



Vitamin D Supplements Associated With Reduced Fracture Risk in Older Adults

March 23, 2009 Oral vitamin D supplements at a dose of at least 400 international units (10 micrograms) per day are associated with a reduced risk of bone fractures in older adults, according to results of a meta-analysis published in the March issue of *Archives of Internal Medicine*.¹

Researchers from Zurich in Switzerland conducted a meta-analysis on 12 previously published clinical trials of oral vitamin D supplements among adults age 65 or older. These double-blind randomised controlled trials involved 42,279 participants (average age 78) and looked at non-vertebral (non-spinal) fractures, including eight trials of 40,886 participants with hip fractures.

When the results of the trials were pooled, vitamin D supplements decreased the risk of non-vertebral fractures by 14 percent and hip fractures by 9 percent. The authors then pooled the results of the nine trials in which participants received doses greater than 10 micrograms per day. At this level, vitamin D supplements reduced non-vertebral fractures by 20 percent and hip fractures by 18 percent. Doses less than 10 micrograms per day did not reduce the risk of either fracture type. A much lower risk of fracture was also seen among trial participants whose blood levels of 25-hydroxyvitamin D (a commonly used measure of vitamin D status) rose significantly.

Dr Carrie Ruxton² from the Health Supplements Information Service (HSIS) notes: "Fractures are common amongst older people, particularly women. This study provides additional evidence that taking a vitamin D supplement boosts blood levels of the vitamin and helps prevent fractures. The reduction in risk was greater in people taking more than

¹ Arch Intern Med. 2009;169[6]:551-561

² Dr Ruxton is an independent nutritionist and scientific advisor to the Health Supplements Information Service

10 micrograms per day, which is well within the safe limit for vitamin D. People whose vitamin D status, i.e. blood 25-hydroxyvitamin D level, improved significantly also benefited. While there are recommendations in the UK for adults over 65 years to consume 10 micrograms of vitamin D per day, there are currently no recommendations for most other adults. There is now a growing body of evidence that suggests recommendations for vitamin D intake need urgent review. In the meantime, it would appear that regular supplementation with vitamin D, on its own or as part of a multivitamin, supports bone health.”

For more information on vitamins and minerals visit www.HSIS.org.uk

The Health Supplements Information Service (HSIS) (www.hsis.org.uk; Tel: 020 7052 8955) is an independent information body, set up to provide information on vitamins and minerals. It is supported by a restricted educational grant from the Proprietary Association of Great Britain (PAGB).



March 23, 2009 Average blood levels of vitamin D in the United States fell by 20% between 1994 and 2004, according to a report in the March 23 issue of *Archives of Internal Medicine*.³

Measuring levels of 25-hydroxyvitamin D in the blood is a very accurate way of assessing vitamin D status in a population. The new report used data from a large national survey of more than 18,000 people conducted from 1988-1994 and compared this with a later survey of more than 13,000 people carried out between 2001-2004.

The results showed that average blood levels of vitamin D fell by 20% during the 10 years between studies (i.e. from 30 nanograms per ml to 24 nanograms per ml). Not only that, the percentage of people with severe vitamin D deficiency (below 10 nanogram per ml) rose three-fold. A level of 25 nanograms per ml is seen by experts as the minimum level required in order to protect bone health⁴.

Dr Carrie Ruxton⁵ from the Health Supplements Information Service (HSIS) notes: "A poor vitamin D status is becoming increasingly common throughout northern countries, including the UK. Many experts believe this is associated with increased risk of cardiovascular disease,⁶ diabetes and some cancers⁷ as well as poor bone health.⁸ Studies show that vitamin D supplements can improve blood levels of vitamin D⁹ and help lower the risk of certain conditions.

³ Arch Intern Med. 2009;169::626-632

⁴ Scientific Advisory Committee on Nutrition (SACN) position statement on vitamin D 2007

⁵ Dr Ruxton is an independent nutritionist and scientific advisor to the Health Supplements Information Service

⁶ Curr Opin Clin Nutr Metab Care 2008;11:752-7

⁷ Am J clin Nutr 2008;88:565S-569S

⁸ Drugs Aging 2007;24:1017-29

⁹ Eur J Clin Nutr 2006; 60:681-7

The authors of this new study acknowledged that “current recommendations for dosage of vitamin D supplements are inadequate to address this growing epidemic of vitamin D insufficiency.” This referred to the US recommendation of 5 micrograms per day for adults. They also suggested that: “Increased intake of vitamin D (25 micrograms per day or more)—particularly during the winter months and at higher latitudes—and judicious sun exposure would improve vitamin D status and likely improve the overall health of the U.S. population”.

We have a worse situation in the UK because there are no vitamin D recommendations for most adults and children due to the expectation that they will get enough from sunlight exposure. Recommendations for young children, pregnant/lactating women and older people are only 10 micrograms per day. Perhaps this new US study will be a wake-up call for dietary experts to re-examine UK vitamin D recommendations. In the meantime, people who are concerned about their vitamin D status could increase their intakes of vitamin D rich foods, e.g. oily fish, or take a multivitamin supplement”.

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