

13.7: Cosmos And Culture

For Summer's First Full Day: The Science Of Skin Color And Vitamin D

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11:03 am

June 21, 2012

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During a [TED talk](#) in 2009, anthropologist Nina Jablonski told her audience, "You have the evolution of the history of our species, part of it, written in your skin. Understand it, appreciate it, celebrate it. You are the products of evolution."

It's a beautiful thought, and an apt one to consider on this first full day of Vitamin D season, otherwise known as summer. To understand why there's a diversity of skin colors in the world today does connect us to our evolution and illuminates some reasons for [high levels of Vitamin D deficiency](#) in some modern populations.

The human lineage originated, and first flourished biologically and culturally, in Africa. Evolutionarily, each of us is African; the first people had darkly pigmented skin and were thus well-adapted to handle the high levels of UVR (ultraviolet radiation) in equatorial regions.

As Jablonski explains in her talk, UVR has both benefits and costs for the human body. On the plus side, when it strikes the skin it catalyzes Vitamin D, which is essential for bone and immune health; on the minus side, it can cause DNA damage and skin cancers. In ancient Africa, melanin acted as a natural sun screen to protect people from the dangers while still allowing the benefits of Vitamin D synthesis from the sun.

When people from some ancestral populations migrated north out of Africa, they encountered much less intense UVR. The previously adaptive sun screen of melanin was now a disadvantage, and thus lightly pigmented skin evolved. People with light skin in these northern regions spent enough time in the sun that, typically, their skin still synthesized adequate vitamin D, a process helped along in some areas by diets heavy in fish.

What we have nowadays is also a balance of pluses and minuses: A lovely rainbow diversity of skin colors that reflects the map of our ancestors' relatively recent geography, and an unfortunate risk of vitamin D deficiency that comes with spending the bulk of our hours indoors in artificial light.

This topic fascinates me not only as an anthropologist, but also as a person with a new diagnosis (at age 55) of osteoporosis. My Vitamin D level is 23.7, with a level of 30 considered minimal and a level of 50 much better.

All my life it's been drummed into me, *sunscreen, sunscreen, sunscreen*, especially because I am lightly pigmented with blue eyes. Correct in one way, that lesson may have contributed — along with too much time indoors, especially in winter — to the situation I'm in now. I'm seeking a physician's advice, and the Internet helps too, including this jam-packed-with-facts [information sheet](#) about Vitamin D and Vitamin D deficiency from the National Institutes of Health.

We naturally link summer and sun in our minds, yet we need to find ways to ensure adequate Vitamin D intake in all seasons.

At the [15th annual Vitamin D Workshop](#), underway right now in Houston, scientists are sharing information that may help us with that goal. One thing is clear: There's no one-size-fits-all answer regarding the [efficacy of Vitamin D supplements](#) or even sun exposure. As the "skin type, latitude, and season" section of this [Vitamin D Council website](#) shows, adequate sun exposure for Vitamin D synthesis differs greatly according to one's skin type and place of residence.

So today, to usher in summer, I'll try and time my UVR exposure to ensure the right balance for the pluses and minuses written into my evolved skin.

You can keep up with more of what Barbara is thinking on Twitter: [@bjkingape](#)

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