



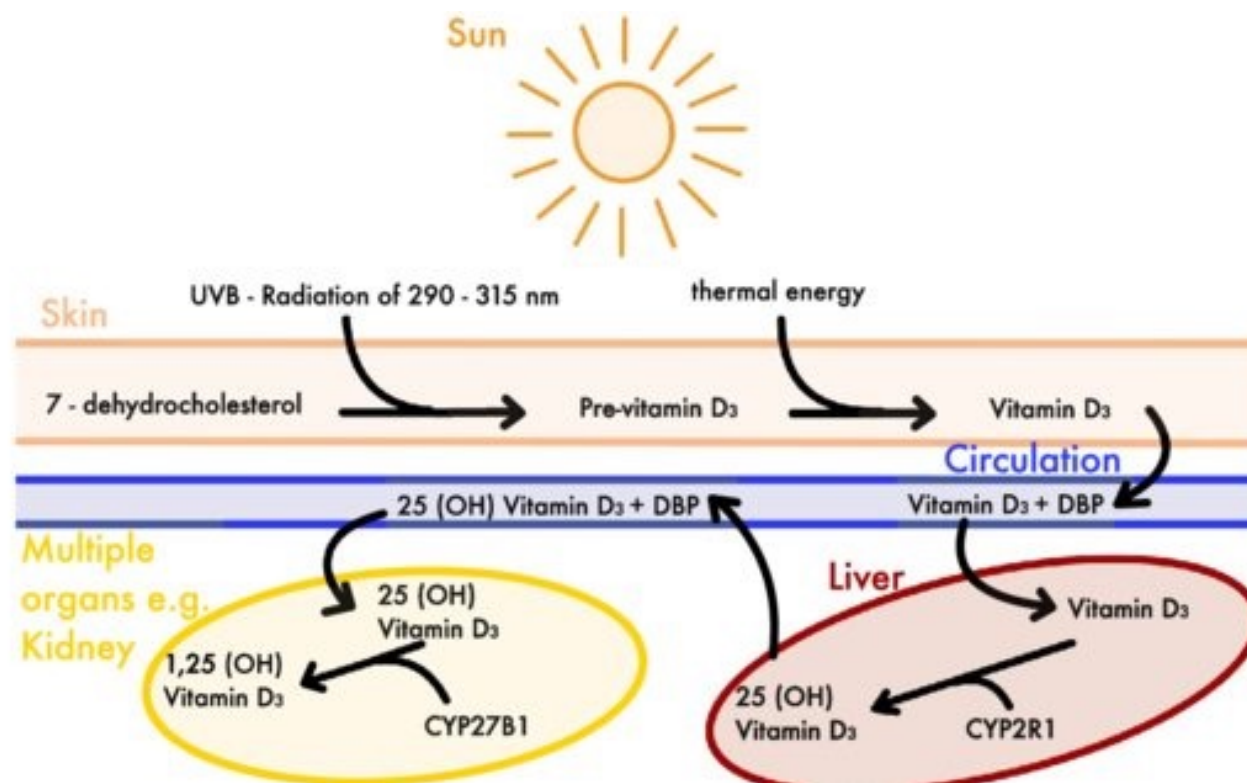
# Whole Body Health

WITH DR. SALEEBY

**FLCCC**  
ALLIANCE

[www.flccc.net/wholebodyhealth](http://www.flccc.net/wholebodyhealth)

# Vitamin D



Not intended as  
Medical Advice

- This lecture is informational only and not intended to diagnose or suggest treatments to any individual listening to this lecture.
- We advise you to seek medical direction with your licensed primary care provider.

