


Benefit–risk assessment of vitamin D supplementation


Bischoff-Ferrari HA, Shao A, Dawson-Hughes B,
Hathcock J, Giovannucci E, Willett WC


Osteoporos Int. 2010 Jul;21(7):1121-32


Issue 3, September 2010


D-Evidence

 The efficacy of vitamin D supplementation in the prevention of skeletal and non-skeletal outcomes of public health significance was evaluated with respect to the risk of hypercalcemia as the critical effect (i.e. the adverse effect occurring at the lowest intake).

 Meta-analyses of randomized controlled trials indicate that optimal fracture and fall prevention in older individuals occurs when the achieved mean 25(OH)D levels are approximately 75 to 110 nmol/L. Similarly, epidemiologic data on cardiovascular health (incident hypertension, general mortality and cardiovascular mortality) and colorectal cancer prevention suggest a desirable serum 25(OH)D level around 100 nmol/L.

 Dose-response data from RCTs show that a mean value in the target range of 75-110 nmol/L was reached in healthy younger and older adults with vitamin D supplementation of 1,800 to 4,000 IU/day for at least 42 days.

 Reliable evidence that excess vitamin D can cause hypercalcemia in generally healthy adults comes from daily intake of vitamin D > 100,000 IU or serum 25(OH)D > 240 nmol/L, which are far higher than those necessary to achieve the benefits.

 No pattern of evidence was found to suggest that risks are elevated within the ranges of serum 25(OH)D or oral vitamin intake related to increased benefits (75-110 nmol/L).

DiaSorin

The Diagnostic Specialist