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# JOURNAL OF LIGHT

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- **Research Update on the Therapeutic Applications of Light**
- **Energy Efficient Illumination and its Impact on Health**
- **Threading the Rainbow – Pathways to Consciousness**
- **Treating Mood Disorders with Iris-Phototherapy Colourpuncture**
- **Energy Meridians - ‘Rivers of Light’**

**Cover image:** Harun Mehmedinović with Gavin Heffernan & [SKYGLOWPROJECT.COM](http://SKYGLOWPROJECT.COM)

The Skyglow Project aims to bring awareness to the effects and dangers of urban light pollution with film and images of the amazing dark sky areas in North America. 'Skyglow' refers to the brightening of the sky caused by light pollution. This important issue impacts animal species and human health.



*"Advancing Light for Health"*

The International Light Association is a diverse group of individuals, comprising those with a professional interest in light and colour, as well as those with a personal or creative connection to light. Beyond individual interests, ILA members have a common desire to share knowledge, skills and passions: to learn about and apply the latest theories, techniques and technologies in light and colour; and to use this knowledge to promote health, enhance performance and learning, and to raise consciousness.

The ILA mission is to share and disseminate information; educate, initiate and promote research; and create an open-hearted, broad-minded and integrative community in the field of light and colour.

**Acknowledgements:** Thank you to all contributors to this edition of the Journal of Light. Submissions for future editions are very welcome. Please contact the editor at: [info@ilacolor.org](mailto:info@ilacolor.org)

It is a great pleasure to present this new edition of the  
JOURNAL of LIGHT  
at the 14th Annual ILA Conference in Florida

On behalf of the Editorial Team,  
we hope the journal informs and inspires,  
sharing the ILA vision of 'Advancing Light for Health'

Amanda J. Hoffmann (Editor)

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## Letters

### From the ILA President

“It is with great pleasure that I introduce this new edition of the ILA’s Journal of Light, after a hiatus of five years. Its publication is indicative of the renewed vitality of the ILA and of its expanding reach in the world of light and healing.

Light is a multi-dimensional phenomenon, and it deeply influences both our body and our psyche. This is reflected in the diversity of light therapy modalities in existence today - all of which are of interest to the members of our Association. This openness to the whole spectrum of light applications is evident in our Journal, with its fluid range of articles.

The remarkable recent expansion of light medicine, focusing on the biochemical effects of light, is now amply recorded in a multitude of scientific and medical journals. It is therefore left to a Journal like ours to also present other modalities of light and colour work which are, as of yet, not so well documented but possess just as much healing potential. These include the subtle effects of energy medicine, as well as the transformative applications of light and colour in psychotherapy.

In the name of the whole ILA board, I wish to thank Amanda Hoffmann, the new Journal of Light editor, and Maniisha Bluntschli, for their dedication in putting together this beautiful edition. May there be many more in the near future!”

Anadi Martel

Anadi Martel has been researching light and its applications for 40 years, developing new devices integrating light, sound and touch to benefit health and wellbeing. An author, inventor and design consultant, Anadi has been ILA President since 2011.



### From Sarah Cobb - ‘Journey of Light’

“My journey toward becoming infatuated with the therapeutic use of colored light started almost twenty five years ago after my beloved father had a stroke and then began to lose his eyesight due to macular degeneration. He had come to live with me in his late eighties after he had given up his two favorite pastimes, reading and surfing the web.

As a lifelong vision therapist and someone who adored him, I felt compelled to find a way to restore his visual function. I researched alternative treatments and wrote an article called, "Reversing Macular Degeneration" for the Optometric Extension Program and along the way discovered Optometric Phototherapy or Syntonics and met dean emeritus Dr. Charles Butts. It was actually Charlie who saved him.

The doctor offered to take a look at my father and after he mapped his peripheral fields I finally understood why he acted so visually disabled. As it turns out, the stroke resulted in almost total collapse of his fields and although there was some deterioration in the macula of one eye, he experienced the world as though he was looking at it through a drinking straw.

Dr. Butts prescribed a series of mu epsilon or blue green and it literally changed my father's life. The light acted to re balance his nervous system opening up the visual field so the spot of deterioration on the macula became small in relation to the totality. Immediately he began to read again and even designed his own web page. One series of light (20 daily treatments) gave him 5 years of quality of life that I never dreamed possible. Then Dr. Butts continued to mentor me as I began to see my own clients.

So with deep gratitude I wanted to give something back to the College of Syntonic Optometry and thus the first issue of the Journal of Optometric Phototherapy was born. A few of the early issues are still posted on the College's web site <http://www.syntonicphototherapy.com/>

I discovered the ILA around 1992 when I attended a meeting in Chicago hosted by Alice Nixon. Since then the organization has had several incarnations as it grew to become the far reaching organization it is today. I have admired it for the diversity and inclusion as well as the tenacity and care the members have shown keeping it afloat during challenging times. There are many who stepped up and gave what they could over the years and I was simply one of those people who believed so much in the power of light that giving voice to it seemed like the right thing to do."

Sarah Cobb



Sarah Cobb was Editor of the first editions of the Journal of Light published in 2011 and 2012. We thank her for the inspiration and vision that allows us to continue the journey.

Thank you, Sarah - from

The 'Journal of Light' Editorial Team

# Articles

## Research Update on the Therapeutic Applications of Light

by Anadi Martel

Adapted from original version in Professional Lighting Design magazine No.102 Aug/Sept 2016 ([www.via-verlag.com](http://www.via-verlag.com))

*Light, in addition to fulfilling the practical and aesthetic functions with which we are already familiar, can also have a profound impact on our health and well-being. While light has traditionally been used for therapeutic purposes by most ancient cultures, since the beginning of the 21<sup>st</sup> century we are witnessing a remarkable acceleration in the amount of scientific research devoted to light medicine, with thousands of articles now published yearly. Lately there is much talk in the lighting design community of “human-centric” aspects, such as melatonin suppression and blue light hazard. However, this is only the tip of the iceberg, with the surprisingly wide range of therapeutic applications of light going well beyond these topics. The purpose of this article is to provide a brief update on some of the latest research in the field.*

### A brief historical overview

Light from the sun is the primary source of energy driving all life on our planet, so it is not surprising that it plays such a powerful role in human health. The use of light for healing is as old as humanity itself, and is documented in ancient Egyptian, Indian and Greek texts. Sunlight was a key medical tool for the ancients, either in its pure form as heliotherapy, or filtered through gems or other colored materials. In the West, its role was then obscured for many centuries because Christianity deemed heliotherapy to be a form of sun worship and proscribed it as paganism.

Only towards the end of the 19<sup>th</sup> century did it begin to arouse renewed interest, with numerous heliotherapy centers throughout the world becoming the preferred medical providers for intractable diseases such as tuberculosis. Such was the respect accorded to light medicine during this period that one of the very first Nobel Prizes for Medicine was awarded to Nils Ryberg Finsen in 1903 for his pioneering work in phototherapy, *“in recognition of his contribution to the treatment of diseases, especially lupus vulgaris, with concentrated light radiation, whereby he has opened a new avenue for medical science”*.

This was not to last: with the rise of antibiotics in the 1930s light therapy was again relegated to “medical paganism”, this time through the war between orthodox (pharmaceutical) medicine and alternative medicine or therapies. There it remained for the remainder of the 20<sup>th</sup> century – until two key discoveries initiated the current renaissance in light medicine.

## Light for the body: medical applications

The first discovery is that light can directly enhance cell metabolism, through a complex chain of biochemical processes termed *photobiomodulation* by the main researcher behind its discovery: Tiina Karu. Prof. Karu worked patiently on this field of light therapy throughout the 1980s and 1990s in her Moscow lab – even though she was not taken seriously at the beginning of her research. She identified the mitochondria (tiny energy engines within each of our cells) as the main recipients of light stimulation, mostly driven by red and near-infrared (NIR) wavelengths.

This understanding opened the whole new field of *Low Level Laser Therapy* (LLLT), where non-thermal low levels of light are used for various regenerative purposes. Riding on applications research conducted by NASA in the early 2000s, LLLT is now gaining widespread acceptance. The underlying photobiomodulation cellular processes involved are now the focus of intensive worldwide research, and the specific effects of different colors are being explored. For example, blue is used for acne treatment, yellow-orange for skin toning, red for wound healing, infrared for joint relief.

One of the most promising recent developments is *transcranial light therapy*, where infrared light shining through the cranium (which, surprisingly, transmits up to two to three per cent of its flux) heals brain cells and may alleviate strokes, dementia and depression (Hamblin 2011). In one of the latest experiments, a team in France has been exploring a potential cure for Parkinson's disease using infrared light piped directly into affected brain regions by a tiny optical fiber (Benabid 2015).

The second key discovery is that light has a deep impact on our hormonal system through a non-image forming (NIF) optic pathway, entirely distinct from the previously-known visual optic pathway. While such a non-visual pathway had been suspected for decades (Hollwich inferred it in back in 1948), it was only in 2000 that a new type of photoreceptor was positively identified (Provencio 2000): the iPRGCs (*intrinsically photosensitive retinal ganglions cells*) which express an ancient photopigment closer to the invertebrate world than the mammalian one, melanopsin, characterised by a blue-centered action spectrum. These iPRGCs are directly linked with the hypothalamus and influence melatonin levels and our circadian rhythm. A resultant therapeutic application is the bright-light treatment used to counter Seasonal Affective Disorder (SAD), so well-established today that it has actually become synonymous with “light therapy” in the public's mind.

This discovery had profound implications for the lighting industry: not only did lighting techniques imply economic and aesthetic considerations, they now also had a bearing on health. The proportion of blue content in the light applied in our living spaces, as expressed by its color-correlated temperature (CCT), became a key design issue. The general picture originally seemed relatively clear: use high CCT (above 4,000K, more blueish) in the morning and mid-day to encourage wakefulness, use low CCT (below 3,000K, more yellowish) in the evening to mitigate circadian disruption.

Lighting designers wish it were that simple... Much has been learned about the NIF pathway in the last decade, with hundreds of research papers published on the subject every year, but this has only highlighted its exquisite complexity. While the general lighting recommendation above remains broadly valid, from 2010 on it has been subject to increasingly more caveats. In a recent landmark opinion “*Measuring and Using Light in the Melanopsin Age*” (Lucas 2014), fourteen leading

researchers in the field conclude: “*Simple prescriptions are as likely to do as much harm as good, and even experts may have divergent ideas about best practice under some situations*”.

Here are a few examples of the complexities as they appear today:

- In addition to responding to their own melanopsin pigment, the non-visual iPRGCs also relay stimuli from the visual photoreceptors known as rods and cones (Schmidt 2011). The ensuing circadian sensitivity is now seen as a complex web involving both visual and non-visual cues.
- From the early model, which focused on melatonin suppression centered at 460nm (Brainard 2001), the circadian sensitivity spectrum is now being described by more sophisticated non-linear models, with an average peak shifting towards 490nm (Rea 2012).
- Up to five different types of iPRGCs have now been identified, each with its own action spectrum and dendritic networks (Ecker 2010).
- Considerably different response speeds for these various iPRGC types as well as the “traditional” rods and cones point to complex temporal as well as spatial dynamics within the retinal matrix (Gooley 2012).
- The neat division between the visual and NIF optic systems is eroding: iPRGCs are now thought to project beyond the hypothalamus to all major visual regions of the brain, so that their influence also extends to aspects of perceptual vision (Lucas 2013).
- The circadian clock may actually be driven more by the intense *variations* in CCT prevalent at dusk and dawn rather than by the CCT value itself (Walmsley 2015), with far-reaching consequences for human-centric lighting design.
- The photopigment *neuropsin* (OPN5), of a different nature than other photopigments used by the visual system, was previously detected in the retina but its role remained mysterious. It has just been identified as playing a key role in the retina’s own autonomous circadian clock (Buhr 2015). This photopigment is sensitive in the violet and UV-A range, new wavelengths that will now have to be considered in chronobiology. Remarkably, neuropsin is also present in the cornea – which makes sense since most UV-A is filtered in the eye and does not reach the retina.

If you feel somewhat confused by this state of affairs, do not despair: you are not alone ...

### **Light hygiene: the LED controversy**

The LED revolution is unfolding throughout this ongoing research, leading to numerous controversies surrounding the health implications of LED lighting with various experts weighing in on both pros and cons.

Some of the main concerns revolve around risks associated with the 440 to 460nm blue peak typical of nearly all white LEDs applied for general lighting, as exposed in numerous papers published over the last 15 years (e.g. ANSES 2010). Specifically, these risks can lead to potential circadian rhythm disruption (melanopic NIF influence) and result in retinal damage due to oxidative photodegradation (so-called “*blue light hazard*” centered at 450nm) with possible links to age-related macular degeneration (ARMD).

