Sunshine
An essential fuel of life.

Also: Sunscreens—Biohazard, The Brad Bose Interview, Qigong Breath, Spiritual Flame, Vitamin D, Sprouts: the Original Sol Food, and more!
The Language of Light

by Pam Blue

The sun is constantly emitting light. This light has many different wavelengths contained within it, some visible to our naked eye and some not. What makes these waves of light different is their distance from one another and their subsequent effect on matter. Some are shorter and some are longer than that which we see and acknowledge as light. In fact, we are now discovering that some of these wavelengths, most notably the ones that range from 200 to 800 nm, are being emitted from within our own DNA as well. So, just like the sun, we too are constantly emitting light. We cannot see it happening for it is at such a weak intensity that it can be compared to a candle flame 12 miles away, yet growing scientific evidence is revealing that it is taking place not only in our DNA, but in the DNA of all living organisms.

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urrently there is somewhere in the neighborhood of 40 scientific groups worldwide working to understand more about this weak intensity light we are emitting. The largest association involved in this research is the International Institute of Biophysics, founded and headed by Dr. Fritz-Albert Popp, a German researcher and biophysicist. It is an international network of 19 research groups from 13 countries, all involved in biophoton research and coherence systems in biology. Their research indicates that biophotons, or very small units of light, are emitted spontaneously from a coherent photon field within a living organism and the function of this light or biophotonic emission is intra- and inter-cellular regulation and communication. This information transfer within and between cells is believed to not only regulate metabolic activities, but also contribute to the growth and differentiation of cells and even to evolutionary development. Dr. Popp and his colleagues at the International Institute of Biophysics went on to discover applications of this research which can be valuable to our daily lives.

For example, Dr. Popp was able to show through his research that chemically similar substances could be differentiated as carcinogenic or benign according to how they responded to one specific wavelength of light. The carcinogenic substances would “scramble” light emitted at 380 nm while benign substances would not. Interestingly enough, this is also the exact wavelength that science acknowledges cells prefer to use to repair themselves in something known as photorepair. Thus, the wavelength that becomes scrambled by exposure to carcinogens (380 nm) is also the wavelength preferred by cells to repair themselves. Could it be then that carcinogenic substances like eggs prefer to use wavelengths which are emitted at 380 nm while benign substances do not? Interestingly, this is also the exact wavelength that science acknowledges cells prefer to use to repair themselves in something known as photorepair.

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Sunlight and Sustenance, cont’d from p. 26
Now trim away the flexible outer leaf that generally is a deeper color green, and retain the stiff central spine whose color generally is of white. Now eat only that outer leaf. Tender, succulent, maybe even sweet! Nice! Okay, next eat the remaining central spine. FINISH, maybe even bit- ter! Not so nice!
Let’s talk sunflower, whose very name is very sunny. Some indoor gardeners find that their sunflower greens grow long and frail stems. To prevent this they extend the initial “darkness” stage by one or two extra days. During the darkness stage (I recommend a duration of 2–3 days), some sort of weight is placed atop a tray which itself rests atop the sunflower greens. Weighed down, the seedlings grow stems that are strong and squat. But the plants are seeking the light of the sun, not extra days of darkness. Another try. The problem is lack of light, not lack of weight. So instead of growing stems that are long and frail and fibrous and bitter, under pressure such sunflower greens grow stems that are short and squat...and fibrous and bitter!
Conduct that same lettuce taste test upon sunflower greens. Take a handful, snap off just the leaves with your fingers or your teeth, and once you have a handful of leaves eat only those leaves, but not the stems. Tender, succulent, even sweet! Again, nice! Next, eat just those leftover stems. Relative- ly tough, maybe bland, or maybe even bitter! Again, not so nice! The leaves, not the stems, impart the delicate and agreeable flavor that makes sunflower greens so highly prized. The smaller their leaves, the lesser your price.

Get Your Fill of Chlorophyll
Chlorophyll in leaves converts sunlight energy into plant matter, which mostly are sugars and starches but also all other plant nutrients. Chloro- phyll imparts the green in vegetable greens. Deep, dark green in leaves indicates richer chlorophyll content. More chlorophyll signals the plant’s poten- tial to produce more sugars and all its other phytonutrients. More sugars and more nutrients result in more flavorful and nourishing veggies. Thus the goal is to grow lush leaves, not long stems. Simply stated, leave not stems.
Longer hours or stronger lumens of light foster the growth of larger leaves, shorter hours or weaker lumens foster longer stems. In seeking the light, try to make that more sunlight. From sunrise to sunset, follow the path of sunlight in your home. If you must, move your crop from window to window, even from room to room. Because our sunny dispositions inform us that no light is better than sunlight.

What can possibly be more in- tense than the sun? Two suns! When sunlight shines through your win- dows directly upon your microgreens, prop some reflectors to the sides of and behind the plants. Merely one reflector in back works wonders. Create reflectors with lightweight white cardboard. (Hint: undersides of produce boxes often are white.) The deluxe model is white foam core board purchased from office or art supply stores. Aluminum foil affixed to cardboard is more reflective than white, but unsightly. The hi tech version of foil is metalized mylar, a plastic film embedded with aluminum. Some well stocked gardening stores carry metalized mylar, as do sporting goods and camping equipment stores. Camping stores call metalized mylar space blankets or survival blankets.

