



# International Journal of Home Science

ISSN: 2395-7476  
 IJHS 2016; 2(2): 177-179  
 © 2016 IJHS  
 www.homesciencejournal.com  
 Received: 27-03-2016  
 Accepted: 28-03-2016

**Shameema Rahman**  
 Research Scholar, School of  
 Humanities, Singhania  
 University, Pachheri Bari,  
 Jhujhunu, Rajasthan, India,  
 Pin- 333515.

**Dr. Kiran Singh**  
 Associate Professor, Smt. B.D.  
 Jain Girls P.G. College, Dr. B.R.  
 Ambedkar University, Agra,  
 U.P., India

## Nutritional needs and deficiencies in pregnant women

**Shameema Rahman, Dr. Kiran Singh**

### Abstract

Maternal nutrition and health is considered as the most important regulator of human fetal growth. A healthy mother can produce a healthy child. If women are not well nourished, they are more likely to give birth to weak babies resulting in high infant mortality rate. Our body goes through numerous physical and hormonal changes during pregnancy. The way we nourish our body during this time will affect the health of both mother and baby. We must eat a healthful, balanced diet to help ensure we stay healthy throughout our pregnancy. The food we eat is also the main source of nourishment for our baby, so it's critical to consume foods that are rich in nutrients. Proper nutrition can help promote our baby's growth and development.

**Keywords:** Nutritional, deficiencies, pregnancy, nourishment

### 1. Introduction

#### Nutrition requirements during pregnancy

A woman's normal nutritional requirement increases during pregnancy in order to meet the needs of the growing foetus and of maternal tissues associated with pregnancy. Proper dietary balance is necessary to ensure sufficient energy intake for adequate growth of foetus without drawing on mother's own tissues to maintain her pregnancy.

Although the old adage of "eating for two" is not entirely correct, we do require more micronutrients and macronutrients to support us and our baby. Micronutrients are dietary components, such as vitamins and minerals, which are only required by the body in small amounts. Macronutrients, on the other hand, are nutrients that provide calories or energy. Examples of macronutrients include carbohydrates, proteins, and fats. A pregnant women needs to consume more of each type of nutrient during pregnancy. Table- 1 representing additional daily requirements of food nutrition for pregnant women.

**Table 1:** Additional daily requirements of food for pregnant women

Food Nutrient	Additional daily requirements for pregnant women
Calories	300 (in the second and third trimesters)
Protein	60 milligrams
Calcium	1200 milligrams
Folate (Folic acid)	15 milligrams
Iron	30 milligrams
Vitamin D	10 micrograms
Zinc	15 milligrams
Iodine	220 microgram
DHA/omega-3 fatty acids	250 milligrams

Most pregnant women can meet these increased nutritional needs by choosing a diet that includes a variety of healthy foods. A simple way to ensure we are getting all the necessary nutrients is to eat different foods from each of the food groups every day. In fact, all meals should include at least three different food groups. Each food group has something to offer our body. Grains are a good source of energy. Fruits and vegetables are packed with antioxidants, fiber, and water-soluble and fat-soluble vitamins. The food groups that include meats, nuts, and legumes provide our body with protein, folate, and iron. Dairy products are the best source of calcium and vitamin D.

In our daily diet following nutrients will help ensure that we satisfy our body's nutritional needs during pregnancy:

### Correspondence

**Shameema Rahman**  
 Research Scholar, School of  
 Humanities, Singhania  
 University, Pachheri Bari,  
 Jhujhunu, Rajasthan, India,  
 Pin- 333515.

#### **a. Protein**

At every stage of life, protein is important for optimal health, but when we are pregnant, it is critical for ensuring the proper growth of fetal tissue, including the brain. It also helps with breast and uterine tissue growth during pregnancy. It even plays a role in our increasing blood supply, allowing more blood to be sent to our baby. Lean meat, poultry, fish, eggs, dried beans and peas, tofu, dairy products and good-quality peanut butter are all great sources of protein.

#### **b. Calcium**

Both pregnant women and baby need calcium for strong bones and teeth, and we specifically need it to help our circulatory, muscular and nervous systems run at their peak. Calcium helps build our baby's bones and regulates our body's use of fluids. Good sources of calcium are dairy products, with milk, yogurt and cheese being among the best-absorbed sources of calcium.

