Vitamin D plus calcium prevents falls in older women but not older men

Research question Which subgroups of older people benefit most from vitamin D plus calcium?

Answer The supplements help to prevent falls in women but not men. Older women who are less active than average benefit most.

Why did the authors do the study? These authors had already shown that taking extra vitamin D (cholecalciferol) can reduce falls in older people by 20%. They wanted to find out whether the benefits were different for men, women, and other subgroups defined by physical activity or baseline serum concentration of 25-hydroxyvitamin D (25-hydroxycholecalciferol).

What did they do? They analysed data on falls from a previous randomised trial examining the effects of vitamin D plus calcium on bone mineral density in older people living in the community. Falls were a secondary outcome in this trial, which had one author in common with the current analysis. The trial was double blind and included 199 men and 246 women aged over 65 who took 700 IU of cholecalciferol plus 500 mg of calcium or a placebo of identical appearance once a day for three years. Participants recorded falls on a card, which they posted to the research team, who obtained further details at follow-up visits every six months.

The current authors used multiple logistic regression analysis to estimate the impact of supplements on the risk of falling at least once. The main analyses were intention to treat and controlled for 12 possible confounders, including age, body mass index, dietary calcium intake, and smoking.

What did they find? 54% of the women (134/246) and 49% of the men (97/199) fell at least once during the three years. Vitamin D plus calcium did not prevent falls overall, or in men. But it did reduce the risk of at least one fall in the subgroup of 229 older women (odds ratio 0.54; 95% CI 0.30 to 0.97), particularly those who were less active than average ($n = 130$; 0.35 (0.15 to 0.81)). The supplements did not preferentially benefit women with a low serum concentration of 25-hydroxyvitamin D at the start of the trial. Nor did they reduce the total number of falls reported by women or men.

The benefits for women appeared after about a year of treatment and persisted for the rest of the three year follow-up period.

What does it mean? These findings are from subgroup analyses so should be treated with caution. They are also from a trial that was designed to look primarily for the effects of supplements on bone mineral density, not on falls. So the current analyses are likely to be underpowered. They do suggest, however, that older women, but not older men, fall less when they are taking extra calcium and vitamin D. It's still unclear exactly why, although we do know that vitamin D deficiency causes proximal muscle weakness, and that human muscle contains receptors for 1,25-dihydroxyvitamin D that promote protein synthesis and decline with age.

Bischoff-Ferrari HA, et al. Effect of cholecalciferol plus calcium on falling in ambulatory older men and women *Arch Intern Med* 2006;166:424-30

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Editor's choice

April fools

It can now be revealed that our news story on motivational deficiency disorder (1 April, p 745) was a hoax. Apologies to all those who were fooled, especially New Zealand's *Dominion Post*. "Credibility is hard earned," its editor lectured us; "You damaged yours and ours as a result."

Subsequent questions about how often we have published hoaxes had me flicking through previous 1 April issues. A discussion of the use of aeromedical blimps for emergency transport certainly qualified in 1989, as possibly did a letter on lottery distress disorder in 1995.

But what really caught my eye was the familiarity of the political themes in *BMJs* published 17, 11, and 6 years ago. The issue of 1 April 1989 read like an extended critique of *Working for Patients*, the UK government's white paper on the internal market, self governing trusts, and the like. The Joint Consultants Committee regretted that changes were being introduced before pilot schemes had been evaluated. An economist and an orthopaedic surgeon wrote, "The days of the local hospital having a natural monopoly are numbered," and a general practitioner said, "I suspect that practice budgets will become an insidious way of commercialising primary health care."

1 April 1995 was calmer: thoughtful discussions on waiting lists and the future of the hospital consultant, although there were also letters on the increasing numbers of emergency medical admissions. By 1 April 2000 things had clearly deteriorated. Editor's Choice was entitled "The NHS: last act of a Greek tragedy?" "Imagine that you are the British prime minister sitting in 10 Downing Street being driven mad with frustration. The damn NHS won't deliver ..." wrote Richard Smith. "Last week the government reached for the ultimate weapon, the one it least likes to use: money. The NHS is going to receive an extra £19.4bn over the next four years, an annual increase of 6.1%."

In fact the boom lasted seven years, not four, and is almost over. Downing Street is even madder with frustration. The main problem is that productivity has not kept up with the increased NHS spending. In this week's journal Alan Maynard and Andrew Sweet come up with four ideas: reforming NICE, providing incentives for doctors, developing a structured payment system, and collecting better outcome data (p 906). How will these recommendations look in 2017, when 1 April next falls on a Saturday?

Presumably by then we'll know how the bird flu pandemic panned out. Predictably, the H5N1 strain has now reached Britain (p 873), but much harder to predict is whether we'll end up with a virus that spreads from person to person. The fact that we haven't—despite the conditions for its emergence being present since at least 1997—is grounds for hope. For readers for whom motivation is a problem (p 916) now may be the time for a quick catch-up on the topic: the journal has published 100 relevant articles over the past few years, all of which can be accessed at: <http://bmj.bmjournals.com/cgi/collection/bird-flu>.

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