

THE AKHENATON PRINCIPLE

About 3,300 years ago there lived a Pharaoh in Egypt named Akhenaton. He was crowned as Pharaoh Amenhotep IV, but changed his name to Akhenaton to honor the sun god, Aton. (His new name meant, “Aton is Satisfied.”) History books tell us that he was the first leader of Egypt to abandon the complicated polytheism of his ancestors and adopt a simpler type of religion, called monotheism, in which the sun itself was recognized as the absolute ruler of the Universe.

This type of religion preached that everything that lived had its origin, and owed its existence, to the rays of the sun. In art, there was a new turn towards nature, because this showed the power of the sun. A worship of all things solar suddenly became popular.

Over the course of the intervening centuries, the reputation of the sun god –by whatever name he is called--has waxed and waned, like the passing of the seasons. In the medieval and early modern era, sun exposure was considered the blight of the peasantry and was shunned by “people of quality.” We still use the term “redneck” to denote an uncouth or uncultured character.

Then in the 19th and early 20th centuries came the revival of nature worship and a return of the sun to a position of prestige. Many of those alive today remember those days. As a child, I watched in morbid fascination as the elderly ladies of my neighborhood tanned their faces to leather in their imitation of ancient Egyptian practices. In fact, we called these intrepid grannies “sun worshippers.” Any day of the week you could see them lined up in their beach chairs beneath a south-facing wall, an area we dubbed “Little Miami,” in which these well lubricated ladies with their bottles of Coppertone, broiled themselves to a crisp.

Some years later, of course, it was announced that such excessive solar exposure could cause skin cancer, not just basal and squamous cell carcinomas but the highly deadly melanoma. And so most health-conscious people began to shun the direct rays of the sun and to seek light-deflecting clothing and total shade.

Without changing its name, the Coppertone Company switched from being a suntan promoting company to a suntan preventing company. (Coppertone is called a prime example of a brand that delivers exactly the opposite of what its name implies, i.e., a copper-toned suntan.) With the increasing cooperation of the dermatology profession, the sunscreen and sun block business grew into a multimillion-dollar enterprise. Dermatologists, whose organizations and studies are now interlocked with the sunscreen industry, became the scourge of sun worshippers everywhere.

But now, sunlight is once again coming back into favor, although the dermatology profession is vigorously resisting this change. But evidence continues to mount that sunlight may be instrumental in preventing cancer. The action of sunlight on the human skin triggers the formation of vitamin D, and an adequate level of vitamin D has been

shown to be important not only in preventing various kinds of cancer, but also as a brake on its growth and spread, when it does occur. A June 15, 2005 study in the journal *Cancer Research* found that the risk of prostate cancer was reduced by a full 50 percent in men who had high levels of sun exposure during their lifetimes, compared with men who had low lifetime levels.

“A risk reduction of 50 percent is quite large, given how little is known about what men can do to prevent prostate cancer,” said the co-author Dr. Esther John of the Northern California Cancer Center.

Another paper about to be published this fall in the *Journal of Steroid Biochemistry and Molecular Biology* will report general agreement that vitamin D deficiency is associated with a higher incidence of cancer (and several other diseases), and that the vitamin D-derived hormone can decrease the proliferation of cells and control malignant cell growth.

Using a device called a reflectometer, the researchers measured skin tone in 426 men who had advanced prostate cancer and 455 cancer-free men, and then compared their unexposed underarm skin to sun-exposed skin on the forehead. They found that the darker a man’s skin pigmentation (i.e., a measure of sun exposure), the less likely he was to develop prostate cancer.

This is a major development that is coming not from the edges of medicine, but from its core—at some of the top cancer centers of the world. The news is so positive that one sense’s trepidation in dealing with it. In particular, experts seem afraid to publicize this lest the public rush out and overdose on the sunlight treatment.

The National Cancer Institute’s *Bulletin* (June 28, 2005) has published an unsigned article on vitamin D, sunlight and cancer that, while good in some particulars, repeats the dermatology “party line” on sun exposure.

