Vitamin D deficiency is now recognized as a worldwide epidemic. Here’s a shocking fact: medical experts will tell you that 75% of Americans are lacking in Vitamin D (Krebs, 2009). Mounting scientific evidence exists that connects Vitamin D deficiency with an increased risk of several deadly cancers, bone diseases, autoimmune disorders, heart disease, mental health disorders, and diabetes (Lucas & Ponsonby, 2006). The major source of Vitamin D for humans is sensible sun exposure. Yet, current public health messages on sun safety overemphasize the importance of sun avoidance, focusing on the adverse consequences of excessive exposure to ultraviolet radiation (UVR). Minimal attention is placed on the beneficial effects of sun exposure on human health, however. Education and greater awareness of the dangerous consequences of Vitamin D deficiency is needed. Maintaining current sun avoidance policies while supplementing food with Vitamin D is not sufficient. The public health message on optimal sun exposure needs revised. Safe sun exposure should be encouraged, placing attention on the critical role of Vitamin D in the human body.
Vitamin D deficiency is now recognized as a worldwide epidemic.

Introduction

Vitamin D, the “sunshine vitamin,” is taken for granted. Minimal attention is placed on its important role in child and adult health, and consequently, Vitamin D deficiency has grown into a worldwide health problem. Vitamin D deficiency is considered a silent epidemic for a very good reason – most people aren’t even aware it exists. The silent epidemic of Vitamin D deficiency is a contributing factor of many chronic debilitating diseases. Overwhelming scientific evidence suggests that maintenance of an adequate Vitamin D status plays a critical role in the prevention of a wide variety of deadly cancers, bone diseases, autoimmune disorders, heart disease, mental health disorders, and diabetes (Lucas & Ponsonby, 2006). For more than forty years, the government has broadcasted the unchallenged message that all humans should avoid direct sun exposure, liberally apply sunscreen, and wear protective clothing when outdoors (Holick, 2008). This sun safety message still penetrates the general public and health care professionals today. Yet, the main source of Vitamin D for humans is sensible sun exposure. We have an imbalance. Clearly, the underlying suggestion implies that Vitamin D deficiency is not a major health risk. Public health officials and physicians in the United States need proper education on the negative impact of insufficient sun exposure. With Vitamin D deficiency present in more than 75% of Americans (Krebs, 2009), a reevaluation needs to take place on the current public health message and optimizing Vitamin D levels for human health. The government’s recommendation for the avoidance of all sun exposure has placed the world’s population at risk of Vitamin D deficiency. Current sun protection messages are too strong. Increasing the body’s Vitamin D levels through safe sun exposure could help prevent diseases that claim nearly one million lives worldwide per year. After the widespread promotion of sun safety, we must refine public health messages in order to optimize the balance between healthy sun exposure and Vitamin D requirements.
The light from the sun is indispensable from nature and humans. We need sunlight for health and happiness, for ecstasy and energy. The incredible healing powers of the sun have been known for centuries. The earliest writings from the Egypt, Arabic, Roman, and Greek Physicians prove that cultures around the world worshiped the therapeutic qualities of sunshine. These ancient records reveal how the sun was prescribed as a treatment for several illnesses and to enhance a person’s overall health. By the 1600’s however, clothing became a norm, skin was covered, sun was avoided, and rickets was prevalent. During the Industrial Revolution, indoor factory work became common and rickets emerged as a disease of working class children. As the 20th century dawned, phototherapy represented a popular medical treatment for ulcers, wounds, tuberculosis, leukemia, gout, and diabetes (Lucas et al, 2006). In the early 1900’s, the link was discovered between rickets and the sunlight-derived factor, Vitamin D. The first reports of an association between sun exposure and skin cancer from dermatology journals in the late 19th century attracted little attention. But shortly after, the US Public Service began issuing warnings about sun-induced health risks in 1932. Over the next 30 years, the skin cancer hazard of sun exposure became well acclaimed (Lucas et al, 2006).

