

Seeing the Light

by Sally Euclaire Osborne

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When Dr. Albert Schweitzer arrived in Lambarene, Gabon, in French Equatorial Africa in 1912, he hardly ever saw a case of cancer. Later, cancer rates skyrocketed. Although their new "civilized" diet was certainly at fault, another lifestyle factor may have also played a role.

Natives who had once paddled their dugout canoes up and down the rivers wearing nothing more than a loin cloth, had started wearing sunglasses. Indeed Dr. Schweitzer's daughter remembers that sunglasses were such a status symbol in Lambarene that they had a higher bartering value than beads and trinkets.

Anecdotes abound that correlate the use of sunglasses with cancer. So do stories of "spontaneous remissions" from cancer, achieved soon after patients threw away their sunglasses or tinted lenses and soaked up the healing rays of the sun. Yet the mass media has whipped people into such a frenzy of fear about the dangers of sunlight that many Americans are afraid of going out in the daytime at all. The sun has been blamed for everything from premature wrinkling to skin cancer.

Those who examine the evidence, however, will find it less than convincing. Certainly, Dr. Weston Price never spied healthy natives wearing dark sunglasses, fashion shades or tinted contact lenses. Nor did he see them riding around in cars with tinted windows, slaving under artificial lights or slathered with sunscreen. The result was they never suffered from "malillumination," a word coined by photobiologist John Nash Ott. Dr. Ott believes that malillumination is as big a problem in the western world as malnutrition.

In Dr. Ott's opinion, depression, fatigue, eyestrain, headaches, stress and feeling "out of sorts" can all be attributed to poor lighting. What's more, he has accumulated considerable data connecting the lack of sunlight and use of artificial lights with major diseases of civilization such as arthritis and cancer.

Now in his 90's, Dr. Ott has studied the effect that light has on living things for more than 40 years. The author of *Health and Light* (Devin-Adair, 1973), *Light Radiation and You* (Devin-Adair, 1982) and more than 60 scientific papers, Dr. Ott's most striking work may well be the time-lapse photography sequences in the Walt Disney films "Secrets of Life" and "God's Half Acre" in which he filmed, respectively, the actual growth of a pumpkin from seed to fruit and the bursting of flower buds into bloom. These films led him to the conclusion that if the wrong light can wilt plants, it can also wilt people.

Though Dr. Ott's work remains controversial, he is hardly alone in his opinions. "Until 100 years ago, 90 percent of the world's population worked outdoors," says Jacob Liberman, OD, PhD, the Aspen, Colorado-based author of *Light Medicine of the Future* (Bear, 1991) and *Take Off Your Glasses and See: A MindBody Approach to Healing Your Eyesight and Expanding Your Insight* (Crown, 1995). Now, 90 percent work inside. "They're not getting the entire spectrum of light, which is truly the spectrum of life. Full-spectrum light from the sun nourished humanity for millions of years. It's nature's optimal fuel and the octane we require."

The National Institute of Mental Health in Bethesda, Maryland - in a striking departure from other

government health agencies - agrees. In a statement issued by its photobiology department regarding the malady known as Seasonal Affective Disorder (SAD) that leaves five million Americans seriously depressed during the winter months when days are short and there is little sunlight, the Institute made an unequivocal statement: "Along with food, air, and water, sunlight is the most important survival factor in human life."

Why? "Solar radiation activates biochemical events in our bodies that are involved with regulation of stress and fatigue, endocrine control, timing of our biological clocks, immunologic responsiveness, control of viral and cold infections, and the dampening of functional disorders of the nervous system." In addition to those people who have been clinically diagnosed with SAD, there are perhaps 25 million more afflicted with a milder version that is commonly known as the "winter blues."

Although it is best to open windows and get outdoors as much as possible, more and more people are choosing the next best thing - lighting up their interiors with full-spectrum fluorescent tubes. "Those who work in offices with full-spectrum lighting report less eyestrain, fewer headaches, fewer sick days, better concentration and greater productivity," says Sam Berne, O.D., of Santa Fe, New Mexico, author of *Creating a Personal Vision: A Mind/Body Guide to Better Eyesight* (Color Stone Press, 1994). "People have more energy, sleep better and stop craving carbohydrates and caffeine."

Although anecdotes abound about happy workers in offices that have switched to full-spectrum lighting, most of the scientific research has been done on school children. A 1973 study performed on first grade classes in Sarasota, Florida, conducted by Dr. Ott's Environmental Health and Light Research Institute, proved that hyperactive children calm down and academic levels go up when full spectrum lights are installed.(1,2,3) At the same time, the Sarasota Dental Society observed that the children schooled under full-spectrum lights developed one-third the number of cavities compared to the children schooled under the standard fluorescent lights.(4) The most likely reason is the increased calcium absorption that occurs when Vitamin D is manufactured by the skin in the presence of sunlight. Interestingly, it is the ultraviolet component - that most health "experts" urge us to avoid at all costs - that encourages the skin's production of this important vitamin. (5)

Another study of school children was conducted in 1981 by Catherine Sam and Harry Wohlfarth at the Elves Memorial Child Development Centre, a school for handicapped children in Edmonton, Alberta, Canada. There researchers noted marked behavioral improvement among children under full-spectrum lighting as well as decreased stress levels, which they calculated by drops in systolic blood pressures averaging 20 points per child. When the full-spectrum lighting was changed back to the original cool-white fluorescent tubes, the children's stress levels shot back up and they became disorderly again.(6)

In Germany, Fritz Hollwich, Professor Emeritus, Department of Ophthalmology at the University of Munster, found high levels of stress hormones - specifically adrenocorticotrophic hormone (ACTH) and cortisol - in individuals sitting under cool white fluorescent tubes. He found normal levels, however, in people working under full-spectrum tubes. Based on the research of Dr. Hollwich and others, the cool-white fluorescent bulb is legally banned in German hospitals and medical facilities.(7)

In America, however, most schools, hospitals and businesses "still haven't seen the light," says Dr. Berne. Although he reports some luck in convincing school officials to convert to full-spectrum lighting, his success has been mostly in the private sector, namely Waldorf and Montessori Schools. It seems that we are willing to buy special lights so that chickens, hogs and horses will grow better, yet subject our children to the cheapest warehouse lighting possible.

