



Essentiality of Nutrients for Healthy Life of Farm Women in India: An Overview

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Introduction:

India is an agrarian country. Approximately 80% of women in rural India are directly or indirectly involved in agriculture, viz., production, processing, and marketing, forming a significant part of the workforce in these areas. The participation rate of rural women in the workforce is notably higher, standing at 41.8 per cent, while urban women's participation rate constitutes 35.31 per cent. Generally, rural women performed household chores and agricultural activities, tired mentally and physically, leading to exhaustion due to overwork. Due to farm women's daily activities, nutritious food and good health are essential throughout life. Though health is crucial, no attention has been paid to women's health. Malnutrition is emerging as a severe issue among rural women. Approximately 22.9% of women (15-49 years of age) are underweight (BMI less than 18.5 kg/m²) from malnutrition in India. The most important reason for undernutrition among women is inadequate dietary intake of calories and protein for a long time, leading to

the deficiency of micronutrients such as vitamins and minerals. It is directly associated with a lack of health awareness amongst women, illiteracy, low socio-economic status, poor housing conditions, early marriage, low income, poor sanitation, stressful environment, use of narcotics, childbearing, overwork and lethargy. Women are more susceptible to various diseases because they do not access sufficient nutrients in their diet. Nutritional anaemia is common among rural women due to deficiencies of micronutrients such as iron, folic acid and vitamin B12, with iron deficiency being the most common cause of anaemia. As workload and energy expenditure increase, rural women need a balanced and nutritious diet that provides essential nutrients, vitamins, and minerals while promoting overall well-being. A healthy diet includes a variety of whole foods such as fruits, vegetables, whole grains, lean proteins, and healthy fats. It also involves moderate portions, limiting processed and sugary foods, and staying adequately hydrated.

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Nutrition Recommendation for Women

Recommended Dietary Allowance (RDA) of nutrients is also crucial for a healthy life. The recommended quantity of nutrients for women in India can vary based on age, activity level, and specific health conditions. The average daily calorie intake for adult women in India ranges from 1,800 to 2,200 calories, depending on factors like activity level and metabolism. In micronutrients: around 45-65% of daily calorie intake should come from carbohydrates. Adult women's recommended daily protein intake is approximately 0.8-1 gram per kilogram of body weight. About 20-35% of daily calorie intake should come from healthy fatty foods. In vitamins and minerals: the recommended daily iron intake for adult women is around 18 mg, calcium intake is approximately 1,000-1,200 mg, vitamin D intake is around 600-800 IU and folate intake is about 400-600 mcg. Important essential nutrients, vitamins, and minerals obtained from various foods are as follows:

Carbohydrates:

Importance: Act as an energy source, help control blood glucose and insulin metabolism, participate in cholesterol and triglyceride metabolism, and help with fermentation.

Sources: Vegetables, fruits, whole grains, milk, and milk products.

Protein:

Importance: Adequate protein intake is necessary for overall health and maintenance of body tissues.

Sources: lean meats, poultry, fish, legumes, lentils, dairy products, and plant-based protein sources like tofu and tempeh.

Fat:

Importance: Absorb vitamins A, D and E in the body.

Sources: Avocados, nuts, seeds, olive oil, and fatty fish.

Calcium:

Importance: Adequate calcium intake is important for women's bone health, mainly to prevent osteoporosis.

Sources: Dairy products like milk, yogurt, cheese, leafy greens, sesame seeds, and almonds are excellent sources of calcium.

Iron:

Importance: Iron is crucial for women because it reduces the risk of anaemia.

Sources: Green leafy vegetables, legumes, nuts, seeds, poultry, fish, and fortified cereals.

Folate (Folic Acid):

Importance: Folate is essential for women, especially during pregnancy or when planning to conceive. It helps in fetal development and reduces the risk of certain congenital disabilities.

Sources: leafy greens, lentils, beans, fortified grains, and citrus fruits.

Vitamin D:

Importance: Vitamin D is vital for calcium absorption and overall bone health.

Sources: Exposure to sunlight is an excellent natural source of vitamin D; fatty fish like salmon and mackerel, egg yolks, and fortified dairy products can provide vitamin D.

Omega-3 Fatty Acids:

Importance: Omega-3 fatty acids have various health benefits, including heart health and brain function.

Sources: Women can obtain omega-3 fatty acids from fatty fish like salmon, sardines, and trout, as well as chia seeds, flaxseeds, and walnuts.

Importance of Vitamins

Vitamins are also important in resisting infections, keeping nerves healthy and helping the body get energy from food or helping blood to clot properly. Food sources contain vitamins, deficiency effects on the human body, and daily intake of vitamins are mentioned below

Conclusion

Women contribute significantly to agriculture, working as farm labour or helping in agricultural activities. Though heavy work, they are being neglected in maintaining a proper diet. Therefore farm women are challenging various health issues at different

| Vitamins | Quantity | Effect of deficiency | Food Sources |
|---|----------|--|--|
| A (Retinol) | 600µg/d | Night blindness, Growth failure, xerophthalmia | Liver, Milk, Carrot, Papaya, Mango |
| B₁ (Thiamine) | 0.8mg/d | Beri-beri (Disturbance in the digestive system) | Rice, leafy vegetables, Fish, Egg, Meat |
| B₂ (Riboflavin) | 1.1mg/d | Photophobia, Inflamed lips | Milk powder, Fish, Pulses |
| B₃ (Niacin) | 13.2mg/d | Pellagra | Fortified cereals and bread, Meat, Brown rice |
| B₅ (Pantothenic Acid) | 5mg/d | Insomnia | mushrooms, potatoes, avocados, broccoli, Whole grains, such as whole wheat, brown rice, and oats |
| B₆ (Pyridoxine) | 1.2mg/d | Degeneration of nerves | Yeast, Wheat germ, Legumes |
| B₁₂ (Cobalamin) | 1.5µg/d | Pernicious anaemia | Animal food (Liver, Meat, Fish, Egg) |
| C (Ascorbic Acid) | 40mg/d | Scurvy | Aonla, Guava, Citrus fruits |
| D (Calciferol) | 10µg/d | Rickets (bone deformation), Pigeon chest in children, Osteomalacia in adults | Sunlight, Fish and Liver oil |
| E (Tocopherol) | 15 mg/d | Sterility | Out layer of grains |
| H (Biotin) | 30mcg | Dermatitis | Egg yolks and Sweet potatoes |
| K (Phylloquinone) | 90mcg | Delayed clotting | Cauliflower, Liver, Soyabean |
| Folic Acid | 200µg/d | Anaemia | Palak, Karonda, Green leafy vegetables |

times due to inadequate nutritious food and care. The deficiency of nutrients, vitamins, and minerals in daily food intake causes malnutrition in women, further appear major health issues. So a regular and healthy diet (fruits, vegetables, whole grains, lean proteins) is essential in proper quantity for maintaining the good health of farm women.