#### **c. Folate**

Folate, commonly known as folic acid (Vitamin B-9), plays an important part in reducing the risk of neural tube defects. Folic acid-iron supplementation is universally recommended during pregnancy. These are major birth defects that affect the baby's brain and spinal cord. Examples of neural tube defects include spinal bifida and anencephaly. Leafy green vegetables, citrus fruits and dried beans and peas are great sources of folate. The synthetic form of folate found in supplements and fortified foods is known as folic acid.

#### **d. Iron**

Our blood volume expands during pregnancy to accommodate changes in our body and to help our growing baby create its own blood supply, which effectively doubles our need for iron. Iron works with sodium, potassium, and water to increase blood flow. This helps ensure that enough oxygen is supplied to both pregnant women and baby. Maternal blood volume expands by almost 50% during pregnancy, which results in a hemodilution of red blood cells.

#### **e. Vitamin D**

Vitamin D helps with building our baby's bones and teeth. A number of studies indicate that vitamin D deficiency and insufficiency are quite common among pregnant women. Good sources of vitamin D are fatty fish, such as salmon, along with vitamin D-fortified milk and orange juice.

#### **f. Zinc**

Poor nutritional status of zinc during pregnancy has been associated with a number of adverse outcomes, including low birth weight (<2,500 grams), premature delivery, labor and delivery complications, and congenital anomalies. It is an essential nutrient throughout all stages of pregnancy, as it helps our baby's cells to grow and replicate.

#### **g. Iodine**

Iodine is a necessary element for the production of thyroid hormones. Women need more iodine than usual during pregnancy, because when our bodies are busy growing humans, our maternal thyroid hormone production increases by about 50 per cent.

#### **h. DHA/omega-3 fatty acid**

An omega-3 fatty acid that helps our baby's brain development - docosahexaenoic acid (DHA) - consumed during pregnancy can actually help provide our baby with a better attention span and a greater capacity to learn.

#### **Cravings and food aversions**

During pregnancy, many women experience aversions to particular foods (never wanting to eat them), or cravings for at least one type of food. It's unclear why women develop food cravings or aversions during pregnancy. However, researchers believe hormones play a role.

Common cravings during pregnancy include:

- Chocolate
- Spicy foods
- Fruits
- Comfort foods, such as mashed potatoes and pizza

#### **Causes OF Nutritional Deficiencies**

The usual cause of nutritional deficiencies is a poor diet that lacks essential nutrients. The body stores nutrients, so a deficiency is usually caught after it's been without the nutrient for some time.

A number of diseases and conditions - including colon cancer and gastrointestinal conditions - can lead to an iron deficiency. Pregnancy can also cause a deficiency if the body diverts iron to the fetus.

- Iron deficiency can lead to anemia, a blood disorder that causes fatigue, weakness, and a variety of other symptoms. According to the WHO, a lack of vitamin A is the leading cause of preventable blindness in children. Pregnant women who are deficient in vitamin A have higher maternal mortality rates as well.
- Another common nutritional deficiency occurs with thiamine (vitamin B-1). Thiamine is an important part of our nervous system. It also helps our body turn carbohydrates into energy as part of our metabolism. A lack of thiamine can result in weight loss and fatigue, as well as some cognitive symptoms such as confusion and short-term memory loss.
- Folate is especially important for fetal development. It plays a crucial role in the formation of a developing child's brain and spinal cord. Folate deficiency can lead to severe birth defects, growth problems, or anemia.
- A lack of Vitamin D can lead to stunted or defective bone growth. Osteoporosis, caused by a lack of calcium and vitamin D, can lead to porous and fragile bones that break very easily.
- Calcium deficiencies are related to low bone mass, weakening of bones due to osteoporosis, convulsions, and abnormal heart rhythms.

