



All living organisms emit light. The work of healers can be measured in terms of light. At the same time, research shows that light from LEDs can speed healing. Is this a revolution in the making?

Healing *with* Light

By JILL NEIMARK

“A flashlight and water cured me of lifelong Lyme disease,” jokes Sheryl Seliger, a 44-year-old licensed clinical social worker and mother of two in Salt Lake City, Utah. But she’s not exactly joking. Seliger, who has suffered from chronic Lyme since age seven after a tick bite on her neck, is now feeling healthy after a year of an unusual treatment that combines light emitting diodes (LEDs), which look a bit like a flashlight, and homeopathic remedies that MDs deride as pure water.

“Lyme disease is rampant in Connecticut, where I grew up,”

explains Seliger, “but I also got multiple tick bites on a cross-country camping trip with my husband shortly after I got married.” For the last 20 years, Seliger suffered with mysterious symptoms. “After both of my pregnancies I was completely flattened. I couldn’t raise my head off my pillow, or I’d be throwing up or falling down. Then neurological symptoms kicked in. I’d drop things, break things, have difficulty finding the right word, or even get lost driving just a few blocks. At some points I was so sick, I just sat all day. It was terrifying, and I didn’t have any idea what it was until I met a naturopath who tested me for Lyme disease. I found out my test was positive a few days before Christmas. It was the best present I’ve ever gotten, because I finally had a diagnosis.”

Treated with antibiotics and herbs, Seliger says she was “almost better several times, but then I’d be hit with a life crisis and completely relapse.” Then she heard about a “woo-woo” treatment offered by a medical doctor in Germany. A homeopathic dilution of a pathogen that makes a patient ill was taped to the solar plexus of the patient, while he or she was treated with a European LED device called the Bionic 880, applied for several minutes at a time to each of 10 acupuncture meridians. (For more, see the discussion group at health.groups.yahoo.com/group/bionic880/.)

Seliger didn’t travel to Germany. Instead, she bought an LED device made in America by Photonic Energetics (photonicenergetics.com). Working closely with a naturopathic practitioner, she was treated for over a year with her flashlight-and-water cure. “I still have a little bit of fatigue and a few symptoms, but I went kayaking on Monday, hiked at 9000 feet on Saturday, and am able to work out at the gym. The light, along with homeopathy, is by the far the best treatment I’ve done, and it’s amazing how quickly and deeply it works, with no side effects. I should caution, however, that this treatment is powerful and needs to be done under the care of a good doctor.”

Powerful? It’s a treatment that would scream “placebo” — if not “snake oil” — but I know from personal suffering (nine years of it) that intractable Lyme symptoms simply do not recede with the placebo effect. Hope, cognitive reframing, and rest have little effect on this virulent infection, which is caused by a tick-borne spirochete far more complex than syphilis, along with other pathogens the tick carries (such as a red blood-cell parasite). So Seliger’s story truly got me pondering — and searching for a plausible mechanism or even a wild hypothesis to explain how this treatment actually worked.

What I came up with is light. New research shows that living organisms, including the human body, emit and respond to light. And recent studies on homeopathic remedies suggest their signature can be measured specifically in terms magnetic photons. I also found that the work of healers can be measured in terms of light. At the same time, preliminary research on LEDs, even by NASA, shows that red and infrared LEDs can speed healing. Light healing may be a revolution in the making.

A Body That Glows

In the 1970s, German biophysicist Fritz-Albert Popp discovered that healthy cells emit coherent light, cancer cells emit scrambled light, and the cells of those suffering from multiple sclerosis


actually emit too much light, inhibiting their ability to function well. He coined the term “biophoton.” A photon is a single particle of light. Plants, animals, and humans generate up to 100 photons per second, per single square centimeter of surface area. The light is much too faint to be seen by our eyes (see “A Jewel by Any Other Name,”). Also in 1970s, the late Paul Nogier, a French neurologist, found that specific body tissues pulse in resonance with specific frequencies, according to that tissue’s origin in the womb.

