

Highlights from Vitamin D Screening and Supplementation in Community-Dwelling Adults: Common Questions and Answers

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SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	Evidence rating	References	Comments
Serum 25-OH-D levels of 12 to 20 ng per mL (30 to 50 nmol per L) correlate to the vitamin D exposure necessary to maintain bone health. Individuals with levels less than 12 ng per mL are usually deficient in vitamin D, and 97.5% of individuals with levels higher than 20 ng per mL have adequate vitamin D intake.	C	5	Use of 25-OH-D levels to assess adequate vitamin D exposure is limited by variability in measurement technique and precision.
Routine vitamin D supplementation in community-dwelling adults is not recommended.	A	16-22	Routine vitamin D supplementation does not prolong life, decrease the incidence of cancer or cardiovascular disease, or decrease fracture rates.
There is insufficient evidence to recommend screening the general population for vitamin D deficiency. Treating asymptomatic individuals with identified deficiency has not been shown to improve health.	B	25-27	The USPSTF found adequate evidence that treating vitamin D deficiency does not reduce risk of cancer, type 2 diabetes mellitus, or death in community-dwelling adults, or fractures in persons not at high risk of fractures. Evidence is insufficient for other outcomes, including psychosocial and physical functioning.
Physicians should not measure 25-OH-D levels or prescribe vitamin D supplementation in the treatment of depression, fatigue, osteoarthritis, or chronic pain.	A	37-41, 46-48, 53-57	Randomized controlled trials do not show benefit for conditions commonly treated with vitamin D. Other nonskeletal conditions have been inadequately studied.

25-OH-D = 25-hydroxyvitamin D; USPSTF = U.S. Preventive Services Task Force.

A = consistent, good-quality patient-oriented evidence; **B** = inconsistent or limited-quality patient-oriented evidence; **C** = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to <http://www.aafp.org/afpsort>.

“...the recommended dietary allowances of 600 IU per day for persons one to 70 years of age and 800 IU per day for persons older than 70 years are the allowances needed for those with the greatest biologic need, not the minimum or average needed across the population, which has been widely misinterpreted. The estimated average requirement is 400 IU per day. The estimated average requirement and the recommended dietary allowance both assume minimal to no sun exposure.”

“Therapeutic benefits for chronic nonskeletal disorders have not been established. A variety of nonskeletal disease states have been associated with vitamin D levels, but clinical trials generally do not support health benefits of supplementation. Evidence is mixed for some conditions, and larger trials will be required to draw definitive conclusions.”

TABLE 1

Effects of Vitamin D Supplementation on Medical Conditions

Conditions	Patient-oriented effects
Adverse pregnancy outcomes ²⁸⁻³⁰	Possible increase in birth weight, no other definitive maternal or neonatal benefits; prenatal vitamins include recommended amounts of vitamin D
Asthma ³¹⁻³³	Does not improve control of asthma or enhancement of corticosteroid responsiveness
Chronic obstructive pulmonary disease exacerbation ³⁴⁻³⁶	No therapeutic effect overall; two trials showed benefit in a subgroup of patients deficient in vitamin D
Depression ³⁷⁻⁴¹	No therapeutic effect
Diabetes mellitus ⁴²⁻⁴⁵	Does not prevent or help treat glucose intolerance
Fatigue ^{27,46-48}	Does not increase energy in postmenopausal women or patients with chronic fatigue syndrome
Heart failure ^{49,50}	Small increase in ejection fraction, no increase in walking distance
Hypertension ^{51,52}	Does not lower blood pressure or prevent hypertension
Menopausal symptoms ^{27,46,47}	No therapeutic effect in Women’s Health Initiative study
Nonspecific musculoskeletal pain ⁵³⁻⁵⁵	Does not decrease symptoms
Osteoarthritis ^{56,57}	No improvement in pain or cartilage loss
Upper respiratory tract infection ⁵⁸⁻⁶⁰	No effect on incidence of infection

Information from references 27 through 60.