

# Micro nutrient Deficiency

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## What are nutrients?

Nutrients are compounds in foods essential to life and health, **providing us with energy, the building blocks for repair and growth and substances** necessary to regulate chemical processes

## Types of Nutrients

1. **Macronutrients:** Macronutrients are nutrients that **provide calories or energy and are required in large amounts to maintain body functions** and carry out the activities of daily life. There are three broad classes of macronutrients: proteins, carbohydrates and fats.
2. **Micronutrients:** Micronutrients **are vitamins and minerals** needed by the body in very small amounts. Micronutrients can be divided into four categories: water-soluble vitamins, fat-soluble vitamins, **microminerals, and trace minerals.**

## Types of Micronutrients

**Micronutrients can be divided into four categories: water-soluble vitamins, fat-soluble vitamins, microminerals, and trace minerals.**

### Water-soluble vitamins:

- These vitamins, which dissolve in water, include the **B vitamins and vitamin C.**
- Other than vitamin B12, most are not stored in the body and any amounts not used get flushed out in the urine. That means they must be replenished regularly.
- **Their main job is to produce energy,** but they also help prevent cell damage from metabolic stress and are needed to create red blood cells.
- **Good food sources:** Whole grains, eggs, leafy greens

(such as spinach), fish, lean meat, citrus fruits, and bell peppers.

### **Fat-soluble vitamins:**

- Fat-soluble vitamins dissolve in fat, but not water, and can be stored in your liver and fatty tissue for future use.
- **These include vitamins A, D, E, and K.** They help protect vision, strengthen the immune system, support blood clotting, and provide antioxidants to fight inflammation.
- **Good food sources:** Leafy greens, almonds, sweet potatoes, milk, and soybeans.

### **Microminerals:**

- Microminerals are common minerals **like calcium, phosphorus, magnesium, sodium, and potassium.**
- They are necessary for many bodily functions, such as **maintaining muscle and bone strength** and controlling blood pressure.
- **Good food sources:** Milk products, leafy greens, black beans, lentils, bananas, and fish (such as salmon)

### **Trace minerals:**

- These include **iron, manganese, copper, zinc, and selenium.**
- They are needed in smaller amounts than microminerals and **help with feeding oxygen to muscles,** supporting nervous system function, healing wounds, and defending cells against damage from stress.
- **Good food sources:** Oysters, spinach, pecans, peanuts, and cashews.

### **What is Micronutrient Deficiency?**

- Micronutrient deficiencies, which is defined as a lack of essential vitamins and minerals required in small

amounts by the body for proper growth and development.

- Deficiencies in iron, vitamin A and iodine are the most common around the world, particularly in children and pregnant women.
- Micronutrient deficiencies can cause visible and dangerous health conditions, but they can also lead to less clinically notable reductions in energy level, mental clarity and overall capacity.
- This can lead to reduced educational outcomes, reduced work productivity and increased risk from other diseases and health conditions.

### **Government of India's initiatives micronutrient deficiencies**

In order to address the micronutrient deficiencies among preschool children across the country including marginalized groups living in tribal, rural and remote areas across the country including Andhra Pradesh, the Government is taking following measures:

- Supplementary Nutrition is provided under the Anganwadi Services Scheme in order to bridge the gap between the Recommended Dietary Allowance (RDA) and Average Dietary Intake (ADI).
- The Supplementary Nutrition is provided in the form of Hot Cooked Meal, Morning Snack and Micronutrient Fortified Food and/or Energy-dense Food as Take Home Ration (THR).
- States/UTs have been advised to use fortified food items under the Supplementary Nutrition Programme.
- States/UTs have also been advised to promote Nutrition Garden/Kitchen Garden in the premises of Anganwadi Centers to help ensure regular supply of fresh fruits and vegetables rich in micronutrients like Iron, Vitamin-C, for inclusion in supplementary nutrition and improve the nutritional status of Anganwadi Services beneficiaries.
- States/UTs have also been advised to include Millets

(nutri-cereals / coarse grains like Jowar, Bajra, Ragi)  
in the recipes to enhance the nutritional quality of  
meals provided under Supplementary Nutrition Programme