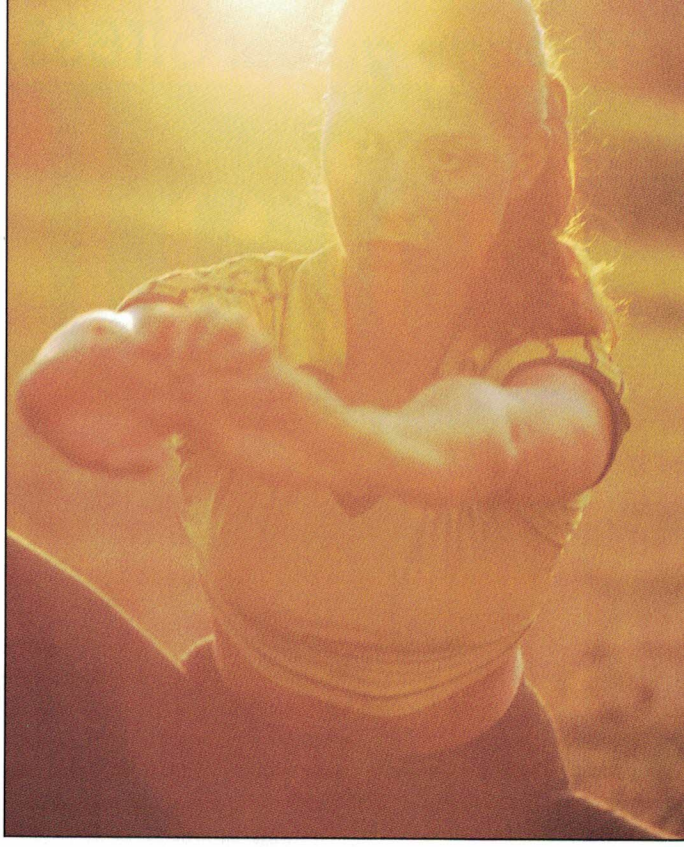
by Tina Wellman, Ph.D.

Heliotherapy:
Let the sunshine in!



To shed a little "light" on the subject, prior to the advent of antibiotics, drugs, and even vitamin supplements, doctors utilized the healing properties of the sun to improve our health, both physically and psychologically.

Light is the source of life on this planet. All that we harvest from nature's bounty would vanish if it were not for light. Plants rely on sunshine to grow and mature. Animals rely on plants to sustain themselves. We reap food from both sources to meet our nutritional needs. In the absence of light, plants would cease to grow and animals would starve.

To shed a little "light" on the subject, prior to the advent of antibiotics, drugs, and even vitamin supplements, doctors utilized the healing properties of the sun to improve our health, both physically and psychologically. Life extension specialist the late Paul C. Bragg, N.D. noted that the rays of the sun are a powerful germicide and a tonic to human health. Bragg ("Doctor Sunshine") credited the vital sun rays and sun-cooked foods with empowering his body to heal from deadly tuberculosis. "Weak, ailing, anemic people are all sun-starved, and in my opinion, many people are sick simply because they, too, are starving for sunshine." Daily exposure to natural sunlight is as fundamental for health maintenance as exercise and nutrition. The absence of sunlight can exacerbate health maladies such as breast cancer, cardiac dysfunction, high blood pressure, infections, immune dysfunction, depression, cutaneous diseases (psoriasis), PMS, chronic lethargy, Alzheimer's disease and hormonal imbalance.

Noteworthy is a resurgence in rickets, a bone-softening disease related to vitamin D (the sunshine vitamin) deficiency, which finds its etiology in a lack of adequate sunlight. Since most of our milk substitutes are void of vitamin D , this makes sunlight an even more essential health ingredient. Vitamin D is required for adequate calcium and phosphorous absorption.

Even in the absence of serious health issues the seasonal diminution of light can trigger a series of psychobiological effects in a syndrome known as Seasonal Affective Disorder (SAD). In cyclical fashion, a cloud of ill health towers over its victims during the dark winter months until its gloom wanes when the budding light of spring returns. Whether afflicted by SAD or not, light deprivation interrupts our 24-hour body clock or circadian rhythms that modulate body temperature, sleep/wake schedule and hormonal balance.

