Vitamin D Deficiency…What does it mean?

Within all human bodies is the ability to transform outside matter into usable material for movement. Movement is the sole reason for functioning of the body. Everything moves. To and Fro. Collecting Data and Learning to build excellence in movement. The human body is able to take in water, fibers (meat, vegetables, fruits, nuts, etc.), electricity, light and sound and transform it into messages and building materials. Dependent on the environment and cultural practices of certain regions on the planet, the body will adapt and produce functioning that is in tune with its habitat. It will create the ideal conditions within itself to be able to extract the material mentioned above. Some needs will be greater than others according to region. And this is where we tend to forget individual genetic characteristics when it comes to mental and physical health.

Deficiency
a lack or shortage.
"vitamin A deficiency in children"
synonyms: insufficiency, lack, shortage, want, dearth, inadequacy, deficit, shortfall; More

- a failing or shortcoming.
  "they did not like having the deficiencies of their city pointed out to them"
synonyms: defect, fault, flaw, imperfection, weakness, weak point, inadequacy, shortcoming, limitation, failing
  "the team's big deficiency"

We must also pay attention to definitions within the health field as we know it today. The word deficiency when uttered may solidify a defensive and victimized attitude when heard. Or at least, a doubtful mindset about one’s health. As if a spell has been cast, the receiver of news of their deficiency is all too eager to tell others their deficient…but are they? For years I heard we are deficient in vitamin D and that we need to take supplements to improve our condition. It is rarely that I hear from the medical industry to primarily get sunlight and SUPPLEMENT with over the counter vitamin d vitamins. Actually before vitamins should come the food that successfully stored vitamin D within its fibers, which is interesting that beings that are supposedly beneath us succeeded in an area we should excel in.

So in all reality, the sun is the main source of vitamin D conversion of light and nothing else. Why not be at the top of the chain? Especially if its free? However, Nubians are under the impression that they are deficient due to their melanin content. They are told that their Khm (which is where the word or definition called
melanin is derived from) blocks the ability to create the precursor of vitamin D and at same point are told they need to be in the sun longer to produce the levels of vitamin D needed. Ever since this point, I seen and heard our own doctors and learnt men promote this idea. One thing we all missed is that all this, like most things, is based on time-management. Time Management runs society, it is the direct reason why most of us don’t get proper sleep, exercise and food. You would think that it would provide all of these things but time management is not about individual management of time but the management of industry….going to work. Basically everyone is deficient because of their work…not enough time in the rising(what you call morning, for me sounds too close to mourning), too much to do in the afternoon and too late after work. And remember I mentioned that Nubians need more time in the sun? So since, you are time constrained, why not pop a quick supplement? Right…Yet…language is everything.

**How does conversion of light to vitamin D work?**

When sunlight interacts with our skin a form of cholesterol(a fat-like substance used for insulation and creation of cells, also insulation for electrical conduction in nerves) called 7-dehydrocholesterol. Its intelligence absorbs the UVB radiation or rays of Ra, to transform itself into cholecalciferol(a steroid hormone). Steroid hormones help control metabolism, inflammation, immune functions, salt and water balance, development of sexual characteristics, and the ability to withstand illness and injury. – internet google word search

Cholecalciferol travels through your bloodstream to your liver, from here, the intelligence of the liver transforms it into hydroxyvitamin D through a process called hydroxylation.

‘Hydroxylation is the first step in the oxidative degradation of organic compounds in air. It is extremely important in detoxification since hydroxylation converts lipophilic compounds into water-soluble (hydrophilic) products that are more readily excreted. The hydroxylation process involves conversion of a CH group into a COH group. Hydroxylation is an oxidative process. The oxygen that is inserted into the C-H bond is usually derived from atmospheric oxygen (O2). Since O2 itself is a slow hydroxylating agent, catalysts are required to accelerate the pace of the process.’ - wikipedia

Before this point, Cholecalciferol is inert. Hydroxyvitamin D, which is also known as 25-hydroxyvitamin D or 25(OH)D enters the bloodstream and makes its way to the kidneys. The kidney’s intelligence recognizes that one more step is need for sunlight to fully enter the process into becoming bone by way of calcium absorption. Hydroxalation takes place again and Hydroxyvitamin 25(OH)D is transformed into dihydroxyvitamin D, also called 1,25-dihydroxyvitamin D. In this form(remember this), it is ready to enter the final stages into becoming the solidified
structure of light called bone or the skeletal body. The skeletal body is like a tuning fork floating in sea water not only does it help us to conduct motion but also sound.

