

Calcium and vitamin D in preventing fractures

Data are not sufficient to show inefficacy

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EDITOR—The study by Porthouse et al had two major design flaws.¹ Firstly, the dose of vitamin D (800 IU per day) is subphysiological and therefore subtherapeutic. Secondly, their use of “self report” as a measure of compliance is unreliable.

The dose of vitamin D at 800 IU daily was not determined scientifically but determined arbitrarily before sufficient scientific methodology was available.²⁻⁴ Heaney et al determined the physiological requirement of vitamin D by showing that healthy men use 4000 IU cholecalciferol daily,² an amount that is safely attainable with supplementation³ and often exceeded with exposure of the total body to equatorial sun.⁴

We provided six guidelines for interventional studies with vitamin D.⁵ ❶ Dosages of vitamin D must reflect physiological requirements and natural endogenous production and should therefore be in the range of 3000-10 000 IU daily. ❷ Vitamin D supplementation must be continued for at least five to nine months. ❸ The form of vitamin D should be D₃ rather than D₂. ❹ Supplements should be assayed for potency. ❺ Effectiveness of supplementation must include measurement of serum 25-hydroxyvitamin D. ❻ Serum 25(OH)D concentrations must enter the optimal range, which is 40-65 ng/ml (100-160 nmol/l).

Since the study by Porthouse et al met only the second and third of these six criteria, their data cannot be viewed as reliable for documenting the inefficacy of vitamin D supplementation.

Notes

Competing interests: AV is a researcher at Biotics Research Corporation, a drug manufacturing facility in the United States that has approval from the Food and Drug Administration.

References

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