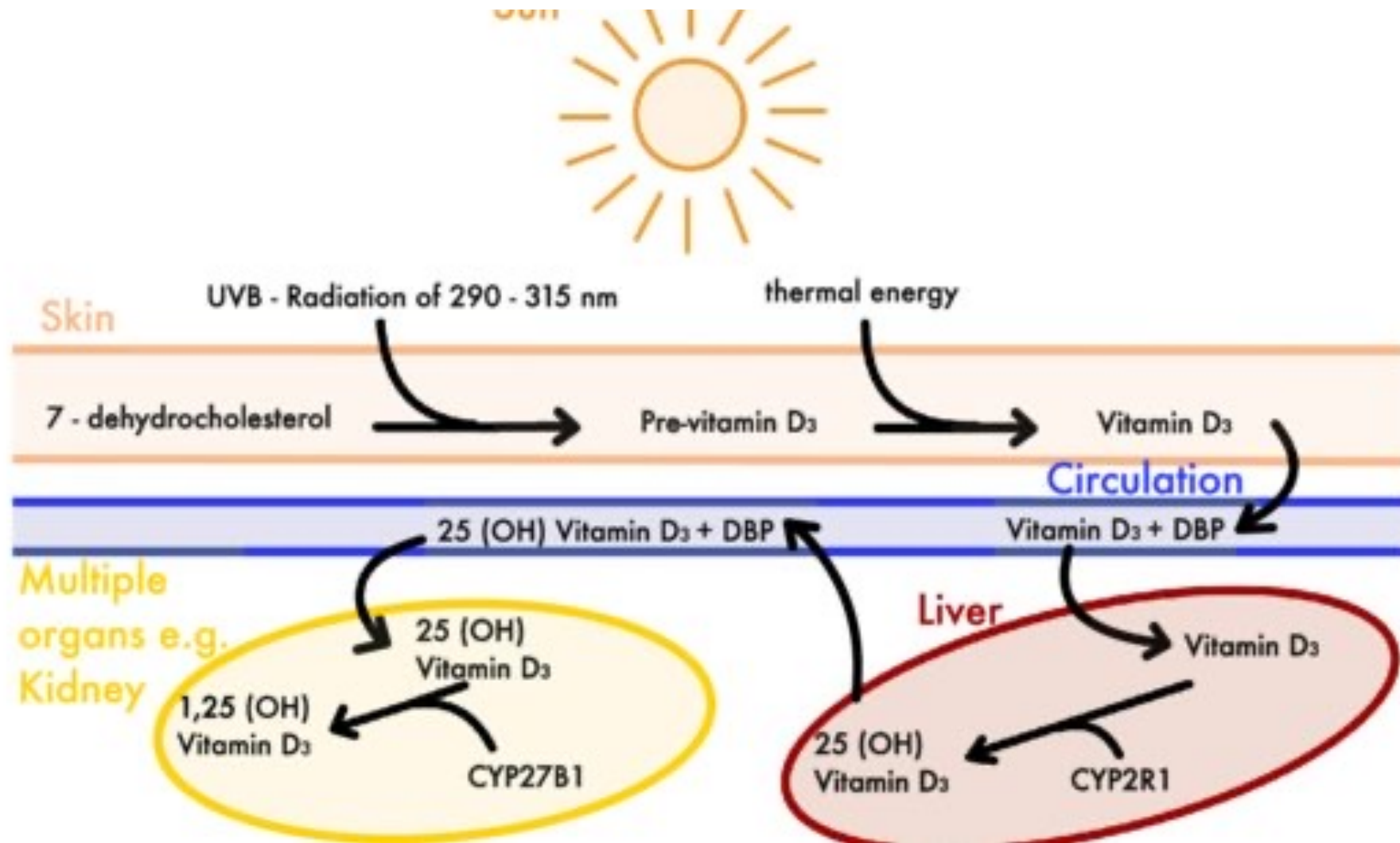
**Seek care with qualified practitioners if you suffer from low Vitamin D (serum)**