#### **Symptoms of Nutritional Deficiencies**

The symptoms of a nutritional deficiency depend on which nutrient the body lacks. However, there are some general symptoms we might experience, including:

- Pallor (Pale Skin)
- Fatigue
- Weakness
- Trouble Breathing
- Unusual Food Cravings
- Hair Loss
- Periods of Lightheadedness
- Constipation
- Sleepiness
- Heart Palpitations
- Feeling Faint or Fainting
- Depression
- Tingling and Numbness of the Joints
- Menstrual Issues
- Poor Concentration

We may display all of these symptoms or only groups of them. Over time, most people adapt to the symptoms. This can cause the condition to go undiagnosed. Schedule a checkup with our doctor if we experience prolonged periods of fatigue, weakness, or poor concentration. These symptoms could be a sign of the beginning of a serious deficiency.

### Healthy weight gain during pregnancy

Many women are concerned about weight gain during pregnancy. They fear they will gain too much weight and never get back to their pre-pregnancy size. However, some weight gain is normal during pregnancy, and it shouldn't be cause for concern. The extra weight gained during pregnancy provides nourishment to the baby. Some of it is also stored for breast-feeding after the baby is born.

Women gain an average of 25 to 35 pounds during pregnancy. It's normal to gain less weight if we start out heavier, and to gain more weight if we were underweight before pregnancy. We can speak with our doctor about the appropriate amount of weight for us to gain during our pregnancy. The chart below provides some general guidelines.

**Table 2:** Recommended weight gain during pregnancy

If our normal range is	And our body mass index is	We should gain
Underweight	< 19.8	28 to 40 Pounds
Normal weight	19.8 to 26.0	25 to 35 Pounds
Overweight	26.0 to 29.0	15 to 25 Pounds
Obese	>29.0	0 to 15 Pounds

Body mass index can be calculated using the following equation:

$$\text{Weight (in pounds)} / \text{Height (in inches)}^2 \times 703$$

We may become self-conscious about our weight at some point during pregnancy, but we shouldn't worry too much about the number on the scale. Instead of focusing on our weight, we should concentrate on eating a variety of nutritious foods. Healthy eating is incredibly important, and dieting to lose weight or prevent weight gain is harmful to both we and our baby. We can buy new clothes that flatter our figure if we feel self-conscious about the weight we have gained.

Exercising during pregnancy can also help we manage our weight. Swimming and walking are particularly good choices of exercise. However, we should avoid any extreme sports or contact sports, such as rock climbing and basketball. If we didn't exercise before pregnancy, start out slowly and don't overdo it. It's also important to drink plenty of water so that we don't get dehydrated. Make sure to talk to our doctor before we start a new exercise routine.

### Acknowledgements

The authors deeply indebted to Honorable Shri D.C. Singhanian (Chancellor, Singhanian University) and Shri Rajkumar Yadav (Chairman of Singhanian University) for giving me opportunity to work as research scholar. Authors also thank to Dr. M.P. Panwar, Dr. Mohammad Alamgeer, Mr. Naresh Yadav, and Mrs. Pooja Kulshrestha for discussions and encouragements. We are gratefully acknowledges the partial support of Mrs. Kokil Tyagi, Mrs. Nasreen Khatoon, Dr. Anil Yadav and faculty of Department of Home Science of Singhanian University.

### References

1. Committee to Review Dietary Reference Intakes for Vitamin D and Calcium, Food and Nutrition Board, Institute of Medicine. Dietary reference intakes for

adequacy: calcium and vitamin D. Dietary reference intakes for calcium and vitamin D. Washington, D.C.: The National Academies Press, 2011, 291-340.

2. Christian P. Micronutrients, birth weight, and survival. *Annu Rev Nutr* 2010; 30:83-104.
3. Hytten F. Blood volume changes in normal pregnancy *Clin Haematol* 1985; 14(3):601-612.
4. Hamilton SA, McNeil R, Hollis BW *et al.* Profound Vitamin D Deficiency in a Diverse Group of Women during Pregnancy Living in a Sun-Rich Environment at Latitude 32 degrees N *Int J Endocrinol.* 2010; 2010:917428.
5. Shah D, Sachdev HP. Zinc deficiency in pregnancy and fetal outcome *Nutr Rev* 2006; 64(1):15-30.
6. Food and Nutrition Board, Institute of Medicine. Iodine. Dietary reference intakes for vitamin A, vitamin K, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc. Washington, D.C.: National Academy Press, 2001, 258-289.