More recently, researchers at Kyoto University measured photon emissions from five healthy male volunteers, using cameras capable of detecting single photons (the cameras are equipped with a cooling mechanism that keeps the measuring device at a bitter -120°C as this allows accurate measurement of photons). The men were placed, bare-chested, in completely dark rooms for 20 minutes every three hours, from 10 a.m. to 10 p.m., for three days. The scientists found that the body glows the least at 10 a.m. and the most at 4 p.m., suggesting fluctuations in tune with our body clock. The Japanese scientists write: “We found that the human body directly and rhythmically emits light. The human body literally glimmers. The intensity of the light emitted by the body is 1000 times lower than the sensitivity of our naked eyes.”

The Special Glow of Healing

In even more fascinating research from the University of Arizona, research associate Melinda Connor, Ph.D., measured biophoton emissions from healers, using the same kind of camera observatories employ to image distant stars. “We harvest five or six similar leaves from the bottom of a plant and image the leaves for three minutes, making sure to choose two leaves that have .03 or less difference in photon output. One leaf acts as a control and one is active. We put them in a darkroom bag in a cool, dark room. We have a healer work on the active leaf, and either try to heal the leaf or make it glow. When you ‘heal’ a leaf, it absorbs and uses the biophotons and has less photon output. When you ‘glow’ a leaf, its photon output increases, and you are essentially burning it up. You can actually tell the difference when you remove the leaves. A ‘glow’ leaf is limp and somewhat crumpled. A ‘healed’ leaf looks robust and healthy, even after several hours in the imaging chamber.”

In order to get an accurate measurement of biophotons, the leaves are imaged for 90 minutes. “That allows us to get past normal fluorescence, and into truly hardcore biophoton imaging,” says Connor. “And the fact is, there’s a physical



difference in the photon output from these leaves. The 'glow' leaves emit significantly more biophotons than the 'healed' leaves. Our data is highly significant — our p. value is less than 0.003. That's really lovely data."

A Measure for Homeopathy

Homeopathic remedies may also have a measurable signature as photons, according to a 2004 article by Karen Langer, Ph.D., in the journal *Subtle Energies and Energy Medicine*. Researchers used Tesla coils to generate magnetic waves and found that homeopathic remedies could attenuate the waves. In a 2007 study in the journal *Homeopathy*, Swiss researchers froze ultra-high (weak) dilutions of substances with liquid nitrogen and then irradiated them to warm them. While being rewarmed, the thermoluminescent glow of different homeopathic substances was measured and found to be significantly different. Though such studies are only preliminary, they suggest that homeopathic remedies are much more than water. They actually carry information on electromagnetic waves, measurable as light and heat.

Using LEDs to Heal

Finally, we come to LED light, which is visible (except for the infrared spectrum) and easily measured. As Charles McGee, M.D., author of *Healing Energies of Heat and Light* and maker of a handheld LED device called the X-light (cheeenergy.com), says, "It may be that tiny amounts of light lead to profound healing effects. In one unforgettable 1985 study from the University of Seville in Spain, a man with a bone infection called osteomyelitis in both legs was treated with low-level laser light on his right leg. Not only did his right leg heal, but a fistula on his left leg also healed. The researchers suggested that, therefore, the light had a remote healing effect."

More recently, a 2004 study sponsored by NASA found that LED light treatments produced improvement of greater than 40 percent in musculoskeletal training injuries in Navy SEAL team members, and decreased wound-healing time in crew members aboard a U.S. naval submarine. LED light produced a 47 percent reduction in pain of children suffering from oral mucositis (inflammation of the cheek lining). A 2008 study from Bar-Ilan University found that chronic wounds resistant to conventional therapy could be treated successfully with low-energy lasers and light-emitting diodes (LEDs) in the visible and near-infrared region. Another study found that LEDs can successfully treat cold sores (reducing healing time to 6.3 days, compared to 9.4 days for placebo) and still another found that blue LEDs at 420 nanometers, applied once or twice a week, were able to significantly reduce the severity of acne in 10 patients.

So what does it all mean? Lots of data, but does it shed any "light" on how Sheryl Seliger might have healed? I can speculate that LED light applied to acupuncture meridians carries healing energy to tissues and organs throughout the body, and that homeopathic remedies carry information on electromagnetic waves of light that the body can interpret, even if just held against the skin. But that's just speculation. And even if it were so, how the two work together is anybody's guess.

