

VITAMIN D

A FAT SOLUBLE VITAMIN

Not much has been mentioned about this vitamin over the past 30 years – until recently – and now only as it relates to OSTEOPOROSIS. Vitamin D is primarily included in dairy products at 400 IU levels per serving to assist in bone mineralization. Is this enough? How do you determine if your patients get enough? If they are deficient, what are the consequences?

In mid-March 2006 the TV news special medical report featured a segment on **RICKETS** in a eight year old boy. It took 5 years for the doctors to make this diagnosis! He will be deformed forever as a result. Rickets was a bone disorder once thought of as a condition of the past! Unfortunately, it's back!

Much is being published about vitamin D (cholecalciferol-D3) in the past two months! It regulates serum calcium and bone mineralization to prevent osteomalacia in adults, stimulates many hormones e.g. Prolactin and PTH acting as a pro-hormone.

Patients at risk for deficiencies include: untanned people who avoid the sun, live above the 35th latitude, at lower altitudes, or in winter areas, dark skinned people make LESS vitamin D, 50% of women of childbearing age, those on anticonvulsant therapy, afflicted with fat malabsorption conditions, gastric resection/bypass surgery, reduced gastric transit time, liver/gallbladder disease, inflammatory bowel conditions, elderly (thin skinned) who are at risk for osteoporosis/osteomalacia, and steroid users.

Vitamin D deficiency is implicated in prostate, breast and 13 other cancers (<33ng/ml), heart attacks (<35ng/ml), depressive disorders, SAD, cognitive disorders, fragility fractures, Parkinson's disease, TB, renal failure, chronic fatigue, and obesity/Syndrome X, periodontal disease (<34ng/ml), osteoarthritis – knee/hip (<36/30ng/ml), and others.

Sufficient Vitamin D appears to prevent/treat hypertension, cardiovascular conditions, diabetes, multiple sclerosis, rheumatoid arthritis, infertility/PMS, chronic pain (fibromyalgia) and autoimmune conditions. Activated vitamin D in the adrenal produces dopamine, epinephrine, and norepinephrine. Supplement vitamin D (4,000 IU/day) to mothers that breast feed.

Sources of vitamin D:

SUNLIGHT – ultraviolet light (UVB3) from sunlight is synthesized in the skin. Initially, 10 minutes daily, increase carefully to 20 minutes, however MORE SUN DOES NOT PRODUCE MORE VITAMIN D. Sunny and hot weather does not equate to high UV-B levels. Avoid sunburn – decreased skin cancer with high Omega-3 fat ratio. 20,000 IU's produced (without sun block) full body exposure both sides (Caucasian) 10 minutes before skin turns red. 10 times longer exposure for dark skinned people. Repeated sun exposure reduces Vitamin D conversion efficiency over time. Lack of sunlight to the skin from early fall to late spring in the US especially above the 35th latitude (Los Angeles to North Carolina)! Clouds, smog, season, sunscreen and clothing affect exposure. The kidney and liver help convert it to its active hormone form.

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COD LIVER OIL – good source if toxin free/purified. Maybe difficult to take though because of taste. 1 teaspoon/day if Vitamin D level is NOT verified by lab test.

SUNLAMPS – do contain significant amounts of UVB and raises calcidiol levels into the healthy range.

VITAMINS – if avoiding sunlight and not receiving UVB, 3,000 – 5,000 IU/day of cholecalciferol (D3) must be consumed if lab test reveals deficiency. Microemulsified D (BIOTICS) provides 2,000 IU/DROP and KEY Company has a 5,000 IU/tablet. Take it with a fatty food to aid in absorption. Vitamin D2 (ergocalciferol) is irradiated and is less biologically active and derived from plants.

Milk – poor source (uses vitamin D-2 form) whole or skim. 60% of milk drinkers do not have higher D levels. Milk contains BGH, antibiotics, pesticides, dioxin residues.

Tuna – poor source – may contain high levels of Mercury.

Diagnosis: perform venapuncture (frozen serum) for 25 hydroxyvitamin D (**25 OH**)D levels and serum calcium [not 1,25 (OH)D]. The gold standard is from DiaSorin Quest labs. Modern suggested optimal ranges are 40 ng/ml (low) and 60 ng/ml (high). SEE ATTACHED LABS for recent results of two of my patients

DOSAGES - Longstanding RDI have been 200 IU/day.

- 2000 IU/day considered a safe maximum daily dose in children.
- Recent research suggests 4000 IU/day is safe in D-deficient adults. Unless appropriate lab studies are performed, do not counsel for any higher daily dosages than 4000 IU.

HYPERVITAMINOSIS D causes serious effects and they are **IRREVERSIBLE! DO NOT ATTEMPT ANY THERAPY WITHOUT A LAB TEST!** If adults are found to be deficient with lab tests, 10,000 IU/day is reasonable with repeated lab tests to track progress.

Measuring your Vitamin D levels [25(OH)D] may be the single most important lab test you can do on your patients and family. Start drawing labs on Monday.

For further information visit

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