The United Nations (UN), in collaboration with the World Health Organization (WHO) got involved in 1992 by launching INTERSUN, the Global UV Project. The project’s mission is to reduce the burden of disease resulting from harmful sun exposure. Sun protection campaigns started providing advice to schools and the community on how to protect children from the sun’s damaging effects (Lucas et al, 2006). Current public health messages on sun avoidance policies, taken directly from the Center for Disease Control and Prevention’s (CDC) website, are as follows:

1. Use sunscreen with Sun Protective Factor (SPF) 15 or higher liberally, and reapply every 2 hours, or after working, swimming, playing, or exercising outdoors.
2. Wear clothing to protect exposed skin.
3. Wear a hat with a wide brim to shade the face, head, ears, and neck.
4. Wear sunglasses that wrap around and block as close to 100% of both UVA and UVB rays as possible.
5. Seek shade, especially during midday hours.
Speaking in more familiar everyday language, these messages translate into, “slather on this sunscreen or you’ll get cancer,” and “cover up, don’t you know the sun can kill you?” You hear these words over and over, and they’ve been handed down for decades now, from your grandmother all the way to the person reporting the nightly news. Americans are frightened of the sun. But wait, isn’t the sun nature’s greatest gift of life-giving power? Very recently, arguments against these current public health messages have begun to circulate. There is growing recognition that adequate sun exposure is essential for maintenance of Vitamin D levels. A 2005 position statement from the Cancer Council Australia signifies the first national stance on recognizing the importance of balance in recommendations about sun exposure. WHO is in the process of addressing the issue of whether current sun protection messages are too strong. A revision has yet to be embraced by official government organizations, however (Lucas et al, 2006).

**Market Drivers**

The major cause of vitamin D deficiency is the lack of appreciation that sun exposure in moderation is the major source of vitamin D for humans. You, your family, friends, and co-workers may be at serious risk for a whole host of chronic and debilitating illnesses. Why? Because you’re not getting enough Vitamin D. And now you’re thinking, “but I drink milk and orange juice fortified with extra Vitamin D.” What you’re not being told is that food sources and supplements are not the best forms of Vitamin D for your body. If adults and adolescents regularly avoid sunlight exposure, research indicates a necessity to supplement with at least 5,000 IU of Vitamin D daily. To obtain this amount from milk, you would need to consume 50 glasses! With a multivitamin, more than 10 tablets would be necessary (Mercola, 2008). Neither is realistic or advisable. Your body makes the “sunshine vitamin” naturally when exposed to sunlight, and you derive major benefits that are independent of the benefits derived from food and supplements. The skin produces approximately 10,000 IU of Vitamin D in response to 20–30 minutes of summer sun exposure, which equates to 50 times more than the US government’s recommendation of 200 IU per day! (Vitamindcouncil.org). In addition, the skin amazingly prevents Vitamin D toxicity. Once you make
about 20,000 IU, the same ultraviolet light that created the Vitamin D begins to degrade it. A steady state is reached that prevents the skin from producing harmful levels. This is why no one has ever developed Vitamin D toxicity from the sun, though it is possible when taking Vitamin D orally (Vitamindcouncil.org).

Vitamin D deficiency is highly prevalent in adults over the age of 65 years. It is also very common in postmenopausal women, with a multinational study of 18 countries showing deficiency in two-thirds of women. Furthermore, and least expected, Vitamin D deficiency is widespread in children as well. Over one-third of young adults have a vitamin D level below normal, despite frequent use of multivitamin supplement, consumption of fortified foods, and eating fish at least once a week (James, 2008).

