



Nutrition for Pregnant and Lactating Women

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Key points regarding nutrition for pregnant and lactating women

Additional nutritious food and care are required during pregnancy and lactation.

Pregnancy is physiologically and nutritionally, a highly demanding period. Extra food is required to meet the nutritional requirements of the mother and development of fetus as well as for healthy pregnancy outcome. Regular physical activity and exposure to sunlight are important for appropriate utilization of nutrients and for vitamin D. Special focus should be given for certain nutrients such as iron, folic acid, B12, iodine and long chain n-3 poly unsaturated fatty acids (LCn-3PUFAs). Iron and folic acid supplements must be taken. Iodine is not an issue now as iodine fortified salt is available. B12 can be sourced from yoghurt or curd and flesh foods. Fatty fish is a good source of LCn-3PUFA. Vegetarian can get their LCn-3PUFA from green leafy vegetables, seeds and nuts.

Why additional nutrients are required during pregnancy and lactation and what is 1000 days nutrition?

The first 1000 days includes the period from women's conception to birth of the child (270 days) and from birth to her child's 2nd birthday (365+365 days). The first 1000 days is a crucial period that shapes the child's future. During this period, the embryo in the mother's womb is growing very rapidly and draws nutrition from the mother. For this, the mother at the start of pregnancy, should be healthy and well-nourished to provide the required vitamins, minerals, fatty acids, amino acids and energy in adequate amounts to maintain her own health, and for nourishing the developing immune system, brain and other organs of the fetus in addition to the child's growth. Poor nutritional status of pregnant women and inadequate (low intake of calorie, protein and

micronutrient- rich foods) or high fat, high sugar, high salt (HFSS) diets can have adverse impact on the growth and development of the fetus.

Undernourished women are at a higher risk of giving birth to small for gestational age (SGA)/low birth weight (LBW= <2.5 kg birth weight) babies, and/or may deliver preterm (PT). SGA/LBW babies are at a higher risk of childhood infections and short stature (stunting: low height for age), and as adults they are at higher risk of metabolic diseases such as diabetes, hypertension, cardiovascular diseases (CVD-heart attack, stroke, etc.).

Pregnant women receiving a balanced diet, and who gain appropriate weight during pregnancy (10 to 12 kg) have a higher chance of giving birth to healthy babies with appropriate birth weight and organ development; these newborns have lesser risk of infections, morbidity and mortality. After birth, the diet /nutrition of infants, especially for the first two years, is also very important as most organs including brain are still developing. However, it is important to understand that to gain ideal weight and good health and nourishment during pregnancy, nutrition status of a mother should be in a good condition before pregnancy. This is called pre-pregnancy nutrition. For this, check BMI or body weight against height, hemoglobin status, blood pressure, thyroid status and blood glucose levels. In addition to these, a woman also needs to be at least 21 years old.

Balanced and healthy diet is crucial during all stages of life including pre-conception and pregnancy. Even a balanced diet cannot provide certain nutrients during pregnancy. For instance, additional iron as well as folic acid to meet the high demands of erythropoiesis (red blood cell formation and hemoglobin synthesis) and iodized salt to meet the requirements of iodine is required.

How much weight gain is recommended during pregnancy?

If BMI of a pregnant woman is normal (BMI 18.5 – 23 kg/m²) at the time of conception, one should aim to gain at least 10 – 12 kg. All underweight women (BMI <18.5 kg/m²) should increase the dietary intake and their weight gain should be monitored closely at ICDS or healthcare facilities. Women who are overweight (BMI 23 – 27.5 kg/m²) and those who are obese (BMI >27.5 kg/m²) should aim to gain not more than 5 – 9 kg.

Important nutrition tips for pregnant and lactating women

- Eat more food during pregnancy.
- Eat more whole grains, sprouted grains and fermented foods.
- Take milk/meat/eggs in adequate amounts.
- Eat plenty of vegetables and fruits.
- Avoid superstitions and food taboos.
- Do not use alcohol and tobacco. Take medicines only when prescribed.
- Take iron, folate and calcium supplements regularly, after 14-16 weeks of pregnancy and continue the same during lactation.

