



Living in the Sunlight

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Sunlight on the skin feels warm and good and looking at a sunlit landscape stimulates a special set of sensors in the retina of the eye (besides the rods and cones that send the data stream of vision to the occipital lobe). These special sensors send impulses through several relay stations to the pineal gland in the center of the brain where they stimulate the production of serotonin which make one feel calm and peaceful and later that night some of this serotonin will be converted to melatonin which will induce sound sweet sleep naturally and as it circulates through the body will set the circadian rhythm for all of the other glands in the endocrine system keeping the entire body coordinated in its hormonal physiology. But recent extensive research is now bringing to light even more powerful health benefits of sunlight – all of them mediated by **vitamin D**.

As the sunlight penetrates through the skin it triggers the transformation of cholesterol into vitamin D. A sunbath for half an hour will drop your cholesterol level about 10mg and will produce about 50,000 units of vitamin D. (Black skin can require up to 10 times the exposure as White skin to make the same level of vitamin D.) While it has been known for a long time that vitamin D is essential for the absorption of calcium and the building of strong bones we are now finding that that is only one of many powerful actions of vitamin D in the body.

Osteoporosis (*the collapse of the human skeleton is the major incapacitating force in this country*)

Calcium supplements do not build bones and probably contribute to increased calcification of the arteries and other tissues in a pathological way. And whatever you do – don't drink your milk! The only people who get osteoporosis are people who drink milk. Countries of the world

that do not have milk do not have osteoporosis and as the consumption of dairy products increases so does the incidence of osteoporosis. In the US the consumption of dairy products is very high and virtually everyone is developing osteoporosis by middle age. Many factors are essential to the development of strong solid bones including several hormones, a balanced diet, boron, phosphorus, strontium, weight-bearing exercise and **vitamin D**.

Vitamin D deficiency *(an increasing and serious health risk factor in this country)*

For several decades now doctors have carried on a campaign to prevent skin cancer by strongly recommending avoiding sun exposure and the heavy use of sunscreens. And the result of all this prevention is that incidence of melanomas is dramatically increasing rather than decreasing. Blocking out the ultraviolet-B from sunlight is making us very deficient in vitamin D which we now know is a very powerful inhibitor of cancer growth and development. So in our human wisdom we hide from God's sunlight and inadvertently we make ourselves very susceptible to all forms of cancer including the deadly melanomas. Many forms of cancer are associated with low vitamin D levels and there have even been studies showing dramatic tumor regression in response to vitamin D in some kinds of cancer.

Vitamin D not only controls calcium absorption from the gut it also regulates calcium usage in every cell of the body – especially the brain. It protects the immune system and regulates cell growth and death. The exact amount of calcium is essential for muscle contraction and for every nerve impulse in the nervous system. Vitamin D provides antioxidant and antiviral benefits. The vitamin D content of foods is minimal and we need sunlight to create the proper levels of this powerful regulator of cellular function. In America vitamin D deficiency is becoming a very serious health problem.

The Brain *(vitamin D is a neurohormone)*

Every cell in the brain has vitamin D receptors on the cell membrane and in the nucleus of the cell. Vitamin D plays a crucial role in brain development both before birth and during childhood. Low levels during pregnancy can result in permanent behavior problems and more significant deficiencies can result in serious brain development abnormalities. In controlled animal studies prenatal vitamin D deficiency resulted in hyperactivity of the brain as seen in

ADHD and autism. Other cellular and brain growth factor similarities to autism have been documented.

Another prenatal effect is that the baby's brain becomes oversensitive to the harmful inflammatory effects of vaccinations and infections. A vitamin D deficiency in childhood or as an adult will have a similar effect where the microglia in the brain can become overly active resulting in brain autoimmune reactions or cancer development in response to infections or vaccinations. Good vitamin D levels will calm down these microglia to normal activity levels thus giving a degree of protection against these inflammatory insults. Vitamin D has been shown to protect the brain against many toxins like mercury and pesticides.

The aging brain is an inflamed brain and the elderly frequently have very low vitamin D levels as they are house bound and avoid the sun. Vitamin D also reduces harmful levels of nitric oxide which can form the brain destroying substance called peroxynitrite. Peroxynitrite is found in high levels in the brains of people with Alzheimer's dementia, Parkinson's disease and many other neurodegenerative disorders. These are all brain inflammatory disorders.

High levels of stress cause high levels of cortisol which can cause excitotoxic damage to the limbic system (hippocampus and amygdale) which is important for memory and for emotional moods. These structures have a very high density of vitamin D receptors and good vitamin D levels can have a protective effect here as well.

Autoimmune diseases and infections

Vitamin D has been shown to switch the immune system from an inflammatory state associated with most autoimmune disorders to a condition that inhibits immune disorders. Low vitamin D levels are associated with rheumatoid arthritis, multiple sclerosis, Crohn's disease, thyroiditis, irritable bowel syndrome, and many more autoimmune diseases.

Vitamin D supplementation

If you cannot get adequate sunlight in the winter or in the more northern latitudes or due to an indoor occupation supplementation with vitamin D3 is recommended. Vitamin D comes in many forms but it is the D3 form that is best absorbed and utilized by the cells. 2000 units/day should be good for healthy individuals. For those with autoimmune diseases, the flu or other

viral infections or other possibly vitamin D deficiency related illnesses 5000 units/day may be more beneficial. No toxic effects have been noted at up to 10,000 units/day of supplementation. Sun exposure can provide 50,000 units and God designed this production to be so regulated in the body that toxic levels are never produced by sunlight.

How can we get the benefits of sunlight without the aging and damaging effects of the sun's rays? Sunlight can create oxidative damage in the cells of the skin and high levels of antioxidants are needed to protect against this damage. The American diet of refined foods is very deficient in antioxidants and thus the skin is totally unprotected but when we switch to God's Eden diet of only whole plant foods we will after a time have cells made up with high levels of antioxidants protecting us against the damaging effects of the sun.

It is interesting to note that Ellen White in her visions of heaven and other worlds frequently commented on the brightness of the light there compared to this dark world. The diet of heaven protects against the light of heaven. Now is the time to learn to appreciate that diet here and receive the benefits here of God's sunlight. "You are all the children of the light and children of the day."