



# Vitamin D

## Special Feature

### Research Update

Recent articles on vitamin D have been published in *JAMA*, *J Natl Cancer Inst*, *Am J Prev Med*, *Arch Intern Med* and *Neurology* and are described below:

#### Bone Health

A recent meta-analysis of 12 double blind, randomized controlled trials indicates that vitamin D promotes hip and nonvertebral bone health. In another 3-year randomized controlled study, D<sub>3</sub> (cholecalciferol) and calcium supplementation lessened the risk of falling in women aged 65 or older.\*

#### Cellular Health of the Colon, Breast and Prostate

A meta-analysis involving 5 trials suggests that a daily intake of 1,000–2,000 i.u. per day of vitamin D<sub>3</sub> promotes colon health. A case-control study from the Nurses Health Study indicates that healthy vitamin D plasma levels are associated with breast cell health. Vitamin D also promotes healthy gene expression to maintain healthy prostate cell function.\*

#### Nerve Health

A prospective, case-control study involving more than 7 million U.S. military personnel indicates that vitamin D is associated with nerve and myelin health. Another cohort study involving women from the Nurses' Health Study and Nurses' Health Study II indicates that supplemental vitamin D greater or equal to 400 i.u. per day promotes nerve health.\*

#### Emotional Health

In a recent cross-sectional trial involving 80 elderly individuals, higher serum 25-hydroxy vitamin D levels were associated with positive mood and healthy cognitive performance.\*

### Vitamin D: An Interview with Mark Swanson, N.D.



**Q:** Thank you for sharing with us your experience and thoughts on vitamin D supplementation. Can you tell us a little bit about yourself and your practice?

**A:** I received my naturopathic degree from Bastyr University in 1984, which was the third graduating class. I have been in a nutritionally oriented private practice in Washington State for almost 20 years. I am also a former Acquisitions Editor for the *AANP Journal of Naturopathic Medicine*. I have been a customer of Pure Encapsulations for almost 15 years.

**Q:** Why is vitamin D so important for your patients?

**A:** There is a widespread vitamin D deficiency crisis, affecting individuals in both cloudy and sunny climates. Lack of vitamin D is linked to a long list of major health concerns. Compounding the problem is the widely recommended advice to always stay out of the sun and to always cover up and/or wear sunscreen, even year around. Unfortunately, that blocks most vitamin D formation in the skin. So what to do? I recommend 10–15 minutes of daily summer sun on exposed skin without sunscreen, as long as there is no burning. In addition to "healthy sunlight", people should supplement with vitamin D<sub>3</sub> year round. The amounts I use are based on the most recently revised research. I basically go by the patient's health profile and baseline serum levels of 25(OH)D. Then I give them the amounts required to achieve healthy vitamin D status (described below). The goal is to reach optimal target levels in a reasonable amount of time.

**Q:** Who should supplement with D<sub>3</sub>?

**A:** Almost everyone and in all age groups! This is true whether you are a sun worshiper, live in



*continued on reverse*

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Florida, California or Hawaii, or regularly go to a tanning salon. Getting non-burning sunlight plus taking a supplement is what is needed by most. Making sure that each person gets enough is paramount. That's why routine testing is now more important than ever. That's the take home message here.

**Q:** *What is the best vitamin D test?*

**A:** The standard for measurement is 25(OH)D (25-hydroxy vitamin D). It is the best indicator of vitamin D in the body. Testing for 1-25(OH) or (1-25 dihydroxy vitamin D) is not recommended because when vitamin D levels fall, the kidneys compensate by increasing the 1-25(OH)D and it can even become elevated.

**Q:** *What types of serum levels of 25(OH)D should health professionals be looking for?*

**A:** Like most, I used to believe that 400 i.u. per day was at least adequate. We never tested patients and the reference ranges that the labs said were normal turned out to be low. Therefore, even 1,000 i.u. per day still wasn't enough for people with low levels to ever reach the optimum serum levels we now recommend. The very basic recommendation for normal replete patients is at least 1,000 i.u. per day in addition to sunlight. If this can't maintain vitamin D levels at 50–60 ng/ml, more is needed. Often this is more than 2,000 i.u. per day indefinitely. Again, serum testing is the best guide to go by, and use whatever amount it takes to maintain 50–60 ng/ml.

**Q:** *When would you recommend taking higher amounts of vitamin D<sub>3</sub>, like 5,000 i.u. or more per day?*

**A:** This is mandatory for patients who test below 20 ng/ml, and is also appropriate for anyone between 20–32 ng/ml. When doing so, retest 25(OH)D levels every 6–8 weeks until serum levels of 50–60 ng/ml are reached. Then test once yearly, preferably in the early fall.

Some helpful vitamin D<sub>3</sub> supplementation guidelines might be:

- **Vitamin D levels < 20 ng/ml:** 5,000–7,000 i.u. per day for 6–8 weeks. Retest. Then 3,000–5,000 i.u. per day for another 6–8 weeks, followed by 2,000 i.u. per day.
- **Vitamin D levels 20–32 ng/ml:** 5,000 i.u. per day for 6–8 weeks. Retest. Then 2,000–3,000 i.u. for 6–8 weeks, followed by 2,000 i.u. per day.
- **Vitamin D levels 32 ng/ml–40 ng/ml:** 2,500–5,000 i.u. per day for 4–6 weeks, then 2,000 i.u. per day. Retest every 3 months.
- **Vitamin D levels 50–60 ng/ml (optimal):** maintain at 1,000–2,000 i.u. per day, retest yearly.

**Q:** *How often do you see patients with vitamin D levels below 32 ng/ml?*

**A:** A lot. If you test, you'll see. When you give the right amounts, you'll make patients very happy!

**Q:** *Should people be concerned about vitamin D<sub>3</sub> toxicity?*

**A:** Toxicity is simply not a concern under 10,000 i.u. per day. It has a very wide range of safety. This is based on the most current re-appraisal of vitamin D needs and safety. Toxicity would probably begin to occur only after chronic daily consumption for weeks to months of approximately 40,000 i.u. per day. That would be the same as taking a full 100-count bottle of 400 i.u. every day. Nobody is going to do that.

**Q:** *Why do you recommend supplementing with D<sub>3</sub> and not D<sub>2</sub>?*

**A:** Cholecalciferol (D<sub>3</sub>) is more potent than ergocalciferol (D<sub>2</sub>). Vitamin D<sub>2</sub> doesn't raise serum 25(OH)D as effectively, is less bioavailable, is poorly metabolized, and has a shorter half-life. It used to be considered equivalent, but it's not.

**Q:** *Who should consult their physician before taking vitamin D?*

**A:** Anyone who will be taking more than 2,000 i.u. daily should have their levels tested first. Individuals with osteoporosis, as well as breast, prostate, and immune health concerns have greater vitamin D needs. Since they are most likely to have levels that fall below 32 ng/ml, they should consult with their physician first for an appropriate and effective dosing schedule. Also, people with health conditions such as hyperparathyroidism, hypercalcuria, osteomalacia, severe kidney disease, and malnutrition should consult with their doctor first.



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