OptiHealth Workshop: The Laws of Health, Part 6

Sunlight (Vitamin D)

The sun is essential to life and health. It not only gives us light, warmth, and energy, but it is also the best source for **Vitamin D** (aka: The Sunshine Vitamin).

Over **40%** of the population is **Vitamin D Deficient**.

When exposed to sunlight, a cholesterol-like compound in your blood is transformed to Vitamin D. Then it is converted to its active form by the liver and then by the kidneys.

Q1: Why do we need Vitamin D?

A: Vitamin D is important in 3 metabolic pathways:

1. As a **vitamin**: Vitamin D **regulates** blood **calcium** levels for maintaining **bone health**:
    a. Prevents **Ricketts** (soft bones) in children
    b. Helps prevent **Osteoporosis** (thin/brittle bones) in older adults
2. As a **steroid hormone: Vitamin D** modulates genes:
    a. Activates good (health-promoting) genes
    b. Suppresses bad (disease-promoting) genes (oncogenes > cancer)
3. As an **antioxidant**: Vitamin D **protects** cells against **free radicals**:
    a. Free radicals are produced during digestion and from exposure to tobacco smoke or radiation
    b. Free radicals play a role in heart disease, cancer, autoimmune disease, and neurodegeneration

Many studies show that sun exposure is **inversely** correlated to cancer rates. **More Sun = Less Cancer!** Except skin cancers, which are usually benign, detected early, and treated effectively.

Q2: How much sun exposure is enough?

A: Most people only need to spend "a short time" in the sun to maintain healthy Vitamin D blood levels.

- One size does not fit all, but 10-30 minutes of sun exposure several times per week is probably sufficient for most people. (Free!)
- Vitamin D production is influenced by season, time of day, latitude, altitude, clothing, skin pigmentation, sunscreen use, passing through glass or plastic, and age.
- Vitamin D is stored during the summer months and is then made available during the winter months.
- Although fat soluble, there is no risk of toxicity. Extra Vitamin D is turned into inactive substances.

Q3: What is the risk of getting too much exposure to sunlight?

A: There are two wavelengths of ultraviolet radiation (sunlight) to consider: UV-A and UV-B.

- UV-A radiation is mainly responsible for causing skin cancers.
- UV-B radiation activates Vitamin D in the skin, but also causes sunburn.
- Most sunscreens block UV-B radiation much more than UV-A radiation.
- Most sunscreens prevent sunburn, but limit Vitamin D production.
- Most sunscreens do not provide much protection against skin cancer.
- **Get multiple <u>brief</u> exposures to sunlight for a total of 20-30 minutes/day <u>without</u> using sunscreen.**

Q4: Does sunlight really make people happy?

A: Many people experience <u>S</u>easonal <u>A</u>ffective <u>D</u>isorder (SAD).

- SAD is a cyclic, usually milder, form of depression that occurs during the winter months.
- SAD can be very disabling: low energy, moody, frustrated.
- SAD is effectively treated using phototherapy (bright light at the proper wavelength = sunlight).
- Phototherapy increases blood levels of Vitamin D and changes brain chemistry (serotonin).
- **Natural sunlight** (and being outdoors beathing fresh air) **is ideal.**

Bonus Q5: Can I get enough Vitamin D from the foods I eat?

A: It is very difficult to get enough Vitamin D from dietary sources, especially for vegetarians.

- Salmon, Sardines/herring, Cod liver oil, Canned tuna, Beef liver, Egg yolks, Mushrooms
- You would need to eat these nearly every day to get enough Vitamin D.
- Some foods are fortified with Vitamin D: Cow's Milk, Soy Milk, Orange Juice, Cereals/Oatmeal

Review: Top 10 Health Benefits of adequate Sunlight/Vitamin D:

1. Support better sleep (serotonin)
2. Improve mood
3. Increase energy
4. Prevent depression (SAD)
5. Prevent heart disease
6. Prevent auto-immune disease
7. Reduce inflammation
8. Prevent cancer (gene modulation)
9. Strong bones
10. Extend life expectancy

In achieving our goal of living to 120, frequent exposure to sunlight is an important habit that we should make part of our healthy lifestyle.