Our fundamental health needs require daily exposure to sunlight as part of our overall health. Abstaining from sunlight exposure is wreaking havoc on the world's population. As we trade life outdoors for the convenience of life indoors, we forfeit the health benefits of the healing rays of sunlight and reap the consequences in compromised mental and physical well-being, health consequences of global concern. Whether in school, at the office or at home, we must find ways to bring sunlight indoors so we may maintain our health while confined to our indoor lifestyle.

Heliotherapy, Immunity and Disease

Heliotherapy, the treatment of disease by exposing the body to sunlight, profoundly influences our immunity. In fact, current research indicates that it may be riskier to avoid sunlight than to tan moderately. Studies indicate increased exposure to sunlight has antimutagenic effects against specific cancers including breast, colon, ovarian and prostate. Ovarian cancer has a five-fold greater risk rate among northern women in contrast to their southern counterparts who have access to increased sun exposure. New studies indicate that vitamin D, a nutrient made by the skin during exposure to sunlight, can lower the risk of breast cancer by 30 to 40 percent and perhaps even more. Fifteen minutes per day of sun exposure is the estimated time needed to reap the preventative effects. The sunshine vitamin is also linked to preventing these cancers, which have an annual death toll of 138,000. Skin cancer, such as malignant melanoma, more commonly occurs among people NOT exposed to regular intervals of sunlight.

Heliotherapy has germicidal properties and is used effectively to irradiate the blood of cancer patients. Additionally it is practiced in cancer research institutes for successful DNA repair. Within hours of light treatments, the cancer cells begin to die, leaving the normal tissue unharmed. Seventy to 80 percent of the tumors treated responded positively after just one treatment. Decontamination of blood transfusions through the successful application of heliotherapy is in the developmental stage at Baylor Medical Center.

Dermatologists utilize heliotherapy to treat cutaneous ailments including acne and psoriasis. Vitamin D_3 cream is commonly prescribed for topical treatment of psoriasis. Phototherapy is practiced in maternity wards to treat neonatal jaundice.

Heliotherapy and Depression

Noted University of California San Diego School of Medicine psychiatry professor and light therapy researcher Daniel F. Kripke, M.D., notes "depression is the most disabling illness," an opinion punctuated by Murray and Lopez in "The Global Burden of Disease." Depression is the most important source of disability, outranking every other injury or disease worldwide by more than two to one, including war, violence, substance abuse and tuberculosis.

Bright light treatment is generally safe except for bipolar patients (those with a history of mania) whose symptoms may be exacerbated. Kripke believes heliotherapy can help alleviate non-seasonal depression and notes "a satisfactory antidepressant response to treatment with 10,000 lux of light for 30 minutes per day." However, lengthier light treatment may accelerate the response for severely depressed patients. Since the benefits of bright light work synergistically with antidepressant medication, a "complementary" approach (using both treatments) should be considered. For more information on Kripke's research on circadian rhythms, depression and heliotherapy, visit his Web site at www.brightenyourlife.info

Melatonin and Circadian Rhythm

There is a subset of health risks associated with light deprivation for each age category. Yet the common ground for all ages is the hormonal influence of melatonin, a pineal gland hormone intimately associated with our biological sleep wake cycle. Melatonin cycles on a 24-hour schedule, exerting a regulatory effect on circadian rhythms. Melatonin is inherently a sedative affecting anxiety, panic, sleep and headaches. With regular sunlight exposure, the melatonin cycle will regulate itself. Melatonin increases during darkness and decreases during periods of light, hence the need for a strong high/low cycle. Continual weak cycles (caused by low levels of daily light exposure) may precipitate insomnia, anxiety, panic and other psycho-emotional imbalances, most notably SAD.

Seasonal lethargy—am I depressed or SAD?

One of the few constants in life is the rhythmic cycle of daytime and nightfall, sleep and wakefulness. Adaptation or maladaptation to this circadian rhythm influences health or illness. As some animals hibernate during winter and reawaken in spring, so too, those who experience SAD emotionally hibernate and experience incapacitating health consequences.

