

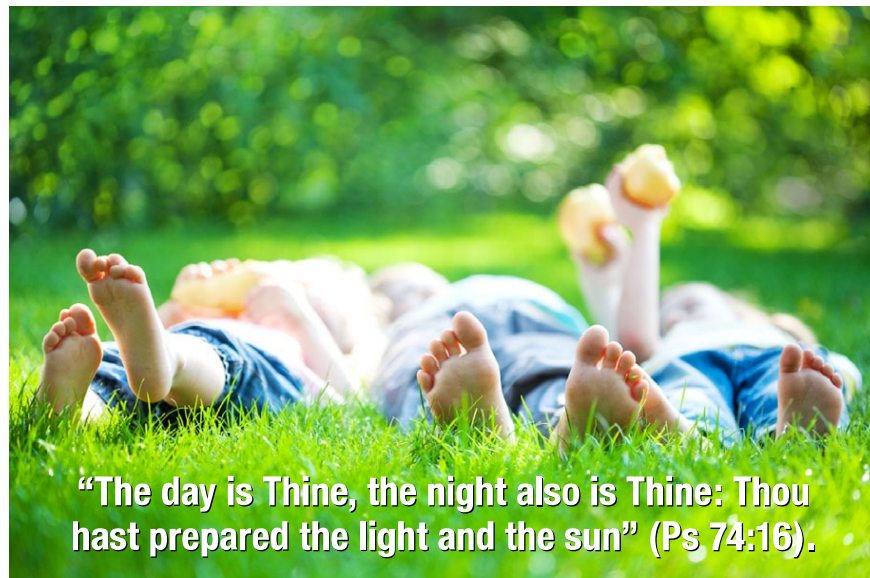
Living in the Light *Part One*

BALANCING RISKS AND BENEFITS

Some years ago, I spent two weeks backpacking with a group of friends in a mountain wilderness area. To lighten our packs, we did not bring tents and we lived outside, exposed to the sun and unpredictable mountain weather. When I returned home, it felt strange to be indoors. Years later, the feeling that people were never intended to live inside wooden boxes lit by artificial light remains with me.

From the Bible, I understand that humans were originally created to live outside wearing only our skin. As a scientist, I understand how human health is supported by daily skin exposure to sunlight. These two concepts are consistent with each other since both the sun and our skin come from the hand of the same Creator. Comparing human physiologic needs with the world we live in reveals the Creator's intent to provide a world whose features perfectly match our basic needs and where the risks and benefits inherent in life are balanced.

Consider the following question. What do gardens and strong bones have in common? The answer is that both require sunlight because both need the products of photosynthesis; but there are two types of photosynthesis. The first is found in plants and algae cells that use chlorophyll to capture the sun's energy and convert carbon dioxide and water into starches needed for growth. Plant



fruits and roots are also a primary human food source, and we could not live without the oxygen produced by plants and algae.

The second type of photosynthesis happens in human skin. That's right, our skin performs a type of photosynthesis, called cutaneous photosynthesis, which makes vitamin D from skin cell cholesterol. Vitamin D, in turn, promotes absorption of calcium from food. And calcium is needed, of course, to build strong bones. So both plant cells and human skin cells make substances vital for human life: oxygen, food, and vitamin D. And both types of photosynthesis are fueled by the same freely available energy source: sunlight.

Humans have certainly changed since creation. Most people now live inside boxes that prevent sun exposure and many live at latitudes far from the

equator where the angle of sunlight is such that, much of the year, even direct exposure to sunlight does not stimulate adequate vitamin D production.

In fact, about half of the people around the world who live north of the latitude of Atlanta, Georgia or south of a similar latitude in the Southern hemisphere are vitamin D and calcium deficient. For those living at higher latitudes, the best solution for this is to take both vitamin D and calcium dietary supplements since it is difficult to balance sun exposure to stimulate vitamin D, yet not burn the skin. And, unfortunately, intermittent sun exposure, sunburn, and tanning all increase the risk of skin cancer.

This raises the question for Living in the Light, Part 2: Wouldn't the first people have had plenty of vitamin D but also plenty of skin cancer?

—MICHAEL G. WINDHEUSER, PH.D.