There has lately been a strong rebuttal from the LED industry, citing publications such as the “True Colors” 2014 report from the *US Department of Energy* (DOE 2014) denoting that the debate should not be about LEDs, but rather about the CCT of lighting sources in general since both the melanopic and the blue light hazard factors of all main lighting sources (whether incandescent, fluorescent and LED) can be shown to be about equal at any given CCT. Other authoritative reports from the *International Energy Agency* (IEA 2014) and the *Scientific Committee on Emerging and Newly Identified Health Risks of the EC* (SCENIHR 2012) similarly state that these blue-related risk factors are no worse for LEDs than for sunlight, which is obviously safe.

A large part of the lighting community currently appears to have been pacified by these arguments – but by no means the entire community, especially among groups specializing in therapeutic applications of light (such as the *International Light Association*).

One issue that has been raised is the validity of the calculated risk factors, which are obtained by integrating action functions over the visible spectrum; this averaging can yield seemingly equivalent results for wildly unbalanced spectrums and tends to mask punctual effects caused by specific biologically active light frequencies. This is of particular concern in relation to the detrimental influence of “artificial light at night” (ALAN) and light pollution on health, as established by ILA member Prof. Abraham Haim (Haim 2015). In fact a recent study has for the first time established a direct link between blue-enriched LED light used at night and cancer tumor growth acceleration, primarily through circadian rhythm disruption (Zubidat 2015).

Another argument relates to the systematic disregard of the essential role played by near-infrared light (NIR) in retinal health. Modern energy-efficient light sources such as fluorescent lamps and LEDs are specifically engineered to reduce or eliminate their NIR output, considered as wasted heat energy. However since Karu’s work it is known that most cellular regeneration driven by photobiomodulation occurs at red and NIR light wavelengths, and experiments have shown that even moderate levels of this light can repair retinal cells damaged by blue light (Albarracin 2011).

In sunlight (as well as in other traditional thermal light sources such as candles and incandescent), blue content is always balanced by substantial red and NIR, leading to a natural equilibrium between oxidative stress and regeneration within the retina – a factor ignored by current blue light hazard factor calculations, which do not factor in NIR. Non-thermal light sources such as LEDs may well have no higher blue content than sunlight, but they also lack its compensating NIR, and so could still potentially contribute to increased long-term retinal degradation.

Yet another light hygiene concern specific to LEDs is the widespread use of pulse-width modulation (PWM) in their driver circuits, commonly leading to highly pulsed light output. It is usually considered that setting the PWM frequency high enough above the *flicker-fusion*

*frequency*, where our visual system stops perceiving flicker (i.e. 50-90Hz), will render the flicker imperceptible and therefore innocuous.

However this “invisible” flicker can lead to migraine, headaches and eye-strain (IEEE 2010), and generally contributes to environmental stress. Recent research indicates effects at frequencies

higher than previously acknowledged (e.g. 500Hz in Davis, 2015), and the latest IEEE recommendations call for PWM frequencies above 3,000Hz to “prevent biological effects” (IEEE Std 1789, 2015). For many specialists used to working with more subtle therapeutic effects of light the healthiest option is to simply eliminate PWM and drive LEDs with DC circuits, which is technically more difficult but perfectly feasible.

### **Light for mood: psychotherapeutic applications**

Every lighting designer makes use of the natural attraction we all feel for pure colors. This process has been refined by light therapists, leading to various methods of tapping into the deep impact of light and colors on our mood, on our autonomous nervous system (ANS) balance, and for those methods more attuned to subtle energy medicine, on biofields and inner energy flows such as those in acupuncture’s meridians.

While on a much smaller scale than with biochemically-oriented light medicine, clinical research is being conducted on psychophysiological effects of color and light pulsations. These include promising avenues such as audio-visual stimulation (Siever 2012), differential influence on brain hemispheres with lateralized light (Palyenko 2001), and my own research on light modulation (Ross 2013). They point to light-based psychotherapeutic applications for depression, burnout, PTSD, insomnia, addiction, learning, ADHD, fibromyalgia... where standard medical treatment has limited success. They also confirm the complex interaction between the visual and non-visual optic pathways revealed by other medical research.

### **Light as information: medicine of the future**

Beyond the manifestations of light covered above, more fundamental effects are gradually starting to emerge from research into the ultra-weak intensities range. Early research pioneered by physicist Fritz-Albert Popp has shown that living organisms both emit and absorb very low levels of light quanta, known as *biophotons*.

This field is yielding provoking indications of the use of living light for diagnostics purposes and as an information vector for influencing health and consciousness (Van Wijk 2006). Deciphering such mysteries will truly turn light into the medicine of the future.

**About the author: Anadi Martel / Canada**

*After acquiring a solid scientific training through graduate studies in Physics, he went on to live in an ashram in India for a few years. Since then, he has been applying his intimate knowledge of electronics to the development of instruments working in novel ways with sound, light, and brainwaves. His Spatial Sound Processors have been used worldwide by professionals in psychoacoustics, multimedia and cinema. His work has led to patents in the field of Light Modulation, and recently in LED-based design. When not travelling as a design consultant for special audiovisual projects, he can mostly be found in his lab in the Canadian forest, working to refine the Sensora, a multi-sensorial environment combining many of his inventions. An open-ended research project now ongoing for 30 years, the Sensora aims at exploring the overlapping frontiers of art, technology, therapy and consciousness. He is president of Sensortech Inc. ([www.sensora.com](http://www.sensora.com)).*

## Research Update on the Therapeutic Applications of Light

**Figures:** Examples of new therapeutic light instruments

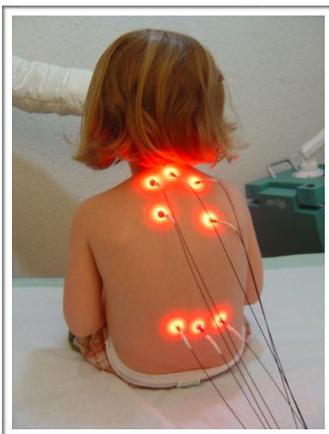


Figure 1 – Laser Needle Acupuncture (from Schikora, Klowersa, Suwanda: "The LASERNEEDLE Therapy Handbook", 2012, p 125, publisher: laneg GmbH Wehrden, Germany, ISBN 978-3-00-038967-2)

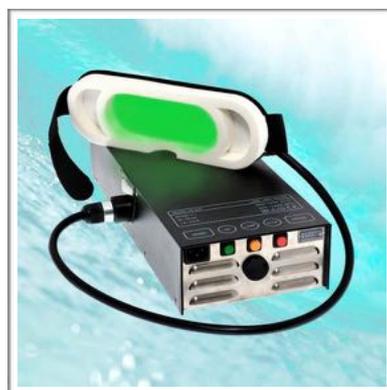


Figure 2 – Monochromatic light therapy with Monocrom Mask (from Monocrom, Sweden)



Figure 3 – Esogetics Colorpuncture™ (colored light acupuncture by Peter Mandel, Germany)



Figure 4 – Color toning instrument (from Van Obberghen Color Institute, Switzerland)



Figure 5 – Therapeutic mood lighting with Sensosphere (from Sensortech, Canada)



Figure 6 – The author experimenting with Transcranial Near-Infrared Light Therapy (NILT)

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## Energy efficient illumination and its impact on health

by Abraham Haim and Abed E Zubidat

*Energy efficient illumination and its impact on health - sustainable illumination should be the next step.*

Abraham Haim and Abed E Zubidat, The Israel Center for Interdisciplinary Research in Chronobiology, University of Haifa, Mount Carmel, Haifa 3498838 Israel

### Evolution of artificial light

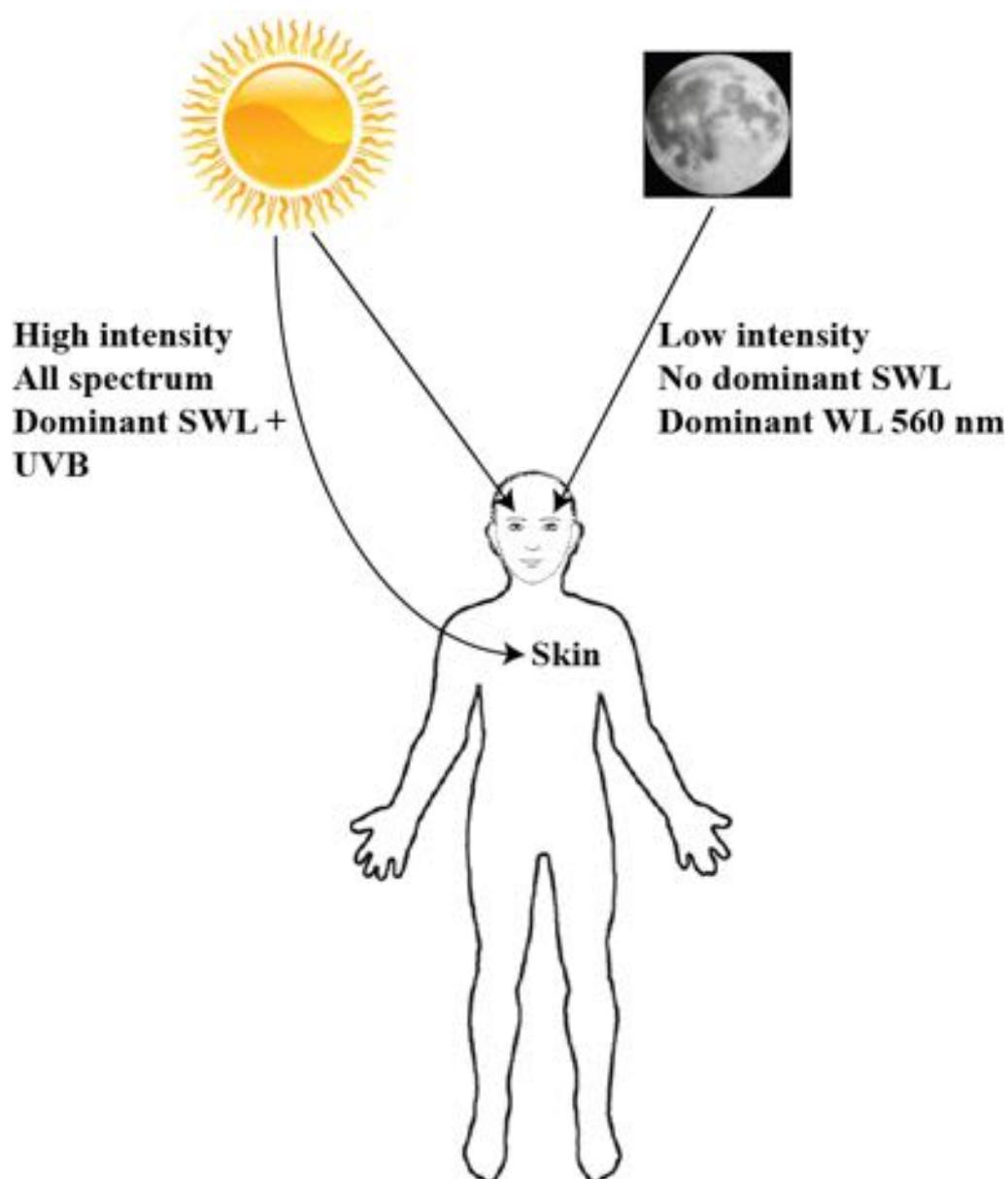
Humans, as diurnal organisms, looked for ways to increase photophase (light) hours in order to increase the hours of activity. We may assume that for humans inhabiting higher latitudes in the northern hemisphere, the period between October and January was of concern, when day length decreases and thus less time for activity is available. Fire was an efficient source of heating but presented both limited light and portability; rather used *in situ*. In the coming stages of light evolution, humans learned to use oil lamps, which produced less light and less heat. This source was used for vision during the dark period (scotophase) of the 24 hours of light/dark cycles. Later, the oil lamp changed to wax, kerosene and gas as the sources of energy, which were also used for vision for short distances. The most significant step in this evolution was the invention of the incandescent bulb by Thomas Alva Edison, which changed our lifestyle in so many ways. This light revolution was a major global change, with an impact on human activities including trade, advertisement, agriculture, human welfare, and natural ecosystems close to places with human activity. The great advantage of the invention was the ability to modify electrical energy into illumination, so wherever electrical power-nets reached, illumination could follow. Today, with solar energy charging electrical batteries, no limitations for illumination exists. The great advantage of incandescent bulbs is the fact they have a dominant wavelength within the orange range of the natural spectrum similar to that of the moon and no dominant wavelength within the blue. The main disadvantage of these bulbs emerges from the fact that they produce relatively less light and are energetically inefficient as they produce heat, which dissipates into the environment (Haim and Portnov, 2013).