**What makes us deficient?**
We are deemed deficient due to the nature of the test to determine vitamin D deficiency. The test, at this point, is looking to measure the levels of 25-hydroxyvitamin D. Yet this form is inert and still needs to undergo the process of hydroxylation to be active. While Nubians have lower numbers in the inert form, we have higher numbers of the 1,25-dihydroxyvitamin D, the form that is active...

Here’s why:

"The population in the United States with the best bone health happens to be the African-American population," says Dr. Ravi Thadhani, a professor of medicine at Massachusetts General Hospital and lead author of the study. "But almost 80 percent of these individuals are defined as having vitamin D deficiency. This was perplexing."

The origin of this paradox is a fascinating tale of genes interacting with geography. More on that later.

To unravel the mystery, Thadhani and his colleagues looked closely at various forms of vitamin D in the blood of 2,085 Baltimore residents, black and white. They focused on a form of the vitamin called 25-hydroxyvitamin D, which makes up most of the vitamin circulating in the blood. It’s the form that the standard test measures.

The 25-hydroxy form is tightly bound to a protein, and as a result, bone cells, immune cells and other tissues that need vitamin D can’t take it up. It has to be converted by the kidneys into a form called 1,25-dihydroxyvitamin D.

For Caucasians, blood levels of 25-hydroxyvitamin D are a pretty good proxy for how much of the bioavailable vitamin they have. But not for blacks.

That’s because blacks have only a quarter to a third as much of the binding protein, Thadhani says. So the blood test for the 25-hydroxy form is misleading. His study finds that because of those lower levels of the protein, blacks still have enough of the bioavailable vitamin, which explains why their bones look strong even though the usual blood tests say they shouldn’t.

"The conclusion from this study is that just because your total levels are low, it doesn't mean we need to replace vitamin D" using supplements, Thadhani says. The study was published Wednesday in the New England Journal of Medicine.

The reason people of African descent have far less protein-bound vitamin D is probably related to the geographic origins of the human race. Our earliest ancestors lived near the equator in Africa, where sunlight was plentiful and intense year-round.

Vitamin D is synthesized in the skin when sunlight strikes it. When sunlight is deficient, the vitamin has to come from dietary sources such as eggs and fish oil.
Humans living in sunny climates make plenty of vitamin D on their own. In fact, one reason for the high degree of skin pigmentation in people of African descent is to prevent the synthesis of too much vitamin D, which can be toxic. Early humans didn't need to store up reserves of vitamin D, so they didn't need as much of the binding protein, whose function is to store the vitamin away in a form where it can be used later.

"Everyone who came out of Africa had the ancestral genotype associated with lower vitamin D-binding proteins," Thadhani says. "When humans moved to areas with less sunlight, a different genotype evolved. The further north they went, the more people needed reserves of vitamin D. So D-binding protein levels went up."

And that genetic difference in vitamin D-binding proteins is what researchers have finally figured out. [http://www.npr.org/sections/health-shots/2013/11/20/246393329/how-a-vitamin-d-test-misdiagnosed-african-americans](http://www.npr.org/sections/health-shots/2013/11/20/246393329/how-a-vitamin-d-test-misdiagnosed-african-americans)

Could it be that our khm actually regulates the rate of metabolism of sunlight?

<table>
<thead>
<tr>
<th>Skin Type</th>
<th>Skin color</th>
<th>Skin characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Very fair; red or blond hair; blue eyes; freckles</td>
<td>Always burns, never tans</td>
</tr>
<tr>
<td>II</td>
<td>Fair; sandy or red hair; blue, hazel or green eyes</td>
<td>Usually burns, tans with difficulty</td>
</tr>
<tr>
<td>III</td>
<td>Fair; with any eye or hair color; very common</td>
<td>Sometimes mild burn, gradually tans</td>
</tr>
<tr>
<td>IV</td>
<td>Dark brown hair, green, hazel or brown eyes.</td>
<td>Rarely burns, tans with ease</td>
</tr>
</tbody>
</table>
The table below shows the different skin types:

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</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Dark brown and black hair; brown and dark brown eyes.</td>
<td>Very rarely burns, tans very easily</td>
</tr>
<tr>
<td>VI</td>
<td>Black hair, dark brown eyes.</td>
<td>May never burn, tans very easily</td>
</tr>
</tbody>
</table>