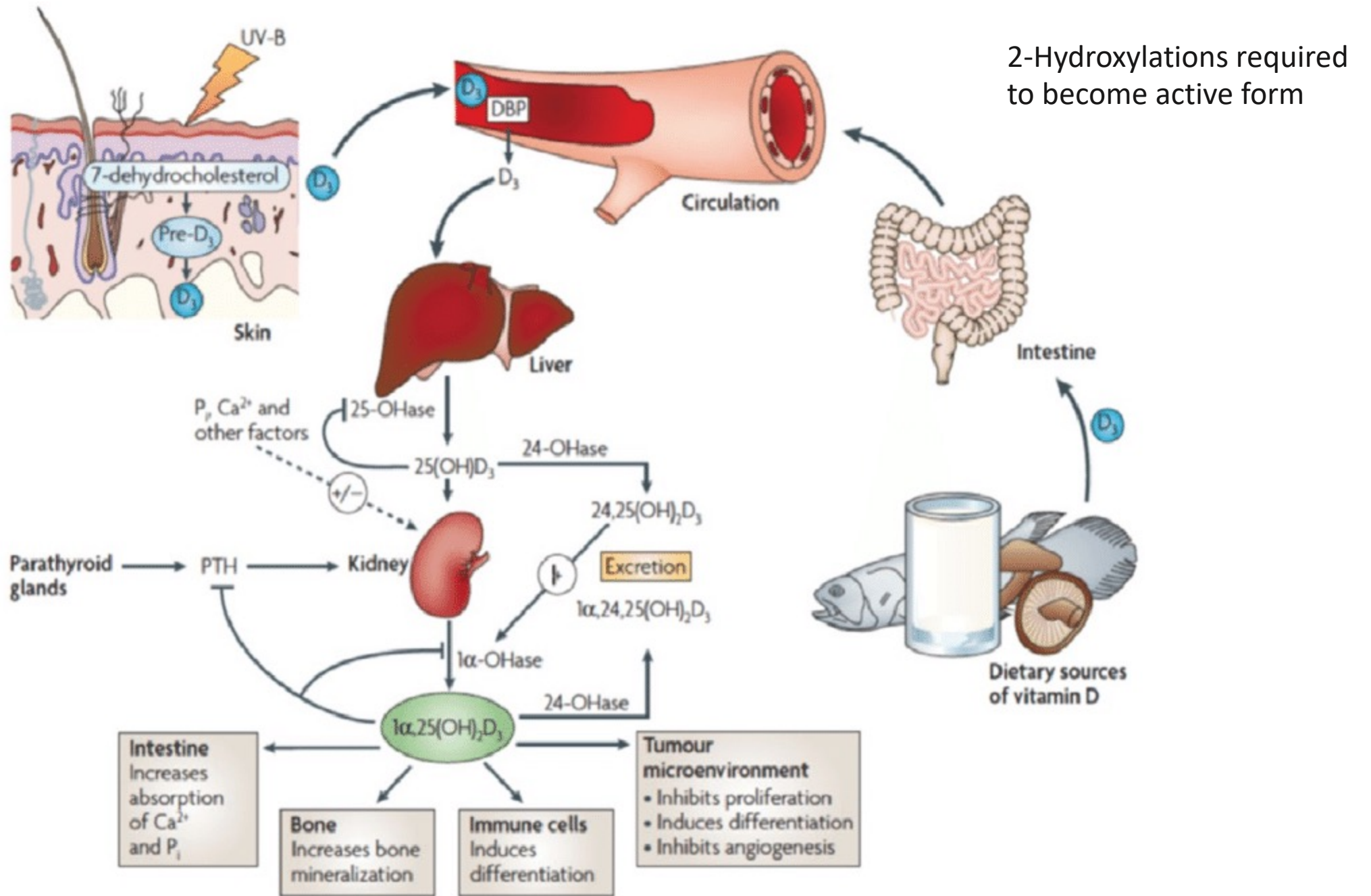
# Learning Objectives:

- What is the metabolism of Vitamin D
  - 1,25-OH-vitD
  - 24,25-OH-vitD
- How do you increase it
- What if any toxicity
- Active and Inactive and how much should you take

**FACT:** 30-minutes in mid-day sun for average White or fair skinned person will yield a serum 25-hydroxy-vitamin D level equivalent to taking 10 – 20,000 IUs of oral vitamin D.

