Reviewer's report

Title: Fracture prevention with calcium and vitamin D supplementation: is there publication bias?

Version: 1 Date: 6 November 2006

Reviewer: David J Torgerson

Reviewer's report:

General
This paper argues that the meta-analysis that shows that vitamin D supplementation for fracture prevention is biased through publication bias. I tend to agree with the authors conclusions, although another explanation is that the first few trials to test the hypothesis all, by chance, reached a favourable conclusion. Unfortunately the evidence supporting the author's hypothesis (and mine) is not that robust.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Funnel plots are notoriously difficult to interpret - there was a recent BMJ paper on this issue which shows the sensitivity of funnel plots to publication bias is very poor. Furthermore, the relatively small number of trials included in the original review plus the updated review are probably too few to interpret a funnel plot.

A technical detail is that y axis should not just be the sample size it should be inverse of the variance that takes into account the incidence as well as teh total N. The Chapuy studies would go up higher in the plot because they have a relatively high incidence of fracture - power is not just about sample size here it is also about event rates.

The author might also include the Wessex study Smith et al (Cited in the Porthouse paper), which is a RCT of vitamin D injections of about 9,000 people, which showed a 50% increase risk of hip fracture. I don't know if it has been published as a major paper yet or still only available as an abstract, the author might be able, however, to work backwards from the sample size and CIs and estimate the number of fractures that can be used in the funnel plot. That study also tends to reduce the argument of poor compliance as the annual injection avoided this problem.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

RCTs does not have an apostrophe.

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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I have done work on calcium and vitamin trials that were partly funded by SHIRE pharmaceuticals who...
manufacture calcium and vitamin D. Publication of this paper may reduce use of calcium and vitamin D sales. I do not have any current work with any company that makes these products.