While many of us prefer to retreat indoors during the dark clouds of winter, the sad, dark wintery months can trigger a plethora of negative emotions including anxiety, increased carbohydrate cravings, weight gain, increased need for sleep, depression, withdrawal, confusion, forgetfulness and irritability. Distinguishing from classical depression, SAD sufferers experience initial vegetative symptoms (oversleeping and overeating) followed by mood changes and depression.

SAD was first identified by Norman Rosenthal, M.D., psychiatric and psychobiology investigator at the National Institute of Mental Health.

In his SAD resource guide, "Winter Blues," Dr. Rosenthal explains the relationship between SAD and the psychobiologically induced crises in 20 percent of the American population. Noteworthy are his clinical findings that exposure to bright light produces an "antidepressant effect" on SAD victims. To relieve SAD symptoms, Rosenthal favors 10,000 lux (measure of luminescence or light intensity) for 30 minutes per day but points out that protocols should be adapted to personal needs. A Rosenthal caveat: For those with severe depression, suicidal tendencies, bipolar or other medical disorders, be sure to consult with your physician before initiating any phototherapy protocol.

Daily scheduled exposure to bright light involves four parameters: intensity, wavelength, duration of exposure and frequency of exposure. A measure of 2500 lux may be used for 2–6 hours per day; 10,000 lux is customarily used for 30 minutes daily. It is important to avoid staring into the light directly. Rather, use it while reading, working or watching TV. Intensity, not spectrum, is the variable most critical for obtaining an antidepressant effect.

Non-seasonal effects on circadian rhythms

Jet lag, working the graveyard shift and the aging process all perturb circadian rhythms. Disturbances in these rhythms affect dementing illness, academic performance, dermatological problems and hormonal balance. Frequent flyer syndrome can desynchronize our biological clock. When we drastically change our time zone, we concomitantly change our sleep/wake cycle. Fatigue, insomnia, fuzzy thinking and constipation are symptoms of this desynchronization. Artificial jet lag may be induced by working graveyard shifts or staying up all night. Whether artificial or not, jet lag seriously impairs cognitive function.

Melatonin supplementation can be used to offset the damage incurred by loss of sleep and disturbance to circadian rhythms. Even so, light therapy can be used to naturally moderate melatonin levels. And how does one promote a healthy melatonin response at night? By obtaining adequate sunlight exposure during the day. This not only regulates the body clock but may have a profound effect in minimizing the psycho-emotional and biological impact on Alzheimer's related symptomatology and PMS symptoms. Additionally, vitamin D synthesis from sunlight is noted to play a prominent role in memory performance. Endocrinology researcher Dr. Ray Peat notes that exposure to bright light reduces PMS because women who produce less melatonin exhibit an increase in PMS symptoms.

While the verdict remains undecided as to whether melatonin decline accelerates aging or vice versa, melatonin reduction, while not an inherent consequence of aging, still contributes to it. A potent and safe antioxidant, melatonin may reduce damage incurred by some 60 degenerative diseases.

Were it not for light, the earth would be in everlasting darkness, noted Paul Bragg. He suggested conducting the following simple experiment to determine the value of sunshine in the matter of life and death: "Find a beautiful lawn, where the grass is like a green carpet . . . Cover up a space of that beautiful lawn with a small piece of wood or a metal. Day by day you will notice that the beautiful grass that is full of plant blood, chlorophyll, will start to fade and turn a sickly yellow. Then the tragedy happens—it withers and dies—death by sun starvation." What else can one add to this other than to revisit the Broadway musical "Hair" and sing a refrain from "Let the sunshine in!"

How to obtain light therapy

No beach? No solarium? No picture windows? Here is an alternative: The fluorescent light box from The SunBox Co. in Gaithersburg, Maryland sets the "gold standard" for light therapy. Founded in 1985 by Neal Owens, the SunBox Company offers a spectrum of bright light units to meet the needs of health professionals and customers worldwide and provides full service consulting for natural lighting in homes and businesses. For free information contact them at LITE-YOU 800-548-3968 or visit their Web site: www.sunbox.com