

Vitamin D and menopausal health

Vitamin D is pivotal in maintaining skeletal health. Deficiency has also been associated with cardiovascular disease, diabetes and cancer.

Sources of vitamin D

- **Skin synthesis** through exposure to **sunlight** is the major natural source.
- Some foods such as **oily fish**, **eggs** and **dairy products** are rich in vitamin D.
- **Supplements** or **fortified foods** can be consumed to increase vitamin D levels.

Vitamin D deficiency

Risk factors include:

- low exposure to sunlight, dark skin and skin aging
- poor dietary intake
- kidney disease/renal failure and obesity
- malabsorption
- certain medications (e.g. anti-convulsants, antiretrovirals)

Vitamin D and skeletal health

- Vitamin D **supplements** combined with **calcium** should be considered for postmenopausal women of any age if they have low levels of vitamin D and osteoporosis and/or are at high fracture risk.
- There is no evidence that supplements prevent fractures in postmenopausal women who do not have a deficiency or who are at low fracture risk.

Evidence from randomized controlled trials concerning vitamin D supplements is not robust, since many studies did not consider whether people were deficient at baseline.

Serum 25-hydroxyvitamin D levels less than 20 ng/ml (50 nmol/l) and 10 ng/ml (25 nmol/l) are considered to constitute vitamin D *deficiency* and *severe deficiency*, respectively.

Vitamin D and cardiovascular disease

- **Vitamin D deficiency** is associated with coronary heart disease, stroke, hypertension, dyslipidemia, type 2 diabetes and metabolic syndrome.
- **Vitamin D supplements** do not decrease cardiovascular risk, although they do have a modest beneficial effect on glucose metabolism and lipids.

Vitamin D and cancer

- **Vitamin D deficiency** may be associated with increased incidence and mortality of several types of cancer, such as colorectal, lung and breast cancer.
- **Vitamin D supplements** do not affect cancer outcomes, except for a modest decrease in cancer-related mortality.

Vitamin D and menopause

- **Vitamin D deficiency** may be associated with hot flashes, sleep disorders, depression and sexual problems
- **Vitamin D supplements** have no effects on menopausal symptoms except for a modest effect on vulvovaginal atrophy.

Further information

Vitamin D and menopausal health. EMAS position statement 2023 <https://doi.org/10.1016/j.maturitas.2022.12.006>