

## EDITORIAL

### THE INDISPENSABLE SUNSHINE VITAMIN


The sunshine vitamin, Vitamin D, is a steroid hormone and is very important in calcium homeostasis inside the human body. The human skin has the ability to form almost 10,000 – 20,000 IU of vitamin D<sub>3</sub> after 15 minutes whole body exposure to ultraviolet B (UVB) radiations under the sun. Factors that can affect our body's ability to form vitamin D are, time of the day on exposure to sunlight (10:00 am to 02:00 pm), latitude (0 to 35 degrees north or south), season, complexion (lighter skin complexion), use of sunscreen, cloud cover, smog and the type of clothes worn<sup>[1]</sup>. Pakistan lies in latitude of 32.0162° north that is favorable for vitamin D production.

The role of vitamin D is not restricted to calcium homeostasis but it has pleiotropic actions with a lot more clinical significance. Optimal levels of vitamin D in the body can reduce the risk of highly prevalent diseases like respiratory tract infections, influenza, asthma, diabetes, various autoimmune disease and even cancers<sup>[1]</sup>. More than 2776 genomic positions of vitamin D receptor has been identified and change in expression of more than 229 genes has been seen in response to vitamin D<sup>[2]</sup>. Vitamin D is important for proper bone remodeling. Its deficiency along with the lack of calcium can lead to disrupted bone growth and development of osteoporosis, which is a major public health concern especially in postmenopausal age group as the prevalence of osteopenia and osteoporosis is progressively increasing in our population and is found to be around 29.8%, 27.2% respectively<sup>[3]</sup>. It has been found that 40% to 52% of women with osteopenia or osteoporosis have 25(OH)D levels below 30 ng/ml<sup>[4]</sup>. Vitamin D was found to be highly deficient in population of various cities of Pakistan, 81 % in women of Lahore<sup>[5]</sup> and 92% in Karachi<sup>[6]</sup>. Another study conducted in Lahore has shown that 35.3% of females in postmenopausal age were deficient (<10 ng/ml), 57.7% were having insufficient (10-30 ng/ml) and only 7.1% were

having sufficient (>30 ng/ml) levels of vitamin D<sup>[7]</sup>. Despite having favorable latitude and sufficient sunlight especially in summers, the probable reason for deficiency of vitamin D in our population could be attributed to the lack of dietary intake, relatively darker skin complexion, inadequate sunlight exposure because of the type of clothes worn, staying inside the rooms during optimal time of the day. A study conducted in Lahore has shown that 44.0% of the population has Mediterranean (type IV) and 36.3% has dark brown (type V) complexion which has a UVB penetration of 42.5% and 30% respectively as compared to 80 % UVB penetration by type 1 skin<sup>[7]</sup>. Lighter skinned people have 5 to 10 times faster capability of producing vitamin D. Therefore, a lack of adequate sunlight exposure and relatively darker skin complexion can be a cause of vitamin D deficiency in our population.

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