Vitamin D follows one of two pathways once manufactured by the skin. The first pathway takes priority, as your life literally depends on it. The kidneys secrete Vitamin D into the blood supply in order to maintain blood calcium levels. When blood calcium levels fall, illness sets in. The leftover Vitamin D goes down the second pathway, which leads to your tissues, directly to your cells. All of the amazing health benefits of vitamin D discovered in the last 10 years are from this second pathway. In targeting over 2,000 genes in the human body, Vitamin D plays a vital role in preventing at least 17 varieties of cancer, heart disease, stroke, hypertension, autoimmune diseases, diabetes, depression, chronic pain, and osteoporosis (Vitamindcouncil.org). This list is so long because Vitamin D actually regulates cells, systems, and organs throughout the body. It works by turning your genes on and off, a very important fact that distinguishes Vitamin D from any other vitamin. It’s a hormone. It’s in a class by itself. Health investigators and doctors have observed that where there’s less sun, there’s more cancer, flu, and even autism. For example, increased rates of these diseases exist during the winter months when there’s less sunlight. More of these diseases also exist the further you travel from the equator. Scientific research reveals an obvious connection between Vitamin D deficiency and these chronic, debilitating diseases (Holick, 2005).

An additional consequence of avoiding harmful sun exposure could amount to a reduction in physical activity. School, work, and recreational activities are typically held outdoors between the hours of 10:00 and 4:00. Current sun protection messages may, thus, indirectly increase health risks related to physical inactivity such as obesity and cardiovascular disease.
Primary Solution

Remember, our ancestors lived naked in the sun for several million years. Then 50,000 years ago, some of us migrated north and south to places with less sun. Then we put on clothes, started working inside and living in cities where buildings blocked the sun. Then we started traveling in cars instead of walking, or riding horses, and glass blocked even more of the UVB in the sunlight. Then, only a few years ago, we started actively avoiding the sun and putting on sunblock. All this time, we have steadily been reducing the levels of Vitamin D in our bodies. The most significant reductions in sunlight exposure occurred after the Industrial Revolution, when cardiovascular disease, diabetes, and cancer rates seemed to greatly increase in number (Mercola, 2008). Pretty terrifying when you think about it.

So, here's my solution. For a person with moderately fair skin, exposure of hands, face, and arms for 10 minutes during the midday hours is sufficient to maintain Vitamin D concentrations in the normal range. There is absolutely no reason why anyone in the world should suffer from a lack of Vitamin D when the simple solution is natural and free, and incorporates spending just a little time outdoors. I'm not saying you shouldn't be careful; keep your time in the sun moderate. The sun is a very powerful source and repeated over-exposure can cause harmful and dangerous damage to your skin. I caution you to have healthy respect for the sun's rays, but don't eliminate it from your life completely.
Stop living in the dark and speak out against the myth of the deadly sun.

Conclusion & Call to Action

Your body is a system that naturally makes thousands of units of Vitamin D in minutes from sun exposure. We have a government, on the other hand, saying avoid the sun at all costs. This entire problem, when you think about it, is completely absurd. Yet the government has refused to look at the evidence for over ten years.

I hope to leave you thoroughly educated and enlightened after reading this paper. Imagine this. The annual report on cancer-related deaths has just been released. You hold your breath in anticipation of the terrible news. But wait, how many deaths in the last year? Instead of an incline in numbers, you see, for the very first time, a drastic decrease! And by drastic, we’re talking thousands! This picture seems like a miracle. By spreading our new knowledge about sun exposure and Vitamin D however, this picture will soon be reality. Stop living in the dark and speak out against the myth of the deadly sun. The longer you wait, the longer we may be at risk for serious health conditions that can easily be prevented. Pick up your phone and call the Center for Disease Control and Prevention (CDC) at #1-800-CDC-INFO (1-800-232-4636) to take immediate action. Of course, you are invited to contact me personally for more information, or with any questions, at 916-502-1462.

Together, we can create a greater awareness of the dangerous consequences of Vitamin D deficiency by promoting safe sun exposure.
Reference List


Lucas, R.M.; Ponsonby, A. (2006). Considering the potential benefits as well as adverse effects of sun exposure: Can all the potential benefits be provided by oral vitamin D supplementation? Progress in Biophysics and Molecular Biology, 92: 140-149.


