

## To 'D' or not to 'D' in the older person, that is the question

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In anticipation of new recommendations from the Institute of Medicine and others, it behooves physicians and healthcare providers to review their knowledge base concerning adequate vitamin D intake for fall and fracture prevention in the elderly. There is enough new data for the Institute of Medicine to consider a new Dietary Reference Intake, or DRI, for vitamin D.<sup>1</sup> A recent review by Bischoff-Ferrari et al, of numerous randomized controlled trials of vitamin D supplementation in older persons, concluded that both falls and fractures could be prevented. In addition, a dose-response relationship suggested that the optimal supplementation dose is 700 IU to 1000 IU per day.<sup>2</sup> Epidemiologic associations between low vitamin D status and various cancers has led some to recommend balancing risk and benefit of moderate ultraviolet light (UV) exposure against complete UV protection for prevention of skin cancer.<sup>3</sup> Others have reviewed the epidemiologic evidence for vitamin D supplementation in treatment of hypertension and prevention of cardiovascular disease.<sup>4</sup> These epidemiologic studies are tantalizing, yet the evidence is not sufficient to support a causal relationship in making decisions about vitamin D supplementation for the prevention of cancer and cardiovascular disease. I will limit my editorial comments to preventing falls and fractures.

I would suggest looking at potential short- and long-term risks as well as the benefits of any intervention. What evidence do we have for the risks of vitamin D use for prevention? One recent study using a single dose of 500,000 IU of vitamin D daily showed an increased relative risk of fractures,<sup>5</sup> but the dose of vitamin D in that study was far higher than other randomized controlled trials. Bischoff-Ferrari et al reviewed documented cases of hypercalcaemia in the randomized controlled trials;<sup>2</sup> those authors add that only one trial reported nephrolithiasis, the Women's Health Initiative.<sup>6</sup> It is noteworthy that only the self-reported vitamin D and calcium dose was determined in that study, not the vitamin D status of the subjects. My opinion is that hypercalcaemia is uncommon and its complications are rare.

Many interventions that are routinely recommended for the older person probably have higher risks than the 700 IU to

1000 IU of vitamin D per day suggested by the evidence. Medications for hyperlipidaemia are one case in point; antihypertensives are another. Both are considered relatively safe and effective in primary and secondary prevention of cardiovascular disease. The long-term risks of the supplementation of 700 IU to 1000 IU of vitamin D are not well known compared to those long-term risks associated with lipid-lowering drugs or antihypertensives. On the other hand, some older persons at increased fall risk have more immediate threats to their health from a fall or fracture than any long-term risks of vitamin D supplementation. Given the detrimental consequences of falls and fractures in the elderly, the risks of vitamin D supplementation may be worth it.

### Competing Interests

None declared

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