The article, entitled “Sunlight and Cancer: Testing the Vitamin D Hypothesis” is more positive on the usefulness of vitamin D than some previous statements. It concedes, “Some researchers are now investigating whether vitamin D may have a role in preventing or treating cancer.”

The evidence that vitamin D may reduce cancer risk is based upon two main factors: (1) population-based studies, such as in the above mentioned prostate study, showing that people who have higher levels of vitamin D have a reduced risk of the disease, and (2) biochemical studies showing that vitamin D, when converted into its hormonal form, promotes the normal growth of cells and therefore has anticancer properties. As the article notes, there is now “general agreement” among experts that “vitamin D deficiency is associated with a higher prevalence of cancer (and several other diseases), and that the vitamin D hormone can decrease the proliferation of cells and control malignant cell growth” (NCI 2005).

These are very important findings and, if confirmed, are among the most promising discoveries made in the course of the war on cancer. But in practical terms, what should NCI and other health agencies do as a result of this finding?

The most obvious course would be to intensively study the effects of natural vitamin D on metabolism, especially in regard to prevention. As to public health recommendations, it may be that a moderate exposure to sunlight can prevent a good many internal cancers and also keep small existing tumors—not just prostate cancer—from taking hold and from metastasizing (spreading) to other organs.

The advantages of the natural approach are that sunlight is abundantly and readily available and always free of charge, and therefore accessible to people of all countries and socioeconomic classes. It only “costs” one the time required to get adequate sun exposure. Prof. Michael Holick of Boston University has suggested that in the winter people at the latitude of Boston set-aside 15-minute sessions twice per week during which they should expose their heads and arms to sunlight without the protection of sun blocks or sunscreen. This innocent-sounding proposal has in fact caused a firestorm of controversy, as a result of which Holick lost his dermatology position at Boston University.

The leadership of the dermatology profession has taken the inflexible stance that “no amount of sun exposure is safe because ultraviolet radiation can cause skin cancer” (NCI 2005). Conversely, they claim, “the amount of vitamin D that might help prevent cancer, if any, is not known.” The solution proposed by the dermatologists—and reported without further comment by the NCI—is that people taken vitamin D supplements.

It does not seem odd to them that sunlight, life’s source and its constant nurturing companion through three billion years of evolution, could be so dangerous that no level of exposure to it is deemed safe. In their brave new world, they would have us dash from our homes or offices to our cars slathered with SPF 50 lotion and covered by UV Protective Clothing. At the risk of offending an entire medical specialty, I think these people literally need to get out more!

“If you want to increase your vitamin D levels, the safest way is to take supplements,” says Dr. Sue Ingles of the University of Southern California, who co-authored a new study on sunlight and advanced prostate cancer among men in San Francisco. Even a few minutes of sunlight at the latitude of San Francisco or Boston is apparently a cancer risk.

“It would be profoundly important for public health if vitamin D could prevent some prostate cancers,” Dr. John’s co-author Dr. Gary G. Schwartz of the Wake Forest University Comprehensive Cancer Center in North Carolina, admits. “Vitamin D is safe, inexpensive, and available, and there's no need to get it from sunlight.”

There is something disconcerting in this sudden enthusiasm for vitamin supplements on the part of the dermatologists. In addition, for the profession to claim on the one hand “the amount of vitamin D that might help prevent cancer, if any, is not known,” and on the other to urge us to take supplements, seems to me to be a glaring contradiction.

Furthermore, this has to be one of the few times that the medical profession has urged people to take a supplement and avoid the dominant natural way of attaining an essential nutrient. Usually, they oppose supplement use and insist that people get their micronutrients only through their standard diet (which is often an inadequate source of nutrients). Because of this opposition, and the media’s slavish acceptance of the party line, it will take some years before the profession reverses itself and accepts the benefit of moderate sunshine. It was sad to see the New York Times powerfully reinforced this notion with a story headlined “Sunbathing for Your Prostate? Don’t Bother” (Bakalar 2005).