How We Underestimate Light

One thing I did sense from all this is that we underestimate how light — and its electromagnetic signature — governs our lives. A study from Cornell University on 15 individuals found that a light shone on the *popliteal* region (the back of the knee, where many blood vessels are near the surface) can significantly advance or retard the body's circadian rhythms — that is, the normal fluctuations in body temperature and chemistry associated with the daily cycle of sleeping and waking. That's the back of the

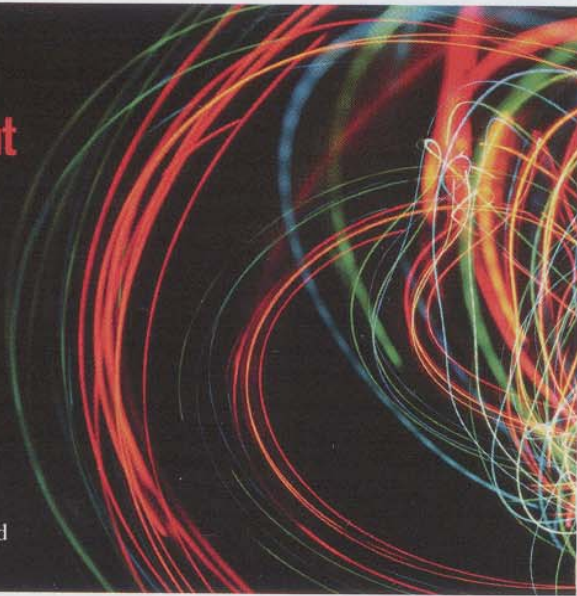
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A Jewel by Any Other Name

A Simple Guide to Light

How can we describe and measure the light from the sun, compared to the light from a lamp, an LED flashlight, or the human hand? We can do so in joules, the unit standard for a packet of energy. To melt the average ice cube in your hand, you need about 10,000 joules. A 60-watt light bulb produces 60 joules per second. The amount of energy in the sunlight that falls on one square meter of the earth's surface is very roughly 1,000 joules per second. One second of sun-light on a 10-centimeter-square patch of ground is about one joule.

But how many photons are in a joule? One photon of blue/green light, which has a wavelength of 500 nanometers, equals 0.000000000000000397 joules. The number of photons of blue/green light you'd need to make one joule totals about 2.5 million million million. The imaging apparatus that Melinda Connor used to measure bioluminescence in leaves and humans was so sensitive, it could measure a single photon. It boggles the mind (and the joule).





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knee, folks. And the light was a fiber optic pad illuminated by a halogen lamp. Not the sun. Not in the eyes. If it's true, it shows an exquisite sensitivity.

I recently experienced the effect of light — not sunlight but moonlight — on a living organism. I have a night-blooming cereus, an unusual cactus that offers up fragrant, enormous white blossoms. But the flowers bloom once or twice a year and open only at night, dying by the first glimmer of dawn. My plant, a former cutting from a neighbor, has been growing wild on my windowsill for two years, ejecting Jack-and-the-Beanstalk-type stems up to the ceiling and down over my desk as well. It sprawls and soars in all directions.

We sat in reverent silence in my dark living room as the blossom unfolded in a time-lapse striptease. We literally watched it birth itself. A woody, sweet, overwhelming fragrance pulsed through the air, pushing out waves of perfume. When fully opened, the white flower was bigger than my fist, with a complex choreography of pistils and stamens. Fruit- and nectar-eating bats traditionally pollinate the plant, and as bats are most active at night, this remarkable cactus evolved to respond not only to sunlight but to moonlight. By five in the morning, when I snuck back into the living room, the flower had already spent itself and folded up, its long curving stem dipping down along my computer monitor, its white tendrils like the neck of a dying swan. I thought to myself, *This is on my New York City windowsill, where streetlights and building lights make it impossible to see stars, much less moonlight.* And yet it knew. It followed some ancient rhythm of light, blooming in rhythm with the new moon on a bat-less city night. Who is to say humans are any less attuned and responsive than a night-blooming cereus?

Jill Neimark is a science journalist and author. Her most recent book is *Why Good Things Happen to Good People*, coauthored with Stephen Post, PhD.

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