

# Rationale For O-Mega D™

Fundamental to the Wysong Optimal Health philosophy is the fact that we are integrally linked to our genetic heritage. We are what our genetics dictate, not what we impose upon ourselves by modern circumstances we artificially create. This understanding is a master key to health, a heuristic foundation for making decisions about food and lifestyle.

Now then, what does this philosophy say about the sun? Dermatologists tell you to hide from it and modern living would lead us to believe we can do just fine by living in caves – offices, homes and automobiles. But our genetic roots

tell us we should be naked and in a climate where we can be so. That is our origins – and what was the norm for 99.99999999 +% of our history. Should we believe dermatologists and modern lifestyle or our genes and history? The answer is obvious but few live by its wisdom.

This discussion of vitamin D will provide incredible and surprising proof of the Wysong philosophy and give you a fundamental ingredient for your health success.

Seeing the complexity of vitamin D, even if you don't understand it, will make the point that our need for vitamin D is no accident and proves our inextricable link to nature. (For those not technically savvy, just let your eyes glaze over during the hard parts and move on. This is critical information for your health, so stick with it.)

## The Sun Vitamin

Vitamin D (actually a hormone) is manufactured in the skin by the action of ultraviolet light from the sun striking a precholesterol molecule (7-dehydrocholesterol). This converted cholesterol molecule (provitamin D) is further modified (hydroxylated) in the liver and kidney creating the active 1,25 dihydroxycholecalciferol molecule (1,25 dihydroxy vitamin D<sub>3</sub>=calcitriol).

The UV-B wavelength that produces vitamin D from



### PURPOSE:

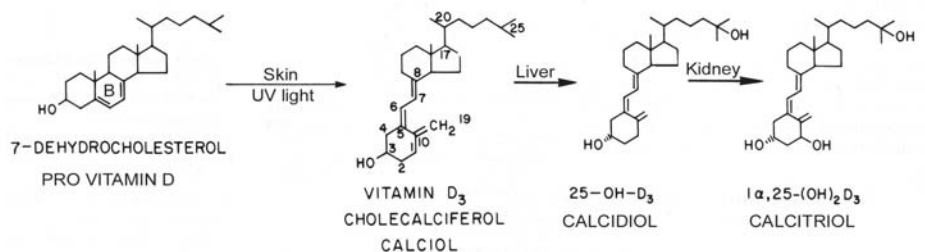
O-Mega D™ is a new and unique supplement providing a concentrated source of natural vitamin D<sub>3</sub> at a dose research is now showing is important for a large part of the population not exposed to regular sunlight. Additionally, two natural sources of omega-3 fatty acids from land and sea help supplement these universally deficient essential fatty acids and borage oil provides omega-6 supplementation.

O-Mega D is tested free of mercury and other organic toxins and stabilized with Wysong Oxherphol™ natural antioxidant. Research has now shown that deficiencies in Vitamin D are not only linked to poor bone health but to cancer and a host of other degenerative diseases. Experts in the field assert that the present RDA of only 400 IU is insufficient and levels in the 3000 to 4000 range and up are necessary for optimal health in many people. If in question as to your vitamin D status it is wise to have blood levels of this and calcium analyzed by a nutritionally competent physician.



### INGREDIENTS:

Each gelcap (1200mg) provides:  
 Vitamin D<sub>3</sub> ..... 1000IU  
 Fish Oil ..... 400mg  
 Flax Seed Oil ..... 400mg  
 Borage Oil ..... 250mg  
 Vitamin E ..... 10IU



When sunlight hits a precholesterol molecule in the skin (7-dehydrocholesterol), the B ring (bottom, second from left) opens up (rupture of 9-10 double bond and 5, 7 signatropic shift) to form Vitamin D<sub>3</sub>. This molecule is then bound by a protein carrier and carried to the liver, and one hydroxyl (OH) in the 25 position is added to form 25-hydroxy Vitamin D<sub>3</sub>. This is the form measured in lab tests on the blood.