Society has given much attention in recent decades to move to energy efficient illumination (EEI) in order to reduce electricity production in power stations and reduce CO<sub>2</sub> production. Reducing heat and CO<sub>2</sub> production from incandescent illumination, resulting in better control over climate change and global warming, has motivated environmentalists to move to EEI such as fluorescent, and in recent years to Light Emitting Diodes (LED) in public spaces, as such illumination is of higher intensity and consumes less electricity. The only criteria for such a step is energy saving - without asking questions in regards to the health consequences emerging from the use of new illumination technologies. Today, we are aware of two negative outcomes from this step. The first is the dramatic increase in Artificial Light at Night (ALAN) resulting in what we know today as light pollution from a rebound effect (energy saving results in higher

illumination intensities). The EEI sources, based on light emission, from short wavelength (SWL) illumination (450-500nm) are the dominant wavelength for daytime natural illumination. From the knowledge we have obtained in recent years in regard to our biological clock, SWL illumination is the signal for daytime illumination as it suppresses melatonin (MLT) production in the pineal gland (produced and secreted at night under dark conditions) and this information is transferred to body cells and tissues. MLT suppression has a negative impact on the function of physiological and immune systems. It is also an efficient anti-oxidant, anti-aging agent and anti-oncogenic agent in regard to breast and prostate cancers. The light technology industry could have chosen between two directions as a solution for the inefficiency of the incandescent bulb. To improve its efficiency, as was done with the carbon bulb, or by completely changing the technology. The latter, done for instance by developing the fluorescent or LED technologies, where daylight of the natural spectrum illuminates our public and indoor spaces but misleads our circadian system, which uses the changes in spectrum and intensity for the entrainment of our biological clock (Falchi et al., 2011; Schwimmer et al., 2014; Zubidat et al., 2015; Haim and Zubidat, 2015).

### **Humans, artificial light and the constructed-environment**

If during pre-historical periods there were relations between humans and the environmental temporal variables (in regard to latitudes), when humans moved far away from place of origin, they had to adapt to new conditions. Living close to natural conditions, for instance in rural areas, humans such as farmers spent many hours outdoors. However, despite fewer hours during winter and longer hours during summer, they were still exposed to natural changes of sunlight intensity and composition of polychromatic illumination. Changes in human pigmentation at northern latitudes for instance, could partly compensate for the natural changes of the light exposure. In the coming stages, being connected to the constructed-environments, humans lost direct contact with the sun's rays and in many places where they spent extended hours indoors during daytime, they became disconnected from natural illumination. No doubt the constructed-environment was a strong driver for the development of artificial illumination based on electrical energy. Modern buildings such as sky-scrapers raised another problem for cities, shading the buildings and preventing natural light penetrating our habitat. For exposure to natural illumination, urban dwellers need to find wide open spaces. As more and more people during the 20<sup>th</sup> and 21<sup>st</sup> century are becoming city inhabitants, more and more people worldwide will be disconnected from the natural environment. This will be true for work places in regards to daytime and for dwellings at night time. Can this be a problem?



**Legend: Natural light conditions in which presumably *Homo sapiens* developed**

Daytime (Photophase) was characterized by high light intensity, increasing from sunrise to noon and decreasing to sunset; the dominant wavelength also changes until the afternoon short wavelength (SWL) emission is dominant. In the late afternoon, the dominant SWL emission is changed by long wavelength emission. During night time (Scotophase) intensity is low, changing with the hour of moon's appearance on a daily basis and moon size on lunar cycle, the dominant wavelengths are within the orange color with no SWL emission. It may be assumed that these were important environmental signals for the temporal organization of our circadian system on a daily and seasonal basis.

### **Problems emerging from human distribution and illumination evolution**

Light is perhaps the most basic signal for humans, and picked up directly by two different organs: the eye and the skin. As light intensity and the spectrum changes in a cyclic way, the light signal is transferred to the tissues and cells for entraining their operation with the environment. Briefly, the dark part of the 24h cycle is transferred by an increase in the production of the hormone MLT, also known as the hormone of darkness "Dracula", when its levels increase. While in daytime, in the presence of blue light of the spectrum (450-500nm) its levels are very low, thus vitamin D (which acts as a hormone) increases due the presence of UVB in the spectrum. Suppression of MLT has a negative effect on the function of the physiological systems which prevent aging and suppress breast and prostate cancers. Vitamin D deficiency will result in skeletal problems emerging from calcium deficiency. One of the ways to avoid these problems is exposure to quartz light or sunbaths. The power of light in healing is used in different ways and for different purposes.

### **Light therapy**

Light healing was used for therapy mainly in western societies. Although classical medicine considers light healing as a complementary or a paramedic discipline, the treatment uses different ranges of the spectrum for different therapy purposes and therapists should be aware of the emission source's photometric spectrum composition. Furthermore, our environment's natural illumination changes during its 24h cycle not only in its intensity but also in the dominant wavelength, which finds its way to the retinal-photoreceptors of our eyes. From the knowledge of our eye functions, it is clear to date that the eye has a dual function: 1) Vision, where the signal is picked up by the rods and cones known today also as Image Forming Photoreceptors (IFP) encompassing the photo pigments rhodopsin and opsin. 2) The entrainment of our biological clock where the blue light of the spectrum picked up by photoreceptors, considered in the past as ganglions and known today as Non-Image Forming Photoreceptors (NIFP) containing the photopigment melanopsin, which was discovered some 15 years ago. This discovery made a significant contribution to our understanding of the information pathway obtained from the light/dark cycles, the "zeitgeber" (timekeeper) for the temporal organization of our circadian system. Why is such information important for light therapy and light therapists' knowledge when practicing? As we are aware of the importance of temporal organization and the various daily rhythms of our body and the response of the circadian system to changes in the natural daily spectrum and intensity, this should be an important criterion to be used in light therapy.

Human distribution today in northern high latitudes, which in regards to the photoperiod, are far from the latitudes *Homo sapiens* developed in Africa and close to the equator, must cope with seasonal great differences between photophase and scotophase. These new environmental conditions have resulted in a

syndrome that humans may face in such places (i.e., north Europe and north America) known as seasonal affective disorder (SAD) which is best treated by light therapy using light boxes (Terman et al., 1989). If at the beginning, light intensity was high at levels of 2500 lux, and exposure was relatively long for two hours each day, SWL-illumination emerging from fluorescent, or in recent years from LED sources, could change intensity and duration of treatment. However, although SAD and its treatment is well established within the medical and psychological worlds, it took a long time before the connection with LED, as a source for ALAN and MLT suppression became a matter of concern. Only in June 2016, the American Medical association (AMA), called on communities in the US to be aware of the health damage which can emerge from exposure to LED illumination among others, as it suppresses pineal MLT-production. It is through that, the treatment is given in daytime to suppress MLT-production, still the glare and high intensity of LED-lighting may damage the retina as they may increase oxidative stress in human Retinal Pigment Epithelial cells (RPE) (Liang and Godleya, 2003). In a more recent study by Chamorro et al (2013), a negative impact on human RPE *in vitro*, was noted from three cycles of 12L:12D exposure to LED lighting (blue, green, red and white). In such cells, researchers recorded apoptosis at levels of between 66-89%, decreased cellular viability between 75-99% accompanied by increased production of reactive oxygen species (ROS) and by DNA damage. The following two questions in regards of our knowledge to date, emerging from experiments in different laboratories including our research center at the University of Haifa are: 1) Can LED lighting be used for light therapy during scotophase? 2) If LED lighting is of a high risk for the human eye, should such lighting, be used for light therapy, even in daytime?

Light therapy is used in many cases where conventional medical treatment was not effective. In a recent paper by Brouwer and coauthors (2015) patients with a combined disorder, for instance, of diabetes type II and major depression episodes, light therapy implemented by bright white-yellowish, was given for 30min every morning for four weeks and a four weeks follow up. Light intensity used was at a levels of 10,000 lux at a distance of 50 cm for yellow light. However, 450 lux was given for green light at the same distance. The results of such a treatment revealed reduced depression symptoms on the one hand and improved insulin sensitivity. Interestingly, such light therapy also restored circadian rhythmicity. In conclusion, authors suggested that if light therapy is safe, it can be used as a treatment in addition to other treatments. No doubt, light therapy is an important tool for healing. However, in order to use it in a safe and sophisticated way, we need to understand the relationship between light and our temporal organization.

### **What are the risks emerging from the use of light therapy? Can they be avoided?**

As light/dark cycles are the basic signal for the entrainment of our biological clock, which also acts as a calendar, we need to understand the clock mechanism on the one hand, and daily and annually changes in light intensity and spectrum of natural lighting in the place we live, in order not to change our temporal

organization. Therefore, light therapy should follow these basic understandings. For instance, if we use blue light at night, we will presumably suppress MLT-production, with all its outcomes including disruption of the daily rhythms, through interfering with the function of the master oscillator located in the supra-chiasmatic nuclei (SCN). The SCN behaves as an orchestra conductor that directs the different musical instruments in order to achieve a harmony in the "music". The SCN is the conductor for the different daily rhythms that should operate in harmony in favor of our health.

An important issue in regard to the use of light for light therapy is the quality of bulb that emits the light. To the best of our knowledge, bulb producers do not use a spectrograph drawing to describe the dominant wavelengths emitted from the bulb. For instance, using red light for therapy in the evening, if the bulb is a LED bulb, and has a dominant wavelength between 450-500 nm, it will suppress MLT production and disrupt the daily rhythms. During photophase, the use of LED can be a risk because of its glare, and the light source can be in a short distance from the eye of the patient. It was emphasized that exposure of culture bovine RPE cells to blue LED increases oxidative stress and cell injury (Nekanishi-Ueda et al., 2003). Therefore, bulbs used for light therapy should contain spectrograph information, and be tested in photobiology laboratories in order to be sure the light spectrum used is safe and will not result in damage to the retina even at low intensities. For safe light therapy, we should use sustainable illumination and presumably not energy efficient SWL lighting sources such as LED, which are health risks for our eyes and our circadian system. Results of several studies reveal that the response to LED or SWL-lighting exposure at night is suppression in MLT-production leading to epigenetic modifications, which are reversible, and significant damage may take considerable time to appear (months and even years) and light therapists should be aware of this. If daytime exposure to natural illumination is important for suppressing MLT production and initiate vitamin D production, at nighttime, sleeping in a dark room is of great importance for natural production of pineal MLT.

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## Threading the Rainbow – Pathways to Consciousness by Denise Hadden

*Excerpt from a new book to be published later this year.*



Exploring the pathways between light, the human body and consciousness has uncovered a thread that appeared out of the mists of space time weaving its way through the myriad frequencies of the cosmos to the energy of the earth, our chakras, minds and bodies and out again in a continually revolving flow.

To me – it appeared that the Universe had presented a perfect pathway to the Divine. Suddenly we know where we are – we cannot get lost. The path has been defined and we will always be able to find our way through – and back.

When uninterrupted, this energetic flow is how healing happens at the speed of light. And in the excitement of this discovery we encounter the hidden hero journeys that stand sentried in the in-between of each colour. What sits between the colours is where the precious and the petrifying experiences hold us transfixed. These are the spaces that challenge us to find courage.

We discover the pain that each colour holds – and our visual energetic fields are the gateway guardians to the grief that holds those ancient distorted belief systems firmly in place. They become

the link for us between a light experience and the Divine, and we discover which colour holds us hostage throughout our lives.

The challenge and adventure for humanity is to know how to walk the rainbow.

A recent New Scientist feature article on the true nature of reality, questions whether we are on the cusp of a new theory on consciousness, one that integrates Quantum Mechanics and Einstein's Theory of General Relativity. The reasoning involves seeing space time as being created by entanglement, and entanglement is information. The greater the information – the greater the disorder. The article proposes that if it is only information that underlies all of space time, then all of reality is an illusion.

This is so exciting, but at the same time quite depressing, as the theories on this subject have taken us to the illusory nature of all that surrounds us, yet leave us mired in the day to day existence of life. It is not helpful to be told that 'nothing is real anyway – so why worry'. Nor to know that all of space time is underpinned by vast amounts of information - which we swim through daily in a brave attempt to feel that we have achieved something in our lives.

And yet – there are many of us whose lives have been punctuated, and even defined, by experiences that defy reality and fill us with a hope way beyond any rational belief.

It is these transcendent moments in time that stop us in our tracks and bring us to a personal understanding of the scientific conundrum, face to face with the illusion of life, reality and all that makes us as human.

One of my pivotal defining moments is of driving too fast somewhere and seeing a squirrel about to leap in front of my car. I knew that it would be killed and I instantly screamed 'no I don't want to

hurt this squirrel!'. My right eye suddenly squinted in and I was given another view - of the squirrel sitting on the verge munching an acorn. I drove past this second image, my eye straightened, and as I looked in my rear-view mirror, I saw the squirrel safely crossing the road behind me.

