Yes: Targeted Screening in At-Risk Populations Is Prudent

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Vitamin D is critical for bone mineralization.\(^1\) Over the previous decade, vitamin D deficiency has received significant media attention for its association with many adverse health outcomes beyond bone health, including cancer, autoimmune diseases, infections, diabetes mellitus, and cardiovascular health.\(^2\) Because of this attention, there has been a notable increase in screening for vitamin D deficiency.\(^3\)

Serum levels of vitamin D, a prohormone synthesized in the skin, are influenced by a multitude of factors, including sun exposure, skin pigmentation, age, adiposity, and dietary intake. The dominant function of vitamin D in its active hormonal form (1,25-dihydroxyvitamin D) is to maintain calcium and phosphate homeostasis.\(^4\) Measurement of serum 25-hydroxyvitamin D levels is the best current measure of vitamin D status.\(^5\)

With the release of the Institute of Medicine’s (IOM) report on dietary intake for calcium and vitamin D in November 2010, enthusiasm for assessing patients’ vitamin D status for nonskeletal outcomes was dampened.\(^6\) In this report, the IOM examined outcomes other than bone health, including cancer, cardiovascular disease, diabetes, immune response, and reproductive outcomes, and determined that the existing science does not sufficiently support vitamin D screening for the prevention of these conditions.\(^6\) However, the IOM report also clearly substantiated the importance of vitamin D in a composite end point of bone health, specifically for calcium absorption, calcium retention, and increased bone mineral density, in addition to the prevention of rickets, osteomalacia, and fractures.

Soon after the IOM report was released, the Endocrine Society released a clinical practice guideline for the evaluation, prevention, and treatment of vitamin D deficiency, with an emphasis on caring for patients at risk of deficiency.\(^7\) Some risk factors for vitamin D deficiency include:

- Black race and Hispanic ethnicity
- Body mass index greater than 30 kg per m\(^2\)

...and many other factors. The Endocrine Society guidelines recommend a 25-hydroxyvitamin D level of at least 30 ng per mL (75 nmol per L).\(^7\) Data from the National Health and Nutrition Examination Survey found that increased hip bone mineral density was associated with...
higher serum 25-hydroxyvitamin D levels. This was observed in younger and older adults, as well as in persons of different ethnic and racial backgrounds.

Although it is not time for general population-based screening for vitamin D deficiency, this issue will continue to develop. The extraskeletal benefits of vitamin D may prove scientifically sound in larger randomized controlled trials, resulting in future population-based screening. Until then, we should focus on screening populations at risk of or who have osteoporosis.

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REFERENCES