In the kidney it is hydroxylated again in the 1 position to form the bioactive, hormone-like compound 1, 25 dihydroxy vitamin D<sub>3</sub>. The level of this final compound is tightly regulated by the endocrine system.

the sun (282 nm) does not significantly penetrate glass. So regardless of windows, when we are inside we can pretty much figure vitamin D is not being generated. Clothing of course further seals our fate as does sun screen with SPF above 8 (reduces vitamin D production by 95%). Living in the northern half of the country (even above 30 degrees latitude, the Florida panhandle) also dooms people to inadequate sun for almost nine months of the year. If you are dark-skinned you will need as much as ten times the amount of sun as a fair skinned person to produce adequate levels of vitamin D. It's unnatural enough when fair skinned people live in latitudes requiring clothes, dark skinned people are really fish out of water there and suffer severe consequences as a result.

Food sources of the vitamin include cod liver oil, sardines, salmon, tuna, mackerel, liver, egg yolk, butter, dark green vegetables, algae, mushrooms, phytoplankton and fortified milk. (Plant source vitamin D is the D<sub>2</sub> form known as ergocalciferol [ercalcio] and is not as active as the animal sources.) But in the main, food sources provide inadequate levels unless they are eaten raw (the triene structure in vitamin D is degraded by acid and light-catalyzed isomerization) and in sufficient quantity – most of us do not do that. Our by and large hairless bodies (forcing us to wear unnatural clothes and dwell in artificially heated environs) and the fact that there is no negative feedback shutting down production of vitamin D in the skin, strongly argues that we are intended to be in the sun, not dependent upon food scientists to fortify milk.

Older folks have decreased ability to synthesize vitamin D in the skin, have poorer digestive efficiency and decreased liver and kidney function to convert vitamin D into the active forms. There is a reason the elderly go south and feel better doing so. They might

not know exactly why other than not wanting to shovel snow, but ole sol does. Also, those people with malabsorption problems, Crohn's disease, cystic fibrosis, pancreatic, liver and kidney disease or deficiency, or who have had part of the digestive system removed are at increased risk of vitamin D deficiency. Vitamin D requires precholesterol and is fat soluble and thus "low fat" diets and "low cholesterol" diets put elderly people already deficient at even greater peril.

Some forms of artificial light (see Wysong Resource Directory) can produce vitamin D in the skin. Tanning salons (not recommended because you do not – and neither does anyone else – really know what you are being exposed to) can produce vitamin D in the skin if the highest UV-B:UV-A ratio is used.

As little as 15-30 minutes of skin exposure (as much as you can bare without getting arrested) to midday sun three times per week is believed sufficient to meet vitamin D needs. The vitamin is fat soluble and is stored in the blood and adipose tissue to create some reserve, but daily sun-synthesized vitamin D is believed optimal.

Pregnant and nursing moms who do not get out in the sun, or have an improper diet, are poor sources of vitamin D for their infants. Not only will the baby's bone health be affected but just about every other health parameter will be as well.

### **The Master Hormone**

Vitamin D is arguably the most important hormone in the entire body. We are taught in grade school that vitamin D enhances the absorption of calcium and phosphorus from the intestinal tract, and that drinking fortified milk will prevent rickets. But bone health is only a small part of the story. Research has now accumulated demonstrating that our link to the sun and the vitamin D it produces touches virtually every

aspect of physiology.

Vitamin D affects:

- > Both autocrine and paracrine (in and out) cellular functions
- > Gene expression
- > Cell growth
- > Immunity
- > Energy metabolism
- > Muscle strength and coordination
- > D receptors which have now been found in the gut, bone, brain, breast, prostate and lymphocytes
- > Neuronal calcium metabolism
- > Neurotransmitter production
- > Apoptosis (cell death) signaling neoplastic colon, breast and prostate cells to stop growing
- > Inhibition of G1S cell cycle checkpoint and the increased expression of cyclin-dependent kinase inhibitors p21 and p27 in cancers
- > Reduction of C-reactive protein (CRP) and interleukins (IL-6), markers of inflammation such as in atherosclerosis (vascular diseases) and arthritic conditions
- > Brain development

In short, virtually no aspect of anatomy, physiology and biochemistry escapes the influence of vitamin D. Our link to the sun is complete and absolute!