By focusing with my right eye intently on a desired outcome, it seems, I slipped between informational time space dimensions to create an outcome that I had asked for.

Of course, this was not my thought in the moment! I pulled over as soon as I could and in an almost hysterical state, tried to work out what had just happened to my reality.

It appears that each synchronistic or dimension shifting happening is prefaced by a desire for a different outcome to that which is apparent, and that this may be achieved by using sound as a vibration to reform the informational field, or light.

According to Donald Hoffman, professor of cognitive science, University of California, consciousness is the ground, the foundation of everything, and what we see is not anything like the truth. Life is a sophisticated illusion, there to save us from the overwhelming overload of information that would detract from our ability to survive. Professor Hoffman uses the analogy of desktop icons as focused indicators of the information we have distilled, but which do not tell us the irrelevantly intricate computations required to achieve this. Hoffman's research has regarded the sense of vision as being a determinant factor and area of research in fitness for survival. Our physical system and visual sense show that fitness, flexibility and movement are required in order to maintain good health and clarity as well as the ability to separate the figure from the ground. However, physicists have yet to agree on whether reality is the figure or the background, and equally whether consciousness is fundamental to reality or is an aspect of evolution.

Being human has included looking for new ways of analysing and sorting the informational overload that technology and science have given us. When understanding the cosmos becomes too ethereal, we move back to the realities of how to function and feel comfortable in our own lives. This is where we begin the search for healing – yes – but primarily understanding.

What is the reason that we explore how frequencies such as those of light and sound will help us? Is it to see that what we intuit is hidden from view? Visual field analysis shows us how much we have hidden in order to maintain an outmoded belief and light opens our fields in order for us to understand our misinterpretations.

Viktor Frankl discovered in his time at Auschwitz, that life is a quest for meaning and he quotes Spinoza in his Ethics, 'Emotion, which is suffering, ceases to be suffering as soon as we form a clear and precise picture of it.'

The evolving task of humanity, in this unfathomably vast field of information, may quite simply be to create and expand on new and wondrous experiences.

And for that to occur, using our knowledge on fields of awareness will bring the information that is in the background, to the fore.

In my first experience of using light therapy, it became the catalyst that brought me out of the shadows, changed my informational field, and as I later discovered my physical visual field of awareness as well. I describe it here

*I was in the doldrums in 1999, and crying out for help...*

*'what am I DOING, where AM I headed, there MUST be more to life than this... '*

*I think you will understand. Perhaps a doctor would diagnose that as depression. But before I was driven to antidepressants, through some strange and fascinating twist of fate, light came into my life. Triggered by a patient who on returning from the USA, some months prior, told me to 'find out about light', I discovered that one could use light to expand consciousness. Finding this began a profound journey of healing for me and thankfully, re-ignited the fire in my belly without the use of medications. This search and rescue effort was for my own soul, though I was under such dark clouds at the time to be unaware of it. I knew I had to find the light tool that would help me, but first I had to find the finances to be able to buy the instrument that I intuitively felt would change my life. The fire that was warming my belly gave me the courage to gather my resources and order the instrument.*

*The particular light system enabled one to experience twenty different colours for a variable period. I chose to watch those beautiful colours at a rate of 15seconds per colour. That's five minutes of*

*looking at coloured lights in a darkened room. The effect was nothing less than a transformation of my being. I became calm, focused, aware and energized. I began systematically completing tasks I had avoided for months. I powered through work, was filled with positive energy and enthusiasm and felt healthier than I had done in months. A week later, when I began feeling a little fatigued from all this activity, I did another five minutes. And so it went on for a few more sessions with lengthened gaps between until my energy maintained by itself. Soon after this, I discovered that light was used as an optometric tool in vision improvement - and I incorporated this into my practice, changing the entire trajectory of my life.*

The timing of this light event revealed a similar pattern to my lucky squirrel experience – I was shown a different viewing point in my reality that altered my previous idea and belief of truth. The size of my visual field had expanded. My nervous system had relaxed and allowed me access to the visual and emotional information that I had shut out. As the background became the foreground, I glimpsed a part of the chaotic field of information that synchronized with my logical field and ‘catalyzed a major inner shift of perspective’ [Yalom,1931].

How is this possible? My experiences with light are certainly not unique, and they pose more questions than physicists currently have answers for. These events happened within the framework of human intent, using an open and unguarded sensory system as the bridge between cosmos and brain.

In disentangling fact from fantasy, science requires verifiable mathematical formulae to find the extended patterns that bring clarity to an otherwise unbelievable experience. Perhaps the dimensions of the shadow world are too large for us to see the formula, but the sound or the light waves we have used that have drawn forth these mysterious happenings, are the bridges linking life and death.

Using intent, we become the resonators, skilfully shifting through the rainbow of frequencies that hold our entire nervous system and senses, to make the patterns fit between spirituality, consciousness and logic, creativity, imagination and analysis.

My waking dreaming conjures up images of murmuring sparrows and the magnificent displays of synchronized movement that remind us that it is precisely this timing that links us to the essence of life.

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**Denise Hadden is an optometrist, light therapist, visual coach and author. Formerly in private optometric practice where she focused on alternative healing methods, Denise now offers private consultations and workshops on her developing work with Light Field Therapy.**

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## Treating Mood Disorders with Iris-Phototherapy Colourpuncture by Maniisha Bluntschli

### INTRODUCTION

Mood disorders are increasing and reaching epidemic proportions in western societies. Over 25% of Australian adults report high levels of anxiety and/or depression (1). Australia has the second highest consumption of anti-depressants (second to Iceland) and is increasing by 25% per year (2).

Safe and effective methods of treating mood disorders are needed. Anti-depressants are ineffective for two thirds of people (3). Anti-anxiety medication causes undesirable side-effects. They are potentially addictive and produce withdrawal problems (4).

New safer treatments are emerging. Light therapy is one proven method to help depression (5). Acupuncture is another effective treatment for both depression and anxiety (6).

Colour (chromo) therapy has potential benefits for treating mood disorders. Colour affects brain pathways, neuro-endocrine secretions and the limbic brain (7), which controls emotional and mood expression. Colour therapy is a relatively unresearched field with only few studies published. One research study by Dr. Mary Ross demonstrated a method using individualized colour irradiation above individuals' body as effective treatment for depression (8).

Colourpuncture (popularized by Peter Mandel) is the practice of irradiating acupuncture points with specific colours. Only one research study using colourpuncture could be found. It was shown to be effective in helping a variety of health conditions, including ADD and insomnia (9).

Iris-phototherapy is another colour therapy method whereby colour is irradiated close to the iris–pupillary border for short intervals. It was developed by Tony Cocilovo and is based on syntonics optometry, a visual/emotional therapy via eyes. Iris-phototherapy demonstrated empirically to relax the autonomic nerve pathways (10) though there are no research efforts in this field.

**OBJECTIVE**

This study was designed to investigate the effectiveness of colour-puncture and iris-phototherapy for treatment of mood disorders. A secondary objective was to compare the effectiveness between colour-puncture alone to color-puncture combined with iris phototherapy.

**METHOD**

Eight people were recruited who self-reported as experiencing mood problems (anxiety and/or depression). The age spanned from 35 to 61 years. There were two males and six females. Exclusion criteria involved being free of history of psychotic episodes, manic depression, current suicidal tendencies or addictions.\*

*Safe Microwave Technology Usage Guidelines* \*\* protocol was introduced 1 week prior to commencement and continued throughout the following 9 weeks (4 weeks of the study and 4 weeks post-study).

Initial assessments included Mood Questionnaire\*\*, Colour Preference Test\*\*, GDV (electrophotography) images of ten fingertips and Heart Rate Variability (HRV) test using an EM Wave II. These tests were recorded just prior to administering the first therapy session. All assessments were repeated midway through the study (after 2 weeks) and again at the completion of the study (after 4 weeks). The mood questionnaire was repeated as a follow-up 4 weeks after the end of therapy.

Each person received 8 therapy sessions, approximately 30 minutes in duration, twice per week, spaced 2 to 3 days apart over a period of 4 weeks.

The first 4 sessions included iris-phototherapy plus colour-puncture.

Iris-photo-therapy was administered using the Photon Stimulator. Blue light was delivered via fine 2 mm diameter fibre optic cable for 30 seconds to both eyes. The fibre cable was positioned 2 cm from the pupillary border. The frequency was set at 8 Hertz. This preceded the colour-puncture.

Colour-puncture was administered using the Photon Stimulator using the following specifications and locations -

Area	Point	Single or Bilateral	Colour	Duration	Pulse Frequency
Inner wrist	PC 6	Bilateral	Green	60 secs	8 Hz
Navel	REN 8	Single	Magenta	60 secs	8 Hz

Chest	REN 17	Single	Magenta	60 secs	8 Hz
Between Eyebrows	Yintang	Single	Green	60 secs	8 Hz
Forehead	ST 8	Bilateral	Green	60 secs	8 Hz
Forehead	DU 23	Bilateral	Green	60 secs	8 Hz
Apex Scalp	DU 20	Single	Green	60 secs	8 Hz
Occipital	Amnian	Bilateral	Magenta	60 secs	8 Hz
Cervical Vert. 7	DU 14	Single	Magenta	60 secs	8 Hz
Kidneys	BL 23	Bilateral	Magenta	60 secs	8 Hz
Auricular	Ear Shenmen	Bilateral	Magenta	60 secs	8 Hz
Auricular	Point Zero	Bilateral	Magenta	60 secs	8 Hz
Auricular	Sympathetic NS	Bilateral	Magenta	60 secs	8 Hz
Auricular	Anti-Depressant Point	Bilateral	Magenta	60 secs	8 Hz

The treatments administered in week 3 included the above protocol without the iris-phototherapy.

The treatments administered in week 4 included only auricular points without iris-phototherapy or body acupoints. Auricular points Shenmen and Point Zero were included. A point locator was used to determine electrically imbalanced points of the ear. Two to three of these specific points were irradiated. The administered colour changed according to colour test results. If blue components were low, colours from the blue spectrum were used. If red percentages were low, colours from red spectrum were used. The treatment time per point remained at 60 seconds and frequency at 8 Hertz.

*\*The exclusion list was breached for one person who had history of psychotic and suicidal episodes. The researcher included this individual as he had been free of these signs for minimum 8 years .*

**\*\* Refer to Ref. No.19. for *Safe Microwave Technology Usage Guidelines*, Ref No. 20 *Mood Questionnaire*\_and Ref. No. 21. *Information on Colour Preference Test* in Reference List below.**

**RATIONALE**

Acupuncture points were chosen based on protocols used for treating depression and anxiety from acupuncture references (11, 12) and from the investigator’s own clinical experience.

Microwave technology usage (particularly mobile phone and wifi) restrictions were enforced due to its potential harmful effects on mood, cognitive function and sleep (13). Introduction of restrictions began 1 week prior to the study to eliminate changes in mood being due to changes in exposure to microwave.

The Photon Stimulator was chosen as the therapy device for the following reasons: It emits high quality light (close to natural sunlight) generated from xenon gas globes. It emits pulsed frequencies of light which

assists brain entrainment. A frequency of 8 Hertz was chosen as it corresponds to low alpha brain states which induces relaxation. (14)

Colours used by the Photon Stimulator device are based on Dinshah’s colour therapy system. The colours emulate natural colours found in nature. These colours are considered to be most suited to our biological systems. (15).

Iris-phototherapy was chosen to be delivered before colour-puncture as it is reported to ‘prime’ the nervous system into receptivity. (16) Blue was chosen for the iris-phototherapy as it has been proposed to activate the parasympathetic nervous system. (15) Activated parasympathetic response delivers relaxation (17). Healing occurs more effectively when parasympathetic response is activated (18).

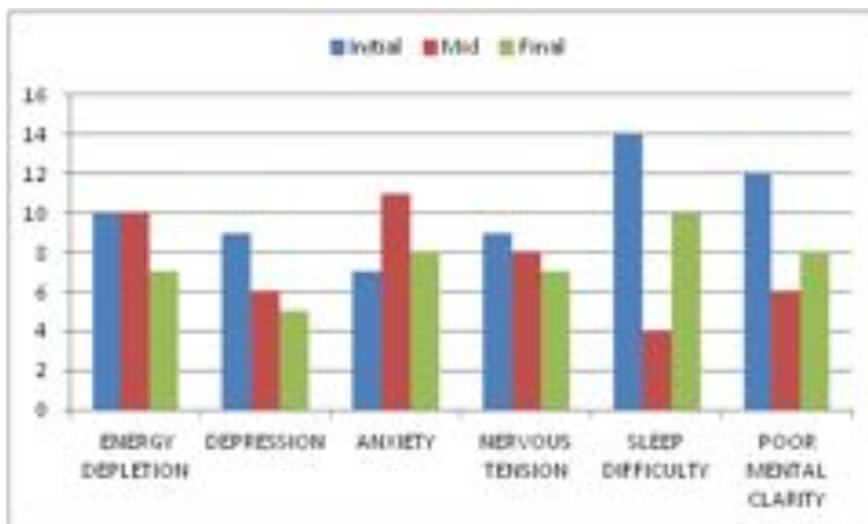
Colours green and magenta were chosen as they are both neutral and complementary colours. Green has empirically been used as a cerebral, pituitary and physical equilibrator. Magenta has been used effectively as an emotional equilibrator. (15)

The protocol changed at the mid point by eliminating iris-phototherapy. This change gave the advantage of studying colour-puncture alone compared to colour-puncture assisted with iris-phototherapy.