Nutrients that require special attention during pregnancy and

lactation period

The daily diet of a pregnant woman of normal weight for height should contain an additional 350 calories of energy from second to third trimester. An additional 8g of protein is required during second trimester and 18g during the third trimester of pregnancy. The requirement of micronutrients is also high during pregnancy. Hence, the required additional calories and proteins should ideally be obtained from micronutrient-dense foods and not from foods containing only calories. A healthy balanced diet is more crucial during pregnancy. Highly processed and HFSS foods with poor nutrient content should be avoided.

During these physiological periods, some micronutrients are specially required in extra amounts. Folic acid, taken in the pre-pregnancy and the first 28 days of pregnancy reduces the risk of anemia. A mother as well as the growing fetus need additional iron as well as folic acid to meet the high demands of erythropoiesis (red blood cell formation). Calcium and vitamin D are essential (during pregnancy and lactation) for proper formation of bones and teeth of the offspring, for secretion of breast milk that is rich in these nutrients and to prevent osteoporosis in the mother.

In addition to LCn-3PUFA, adequate intake of folate-rich foods and iodine intake through use of iodized salt are essential for proper growth of brain of the growing fetus and during early period of infancy. Vitamin A rich food is required during pregnancy and lactation to improve child growth and development, in addition to foods containing vitamins B12 and C. Hence, foods rich in these nutrients must be consumed in adequate amounts.

What additional care is required during pregnancy and lactation?

Dietary care : It is advised to consume plenty of fluids (over 2 litres per day). This amount of fluid includes water and other beverages. Excess intake of beverages containing caffeine like coffee and tea adversely affect fetal growth and hence should be minimized. The expectant mother should choose foods rich in fibre (around 25g/1000 Kcal) like whole grain cereals, pulses and vegetables. Intake of these fibre containing foods and enough fluids prevents constipation.

Food safety : The most important food safety problem is microbial food-borne illness. Avoiding contaminated foods is an important protective measure against food-borne illness. Extra care needs to be exercised to avoid food-borne illness by following food safety practices.

Health care: In addition to satisfying dietary requirements, a pregnant woman should undergo a minimum of four antenatal checkups (ANC) for monitoring weight gain, blood pressure, testing for haemoglobin levels for prevention and treatment of anemia and immunization with tetanus toxoid. She requires enough physical exercise with adequate day time rest of 2–3hrs. Pregnant and lactating women should not indiscriminately take any drugs without medical advice, as some of these could be harmful to the fetus/baby. Smoking, chewing tobacco and consumption of alcohol should be avoided. There is no need to avoid consumption of any specific foods that may be based on wrong food beliefs and taboos

Ways to meet the nutritional demands during pregnancy and lactation

A pregnant woman should eat a wide variety of foods to make sure that her own nutritional needs as well as those of her growing foetus are met. It is important to take care of quantity, quality, diversity and frequency of foods. Grains such as cereals and millets are the major sources of energy, and 45% of the total energy requirement for the day could be contributed by them. Consumption of pulses would contribute in meeting the recommended daily allowance of proteins and also contribute to fibre and micronutrients. Nuts, oil seeds and sea foods would provide essential fatty acids in addition to micronutrients and fibre. In case of non-vegetarians, a portion of the total amount of pulses could be substituted with calorie proportionate amounts of fish and flesh foods or eggs. High fat, sugar and salt (HFSS) foods should be avoided. Good quality protein is derived from appropriate combination of cereals and pulses (3:1) and animal source foods such as milk, fish and flesh foods.

Mineral and vitamin requirements are met by consuming a variety of beans, seasonal vegetables including green leafy vegetables, fresh fruits and animal source foods. Foods such as beans, dry fruits and flesh foods are good sources of iron. Bioavailability of iron can be improved by using fermented and sprouted grains and foods rich in vitamin C such as guava, oranges along with meals. Milk is the best source of biologically available calcium but is a poor source of iron. Adequate sunlight exposure is essential to meet the requirements of vitamin D. Though it is possible to meet the requirements for most of the nutrients through a balanced diet, pregnant women are advised to take daily supplements of iron and folic acid (IFA) tablets and use iodized salt.

Additional nutrition required during lactation

There is an additional demand for calories, proteins and micronutrients during the lactation period, in order to maintain the health of the mother and for optimum breast milk production. During the first six months of lactation, an additional 600 calories of energy and 13.6g of proteins are required in the daily diet. In the next six months, additional requirements are 520 calories of energy and 10.6g of protein. Though it is possible to meet the requirements for most of the nutrients through a balanced diet, lactating women are advised to take daily supplements of iron and folic acid.

