

Vitamin D

Vitamin D is a fat-soluble vitamin which acts like a hormone, regulating the formation of bone and the absorption of calcium and phosphorus from the intestine. It helps to control the movement of calcium between bone and blood, and vice versa. In infancy and childhood, deficiency of vitamin D causes the deformed bones characteristic of rickets, while in adults a lack of the vitamin causes a softening of the bones known as osteomalacia. Deficiency is seen more often in northern countries, or where tradition dictates that the body is well covered by clothes, such as in parts of the Islamic world. An excess of the vitamin can cause loss of appetite, weight loss, nausea, headache, depression and deposits of calcium in the kidneys.

Vegans and Vitamin D

Vegans usually obtain vitamin D from the action of sunlight on the skin or by taking fortified foods such as soya milk, margarine and vitamin supplements which are made from yeast or other fungi. Fortified vegan products contain D2 (ergocalciferol). Foods with naturally occurring vitamin D usually contain animal derived vitamin D3 (cholecalciferol). (There is one form of D3 that is derived from lichen and suitable for vegans, which is marketed as Vitashine).

The most significant supply of vitamin D (for omnivores as well as vegans) comes from the action of ultra-violet B light on sterols in the skin. Most people, including infants require little or no extra from food when regularly exposed to sunlight when the sun is high in the sky. Bright sunlight is not necessary; even the sky shine on a cloudy summer day will stimulate formation of some D in the skin, while a short summer holiday in the open air will increase blood levels of the vitamin by two or three times the amount.

Northern Latitudes

The effective light wavelength - ultra-violet B (UVB, 290-315 nanometers in wavelength) - is not present in winter sunlight between October and March in countries above latitude 52 degrees north, which includes most of Britain. Winter time supplies of vitamin D depend on the previous summers exposure creating adequate stores in the liver, or on dietary sources.

Requirements For Vitamin D

It has been found that bone loss in post menopause women occurs mostly in the winter due to falling levels of vitamin D products in the blood. A winter intake from fortified foods or supplements is strongly recommended to promote bone health. Winter intakes of about 15 ug (micrograms) per day appear to be appropriate to prevent bone loss.

There is growing evidence that low vitamin D levels contribute to cancer and auto immune disease. If we lived as we evolved - in the open nearer the equator - we would synthesise vitamin D from sunlight equivalent to 100 ug (micrograms) or more per day and dietary intake would be irrelevant.

Conclusions

Adult vegans obtain adequate vitamin D if they regularly spend time outdoors in spring, summer and autumn. A dietary intake of the vitamin in the winter can be ensured by eating fortified foods or taking supplements. In northern latitudes vegan women who are breast feeding should ensure their intake during winter by using fortified foods or taking supplements. Parents are advised to include vitamin D fortified foods or supplements if they wean their infants during the winter months, especially if they are dark skinned.

For further information see [Vegans and the Sunshine Vitamin](#) (pdf), an article on vitamin D by Stephen Walsh, Nutrition and Health Spokesperson. [Vegan Society](#)