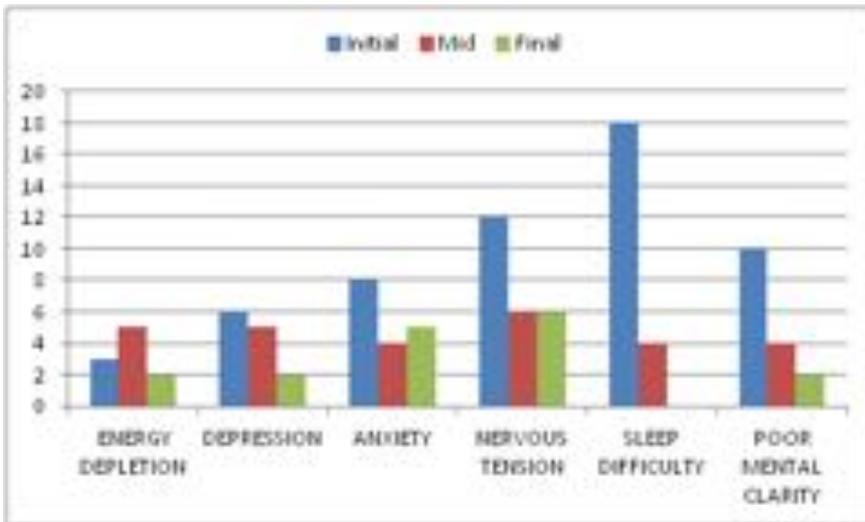
## RESULTS

The following graphs demonstrate the Mood Questionnaire findings.

**Subject 1: Female 35 years old (LM) - Mood Changes for Iris-Phototherapy Colour-puncture**

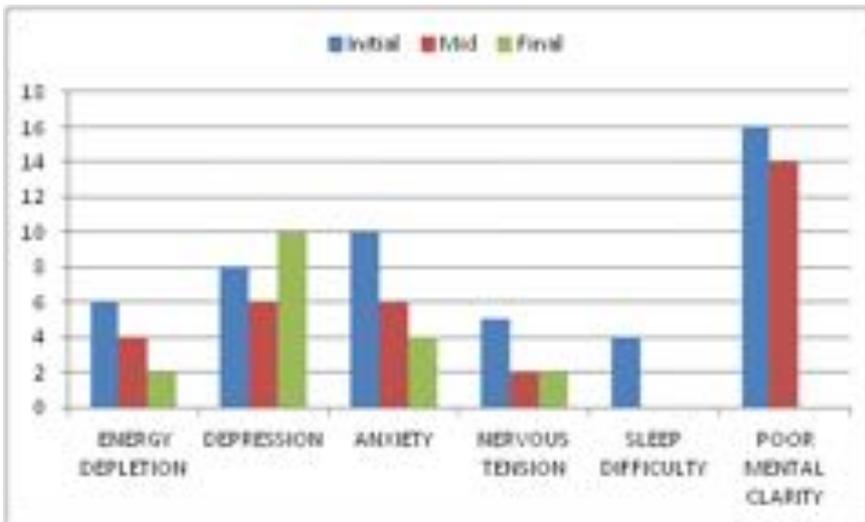


Subject 2: Female 57 years old (RM) - Mood Changes for Iris-Phototherapy Colour-puncture



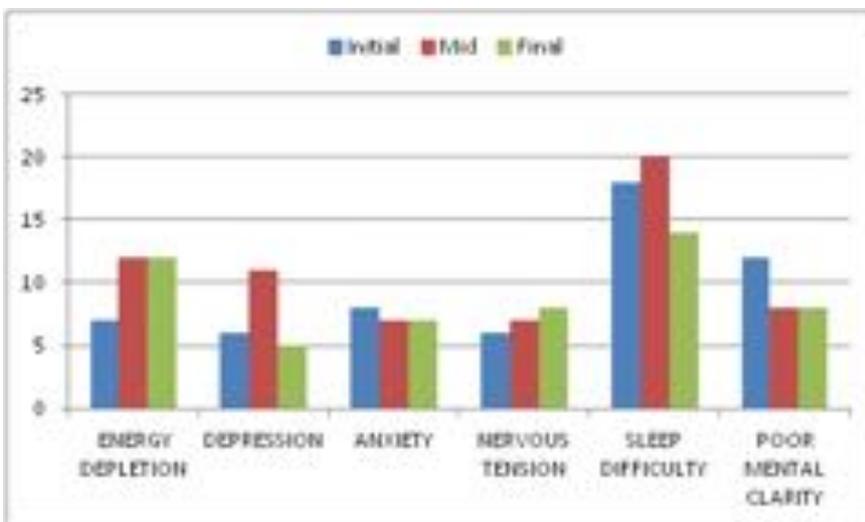
**Please Note** – Where there is an empty space on graph in readings, it indicates a score of 0.

Subject 3: Female 48 years old (MC) - Mood Changes for Iris-Phototherapy Colour-puncture

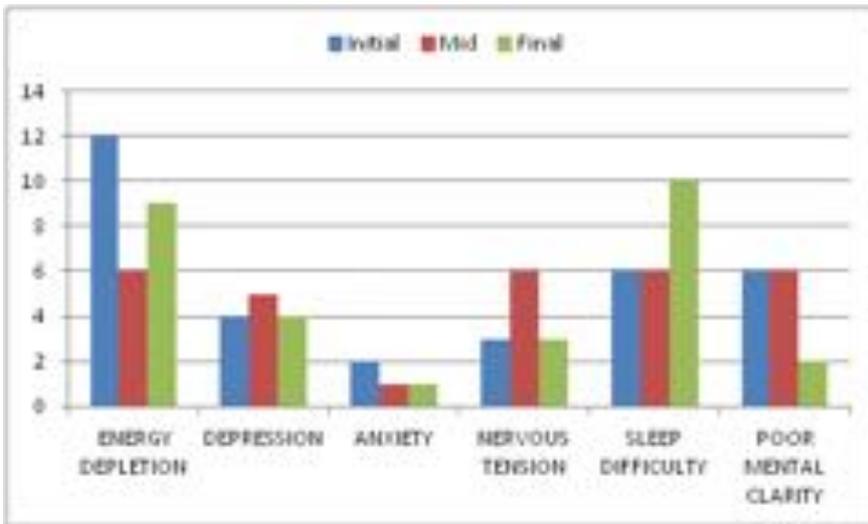


**Please Note** – Where there is an empty space on graph in readings, it indicates a score of 0.

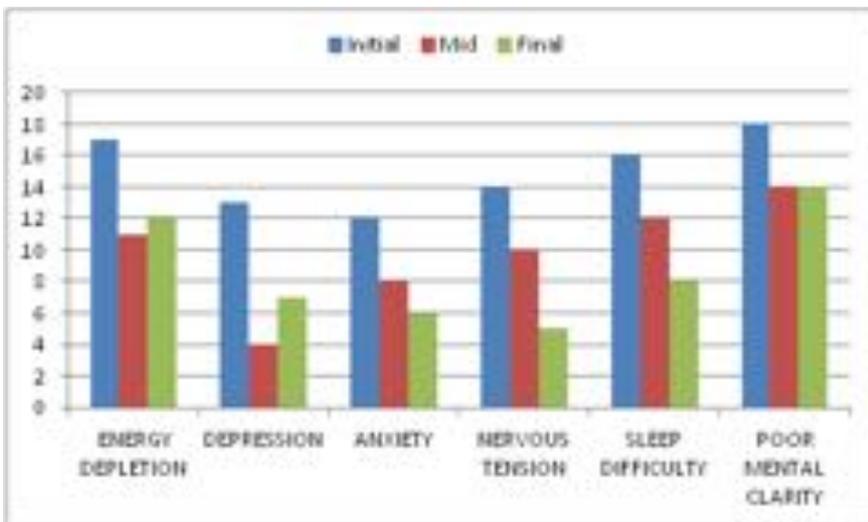
Subject 4: Female 52 years old (KI) - Mood Changes for Iris-Phototherapy Colour-puncture



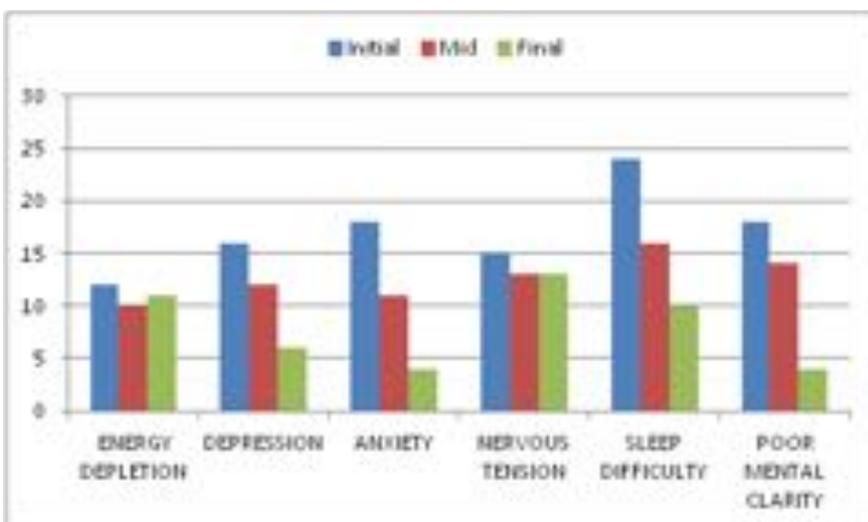
**Subject 5: Male 61 year old (DC) - Mood Changes for Iris-Phototherapy Colour-puncture**



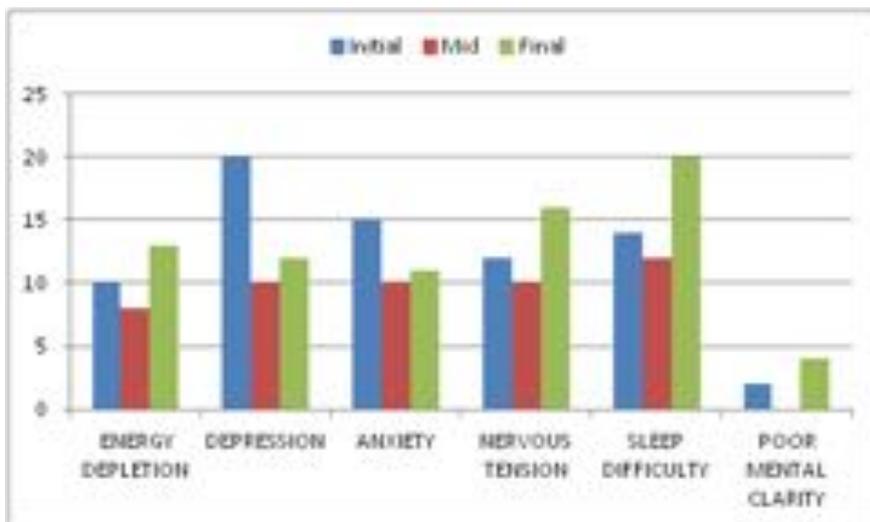
**Subject 6: Female 51 year old (JW) - Mood Changes for Iris-Phototherapy Colour-puncture**



**Subject 7 : Female 48 years old (LS) - Mood Changes for Iris-Phototherapy Colour-puncture**



**Subject 8 : Male 58 years old (TS) - Mood Changes for Iris-Phototherapy Colour-puncture**



**Please Note** – Where there is an empty space on graph in readings, it indicates a score of 0.

**FINDINGS**

- **Depression** was **reduced in 6** individuals, **remained the same in 1** and **worsened in 1** individual (taken from initial baseline to completion of therapy). The average decrease in depression was a drop in 4.8 points (or 35 %). The range was a decrease of score by 15 points (75%) to an increase by 2 points (5%).
- **Anxiety** signs were **reduced in 7** individuals and **worsened in 1** individual. The average decrease in anxiety scores was 4.3 points (or 37.5%). The range was a decrease by 14 points (78 %) to an increase by 1 point (14%).
- **Energy levels improved in 6** and **decreased in 2** individuals. The average increase in energy scores was 1 point (11 %). The range was an increase by 5 points (67%) to a decrease by 5 points (71 %).
- **Nervous tension** was **reduced in 5** people, **remained the same in 1** person and **got worse in 2** people. The average change overall for the group was a 2 point (18%) decrease in nervous tension. The range was a decrease of nervous tension score by 10 points (67%) to an increase by 4 points (33%).
- **Sleep problems** were **reduced in 6** people and **worsened in 2** people (both males). The average overall change in sleep problems was a 5.2 points (33%) decrease. The range was a 14 point (100%) decrease in sleep problems to a 6 points (67%) increase. Two people returned to a score of 0, indicating there were no sleep problems remaining whatsoever by the end of the study.
- **Poor mental clarity** (cognitive function problems) **decreased in 7** people and **increased in 1** person. The average change was 6.5 points (36%) decrease. The range was an increase by 2 points (100%) to a decrease of 16 points (100%).

