Price-Pottenger Foundation Web site

# FULL SPECTRUM LIGHT:

## Energy and Health Builder

by Joseph G. Hattersley

**America has a phobia about ultraviolet (UV) light.** In the name of science, unwise practices are being urged on us. The resulting sickness and misbehavior will mystify yet enrich physicians, psychiatrists, dentists and criminal specialists, as well as pharmaceutical drug companies.

UV intensity will soon be forecast in population centers daily. And the EPA suggests when outdoors, we "protect ourselves against ultraviolet light whenever we can see our shadow". So we peer through sunglasses, hide behind stylish dark car windows, slather our skin with sunscreen for even brief exposure.

**The phobia arose** after investigators anesthetized animals, propped their eyes open and shined intense UV light into them. There was retinal damage. And *excessive* exposure to one kind of ultraviolet (shorter-wave, germicidal UV-C) can damage tissue. It is present increasingly in sunlight with the thinning of the protective ozone layer in tanning salons and halogen lamps. [1]

***Yet the trace amounts of UV radiation in natural daylight*** **are required for both physical and mental health, muscle strength, civilized behavior, energy and learning.** Starting from a high school hobby of time-lapse photography, John N. Ott, Sc.D.Hon., became one of the world's leading photobiologists. Now in his mid-80's, he is still active. Among many publications, Dr. Ott's latest book is *Light, Radiation and You: How to Stay Healthy.* (Greenwich, CT: Devin-Adair Publishers, 1990.)

"Mankind adapted to the full range of the solar spectrum," he wrote, "and artificial distortions of that spectrum -- malillumination, a condition analogous to malnutrition -- may have biologic effects." [2] Ott's largely anecdotal findings are being explored by scientists in Australia and England, at New York University, Thomas Jefferson Medical College in Philadelphia, NIOSH (National Institute of Occupational Safety and Health) and Boston University, among others.

**1. First let's consider health effects of UV deprivation.**

**a. Malignant melanoma,** the dangerous kind of skin cancer, is often blamed on excessive exposure to sunlight. But long-lived people at high altitudes in the Andes and Himalayas are not known to get it. Moreover, sunscreens block out beneficial UVA and UVB, but not dangerous UVC. **In fact, a study published in *The Lancet* [3] found *fluorescent* light rather than sunlight promotes melanoma!** The ends of the cathodes of most fluorescent light tubes, Dr. Ott found, emit low-level **x-rays** and other electromagnetic pollution.

Terminal cancer patients that Dr. Ott knew of personally, got well in a rocking chair **in the sunshine**. One such woman ventured out with Norwegian fishermen, ate a lot of their catch, and

recovered. Friends ate fish but stayed inside -- and their cancers killed them. [4] Had she "protected" herself from UV when she could see her shadow, would her cancer have ended? And if sun-loving Arizonans threw away their sunscreens and sunglasses and limited their sun exposure -- wouldn't their cancers largely disappear?

**b. The Well of the Sea restaurant** in Chicago installed UV radiation to supplement regular lighting in dining rooms and kitchen for its subtle, eerie effect. The owner reported after that, his employees were absent less and dropped fewer dishes, and so their work output increased 25 percent. Their personal relations were unusually cordial from then on. Moreover, the same group worked together for 20 years, and even during the Hong Kong flu epidemic, they were healthy without vaccinations. [5,6]

How come? Well, in a laboratory, *viruses* lose much of their virulence when exposed to full spectrum light including UV. And a tumor-susceptible strain of mice lived more than twice as long there as under standard lights. [7] Infectious organisms such as *E. coli*, which causes food poisoning, dislike ultraviolet, too. [8]

**c. The power of full-spectrum light, enter the eyes, against SAD (seasonal depression)** has been amply demonstrated. [9,10] And working two hours each morning in front of a bank of bright, full-spectrum lights including trace UV helped me recover from non-seasonal depression. Light energizes and regulates the body's entire chemistry. Won't "protecting" millions of people from UV then worsen the ongoing epidemic of depression and suicide?

Ordinary glass cuts out most UV light, so for best results skylights, as well as windows, need to be UV transmitting: Rohm and Haas' UVT Plexiglass, or American Cyanamid's Acrylite UVT.

**d. A Chicago area elementary school** suddenly reported five times the national average incidence of **leukemia**. All but one of the afflicted children were being taught in rooms where teachers kept the blinds drawn and the children were exposed all day to fluorescent light. When even the amount of UV-rich daylight that can get through windows was let in and the dangerous fluorescent lights were turned off, *the leukemia cluster disappeared!* [11]

**e. The cells in the retina of your eyes** will not divide and regenerate without a small amount of ultraviolet light. And so full-spectrum lights reduce *retinal degeneration*, the leading cause of **blindness** among the elderly.[12]

**f. A kinesiologist found the** *hearts* of rats living under artificial lighting -- but not rats under full-spectrum lights -- showed *calcific myocarditis* [13] , a form of heart disease. They also had significantly greater tumor development. This finding, confirmed at six major medical centers, is ignored by the tunnel-visioned National Cancer Institute and American Cancer Society.