This solves a mystery vexing me for years. When I would go south in the winter I would undergo an almost miraculous transformation in health. No sickness, great sleep, incredible energy and high spirits. I could intensify my workouts and lift more weight, and on the same day play two-on-two beach volleyball for hours (not an easy sport for sure), roller blade miles to the beach and to the grocery and back carrying 50 lbs. and still do a full day's

workload of research, reading, writing and exchange with the office. Back home all these wonders would reverse. Was it the warmth, the oxygen-rich air coming off the ocean, the break from the normal work routine? Well now I know. I am a vitamin D-hungry guy. Give me enough vitamin D, and I am almost twice the person I am without it. You might be too. Read on.

### **Choices Have Consequences**

Ignore Mother Nature and pay the price. We are designed to be out-of-doors with the skin exposed to the sun. If we don't do that, one (note, I said just one) of the possible consequences is vitamin D deficiency.

Here are the health consequences of too little Vitamin D discovered so far – all documented in the clinical and scientific references that follow:

- > Psoriasis
- > Immune suppression/increased infection
- > Thyroid dysfunction
- > Blood clotting abnormalities
- > Rickets
- > Osteomalacia
- > Osteoporosis
- > Deafness
- > Insomnia
- > Vision loss
- > Kidney disease
- > Liver disease
- > Muscle pain (an early signal of deficiency)
- > Schizophrenia, chronic fatigue and depression
- > Autism
- > Colon, breast, prostate and 14 other cancers (including melanoma!), following a latitude (vitamin D deficiency) gradient
- > Infertility
- > Type I diabetes (insulin dependent)

- > Obesity
- > Lupus erythematosus
- > Grave's disease
- > Ankylosing spondylitis
- > Bone pain (reduced D decreases calcium absorption, which stimulates parathyroid hormone, which in turn increases phosphate excretion in the urine, resulting in decreased calcium phosphate in collagen in the peri- and endosteum, resulting in hydration, swelling and bone pain)
- > Rheumatoid arthritis
- > Muscular sclerosis
- > Periodontal disease
- > Hypertension
- > Cardiovascular disease (increases in winter and higher latitude)
- > Decreased glucose tolerance and insulin sensitivity

I'm sure that only begins the list. Since vitamin D affects everything, you can pretty well figure that if you are ill or not feeling well it is related to vitamin D deficiency at least in part because well over 95% of the population in the U.S. is deficient.

### **Toxicity**

Let me preface this section as I do every topic where I address toxicity. Anything can be toxic, even water and oxygen, in sufficient dose. The dose makes the poison.

If you are worried about getting cancer from the sun, put your thinking cap on. Believe nature before you believe a dermatologist. Certainly don't get sunburned. Evidence suggests that cancer may be related to those who get sun burned and are vitamin D deficient to begin. Don't stay in the sun longer than you should because you have SPF 460 slathered on. Acclimatize to the sun. Wear clothes. Protect

skin that cannot be covered with non-toxic sun blocks (Wysong Reflector™).

With regard to melanoma, consider that the most common places for it to appear are on the backs of men and inner thighs of women. Not on the back of the hands and the face which are most exposed to the sun. Melanoma does not decrease with the use of sunscreen. Some studies show that increased sun exposure actually decreases the risk of melanoma.

No, the sun is not toxic; it is life- and health-giving in appropriate dose.

There has never been a report of Vitamin D toxicity from sun exposure. So that is the best and safest source. But not everyone can get enough sun so supplements are the next best thing. It is possible to get too much but the margin of safety is immense. The government has set the minimum standard at 400 IU per day. But a person would need to take 42,000 capsules containing 1000 IU each to have a 50% chance of dying if he were as sensitive to vitamin D as the most sensitive animal studied. One man got sick from taking 156,000 IU per day for two years and recovered. One researcher, tired of all the naysayers claiming Vitamin D is so toxic, offered a reward to anyone who could show any toxicity whatsoever to vitamin D at 40,000 units per day. No takers so far.