**Results comparing the first half of the study (using iris photo-therapy in combination with colour-puncture) to the second half (colour-puncture alone) showed –**

- **Depression was reduced in 6 and increased in 2 people for first half** (iris phototherapy plus colour puncture) compared to **depression was reduced in 5 and increased in 3 for the second half** (colour-puncture alone).

- **Anxiety was reduced in 7 and increased in 1 people for the first half** (iris phototherapy plus colour puncture) compared to **anxiety was reduced in 4, remained the same in 2 and increased in 2 people for the second half.** (colour-puncture alone).
- **Energy levels were improved in 5, remained the same in 1 and decreased in 2 people for the first half** (iris phototherapy plus colour puncture) compared to **improvements for 3, remaining the same for 1 and decreased for 4 people in the second half** (colour-puncture alone).
- **Nervous tension decreased for 6, and increased for 2 for the first half** (iris phototherapy plus colour puncture) compared to **decreases in 3, remaining the same for 3 and increasing for 2 people for the first half** (colour-puncture alone).
- **Sleep improved for 6, stayed the same for 1 and worsened for 1 for the first half** (iris phototherapy plus colour puncture) compared to **improving for 5, staying the same for 1 and decreasing for 2 in the second half** (colour-puncture alone).
- **Mental clarity improved for 7 and remained the same for 1 in the first half** (iris phototherapy plus colour puncture) compared to **improving in 4, remaining the same in 2 and worsening in 2 people for the second half** (colour-puncture alone).

*\*For results and findings on GDV, HRV and Colour Testing, please see separate report upon request.*

## DISCUSSION

It is clear from the findings that there have been general overall improvements in all parameters tested, in particular cognitive function and sleep (being the top two areas affected beneficially), depression, anxiety and finally nervous tension and energy levels (in that order).

Even though the general trend was for improvement, there were two individuals who responded adversely in some measures. Both were males with history of severe psychological conditions (one with Complex Post Traumatic Stress Disorder, the other with previous psychotic/addictive/bipolar diagnosis). Even though both individuals were managing their conditions reasonably well at the time, this particular form of light therapy induced aggravating effects, particularly for sleep patterns and energy levels for both of them. One individual had a complete change to his diurnal clock, only able to fall asleep at 4 am, requiring to sleep till midday. Both reported feeling worse as a result of the therapy. One returned to a favourable condition by 4 weeks after the end of the therapy, whereas the other continued to deteriorate, only returning to balance 8 weeks after the study. The reason for this is not understood. It is possible that due to traumatic histories, they had a hyper-sensitivity to light, and the pineal gland (regulator of serotonin/melatonin levels via light exposure) may have received too much stimulation, causing an imbalance rather than a correction, however this is an unproven hypothesis.

The two individuals who improved most were people with a history of least degree of mood/psychological imbalance. Their improvement continued past the end of the therapy. One of these individuals reached a point of having completely removed all signs of anxiety and depression. The other individual had a significantly large reduction in all her measures by the end of the study.

This may indicate that people with less severe symptoms require less treatment (in this case 8 sessions were sufficient) for lasting effects. Individuals with moderate mood disorder signs may need more than 8 sessions for sustained post-effects. Individuals with history of severe psychological conditions (even if past and no longer current) may be best treated cautiously with minimal light stimulation.

### Limitations

Some of the limitations of the study design include –

- Mixing iris phototherapy with colour-puncture. Having two separate groups receiving different modalities may have shown clearer results.
- Changing the colour-puncture protocol in week 4. Keeping the protocol uniform for weeks 3 and 4 may have given more accurate results.
- Choosing more than one colour for irradiation may also have confused the outcome results.
- The low number of people studied give only a limited view of effects.
- The absence of a control group.
- The study was not blinded so expectations may have influenced results.

### Design Considerations

In consideration of future studies, I would recommend a control group, stricter adherence to exclusion criteria, larger groups of people studied, separate groups (one with iris-phototherapy, another with auricular colour-puncture and another with body acupuncture). I would also recommend the choice of one colour per person, dependant on an individualized assessment using colour preference test and overall diagnosis.

### CONCLUSION

It can be preliminarily deduced from the findings that –

- Colour puncture combined with iris-phototherapy is beneficial for improving mental function, sleep patterns and energy levels, as well as alleviating anxiety, depression and nervous tension, provided there is no history of severe psychological conditions.
- The **most responsive conditions** for colour-puncture with iris-phototherapy are **anxiety and mental clarity**.
- The **least responsive condition for this therapy is nervous tension** (however more than half the group still responded with lowered tension levels).
- **Combination of iris-phototherapy with colour-puncture is more effective in helping mood disorders, than colour-puncture alone.**
- **Iris photo-therapy is most effective for reducing anxiety, nervous tension and benefitting sleep patterns.**
- **Some individuals can react adversely to this form of therapy.**
- **People who may respond adversely are people with history of more severe psychological conditions.**
- **Beneficial effects are more likely to be sustained for people with milder conditions.**

## ACKNOWLEDGMENTS

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**Maniisha Bluntschli** has worked as an acupuncturist and naturopathic practitioner for 28 years. She is currently conducting ongoing clinical research studies using a range of assessment modalities including Kirlian-based electrophotography (GDV technique).

## Energy Meridians - 'Rivers of Light'

by Jeremy Halpin

The energy meridians of traditional Chinese medicine may actually be a narrow bandwidth network of low-level light pathways interacting with external and internally generated light energy using the superficial fascia as a relay point to the rest of the body.



Now, this is a lot to digest in a single sentence so let us break it down a little. It is only recently that we have been able to confirm that our bodies generate low-levels of light radiation, the most easily measurable being infrared light.

Conversely, the body's healing mechanisms respond well to low-level doses of this spectrum. We also respond to different bandwidths of light (such as monochromatic light) and even different coloured light of the same frequency. So what might be going on here? Specifically, what might this tell us about the meridian system and human health and consciousness in general? All good questions but first ... a little context about the meridian system.

In traditional Chinese medicine (TCM) light is recognised as one of the countless expressions of chi or catalysing bio-energy. Chi itself is considered a manifestation of consciousness. One such form is expressed in the classical saying "Thoughts travel on waves of wind." When this is disturbed we can suffer in many physical and mental ways from headache and muscle spasms to dissociative states and psychosis.

Not only does light serve to animate the physical body - and thus provide the most obvious difference between a living person and a corpse - it also ferries our consciousness between our thinking mind and subconscious connections via the Shen in the heart centre in the Fire element.

Shen (also called the 'Divine Spirit') functions as the connection between the spiritual/software realms and the daily consciousness required to function successfully in the material world of physical survival. From a TCM perspective, death is described as "The Shen leaving the Heart". In essence our animating energy software separates from the physical hardware of the body. The body itself, being the property of mother earth, returns to it.

### **The Fire element and Inner Light**

In the Five Transformations of chi (a.k.a. the Five Elements) in TCM, the Fire element

encapsulates and describes our individual, inner light.

The Fire element describes:

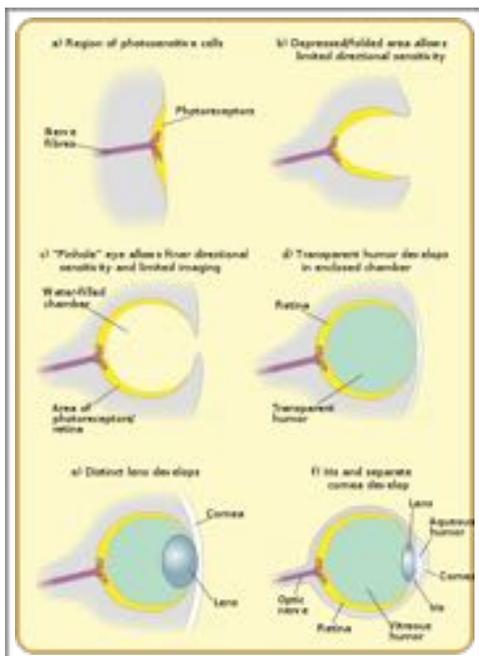
- Our internal resonance to *outward* stimuli : like the sun, therapeutic light, environmental radiation, touch and so on. (Chief mediator: The triple heater)
- The perception of *internal* light states that are the result of shifts in our conscious awareness. (Chief mediator: The Heart)

The Fire element then, is particularly sensitive to light. It's emotional connection to joy, creativity and inspiration (literally meaning: "To be filled with spirit.") shows a direct connection to the state of enlightenment in our body. The gleam in the eye our subconscious recognises in someone is naturally attractive to us. It is connected with humour and the Hanuman-like capacity to make light of difficulty and play with it to arrive at creative solutions. The Hindus call it 'Lila Shakti' - the play of consciousness.

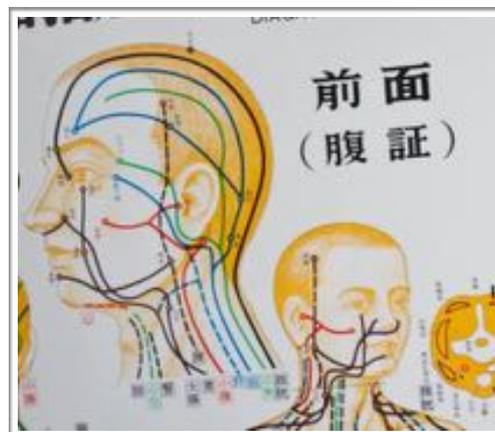
The fire points in the palms lying on the fire meridians of the Heart and Heart Constrictor respectively (Ht.9 and HC-9) measurably generate infrared light. The infrared light spectrum (and its light cousins, near infrared and heat) is used in the healing of many problems from muscular injuries to joint pain amongst others. The hands of a trained healer generates considerably more infrared light during a treatment session and may go some way to explaining healing's therapeutic effects.

**The meridian system and light**

While our eyes are by far the single biggest receptors of light, we absorb light in many ways. Perhaps the most interesting are the acupoints of the meridians themselves. They function much like the primitive, developmental form of the human eye.



Evolution of the human eye



Zen Shiatsu Meridian chart

The points on the main meridians are actually simple light receptors, mimicking the primitive development of our own eyes, that could only perceive and react to the presence or absence of light. As such they are highly reactive to light. This has spawned non-needle meridian treatments like 'colour puncture' (see below) which applies low-level doses of coloured light to point combinations.



Here is a subjective observation: an unexpected consequence of incorporating a monochromatic light machine into my practice as an acupuncturist and healer is the immediate effect light has on the energy diagnosis of my clients. Uneven, disparate fields of energy around their body become harmonious and diagnostically unremarkable. It is also common for clients to experience internal colour visions during treatment where specific shifts can be identified at certain points or areas being treated.

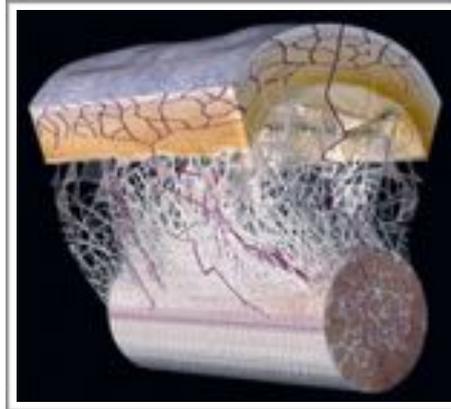
The concept of energy pathways that animate a living body has been around for thousands of years. The relative newcomer of Western medical science lacks a software metaphor that might otherwise include the possibility of animating energy-consciousness. As a result it tends to marginalise or even dismiss the energy model while simultaneously making token attempts to research it. They are only token because they are viewing this software system through the prism of hardware – anatomy and biochemistry like the nervous system. Unsurprisingly then, the results are inconclusive. But what if we viewed the meridian system in a different ... light?

