MICRONUTRIENTS MALNUTRITION IN INDIA - SCIENCE

News: *A recent article in The Lancet has estimated that the **Indian population's consumption of 15 dietary micronutrients is inadequate.***

What's in the news?

Major Highlights

- **Over 5 billion people worldwide,** which is **68%** of the global population, do not consume enough iodine; 67% do not consume enough vitamin E; and 66%, calcium.
- **More than 4 billion people (65% of the population)** do not consume enough iron; 55%, riboflavin; 54%, folate; and 53%, vitamin C.
- **Within the same country and age groups,** estimated inadequate intakes were higher for women than men for iodine, vitamin B12, iron, and selenium; and higher for men than women for magnesium, vitamin B6, zinc, vitamin C, vitamin A, thiamin, and niacin.
- **Calcium intake inadequacy** is reported to be **highest in countries in south Asia, sub-Saharan Africa and east Asia and the Pacific.**
    - Also, Intake inadequacy was high across all age–sex groups in these countries, but highest among people aged 10–30 years.

MICRONUTRIENTS:

Micronutrients are vitamins and minerals needed by the body in very small amounts.

- **Vitamins** are organic compounds that are often categorized into two groups:
  1. **Water-Soluble Vitamins:** These include Vitamin C and the B vitamins (like B12, B6, folate). They dissolve in water and are typically not stored in the body, so regular intake through diet is necessary.
  2. **Fat-Soluble Vitamins:** These include Vitamins A, D, E, and K. They are absorbed along with dietary fat and can be stored in the body's fatty tissues and liver.

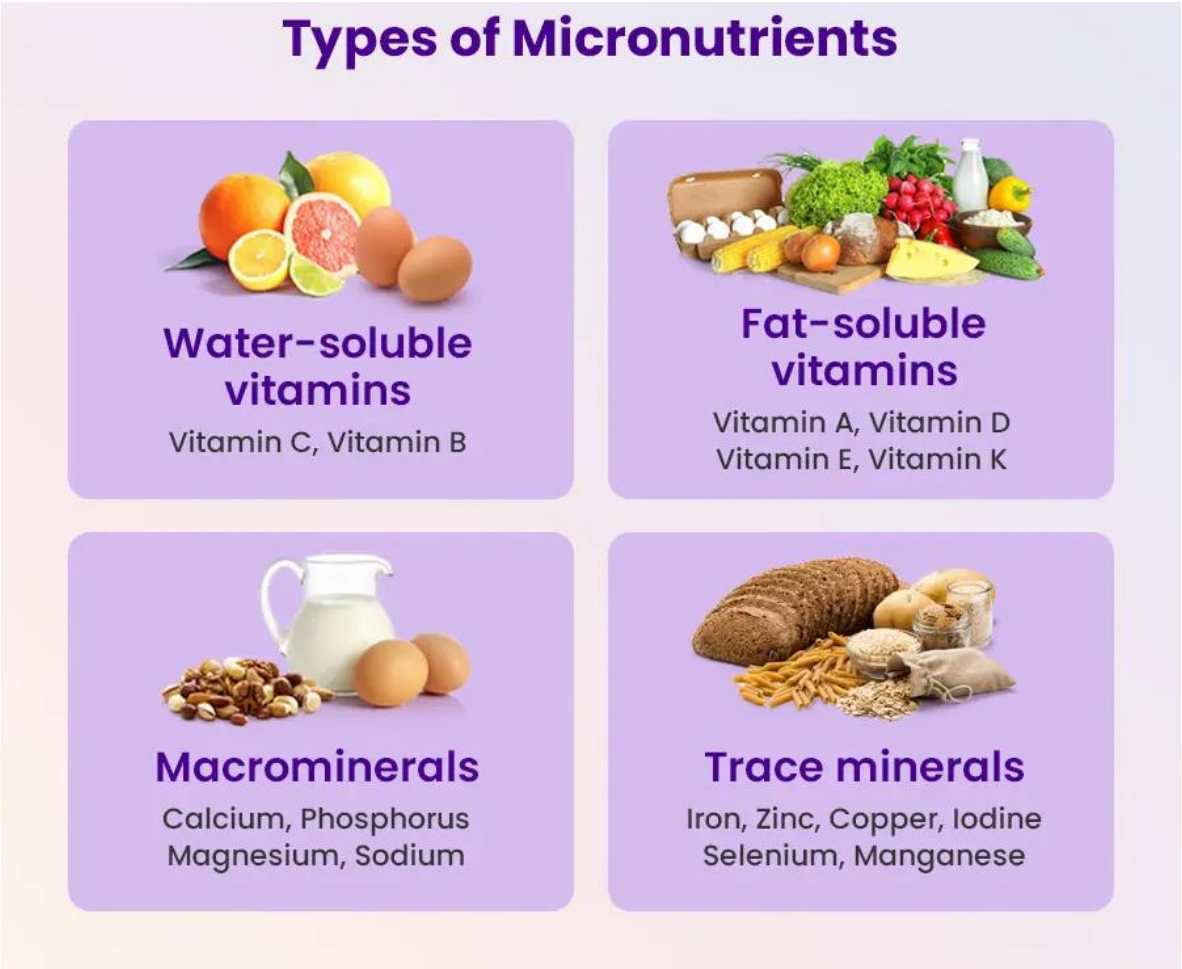
Minerals are inorganic elements that are also classified into:

