

Optimal serum 25-hydroxyvitamin D levels for multiple health outcomes.

[Bischoff-Ferrari HA.](#)

Abstract

Recent evidence suggests that vitamin D deficiency has harmful effects on health and that recent vitamin D intake recommendations may be associated with better health outcomes. In this chapter, evidence is summarized from different studies that evaluate threshold levels for serum 25(OH)D levels in relation to bone mineral density (BMD), lower extremity function, dental health, risk of falls, fractures, cancer prevention, incident hypertension and mortality. For all endpoints, levels in the deficient range (< 50 nmol/l; < 20 ng/ml) are associated with no benefit or adverse effects, while the most advantageous serum levels for 25(OH)D appeared to be close to 75 nmol/l (30 ng/ml). An intake of 800 IU (20 microg) of vitamin D3 (cholecalciferol) per day for all adults may bring 97% of the population to level of at least 50 nmol/l and about 50% up to 75 nmol/l. Thus, higher doses of vitamin D than currently recommended are needed to bring most individuals to 75 nmol/l. While estimates suggest that 1600 to 2000 IU vitamin D3 per day may successfully and safely achieve this goal, the implications of higher doses for the total adult population need to be addressed in future studies.