### **The meridian system - a narrow bandwidth interface**

The meridian system may be seen as an interface, operating on a fairly narrow bandwidth in and around the body. If one presses or needles more than a centimetre or so, we begin to leave the influence of the meridians and to mechanically affect the muscles and connective tissue. While there is nothing wrong with that, it becomes the provenance of other therapies – from deep tissue massage to surgery – and nullifies the specific utility of the meridian system.

Likewise, the points themselves spiral outwards beyond the body. At a relatively short distance away however they become so large as to overlap each other making traditional point and meridian protocols meaningless. Again, this is not a negative thing but at that point, another explanatory model needs to account for the therapeutic effects of working off the body. Indeed, many healing methods, including some light therapies do exactly that.

There are already people investigating just this connection between the meridian system and light. “The Institute for Clinical and Experimental Medicine in Novosibirsk, USSR, in a research project lasting several years, sought to explain how the human body conducts light. They found that the light conducting ability of the human body exists only along the meridians, and can enter and exit only along the acupuncture points.”



The fascia and the 'living matrix'

Dr. James Oschman has long been a supporter for the scientific basis of energy medicine. He makes the connection between the body's collective response to stimuli and the vast, interconnected webs of fascia throughout the body encompassing muscles, connective tissue, nerves and beyond.

What many consider muscular or even joint pain can actually turn out to be distortions in this fascial web. What is even more fascinating is that the fascia can be therapeutically affected by multiple means:

Mechanically: myofascial massage and chiropractic adjustments

Energetically: acupuncture, meridian based therapies like shiatsu and non-physical healing

By light frequency: light and colour therapies

At different times it is prudent to use one over the other. For example, light therapy to an inflamed area may be a better choice than physical massage or manipulation.

### **Light, energy and consciousness**

While the second law of thermodynamics demonstrates how energy is lost as an object or system disintegrates it says nothing about energy-consciousness *entering* a conscious, living system.

Would it not be logical to assume that when this happens a *higher* level of integration occurs? In terms of conscious awareness we would say that we experience a higher level of consciousness. We have already seen how this expresses through the Fire (light) element as playful intelligence. In terms of light energy, we become more enlightened. What might this mean in practice?

Over the last five years I have incorporated a monochromatic light/colour machine into my practice. In cases of extreme debilitation or depression, a 10 minute light session may be the only treatment given to a client. Even this is administered only once every few weeks. Despite what

may be considered a medically inconsequential dose, these clients repeatedly demonstrate a return to emotional and physical well-being.

### **We are light beings**

The capacity of light to act as biological software that programs processes in the body is well known. Light from our sun functions as the catalysing and programming software for life on earth. The many therapeutic uses of light and colour, both from natural sources and purpose built technologies, are still being explored and developed. The invention of Kirlian photography early last century demonstrated that every living thing emits light that can be measured. It is the subliminal shimmer, behind and through, form that secretly thrills and attracts us.

So much regarding the human body is fixated on just that: the body. One of the defining characteristics of a living human however (as opposed to a corpse) is that indefinable software of life. Is it not possible that we ourselves are light generators and therefore attracted to other sources precisely because we ourselves are, in essence, light beings?

### **And what of the future?**

Some therapeutic applications of light have already made it into Western medical practice. The use of lasers in delicate surgery, UV light for sterilisation, the blue light of humidicribs to facilitate the breakdown of bilirubin in prematurely born babies are some examples.

*Blue light being used to help a premature baby break down bilirubin. The undeveloped liver cannot yet do this by itself.*



Here is a prediction for the future of the technological side of medicine, at least. We will see a shift away from overly intrusive and side-affect producing interventions like biochemical medicines and surgery towards more software-based methods for diagnosis and treatment of physical and psycho-spiritual disorders.

One of these will be the use of light and colour. There will be others. To facilitate this, we must incorporate a software metaphor into our medical model. We have already taken it for granted in so many other technological fields. In the body however it becomes the programming language that connects the body-mind and opens up an exciting new world of exploration.

We are currently in our infancy regarding the investigation and application of software solutions like light to health challenges in the body. Perhaps the time has come where the medieval metaphors of cutting, burning and poisoning (surgery, radiation and medicines) that continue to influence modern medicine can be mediated somewhat by a (literally) more enlightened approach.

**Jeremy Halpin** has been in clinical practice for 30 years as a zen-shiatsu therapist, acupuncturist, healer and teacher. He has established diploma courses in alternative medical disciplines and is a published researcher with the Karolinska Institute in the emerging field of “Integrative Medicine”

## On the Bookshelf

### Book Reviews

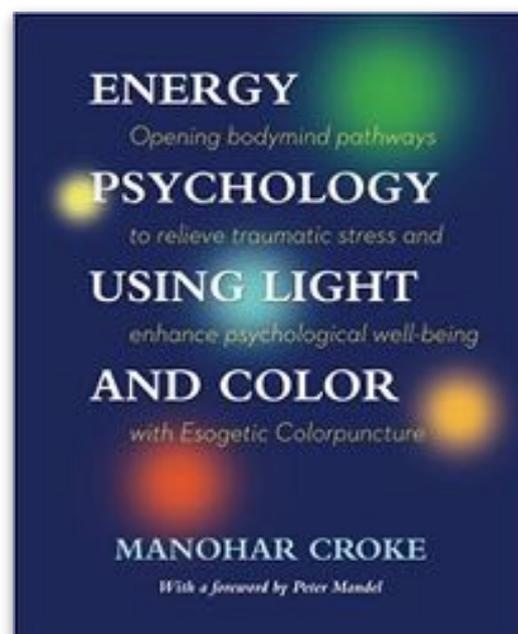
#### *Energy Psychology using Light and Color* by Manohar Croke

Review by AJ Hoffmann

*Energy Psychology Using Light and Color: Opening bodymind pathways to relieve traumatic stress and enhance psychological well-being with Esogetic Colorpuncture*

Published by Points of Light Press, 2016

As the study of mind, brain and behaviour, psychology has many schools of thought and is an evolving discipline as research and knowledge grows. Therapies used to treat psychological problems also have a range of approaches from psychotherapy and psychoanalysis, to behavioural and cognitive therapies. More recently, integrative or holistic therapies have emerged, where therapists combine elements from different approaches and tailor treatments to client needs. As one of these holistic approaches, energy psychology covers a range of psychological treatments that utilize the human energy system to facilitate healing; incorporating colored light is one of the therapeutic options.



*Energy Psychology using Light and Color* by clinician, teacher and Director of the U.S Esogetic Colorpuncture Institute, Manohar Croke, is subtitled '*Opening bodymind pathways to relieve traumatic stress and enhance psychological well-being with Esogetic Colorpuncture.*' The complete title leaves little doubt about the scope and the focus of this book. It is a substantial volume - in length and content - covering current theory in psychology and neuroscience alongside practical information about tools and applications of colored light through Esogetic Colorpuncture™ to treat disorders such as stress, trauma, addiction and depression.

The book is divided into three sections:  
Section 1 - The Concepts and Theories of Esogetics  
Section 2 - Esogetic Tools and Procedures  
Section 3 - The Esogetic Treatments

Section 1 explores the nature of light itself and as a source of information; its connection with the mind and body. The section also gives sound background on Esogetic Colorpuncture, and later the relationship between light and the physical body through the endocrine and lymphatic systems.

Section 2 includes a range of tools available for Esogetic Colorpuncture, indications for color use and procedures to use in treatments.

Section 3 gives specific guidelines for Esogetic treatments. Explanations are clear and easy to follow to follow and are supplemented with illustrations.

With a Forward by Peter Mandel (creator of the Esogetic Colorpuncture™ system) and Preface written by Brian Breiling (author of *Light Years Ahead: The Illustrated Guide to Full Spectrum and Colored Light in Mindbody Healing*), Manohar Croke's latest book adds substantively to the growing library of integrative psychotherapy. Her expertise and many years' experience is evident throughout the text which will undoubtedly be a valuable new resource in the field of energy psychology.

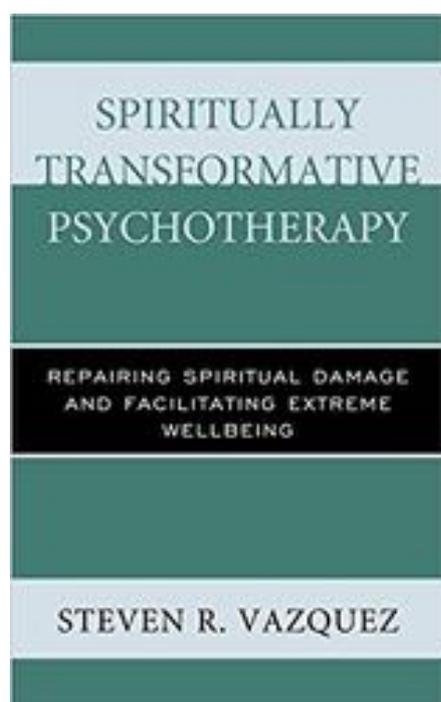
*Energy Psychology using Light and Color* is aimed at psychologists, but is also a valuable instructional volume for those training in Esogetic Colorpuncture and for anyone wishing to explore this modality of healing with light and colour.

It is available for purchase from Amazon: <https://www.amazon.com/Energy-Psychology-Using-Light-Color/dp/1532754159> Or through the author's website: [www.colorpuncture.org](http://www.colorpuncture.org)

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## **Spiritually Transformative Psychotherapy by Steven Vazquez**

Review by AJ Hoffmann



*Spiritually Transformative Psychotherapy: Repairing Spiritual Damage and Facilitating Extreme Wellbeing*  
by Steven R. Vazquez  
Published by Rowman & Littlefield, November 2016

Dr. Steven Vazquez is a professional counselor and therapist, and has been in private practice for over thirty-six years. He is the creator of the Emotional Transformation Therapy® (ETT) approach to psychotherapy and speaks on this method throughout the U.S. and around the world, as well as conducting training seminars and workshops.

His most recent book, *Spiritually Transformative Psychotherapy*, was published late last year, and follows his previous book, *Emotional Transformation Therapy*, published in 2013.

Dr. Vazquez' latest book presents his unique approach to treating a number of mental and emotional problems from the spiritual and religious perspective. The author guides the reader through his process, utilising research and case studies to illustrate the integration of ETT principles into his therapeutic practice.

The book comprises 9 chapters, each presenting information and examples, and importantly, years of accumulated knowledge and experience. Topics include: an introduction to religion and spirituality in coping with trauma, stress and emotional issues; details of ETT - what it is and how it works; facilitating forgiveness, and facilitating 'extreme-wellbeing'; meditation, hypnosis and prayer; approaches to working with cancer patients; spiritual differences in couple relationships.

Each chapter gives a useful summary at the end as an overview of key points. This is extremely helpful, as the chapters do contain a great deal of information to absorb.

The book also includes appendices: a questionnaire for 'Partner Spiritual Differences'; and information and links to the Emotional Transformation Therapy® International Association, and the Visual Ecology and Psychotherapy Research Foundation.

Of particular interest to therapists working with light, is the description of the ETT process itself which uses coloured light in therapy sessions. It involves a combination of eye-movement and stimulation techniques, and the shining of precise wavelengths of light (colors) into a client's eyes. This is done in conjunction with verbal processing and is intended to enhance the effect of 'talk therapy'. It may also have the effect of profoundly changing the brain.

The author says: "This approach is particularly valuable for people who are spiritual but not involved in a traditional religion. However, even people without a spiritual orientation may benefit from an exploration into their deepest inner selves".

*Spiritually Transformative Psychotherapy* is a book which gives a different approach to psychotherapy, and is a resource for therapists and counselors with minds open to new points of view, and new ways of treating mental health and emotional problems.

It is available for purchase at: <https://www.amazon.com/Spiritually-Transformative-Psychotherapy-Repairing-Facilitating/dp/1442258136>

Or from the publishers website: <https://rowman.com/ISBN/9781442258112/Spiritually-Transformative-Psychotherapy-Repairing-Spiritual-Damage-and-Facilitating-Extreme-Wellbeing>

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## Author Interviews

with two recently published authors who work with light and colour

### Margo Ruiter

**In Je Kracht door Kleur** by Margo Ruiter

Published 2016

JoL: Before we talk about your book, can you tell a little about yourself and your connection with light and colour.

M.R: When I was young I always saw colours around people and before I went to sleep I saw colours. When I was 18, I suffered a severe accident with traumatic brain injury. Because of that, I became ill leading me into a state of not functioning in a proper lifestyle, not being able to walk, and without life-energy. I was conscious but not really alive. During that period, I lost my colours and it was dark around me. After receiving a chakra healing from a family elder, I literally saw the light again. Because of that I started connecting with colours and it became my path back to life. I learned that the colours I saw were a gift. Not everybody has the ability to see in this way.