The average Black or dark-skinned individuals may require six-times the sunlight exposure.





cholecalciferol

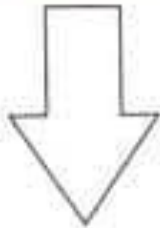
- Vitamin D is metabolized first to 25 hydroxyvitamin D (25OHD), then to the hormonal form 1,25-dihydroxyvitamin D (1,25 (OH) <sub>2</sub> D). CYP2R1 is the most important 25-hydroxylase; CYP27B1 is the key 1-hydroxylase.
- Metabolism of vitamin D is the process of converting vitamin D from the diet or skin synthesis to its active form. Vitamin D is first converted in the liver to 25-hydroxyvitamin D, the main form of vitamin D in the blood. Then, it is converted in the kidney to 1,25-dihydroxyvitamin D, the form of vitamin D that regulates calcium and phosphorus levels. Vitamin D deficiency can cause fatigue, inflammation, and insulin resistance, but its effect on metabolism is unclear.
- Some 25-OH-vitD3 metabolizes to 24,25-OH-vitD3 an inactive form destined for excretion. Little is known about the activity/inactivity of this metabolite AKA as (24R)-hydroxycalcidiol.
- The main consequence of vitamin D toxicity is a buildup of calcium in your blood (hypercalcemia), which can cause nausea and vomiting, weakness, and frequent urination. Vitamin D toxicity might progress to bone pain and kidney problems, such as the formation of calcium stones.



Sheep Wool  
(with an attitude)