Call me an intemperate fool, but I just don’t buy this brand of photophobia. In the winter, my body craves the caress of sunlight, and while I am not about to get blistered now that summer is here, I do enjoy the sensation of sun on skin and fully intend to soak up some rays now that summer is here. Vitamin D supplements may have to suffice during the winter doldrums, when going outside is often an exercise in self-torture. But summertime means fun in the sun, no matter what dermatologists say.

Deltanoids

The NCI (ever the willing ally of industry) has taken this newfound enthusiasm for supplements one step further and embraced the development of vitamin D analogs for cancer treatment. “Many pharmaceutical companies are interested in developing the vitamin D hormone or analogues for use in cancer treatment,” said Dr. Anthony Norman of the University of California, Riverside, who is a leader of the Vitamin D Workshop, a group of researchers that meets every three years. The group cosponsored a three-day meeting on vitamin D and cancer at NCI last November, where participants stressed the need for a new analysis of all of the studies, both positive and negative, on vitamin D and cancer risk. But there is precious little interest in exploring the anticancer properties of plain sunlight or inexpensive dietary sources of vitamin D.

An analog is a molecule that looks like, but is slightly different from, the natural molecule. Even small molecular changes can have important differences from the original molecule, both in terms of efficacy and adverse effects. The manufacturing of analogs requires the intervention of a laboratory or pharmaceutical company. Not coincidentally, such unique chemicals can be patented for 20 years and the ensuing monopoly can thereby become the basis of a bestselling drug. That is how a perfectly natural and inexpensive item turns into a very expensive drug.

Some such analogs (as a class called Deltanoids) are as follows, listed with the organizations that have promoted investigation of these products:

1 alpha-hydroxyvitamin D5 (University of Chicago)

EB 1089 or Seocalcitol (LEO Pharma, Ballerup, Denmark)
ILX 23-7553 (Medical College of Virginia)
KH-1060 (LEO Pharma, Ballerup, Denmark)
QW-1624F2-2 (Johns Hopkins/CCS Associates)

This topic was also discussed at a conference on “Vitamin D Analogs in Cancer Prevention and Therapy,” which was held in Lübeck, Germany, in May 2005 and was organized by Jörg Reichrath and others.

Some scientists at that meeting vocally told the advocates of vitamin D analogs that “they should first make sure that cancer patients are replete in vitamin D before testing analogs on them,” according to William Grant, PhD, director of the SUNARC.

Dr. Grant also summarized the recent Harvard University reports by Drs. Edward Giovannucci and Wei Zhou showing that “plain old garden variety vitamin D from solar UVB and oral intake had already been shown to double the survival rate for non small-cell lung cancer and was more highly correlated with cancer mortality rates than with incidence rates” (Grant 2005).

To the best of his recollection, he says, none of the speakers reported any success with humans in reducing cancer mortality rates using vitamin D analogs. One compound, EB 1089, has shown that it can increase the effectiveness of radiation therapy in mice (Sundaram 2005).

In fact, one can get vitamin D in one of four ways (1) diet (2) supplements (3) solar ultraviolet-B exposure (UVB) and artificial UVB (or sunlamps). One can make the choice based on life style considerations. For myself, I choose to get my vitamin D as much as possible through periodic sun exposure. I increase my antioxidant intake to ward off sunburn and trust in a healthy life style in general to prevent basal cell or squamous cell cancers. But I wear protective clothing in the summer and will use a good titanium-based sunblock if I expect to be out in the sun for extended periods.

I hear the anguished pleas of the dermatologists to totally avoid sun exposure, but I remain unmoved. I agree with the Akhenaton Principle that the sun is the source of all life. Frankly, I’ll take my chances on moderate solar exposure, making sure that I also keep my antioxidant levels high to protect me from free radical damage. Gather ye sunbeams while ye may!

References

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