Arming India’s poor against the pandemic

- **Vitamin D deficiency** can affect COVID-19 high-risk patients, particularly those who are diabetic, have heart conditions, pneumonia, obesity and those who smoke.
- It is also associated with infections in the respiratory tract and lung injury.

**Importance of Vitamin-D**

- Besides, *vitamin D* is known to help in having the right amount of *calcium in the bones*, catalyse the process of *protecting cell membranes* from damage, *preventing the inflammation* of tissues and *helping stop tissues from forming fibres* and *weakening bones from becoming brittle*, leading to osteoporosis.

**Vitamin D and its prevalence**

- It is produced when sunlight (or artificial light, particularly in the *ultraviolet region* of 190-400 nm wavelength) falls on the skin and triggers a chemical reaction to a cholesterol-based molecule, and converts it into calcidiol (adding one hydroxyl group, also called *25(OH)D* technically) in the liver and into calcitriol (or 1, 25(OH)2D) in the kidney.
- It is *these two molecules that are physiologically active*. It is suggested that the level of *25-OHD* in the range 30-100 ng/ml is thought to be *sufficient for a healthy body*; levels between 21-29 ng/ml are *considered insufficient*, and levels below 20 ng/ml mean the individual is *deficient in the vitamin*.
- Since sunlight in important for the generation of vitamin D, *tropical countries have an advantage over the northern countries*. India, being a tropical country, one would expect naturally derived vitamin D levels to be good. *Yet, it is not so!*
- A study in India reveals that the level of vitamin D ranged between *3.15 ng/ml* to *52.9 ng/ml*. Vitamin D level among south Indians is *(15.74–19.16) ng/ml*, yet below 20. Also, females showed consistently lower levels than males.
- The authors conclude that *India, a nation of abundant sunshine*, is surprisingly found to have a massive burden of *vitamin D deficiency* among the public irrespective of their location (urban or rural), age or gender, or whether they are poor or even rich.
- Hence, it is clear that *vitamin D supplementation is necessary for most Indians to treat its deficiency*.

**Way forward**
• Given the deficit in vitamin D (indeed in many other vitamins, and calcium), it is highly desirable for the governments to

(a) consult nutrition experts and institutions to advise and suggest the type of nutritive items that can be added to the current ‘ration’ food given to the poor, and the meals given to school children,

(b) in any case, supply free of charge, vitamin D, other vitamins and calcium, in consultation with medical and public health experts regarding the dosage, frequency and other details.