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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