**2. Dr. Ott demonstrated to a large audience the effects of ultraviolet deprivation on muscle strength**

A man looking at a full spectrum light held his arm straight out against considerable downward pressure; but looking at a standard indoor light, lacking any UV, his arm was pushed down easily.[14,15]

The same weakening was seen in a person holding refined, white *sugar* (which is often used as a placebo in medical trials!), fluoridated water, a lead pencil in the normal writing position, wearing polyester or standing on a polyester carpet.

Full daylight helps endurance, too. A man in Tacoma, Washington, ran 10 kilometers in 48 minutes wearing blue-tinted contacts, which filtered out all UV. Without them, he ran the course in *six minutes* less time and exclaimed that half way through, he felt as though he had just started. [16]

**3. Other effects of ultraviolet deprivation are equally remarkable**

After radiation-shielded full-spectrum lights were installed in five classrooms in Sarasota, Florida, in 1973, several extremely hyperactive, learning-disabled children calmed down completely and learned to read. Absenteeism dropped. Children in four standard-lighted rooms continued to misbehave -- as tracked by concealed motion-detecting cameras; their learning disabilities and absenteeism were unabated. [17,18]

Similar results were reported from schools in California; Colville, Washington; and Alberta, Canada. [19] A classroom comparison in Vermont found full-spectrum lighting strengthened immunity. [20,21] General Electric rigged a study for a negative finding. [22]

And after a year, children in the full-spectrum rooms had *one-third less tooth decay* than those taught under standard lighting. "Protect" ourselves from UV: incidentally, a full-employment plan for dentists?

"Every nutritional substance, medicine and drug," says Dr. Ott, "has a specific wavelength absorption. If those wavelengths are missing in the artificial light source a person is exposed to, then the nutritional benefits of the substance will not be utilized." UV functions as a nutrient and as a co-factor in body utilization of other nutrients. So the full-spectrum lights corrected the children's deficiency of vitamin D, now considered a hormone, enabling more complete calcium absorption -- and lowering risk of osteoporosis and hip fractures in later life.

Exposed to full spectrum light, a father rat is docile and even helpful after his babies are born. But when the same rat pair are moved under standard lights, before the birth of the next litter the male must be removed to prevent aggressiveness and cannibalism; moved back to natural light, he is gentle again. [23] Although human fathers aren't likely to eat their babies, do we really want more domestic aggressiveness?

**4. Recommendations**

Applying Dr. Ott's findings, I stay outdoors at least half an hour daily, excluding time in a car looking through the UV-blocking glass. And occasionally on a sunny day, I strip to the waist for two to three hours without sunscreen. On the trail, a hat shades my forehead; four years ago, I had a harmless skin cancer promptly removed from my nose.

A person at a computer, other video display terminal or color television soon develops *rouleaux* (rope-like clumping) of red blood cells -- because the iron in them gets magnetized. (Some of the radiations from VDTs go right through lead! [24] ) This clumping can clog capillaries and slow blood supply to the brain.

A special $20 light from Befit Corp. (sources listed below), set 6 to 10 feet from me, shines UVA and some UVB at me while I work, to supplement incandescent light. This prevents and reverses *rouleau* and reduces eyestrain. [25] It was installed in an 18-inch fluorescent light fixture ($7.95) from a hardware store. Ottlights offers a special NRG TaskLight, which may be better.

Dr. Ott recommends wearing eyeglasses such as Armorlite (R) that admit all the UV light [26]. (He advises against such glasses after cataract surgery. [27]) For driving, he suggests neutral gray sunglasses (Keystone Optical Laboratory) -- to be used only when necessary. Despite my age (72 years), my ophthalmologist cannot detect any progression toward cataracts. ***Important:*** **An individually tailored diet, supplements including antioxidants, aerobic exercise, etc., share credit for that finding.**

Even your pet dog knows enough to get himself into the sunshine a while each morning if he can. And your flowers require full-spectrum light for a complete process of photosynthesis.

**Some sources and products included in Dr. Ott's latest book:** OttLights' Chromalux lamps fit into existing fixtures and closely simulate natural daylight without any of the sun's inherent dangers. They are fully radiation-shielded. A separate phosphor provides UV; it lasts about one-third as long as the main lamp. Although initially more expensive than regular lights, OttLights use lower wattage and last ten times longer. OttLight Systems, Inc., 28 Parker Way, Santa Barbara, CA 93101; (800) 234-3724).

The Chromalux bulb is also available from:

1. Lumiram Electric Corp., Dept.LL, PO Box 297, Mamaroneck, NY 10543; (800) 356-5596.
2. Befit Corporation, Southampton, NY. (800) 497-9516.
3. Tahoma Clinic Dispensary, Kent, Washington. (206) 639-1433.

*Note: I have not used all the listed products and services.*

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.
To purchase: CLICK HERE:

**A Partial Chronological List of John N. Ott's Publications**

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