The usual reason is higher cost. The other major deterrent is fear of the UV part of the spectrum. After all, news stories routinely warn us of the dangers of UV light and public service television commercials have even begun advising parents to keep their children out of the sun - but not away from the radiation and

electromagnetic fields of their trusty TVs. “UV has gotten a lot of bad press,” says Dr. Liberman, “yet UV is one of the most biologically active and important portions of the electromagnetic spectrum. Like most aspects of life and health, it’s a matter of the right dosage, of balance.”

Dr. Ott, too, speaks of balance: “When too much oxygen is given to premature babies in their incubators, it causes blindness, deafness and brain tissue damage. Fortunately, this has not resulted in any recommendation that we should try to get along without oxygen. Such a notion is obviously preposterous. Yet this is exactly what is happening in prevalent views about ultraviolet light.”

Though the average physician and dermatologist believes that scientific research conclusively proves that sunlight is hazardous to health, a close look at the literature reveals that researchers are divided on the subject. The study most responsible for the fear of UV was conducted in the Medical College of Virginia at Virginia Commonwealth University in Richmond. Reported in 1981, it involved anesthetized monkeys whose eyes were dilated, held open and blasted for up to 16 minutes with a 2,500 watt xenon lamp containing high levels of UV radiation. The monkeys showed retinal damage, leading to the conclusion that UV light causes retinal damage.(8) Similar studies in which researchers burned the skin of laboratory animals with high levels of UV light are cited to prove that it causes cataracts and skin cancer.(9)

Far less publicized was a study published in the British medical journal *Lancet*, which reported that a group of Australians who worked all day under fluorescent lights had higher incidents of skin cancer than people who frequently sunbathed or worked outside! This startled the researchers, who expected quite the opposite. The study, after all, had been conducted in Australia, where residents are routinely exposed to higher than average doses of UV light because of depletion of the ozone layer there.(10)

Adding to the confusion around UV is the tendency of the press to put all types of UV radiation in the same negative light. In fact there are three types: UV-A, which is responsible for tanning; UV-B, crucial to the body’s synthesis of Vitamin D; and UV-C, a potent germicide. If any of the three forms pose a threat to life on earth today, it is UV-C because today’s thinner ozone layer filters out fewer UV-C rays than it did during the millions of years in which humans evolved.

To date the key research on the different forms of UV light has been performed by Dr. Joan Smith-Sonneborn, Professor of Zoology and Physiology at the University of Wyoming. Back in the late 1970s, Dr. Smith-Sonneborn exposed one-cell, fresh water organisms known as paramecia to the bactericidal form of ultraviolet light (UV-C). When it caused DNA damage and shortened the paramecia’s life spans, she healed the damage with UV-A, the form of ultraviolet light to which humans are most often exposed, and she found that it repaired the cells and reversed aging. Not satisfied, she again exposed the damaged cells to UV-A and discovered that this extra dose extended their life spans up to 50 percent.(11,12)

In addition, hundreds of studies - some dating back to the turn of the century - support the health benefits of UV light, including lowered blood pressure, improved electrocardiogram readings, reduced cholesterol, weight loss, the healing of psoriasis and increases in the levels of male and female sex hormones.(13) And that’s not even counting reports from folks who just plain say that they feel happier and healthier outdoors on the beach, on the hiking trails and on the ski slopes.

Perhaps the most promising area of light research today is in medicine. “Light is our most powerful ally,” says Dr. Liberman, who speaks excitedly about new frontiers in light and color therapy. Many mainstream scientists are also experimenting with the use of light to destroy viruses causing AIDS, herpes and other infectious diseases, as well as to decontaminate blood for transfusion. Although Dr. Liberman freely admits that it, “sounds a bit like Dr. McCoy on *Star Trek*,” he foresees, “a future in which photodynamic therapy, alone or in combination with other conventional techniques, will be able to successfully treat most, if not all, cancers and other life-threatening diseases.”

All of which takes us back to the ancient civilizations of the Egyptians and Greeks, who worshipped the sun for its healing powers and used its full spectrum of light to treat physical and mental problems in a practice known as heliotherapy.

PPNF recommended book: *Lights Out*
T.S. Wiley with Bent Formby, PhD

Get 9-plus hours of sleep a night and: Lose weight, Curb your craving for carbohydrates, Eradicate depression, Lower your blood pressure and stress levels, Reverse Type II diabetes, Minimize the risk of heart disease and help prevent cancer. The trouble began with the invention of the lightbulb. When we don't sleep in synch with seasonal light exposure, we alter our biological rhythms that control hormones and neurotransmitters determining appetite, fertility and mental and physical health. By relying on artificial light to extend our days, we fool our bodies into living in a perpetual state of summer. Anticipating the scarce food supply and forced inactivity of the coming winter, our bodies begin storing fat and slowing metabolism to sustain us through months of hibernation and hunger that never arrive.

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