1. **Major Minerals:** Such as calcium, potassium, and magnesium, which are needed in larger amounts.
2. **Trace Minerals:** Such as iron, zinc, copper, and selenium, which are needed in smaller amounts but are still vital for health.

Significance of Micronutrients

- **They perform a range of functions,** including enabling the body to produce enzymes, hormones and other substances needed for normal growth and development.
    - They support metabolic processes, bone development and maintenance, several micronutrients influence brain health and cognitive function.
    - Iron, vitamin B12, and folate are vital for the production of red blood cells and the prevention of anemia.
    - Vitamins C and A, as well as zinc, play roles in tissue repair and wound healing.

- Adequate intake of certain micronutrients can help prevent chronic diseases.



- **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.
- **Many of these deficiencies are preventable** through nutrition education and consumption of a healthy diet containing diverse foods, as well as food fortification and supplementation, where needed.

Government of India Initiatives targeting Micronutrients Malnutrition

- **National Nutrition Mission (POSHAN Abhiyan):** Launched in 2018, it aims to reduce stunting, undernutrition, anemia, and low birth weight by improving the nutritional status of children, adolescent girls, pregnant women, and lactating mothers.
- **Integrated Child Development Services (ICDS):** It provides comprehensive services for children under six years of age, pregnant women, and lactating mothers. It aims to improve the nutritional status and health of these groups.

- **National Iron Plus Initiative (NIPI):** It was launched to combat iron deficiency anemia, especially in children and women. Initiative includes providing iron and folic acid supplements.
- **Food Fortification Programs:** Fortification programs focus on adding iodine to salt (iodized salt), iron and folic acid to wheat flour, and Vitamin A to edible oils.
    - The Food Safety and Standards Authority of India (FSSAI) oversees the implementation of these fortification standards.
- **Mid-Day Meal Scheme (MDMS):** The scheme provides free lunches that are fortified with essential nutrients to schoolchildren, aiming to enhance their nutritional intake and promote regular school attendance.
- **Anemia Mukt Bharat (AMB):** The program includes regular iron and folic acid supplementation, deworming, and efforts to enhance dietary intake of iron-rich foods.
    - It also emphasizes the need for community-based interventions and awareness campaigns.

Source: https://www.thehindu.com/sci-tech/health/study-analyses-micronutrient-deficiency-in-global-population/article68585481.ece