COOPER COUNTY PUBLIC HEALTH CENTER

History of Vitamin D

In the 19th century, as more people left farms to work in factories, a "new" disease appeared. It was called rickets. Leg bones of infants and children did not grow properly. The bones were weak and bowed. The connection to lack of sunlight was made in 1890. In 1922, research demonstrated the beneficial use of cod liver oil to prevent rickets. Soon after, Vitamin D was discovered and it was understood that calcium, essential for bone formation, could not be absorbed without Vitamin D. It was added to milk and rickets soon became a forgotten problem.

As we learned almost one hundred years ago, when sunlight falls on skin there is a cholesterol relative under your skin that is activated. The necessary length of sun exposure in order for this activation to occur is related to the darkness of skin. Darker skin requires a longer exposure time. That molecule then goes to the liver where it is changed, and then to the kidney where Vitamin D is produced. The Vitamin D that is produced in the kidney is then used to transport calcium from the intestine into the bloodstream. It also acts within the body as a hormone that supports immune responses. As a hormone, Vitamin D directly or indirectly influences over 2,000 genes.

The "sunshine vitamin", as vitamin D is frequently referred to, has also been in the news lately. It seems rickets was just the tip of the iceberg. Having a poor Vitamin D status is now associated with many chronic diseases such as:

- Multiple Sclerosis (MS)
- Cancer
- Parkinson's Disease
- Heart Disease
- "unexplained bone and muscle pain"

It should come as a surprise, to no one, that we don't get much sunshine anymore. We have busy lives, we work inside, and when we are out in the sun, we are covered with sunscreen . Even in Southern California, a significant percent of girls ages 16-22 were found to be deficient. Those who were vitamin D deficient also had a tendency to weigh more and had more abdominal fat. (Journal of Clinical Endocrinology & Metabolism, 12/08). Sunscreen blocks the ultra-violet B wave length of light, which is the activator for Vitamin D production. Additionally, from October to March, the sun's angle makes the sunlight we get much less effective for Vitamin D production.

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Public Health
Prevent. Promote. Protect.

The only serious food sources of Vitamin D are:

- fatty fish — salmon, sardines, mackerel, anchovies
- Mushrooms are a vegetable source, but the Vitamin D in them has less biological activity than the Vitamin D in fish.

There are, however, many options to improve Vitamin D status along with our health.

THE PLAN

1. **Eat fatty fish—**for Vitamin D as well as for good quality fat and protein

2. **Hold the sunscreen**—until your skin turns slightly pink, then cover up. If your skin is fair, it may take only 5 minutes. Dark skin may need 45 minutes to an hour. (According to James Leyden, professor emeritus of dermatology at the University of Pennsylvania, "recommending moderate amounts of sunshine is recommended until more evidence is in hand." Professor Leyden states that "the skin can handle it, just like the liver can handle alcohol...I like to have wine with dinner, but I don't think I should drink four bottles a day." Not all providers agree on the amount of safe sun exposure. This issue is still controversial. Please discuss the risks and benefits of sun exposure with your physician.

3. **Walk outside**—You'll get sunshine and the pressure exerted on leg bones encourages calcium to move into bones.

4. **Talk to your doctor about having your Vitamin D levels checked—** more and more health care providers are recognizing vitamin D deficiencies and the conditions related to this deficiency.

5. **Supplements can be taken at very low cost—** when Vitamin D levels are low . The supplement should be Vitamin D3. Vitamin D2 is the type of D in mushrooms and does not have as much biological activity.

6. **See www.vitamindcouncil.org -** for more information? This is a website, started and run by a physician, John Cannell, MD, who learned of the benefits of Vitamin D and wanted to help spread the information.