Putting the baby to breast immediately after birth helps the uterus to contract firmly and reduces blood loss after delivery. Breast milk is the greatest gift to a child from a mother. The family will also be benefitted by spending less on health expenditure.

Importance of eating Folate-Rich Foods

- Folic acid is essential for the synthesis of hemoglobin and prevention of anemia.
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- Folic acid supplements in early period of pregnancy in the first 28 days is essential.
- Green leafy vegetables, legumes, nuts and liver are good sources of folic acid.
- Folic acid supplement (500µg or 0.5mg) is advised during the first trimester (first 12 weeks of pregnancy).

Importance of eating Iron Rich Foods

Importance of eating iron-rich foods

- Iron is essential for the synthesis of hemoglobin and prevention of anemia.
- Iron is also needed for brain development of fetus.
- Iron deficiency during pregnancy increases maternal mortality and may decrease birth weight of infants.
- In children, deficiency of iron increases susceptibility to infections and impairs learning ability.
- Iron bio-availability is poor from plant foods but is good from flesh foods such as meat, fish and poultry products. Plant food items such as green leafy vegetables, pulses and dry fruits contain iron.
- Consumption of rich sources of vitamin C fruits like guava, pineapple and citrus fruits (lemon, orange) improve iron absorption from plant foods
- Beverages (like tea) bind dietary iron and make it unavailable. Tea should be avoided before, during or soon after a meal or while taking IFA supplements.
- Iron, folic acid supplementation comprising 60mg elemental iron, 0.5mg folic acid is recommended from the 12th week of pregnancy onwards up to the first six months of lactation.

Dos and Don'ts

Do's

- A woman must be at least 21 years of age at the time of her first pregnancy.
- Vitamin C rich fruits like gooseberries (amla), guava and orange should be included in the diet to improve iron absorption of plant foods.
- Add green leafy vegetables and other vegetables in your daily diet (Ex. fenugreek (methi) roti, spinach (palak) roti, vegetable idli, vegetable dosa).
- In case of nausea and vomiting, take small and frequent meals (4–6 times/day).
- Expose yourself to direct sunlight for at least 15 minutes to get sufficient vitamin D.
- Avail supplementary nutrition from AWC and micronutrient supplements as per doctor's advice.
- Add a variety of food items in your daily diet by which daily requirement of all the nutrients can be met.
- Green leafy vegetables, legumes and nuts are good sources of folic acid
- Overweight Pregnant Woman - Reduce sugar, cereal (esp. refined) and oil.
- Undernourished Pregnant Woman - Increase the dietary intake

Don'ts

- Don't smoke or chew tobacco or consume alcohol.
- Avoid carbonated beverages.
- Avoid foods made with hydrogenated fat.
- Don't sleep immediately after meal.
- Don't consume tea, coffee and other caffeinated drinks along with meals or soon after meals.
- Don't lift heavy objects or strenuous physical activity.

Diet chart for normal sedentary pregnant women

(Weighing 55 kgs before conception with normal BMI 18.5–23). Total calorie: ~2020 Kcal

Crude protein: 72g

- Early morning - 6 am - 150ml Milk - 110 Kcal
- Breakfast (425 Kcal)- 8 am - Whole grains 60g; Vegetable 75g; Pulses 20g; Nuts 20g; Oil-5g
- Lunch (830 Kcal) - 1 pm - Rice (100g) or Phulka (100g); Pulses (30g); or meat Vegetable curry with roots 1¼ cup; Oil 15g GLV curry (75g), Curd 200ml; Fruits 100g
- Evening (135 Kcal) - 4 pm - Nuts (almond, walnut, peanut & other nuts) and oilseeds (Sesame etc.) (20g); Milk 50ml
- Dinner (485 Kcal) - 8 pm - Rice or Phulka (60g); Red gram or chana (25g)(½ cup); GLV curry (75g) (½ cup); Vegetable curry with roots 1¼ cup; Oil 10g Fruit 50g

Source: [National Institute of Nutrition, Hyderabad](#) 

Source: <https://data.vikaspedia.in/short/lc?k=Xxdr6Xh1MgH9LifNrE6yLA>