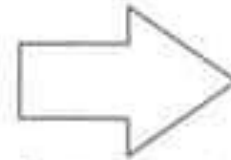


Shave off gently then  
shine a light on the wool

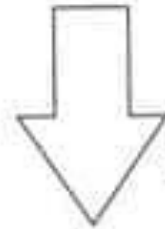


Rub some funk on it

Fishy Fishy Fishy



Squeeze out  
Vitamin D



Squeeze out EPA, DHA  
and a little Vitamin D



# Sources and quantity

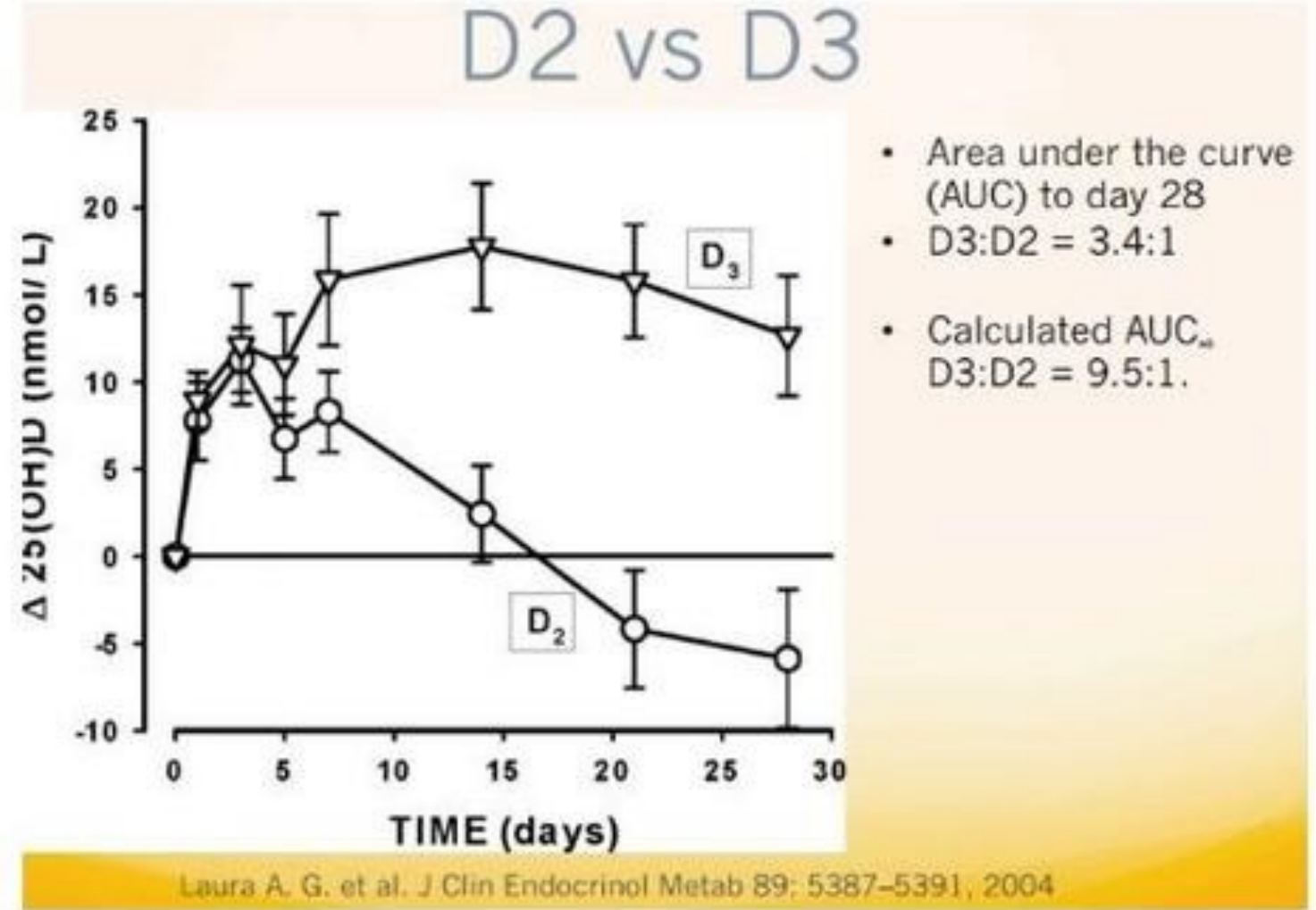
- Fresh Wild Caught Salmon, 3 oz serving: 500 IU
- One can of Tuna fish: 150 IU
- One Organic Egg: 40 IU
- 6 oz of either Milk, orange juice (fortified): ~150 IU
- Cereal/yogurt (fortified): 40-80 IU

## Why D3 is better than D2

D2 happens to be a less expensive way to fortify foods

Prescription vitamin D (Drisdol®) contains 50,000 IU of vitamin D2, dosed once weekly. (?)

Drisdol: \$316 for a supply of 100 capsules  
BioTech D3-50 \$12 for 100 caps



A single dose of 50,000 IU of Vitamin D was given at day 0. The first 3-4 days, Vitamin D2 changes the blood level of Vitamin D the same as D3 does. For about 15 days, there is still a net impact, but after day 16, it is not as effective.

# Impact on Health

- Aids the immune system in preventing sickness
- Aids the immune system fighting infections
- Aids the immune system at preventing and fighting cancer
  
- Works as a messenger (hormone) and affects things from T4 to T3 conversion in Thyroid hormone metabolism (classified as a vitamin but is actually a hormone)
- Works as a messenger with bone osteoblasts to thwart bone loss
- Works with its fat-soluble brother vitamin K

# Hypervitaminosis D

- Vitamin D toxicity
  - May happen if one takes 60,000 IU per day
  - Possibly over 150 nmol/L
  - May cause: nausea, vomiting, poor appetite, constipation, dehydration and dizziness, also elevations in serum calcium, weakness, frequency of urination, renal damage and renal stones.
  
