

## Vitamin D deficiency in India

**Prelims:** Current events of national and international importance

### Why in News?

Recently, India has been facing widespread vitamin D deficiency (30-50% of the population) despite abundant sunlight due to various factors.

- **About** - Vitamin D is a **fat-soluble vitamin**, along with Vitamins A, K, and E.

*Fat-soluble vitamins are more difficult to excrete and can cause toxicity if taken in excess.*

- **Types** - **Vitamin D2 (Ergocalciferol)** - Found in small amounts in almonds and mushrooms.
- Vitamin D levels are generally poor in vegetarian diets.
- **Vitamin D3 (Cholecalciferol)** - Found in large concentrations in animal products such as fish, egg, liver, etc.
- **Vitamin D in India** - In India, **30-50% of the population** has vitamin D levels below 20 ng/dl, higher than in developed countries such as the UK and the US.
- This deficiency persists despite abundant sunlight.
- **Reasons** - They include poor exposure to sunlight, atmospheric pollution, vegetarian diets, and the lack of fortification of dairy products.
- **Health Impacts** - Vitamin D receptors are found in almost all human tissues.
- **Need** - Its essential role is not only in bone and mineral metabolism, but in immunity, and even mood regulation.
- **Deficiency effects** - Poor balance and muscle weakness, and a higher risk of falls in older adults.
- **Deficiency linkage** - It has been linked to increased susceptibility to respiratory tract infections, tuberculosis, cardiovascular disorders, and metabolic disorders like diabetes.

- **Treatment - Food Fortification** - Cost-effective strategy used in many countries.
- But it requires widespread testing to detect toxicity, which is not available in India.
- **Testing and Supplementation** - Follow-up blood test usually done 2-3 months after starting supplementation.

| Daily Requirement                 | Vitamin D Levels (ng/dl) |
|-----------------------------------|--------------------------|
| Children & adults -600-800 IU/day | Deficiency- < 20         |
| Elderly- 800-1000 IU/day          | Insufficiency- 21-30     |
| Pregnant women-1000-1200 IU/day   | Sufficiency- 31-75       |
|                                   | Toxic levels- > 100      |

## Reference

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