

OSTEOSCOOP

News on current events in osteoporosis and rheumatology

Fall prevention with supplemental and active forms of Vitamin D

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The objective of this study [1] was to test the efficacy of supplemental vitamin D and active forms of vitamin D with or without calcium in preventing falls among older individuals. This meta-analysis was performed by searching Medline, the Cochrane central register of controlled trials, BIOSIS, and Embase up to August 2008 for relevant articles. Further studies were identified by consulting clinical experts, bibliographies, and abstracts. Only double blind randomised controlled trials of older individuals (mean age 65 years or older) receiving a defined oral dose of supplemental vitamin D (vitamin D3 (cholecalciferol) or vitamin D2 (ergocalciferol)) or an active form of vitamin D (1 α -hydroxyvitamin D3 or 1,25-dihydroxyvitamin D3) and with sufficiently specified fall assessment were considered for inclusion.

Eight randomised controlled trials (n=2426) of supplemental vitamin D met our inclusion criteria. Heterogeneity among trials was observed for dose of vitamin D (700-1000 IU/day v 200-600 IU/day; P=0.02) and achieved 25-hydroxyvitamin D3 concentration (25(OH)D concentration: <60 nmol/l vs \geq 60 nmol/l; P=0.005). High dose supplemental vitamin D reduced fall risk by 19% (pooled relative risk (RR) 0.81; n=1921 from seven trials), whereas achieved serum 25(OH)D concentrations of 60 nmol/l or more resulted in a 23% fall reduction (pooled RR 0.77). Falls were not notably reduced by low dose supplemental vitamin D (pooled RR 1.10; n=505 from two trials) or by achieved serum 25-(OH)D concentrations of less than 60 nmol/l (pooled RR 1.35). Two randomised controlled trials (n=624) of active forms of vitamin D met the inclusion criteria. Active forms of vitamin D reduced fall risk by 22% (pooled RR 0.78).

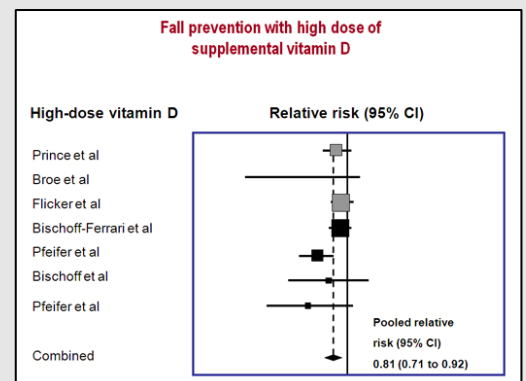
In conclusion, supplemental vitamin D in a dose of 700-1000 IU a day reduced the risk of falling among older individuals by 19% and to a similar degree as active forms of vitamin D. Doses of supplemental vitamin D of less than 700 IU or serum 25-hydroxyvitamin D concentrations of less than 60 nmol/l may not reduce the risk of falling among older individuals.

1. Bischoff-Ferrari HA et al. *BMJ*. 2009;339:b3692.

Fall prevention with supplemental and active forms of Vitamin D

This meta-analysis tested the efficacy of supplemental vitamin D in preventing falls among older individuals. High dose supplemental vitamin D reduced fall risk by 19%, whereas achieved serum 25(OH)D concentrations of 60 nmol/l or more resulted in a 23% fall reduction. There was an inverse relationship between the dose of Vitamin D2 or D3 and the relative risk of falls. Similarly, a significant relationship between the achieved 25-hydroxyvitamin D3 concentration and the relative risk of falls was observed.

In conclusion, supplemental vitamin D in a dose of 700-1000 IU a day reduced the risk of falling among older individuals and to a similar degree as active forms of vitamin D.



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