- Best time to take oral Vitamin D is in the morning with a meal (this vitamin being fat soluble should be taken with “fats” to enhance absorption.)

# Sun vs oral supplementation

- One study in Norway found that if White and fair-skinned individuals spent 30 minutes in the midday summer sun—they experienced a rise of 25-hydroxy-vitamin D equivalent to taking 10,000-20,000 IUs (a higher dose);
- This will drop in winter and when individuals are exposed to lower amounts of time in the sunlight.

# Complexion of skin

- Research shows that Black or individuals with dark complexions will have to spend six times (6X) longer in the sun to achieve a similar rise in serum 25-hydroxyvitamin D concentrations.

# Vegan Sources of Vitamin D

- Aside from making your own by sun exposure there are...
- Vit D supplements sourced/derived from lichen
- Mushrooms especially those exposed to sunlight or UV light
- Fortified plant-based milk (soy, almond or oat milk)
- Fortified cereals and orange juice and tofu
- Some food industry companies put in vitamin D2 vs D3
- Vitamin D2 AKA ergocalciferol is a source in plants and also synthetically derived (biosynthesis) in the laboratory.







# Whole Body Health

WITH DR. SALEEBY

**FLCCC**  
ALLIANCE

[www.flccc.net/wholebodyhealth](http://www.flccc.net/wholebodyhealth)

# References in literature (scarce and conflicting)

- [\(1\) \(PDF\) Does vitamin D have an effect on osseointegration of dental implants? A systematic review \(researchgate.net\)](#)
- [www.researchgate.net/publication/359876922\\_Does\\_vitamin\\_D\\_have\\_an\\_effect\\_on\\_osseointegration\\_of\\_dental\\_implants\\_A\\_systematic\\_review](http://www.researchgate.net/publication/359876922_Does_vitamin_D_have_an_effect_on_osseointegration_of_dental_implants_A_systematic_review)
- [www.researchgate.net/publication/320926240\\_Depression\\_and\\_Vitamin\\_D\\_Deficiency\\_Causality\\_Assessment\\_and\\_Clinical\\_Practice\\_Implications](http://www.researchgate.net/publication/320926240_Depression_and_Vitamin_D_Deficiency_Causality_Assessment_and_Clinical_Practice_Implications)
- [www.lifeextension.com/wellness/vitamins/vitamin-d-safe-dosage](http://www.lifeextension.com/wellness/vitamins/vitamin-d-safe-dosage)
- [www.ar.iijournals.org/content/29/9/3495](http://www.ar.iijournals.org/content/29/9/3495)
- [www.ahajournals.org/doi/10.1161/01.hyp.30.2.150](http://www.ahajournals.org/doi/10.1161/01.hyp.30.2.150)
- [www.lifeextension.com/wellness/vitamins/vegan-vitamin-d](http://www.lifeextension.com/wellness/vitamins/vegan-vitamin-d)
- [www.en.wikipedia.org/wiki/24,25-Dihydroxycholecalciferol](http://www.en.wikipedia.org/wiki/24,25-Dihydroxycholecalciferol)
- [www.en.wikipedia.org/wiki/Ergocalciferol](http://www.en.wikipedia.org/wiki/Ergocalciferol)
- [www.pubmed.ncbi.nlm.nih.gov/20200983/](http://www.pubmed.ncbi.nlm.nih.gov/20200983/)
- [www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/vitamin-d-toxicity/faq-20058108](http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/vitamin-d-toxicity/faq-20058108)
- [www.vegetology.com/en-us/blog/lanolin-and-vitamin-d](http://www.vegetology.com/en-us/blog/lanolin-and-vitamin-d)
- [www.drnealsmoller.com/blog/vitamin-d-not-what-we-think-it-is/](http://www.drnealsmoller.com/blog/vitamin-d-not-what-we-think-it-is/)
- [www.drugs.com/price-guide/drisdol](http://www.drugs.com/price-guide/drisdol)