With that said, certain conditions could increase the risk of toxicity. This would include those with Williams Syndrome (a genetic defect in vitamin D metabolism), sarcoidosis, hyperparathyroidism, some cancers, adrenal insufficiency and people on certain drugs such as thiazide diuretics. Symptoms of overdosage include vomiting, nausea, diarrhea, constipation, polyuria (increased urination), polydipsia (increased thirst), nervousness, confusion, pruritis, calcinosis (deposition of calcium in tissues) and arrhythmia. Most cases involved those who

were taking more than 50,000 IU per day for years. In infants 10,000 IU per day for 4 months and 200,000 IU per day for two weeks has caused toxicity. Why adults would be receiving such large doses is beyond me. Remember, the government standard is 400 IU per day.

If concerned about toxicity of oral supplements, consult with a nutritionally savvy physician. Blood tests that measure vitamin D, calcium and the parathyroid are useful for this purpose. Ideal levels for calcidiol (25-hydroxyvitamin D) range between 30-50 ng/ml depending on the expert. It is known that less than 35 ng/ml will decrease the rate of calcium absorption from the gut so at that level you are questionably deficient. Sunshine alone can cause blood levels of 80 ng/ml. People who work outside or live by the equator have about 50 ng/ml. So I would doubt those laboratories that say levels as low as 8 ng/ml are "normal." If serum calcium is measured above the normal range of 8.5-10.5 mg/dl, particularly in the above-12 age group, this may indicate vitamin D toxicity as well.

I hate to give you the impression that health is achieved by the numbers so to speak. No laboratory ever denies nor proves good health when the body tells you contrary. But I would be remiss in not mentioning the caveats here and the means you can use to be more certain where you stand. My feeling – in the absence of some weird medical or genetic circumstance – is that if you are not getting out in the sun almost daily and not eating appropriate vitamin D-rich foods or taking supplements, you are at high risk for the myriad diseases that can result.

### Supplementation

Opinions vary on oral supplemental doses of vitamin D. The government has recently ratcheted up recommendations from the previous 40 IU to 200 IU for those less than 50 years of age, 400 IU for those over 50 and 600 IU for those over 70. That's the most conservative. Those most knowledgeable in the field say 1000 IU per day for infants and 2000 IU per day for adults with no lab tests and no sun. Next in line are those who say 3000-5000 IU per day (6-10,000 of plant form vitamin D<sub>2</sub>, ergocalciferol) for adults is best, 4000 IU being the most common dose I see suggested. Keep in mind that young whites get about 20,000 IU from a few minutes of full body sun exposure. Some practitioners get aggressive and give what are known as Stoss dosages of 100,000 IU every 4 months in the elderly, to prevent osteoporosis for example.

Cod liver oil is the most concentrated natural source of vitamin D. One tablespoon contains about 1200 IU. Finding that difficult to consume in order to achieve 4000 IU per day and lacking certainty as to the purity and stability of commercial products, we developed our own concentrated supplement tested free of mercury and other organic toxins, mixed with omega-3 fish and flax seed oils, GLA containing borage oil, all properly stabilized with Wysong Oxherphol™ antioxidant. That is what I now take during the fall, winter and early spring when I cannot get the best vitamin D source of all, the sun.

Regulatory agencies governing pet foods set the minimum at 500 IU/Kg of food on a dry matter basis and the upper limit at 5000 IU (i.e. if your pet

eats 1 pound of dry food per day it should get approximately 250 - 2500 IU of vitamin D per day, conservatively). Since you cannot know for sure what is in a commercial pet food (<http://www.wysong.netdontbefooled.shtml>), don't be fooled, the rotation advised in the Optimal Health Program™ is advised. At least periodically (3 times per week) giving 1000 IU capsules (may be opened and mixed with food) is a good insurance policy.

What you do about vitamin D is unlike what you might do about other supplements. This is something you should take very seriously since vitamin D status is, so-to-speak, a marker for how well we are living in tune with nature. Living in tune with nature and according to the way we are genetically designed is fundamental to the Wysong health philosophy I continually preach. Low vitamin D means you are doing things wrong. Like the little canaries in the cages miners would take with them down into the caves to signal by their death that toxic air was present and the miners better skedaddle out of there, our illnesses are the warning signs in more cases than we have previously imagined that we are not living right. Our cave-like modern living is a bane to good health.

The solution is to return to our roots. Roots firmly planted where our health can flower in the sun.

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*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.*

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