When we show a pyramid or numbering system, usually we tend to think what is on top is dominant. Upon seeing this, you may feel that Type I skin works better with sunlight and vitamin D production. But let’s take a look at this from another perspective. 7-dehydrocholesterol and melanin are both found in the stratum basal and stratum spinosum of the epidermis layer.
It is said that khm blocks the production of vitamin D. However, all this is still based on time.
Industry does not afford you the time to enjoy sunlight the way you need to communicate with it.
Over-production of vitamin D can lead to toxicity which means someone of so-called lower pigmentation, although produces a high amount faster, may also produce too much toxic waste when removing a protein in order to produce the ready form of vitamin D. Just as our atmosphere convert sunlight into warmth, without certain layers there will be too much heat all at once.
Your khm allows you to sit in the sun and slowly re-calibrate your body using heat and sound...yes the sun also translates sound. Everything that is grown is grown subtly and at its own time. It regulates the rate of Vitamin D.

We live in an environment where time is running out...or is it?

How are vitamin D supplements created?
Usually there are two forms of vitamin D supplements that are produced in a factory for it to be consumed in your organic body...or maybe three. A derivative of ergosterol which is not produced by land plants or vertebrates but found in protozoa and fungi.

'Ergosterol' (ergosta-5,7,22-trien-3β-ol) is a sterol found in cell membranes of fungi and protozoa, serving many of the same functions that cholesterol serves in animal cells. Because many fungi and protozoa cannot survive without ergosterol, the enzymes that create it have become important targets for drug.
Ergosterol is a provitamin form of vitamin D₂; exposure to ultraviolet (UV) light causes a chemical reaction that produces vitamin D₂.

Ergosterol is a biological precursor of vitamin D₂, the chemical name of which is ergocalciferol. Exposure to ultraviolet light causes a photochemical reaction that converts ergosterol to ergocalciferol. This happens naturally to a certain extent, and many mushrooms are irradiated after harvest to increase their Vitamin D content. Fungi are also grown industrially so that ergosterol can be extracted and converted to Vitamin D for sale as a dietary supplement and food additive.

Preparations of irradiated ergosterol containing a mixture of previtamin and D vitamin were called Viosterol in the 1930s. - https://en.wikipedia.org/wiki/Ergosterol

As well as Sheep’s Wool –

‘While sampling one of the chewable vitamin D supplements, I did a rush-read on the accompanying literature. There was mention of sheep, lanolin and something called Quali-D. What? A vitamin supplement made from sheep's wool? How could this be?

Well, if you are, as I was, curious to know how Jamieson derives vitamin D from the wool of sheep, read on for the step-by-step explanation I later got from Michael McBurney, Head of Scientific Affairs for DSM Nutritional Products, the company which supplies the ingredient to Jamieson:

"Only vitamin D3 comes from wool from sheep. Some brands use vitamin D2 which comes from non-animal sources and is different from the vitamin D humans can synthesize from sun exposure," he said..

"DSM Nutritional Products’ natural-source Vitamin D3 is sold in crystalline, oil and powder forms. It is derived from lanolin taken from the wool of healthy live sheep living in Australian and New Zealand. An October 2003 Note for Guidance, adopted by the Committee for Proprietary Medicinal Products and the Committee for Veterinary Medicinal Products, states that derivatives of wool and hair from ruminants, such as lanolin, are compliant for use as natural-source supplements provided the wool or hair is taken from healthy, live animals.’ -
‘Vitamin D3 is derived from two places, either fish oil or sheep’s lanolin. Lanolin is a waxy substance that is secreted by glands found in a sheep’s skin. Lanolin helps protect skin against rain or other environmental factors. In order to remove the lanolin from wool, the wool is rolled or squeezed, pushing out a yellowish waxy substance. This wax can then be used as a precursor to the production of vitamin D3. It is also used to soften baseball gloves, produce lip balm, and to make a whole variety of beauty products. In order to make vitamin D3, the lanolin must be purified which results in a substance called 7-dehydrocholesterol, the same precursor of vitamin D found in our skin. Then this substance is converted to D3 via exposure to ultraviolet rays, similar to what happens when our skin is exposed to the sun. The final product is extremely concentrated D3 and must be blended with other materials in order to achieve the proper dosage for human consumption. The lanolin-based vitamin D will usually be in powder or tablet form, as it is dried before being made into a supplement.’

No matter which way you look at it, vitamin D is produced by interaction with the sun.

**In conclusion…**

Now that we explored, a few factors, surrounding our vitamin D health we must move forward and ask questions about testing for health and what health means to us individually and as a people. The language being used is still coming from a European Biology who has different needs. We should also acknowledge that is not about quantity of khm but more so region and cultural expression that produces the necessary amount of khm.

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‘Rise in Excellence’ – DjaDja N Medjay