific dynamic action)."<sup>[3]</sup>

**Vitamin A (Retinol):** It is use in the formation of the retinal pigments of the eye, Vitamin A is needed to form the visual pigments and therefore, to prevent night blindness. Vitamin A is also necessary for normal growth of most cells of the body.<sup>[4]</sup>

**Vitamin B<sub>1</sub> (Thiamin):** Thiamine deficiency (beriberi) causes decreased utilization of pyruvic acid and some amino acid by the tissues.<sup>[5]</sup>

**Vitamin B<sub>6</sub> (Pyridoxine):** It is important role of protein metabolism. It is also act in the transport of some amino acids across cell membranes.<sup>[6]</sup>

**Vitamin B<sub>12</sub> (Riboflavin):** The major functions of promotion of growth and promotion of the red blood cell formation and maturation.<sup>[7]</sup>

**Folic Acid:** This vitamin is extremely important during pregnancy, especially in the early period and even before conception. A good intake of folate greatly increases the chance of baby being born without any abnormalities, thus, all women thinking about becoming pregnant, and throughout the first 3 months of pregnancy, should eat food sources rich in folate. Eat folate-rich foods such as spinach, lettuce, cabbage, green beans, cauliflower and fortified cereals.

**Iron:** Iron is forming the red blood cells for mother and baby. Iron helps to carry oxygen in your blood from the lungs to the tissues. Baby's brain and body need iron and oxygen to grow. Too little iron leads to anemia, in which case baby may not be getting enough oxygen for normal growth and development. The best sources of iron are lean meats, especially liver

and kidney. Some vegetables (e.g. green leafy vegetables, cooked beans and peas) are also good sources of iron. Tea and coffee reduce mother ability to absorb iron. Iron is needed for the healthy growth of the fetus and placenta, especially during the second and third trimesters. It is also essential before pregnancy for the production of hemoglobin.<sup>[8]</sup>

**Calcium:** Calcium is important for the healthy bones and teeth of both mother and baby. The best sources of calcium are milk, dairy products and some cereals. Try to choose low fat milk, kefir cheese and yogurt, they provide more calcium than full fat varieties.

**Vitamin D:** Vitamin D is very important both to prevent rickets in new born baby and to keep teeth and bones healthy. Try to spend as much time as you can outdoors, especially in sunny weather: vitamin D is produced in your skin when you are exposed to sunlight. Vitamin D is found also in foods, such as fish oil, eggs, butter, and fortified margarine.

**Magnesium and Zinc:** Supplementation for the binding of hormones at their receptor sites.

**Omega-3 Fatty:** Acids increase blood flow to reproductive organs and may help regulate reproductive hormones. Consumption is also known to help prevent premature delivery and low birth weight. The best dietary source of omega-3 fatty acids is fish oil. Some other omega-3 fatty acids not found in fish can be found in foods such as flaxseeds, walnuts, pumpkin seeds, and eggs.<sup>[6]</sup>

**Vitamin K:** It is fat-soluble vitamins. "Vitamin K are required for blood coagulation" and also certain proteins that the body uses to manipulate binding of calcium in bone and other tissues. It is Anti-haemorrhagic, it is help during delivery.<sup>[8]</sup>

**Niacin:** It is help to growth and development of child.

**Water:** During Pregnancy, one's mass increases by about 12 kg.<sup>[9]</sup> Most of this added weight (6 to 9 L) is water<sup>[9]</sup> because the plasma volume increases, 85% of the placenta is water<sup>[10]</sup> and the fetus itself is 70-90% water. This means that hydration should also be considered an important aspect of nutrition throughout pregnancy.

The European Food Safety Authority therefore recommends that breastfeeding women increase their water intake by about 700 ml/day, giving an adequate volume of 2,700 ml/day (from food and drink), or approximately 2,200 ml/day from fluids.

**Recommended Daily Allowances for Pregnant Women, (1993) ICMR**

	Sedentary Working Woman	Moderate Working Woman	Heavy Working Woman
Energy	1875+ 300	2225+300	2925+30
01 Proteins (g)	50+17	50+17	50+15
02 Fat(g)	40	40	40
03 Calcium (g)	1.0	1.0	1.0
04 Thiamin (mg)	.9+2	1.1+2	1.2+2
05 Iron (mg)	38	38	38
07 Retinol (µg)	600	600	600
08 Carotin (µg)	2400	2400	2400
09 Vitamin D (I.U.)	400-800	400-800	400-800
10 Vitamin C (mg)	40	40	40
11 Riboflavin (mg)	1.1+2	1.3+2	1.5+2
12 Folic Acid(µg)	400	400	400
13 Niacin (mg)	12+2	14+2	16+2
14 Pyridoxine (mg)	2.5	2.5	2.5
15 Vitamin B <sub>12</sub> (µg)	1.5	1.5	1.5

**Nutrients after Pregnancy:** Proper nutrition is important after delivery to help the mother recover, and to provide enough food energy and nutrients for a woman to breastfeed her child. Women having serum ferritin  $\leq 70 \mu\text{g/L}$  may need iron supplements to prevent iron deficiency anemia during pregnancy and postpartum.<sup>[11]</sup> During lactation, water intake needs increase to compensate for the loss of water through milk production. Milk is made of 88% water.

**Some Substances may Harmful for Pregnant Mother and her Baby:** Some things can be dangerous during pregnancy, consumption or contact with other things can be harmful to a developing baby. In general, these are things to avoid during pregnancy.

**1. Alcohol:** Alcohol is harmful during pregnancy because Alcohol crosses placenta and can lead to physical, growth and mental problems in some babies. It is especially important not to drink alcohol at the time of conception and during the first 3 months of pregnancy when the embryo is most vulnerable to the toxic effects of alcohol.

**2. Smoking:** Mothers who are heavy smokers are at much higher risk of having low birth weight babies. Smoking can also be a cause of premature birth, miscarriage and stillbirth and may impair your child's growth and development.

**3. Caffeine:** Effects of caffeine on the foetus are not well established yet. Tea, cocoa and cola - type drinks contain about the same amount of caffeine while coffee contains about twice as much caffeine. Try to limit your coffee intake to 3-4 cups a day. Remember also, that tea and coffee tend to impair your ability to absorb iron from foods, such as beans and cereals, and iron supplements.

**4. Medications:** Many medications can adversely affect your baby and are contraindicated for pregnant women or women

who are breastfeeding. Consult your doctor before taking any medications, including aspirin and vitamin supplements.

**Conclusions:** A healthy diet is an important part of a healthy lifestyle. Pregnancy is a very important period. It is a time to think about mother lifestyle, habits and diet and how they affect mother and future child. It is a time to consider if Pregnant woman wish to adopt healthy habits that will be beneficial to mother and new baby.

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