In a Dark Time
Long hours of natural sunlight do reach a natural limit, which is a good thing. Artificial light can artificially exceed that limit, which is a bad thing. More and more light does not necessarily produce more growth or more nutrients. Just as you need at least six hours of sleep, plants need a minimum of six hours of darkness. Yet plants do not rest at night as we do. Instead, after a day creating carbs during the night plants metabolize and convert those carbohydrates into plant tissue. They deepen their roots, thicken their stems, and broaden their leaves. In essence, plants work hard by day, and grow strong by night.

In an effort to maximize yields, some indoor gardeners shine their artificial lighting 24 hours a day for the last two or three days before har- vest. With uninterrupted light and no darkness, seedlings continually create their starches and sugars, but only minimally metabolize them. Imagine stuffing yourself all day long and all night long, never exercising and never sleeping. Yet you still will grow. You will grow fat! Such obesity is a measure of quantity, not of quality. Plants exposed to round the clock light become stressed. If for only two or three days, they may not yet visibly manifest the effects, but they are stressed nonetheless. Microgreens and mature greens grown under light round the clock cannot provide us with the same level of nutrients as those whose schedule more closely resembles that of nature. If you are inquisitive, grow one batch of sunflower greens under perpetual light and another under light alternat- ing with darkness.

Our sunny dispositions inform us that no light is better than sunlight. Some indoor gardeners find that their sunflower greens begin to grow long stems. In seeking the light, try to make that more sunlight. From sunrise to sunset, follow the path of sunlight in your home. If you must, move your crop from window to window, even from room to room. Because our sunny dispositions inform us that no light is better than sunlight.

Know that nature knows best, and therefore should have faith that nature grows best. So provide your home- grown greens with the light of day, but also with the darkness of night.

Sundays
Of everything we eat, green leaves contain the greatest concentration of sun energy. One way to see the light might be to eat it, in which case spici- ality just might boil down to a ques- tion of energy. Nations go to war over land and people become gluttonous or ravenous for the food that grows upon it, but the sunlight which creates that food seldom is in short supply. Sunlight shines upon us all. It is no coincidence that Christianity’s day of worship and the Western world’s day of leisure both fall on the day named for the Sun. May all our Sundays be sunny and may all our days be Sundays!

Sunlight’s Role in Vitamin D and Children’s Health, cont’d from p. 30
Advocates for addition of vitamin D to foods, known as fortification, see this as a potential to help combat what it sees as an epidemic of vitamin D defi- ciency related diseases. The KCPCH already launched a successful cam- paign to persuade breastfeeding mothers to increase their vitamin D intake.
Vitamin D: Canada’s Study on Critically Ill Children
In what has been touted as the first of its kind, the study looking at the vitamin D levels in a large group of critically ill children could bring to light many answers in the quest to help children.
Dr. McNally, a clinical researcher and intensivist at the Children’s Hospital of Eastern Ontario, and assistant profes- sor in the Department of Pediatrics at the University of Ottawa, was the research leader in the study, which looked at 300 children admitted to an Intensive Care Unit (ICU) with severe infections, significant trauma or condi- tions requiring major surgery, such as congenital heart defects. The study showed that 75% of critically ill chil- dren had blood vitamin D levels well below the level considered safe accord- ing to intake standards. The Canadian children with lower levels of vitamin D required more medical interventions such as breathing tubes and medica- tions, and stayed in the ICU longer.
As an Emergency Room (ER) nurse, I am delighted that Canadian doctors are looking at the vitamin D situation seriously. I have been noticing for some time that ER departments are becom- ing backlogged with more and more adults and children coming in. Imagine if, upon admission, a vitamin D test was done to see if we had regular blood work. It would be of tremendous value to know what percentage of seniors coming in after a fall were deficient in vitamin D; the same goes for children who seem to be very fragile.
In the past, Canadians could have gotten a free vitamin D test from the local family doctor, as it was covered by our government health coverage. I was sad when it was cut. If the Can-adian government is serious about using vitamin D as one of its strate- gies to address brain and language development, childhood obesity and long term reduction of vitamin D defi- ciency diseases, then making the test free again for Canadians is essential.

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Strategic for Parents and Kids
In this article I have highlighted the absolutely essential role vitamin D plays in the development of young people. A basic strategy is to begin supplementing your entire family’s diet with a whole-food, plant-based vi- tamin D supplement. It is interesting to note that many fortified foods contain animal sources of the nutrients or syn- thetics, so you don’t want to consume those if you are on a plant-based diet.
The suggested sun exposure of 30 minutes a day may be too low depend- ing on factors such as your skin color, whether you work indoors all day, the season, the region you live in and the kind of diet you regularly consume. For Canadians and others with similar climate conditions, I recommend you consider spending extra outdoor time in the sunlight. Families can plan more weekend trips to the beach or park, or they can simply lie in the backyard and sunbath to soak up the sunshine.
Remember, good health is your birthright but keeping it is your choice. Peace, love and gratitude.