JoL: What was your motivation to write this book? M.R: During my life I have learned a lot about working with the healing power of colour. I empowered myself by working with colours and the power of the mind. For the last ten years, I learned by working in my practice: with groups, with children and adults. I understood that everyone who came to me, needed to learn and interpret how they felt. Working with colours seemed the easiest way to reach people.

JoL: What else can you share about your book and your work? M.R: The writing process took three years. The first and most important step is for people to learn the true language of colour by connecting with their intuition. I communicate universal truths about twenty-four colours; I trigger the mind, then give exercises to work on. Only by taking action, can you learn how your body, mind, soul and spirit communicate with you. You learn where judgement takes over, where fear steps in, and when you stop connecting with the other. You learn when you feel more space, love and peace. This is the basis of working with colours.

JoL: Who is the book for? Who is your intended audience? M.R: This book is for colour-lovers who are interested in personal development and a healthy life. People who work with colours should also learn their own colour signals, so healing with light and colour devices can be enhanced.

JoL: How did you decide on the title of the book? M.R: It was not difficult to find a title. *Empower Yourself with Colour* is a close translation of the original Dutch title. The book will be translated into English. I hope it will 'see the light' soon.

JoL: The cover art is truly vibrant. Is there a story behind it? M.R: On the cover of the book, the magenta painting is shining brightly. Magenta is the colour which leads us to the next dimension. It is the start of co-creating without ego for the greater good. It is about sustainable development; a new mindset. People are so eager to step into the fifth dimension, but before they can take this step, they need to learn how to feel; how to experience other senses apart from the eyes. Colour is more than what you see. It is a vibration and you can learn how to feel and interpret it.

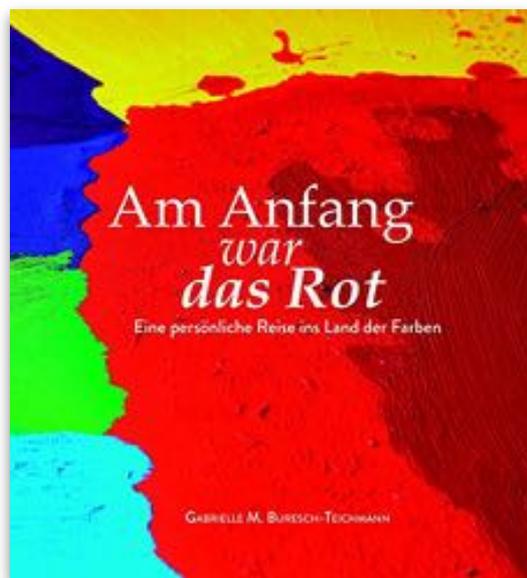
JoL: What's the most important thing you want readers to take away from reading your book? M.R: I want my readers start understanding the signals of their body, mind, soul and spirit; to trust these signals to lead them. I want them to learn how to use the colours on a daily basis for happiness, humility and gratitude. I wish people could attract positivity, health and love by connecting with colour and light and pass this to their children. Colour and light is around us 24/7 and is free! Why not use it the right way?

JoL: Did you learn anything from writing this book? M.R: It gave me more focus, dedication and healing. I learned even more about every colour. And this process is not finished - I think it will never be because I have not finished growing.

JoL: What is your favourite book on light and colour? M.R: *The Chakra Handbook*, a German book translated into Dutch by Shalila Sharamon and Bodo J. Baginski. It was the first book I read after my chakra healing, and it was my salvation to be able to read a few sentences about colour and contemplate it for the rest of the day.

JoL: Do you have plans for more books? M.R: I have developed a healing method called the Elohim-way®. So, my next book would be about this, as I already get asked questions about it.

## Gabrielle Buresch-Teichmann



**Am Anfang war das Rot** by Gabrielle Buresch-Teichmann Published 2016

JoL: Before we talk about your book, can you tell a little about yourself and your connection with light and colour.

G.B-T: I pioneered colour consulting and colour/light therapy in Vienna and Austria. I have 30 years of experience as colour consultant and 24 years of experience as colour/ light therapist. Colour and light are my vocation. I understand, see feel and sense colours with all my six senses. Colour and light are a language I feel at home with.

JoL: What was your motivation to write this book? G.B-T: It has been a dream and wish for me for many years to write a book. My motivation was to bring in my knowledge, wide experience and intuition for colour and light.

JoL: Who is the book for? Who is your intended audience? G.B-T: The book is intended for everyone interested in colour/ light , psychology and healing, as well as for people interested in meditation, colour visualization, travelling and self- development.

JoL: How did you decide on the title of the book? G.B-T: The title “ Am Anfang war das Rot” (in the beginning there was red) is the first phrase of my book.

JoL: The cover art is truly vibrant. Is there a story behind it? G.B-T: I decided that I did not want to buy or search for the illustrations of my book in the internet. So I painted myself all the illustrations of my book - with the supervision of an artist. So it is a whole piece of art coming from me.

JoL: Was there a section of the book you found easy to write, that just flowed? G.B-T: As soon as I managed to get started, it was quite flowing. It was difficult to get started.

JoL: Was there a section that you found difficult to work on? G.B-T: It has been very difficult to get started as I first had other plans for my book. I already wrote the exposé and structure of the book and changed my plans after that.

JoL: What's the most important thing you want readers to take away from reading your book? G. B-T: My book speaks to the reader on the level the reader can be spoken to. My book can be amusing, inspiring and even healing.

JoL: Did you learn anything from writing this book? G.B-T: Yes a lot. I learned to trust my path, my knowledge and my intuition. I learned to overcome obstacles, which are normal when in a creative process.

JoL: What is your favourite book on light and colour? G.B-T: I do not have one favourite book, rather several books from the authors: Goethe, Rudolf Steiner, Johannes Itten, Theophilus Gimbel, Eva Heller, Jacob Liberman, Pierre V. Obberghen, Karl Ryberg.

JoL: Looking ahead, do you have plans for more books? G.B-T: Yes, the inspiration for my next book is knocking and I am preparing to start. This project is big.

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## Reports

### Dr. Mary Ross: Developing a software program to facilitate light research

**Report by Maniisha Bluntschli - acupuncturist, researcher and Australasian Light Association (ALA) Chair.**

At the 2016 International Light Association conference in Vienna, I had the good fortune to meet Dr. Mary Ross. It had been my intention to find a mentor to guide me through research work in the field of light therapy. Mary has proven to be such a person. Through our connection I have learnt about her professional background and also her ambitions in the field of light therapy research.

After 40 years working as a licensed psychologist, both privately and in the Texas Department of Mental Health and Retardation, Dr. Ross retired. Quite 'by chance' she was exposed to the benefits of light therapy in treating depression and since this time, has dedicated herself to research in the field.

One of her more recent endeavours is the development of a computer software program for light therapists to conduct research more easily and effectively.

Within this program, Mary has included her own unique color selection test, which has been tested on approximately 600 individuals and already used in several research projects. The color test is designed to assist the therapist in choosing appropriate colors for therapy. Additionally, it helps make assessments on the psychological state of the individual and the efficacy of the therapy delivered.

The program also contains research questionnaires such as: General Health Status, Status (for Energy, Mood, and Temper), Cognitive Function, Depression, Pain Assessment, Sleep Quality, Amen Scores and Child Behaviour / Learning Abilities. There are also forms which track patient response to light therapy.

Client responses are identified by the ID Code assigned by the therapist. The only other information recorded for the individual is the gender of the client, age and their country. All data would be analyzed in aggregate so it would never be possible to link results to any one client. Findings are confidentially stored and compiled into easy-to-read graphs. These graphs can be included in research reports and articles.

In Mary's words, *"What would get therapists in the USA interested in providing light therapy would be studies showing the effectiveness of light therapy. Having an internet based software program that would administer different measures, score them and record the results in databases would greatly facilitate research efforts.*

*When I first started exploring the use of light I had paper and pencil forms that clients completed. I then had to enter their responses into a database. It was time consuming and every time you handle data it is an opportunity to make an error. As I was able to get the software written to administer, score and record the responses to the measures in databases I realized how much easier it was to do research.*

*I also realized an even greater benefit was being able to monitor my clients' responses to therapy. For example, one of the measures asks the individual to rate the quality of their sleep over the past week. Over time I saw that clients typically started reporting improved sleep after 3-4 sessions."*

By tracking her clients' responses to the sessions and making adjustments she was able to reduce the number of sessions for clients from 20 or more to less than 10 and not infrequently to 5 or 6. Such a program would greatly expand the use of light."

Dr. Ross believes that the USA - and the wider international community - is on the verge of a widespread recognition of the importance of light and color, stating *"companies are producing LED color light bulbs that can be screwed into regular light sockets with the colors controlled by cell phones. These are being aggressively marketed. There are a growing number of articles regarding light and color and its impact on health appearing in lay publications. More and more segments of light and color are being reviewed on national TV.*

*Recently the main actor on one of the new, popular TV shows made a pair of slippers for a patient and embedded blue LED diodes in them. While he was putting them together, he was explaining how blue light lessens pain and promotes healing. Recently she saw the first article regarding the fact that some people using these LED color bulbs are experiencing negative effects from the colors they select. This is not something that one would like to see but it makes the point that things that help you can also be hurtful and that it's best to know what you are doing. As people become increasingly aware of the power of light and color there will be a growing need for therapists and light units.*

*For all of the psychologists, counselors, social workers, nurses and other health care providers who have been trained to work with clients and who have been licensed by their states to work with clients, adding the modality of color light therapy to their practices would be a simple matter if there were research studies that demonstrate its effectiveness.*

*Within the last 3 months or so a number of neurotherapists have been discussing adding near infrared and infrared LED lights to their therapy sessions. They will be doing research projects and reporting their results. If we had sufficient research studies using color light we could just as easily get their attention and perhaps be included in their projects".*

Prior to working in color light, Dr. Ross was involved in neurotherapy and trained in QEEGs and EEG biofeedback. She shares how that field has developed and become accepted by therapists and advocates for a similar process in the field of light.

She relates that *"In the early 1970's several individuals at major universities in the USA that could afford the computers with the speed and memory to record EEG activity began to experiment with changing brain waves by giving EEG biofeedback. This was mostly done with the Alpha waves. Research continued at the universities until the development of the microprocessors and the chips permitted the production of lower cost computers that had the speed and the memory requirements to record and analyze the EEG recordings. They were also priced where the average professional could afford to purchase them. At this point clinicians began experimenting with training the different brain waves and publishing their results. With the studies documenting the effectiveness of the training and describing the protocols and techniques used, more and*

*more professionals began adding the modality to their practices. In the early 90's enough professionals were offering the training that they came together and founded the International Society of Neurotherapy and Research. Like the ILA they have an annual conference with invited speakers. This has helped spread the information of their work. They also have a 'user list' serving as a platform for therapists to share information. They now have members around the world and the field of neurotherapy is becoming accepted as an effective therapeutic modality."*

Dr. Ross' goals are to use the software program to develop a network of clinicians who can collaborate to collect and report data that will be both evidence-based and practice-based. This data can be collected both in a 'real life' practice setting as well as in clinical trials. Through this, it is her hope to increase current knowledge on the scope and efficacy of light therapy. Ultimately, this will assist light therapists to improve and expand their skills and practice while providing effective treatment.

The benefits of such a program would be that therapists could participate in research without time consuming administrative tasks. Additionally, therapists would receive communication about latest findings.

Currently, the program is in the planning stages. It would be best developed through a university with a demonstrated interest in the field of light research, and with the structure and support services to maintain it into the future. Dr. Ross would be willing to transfer copyright of the software design to whoever takes on the role and the project is now awaiting this next step. It is hoped that this report, highlighting Dr. Ross' innovative software program will reach the person or institution who will partner in the venture.

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## The International Light Association (ILA) was a sponsor of -

UNESCO International Year of Light 2015

[www.light2015.org](http://www.light2015.org)



**INTERNATIONAL  
YEAR OF LIGHT  
2015**

## International Day of Light

### Report: Transition from International Light Day (ILD) to UNESCO International Day of Light (IDL)



International  
Day of Light

16 May

Coinciding with the 10 year anniversary of the ILA, the first ILD took place at the ILA Conference in 2013 in Antwerp under the initiative of Pauline Allen. The ambition of ILD was to bring greater awareness to people across the globe as to the phenomena and power of light and to inspire them to celebrate in their own special way, this unique day. Producing the [Power of Light Case Studies](#) booklet was part of this vision.

Pauline and her team celebrated ILD in 2016 with a trip to the Royal Greenwich Observatory and whilst it was not possible that day to view the sun through a solar scope they still spent a fascinating and rewarding day viewing many timepiece antiquities, telescopes and even straddling the Meridian Line!

In 2015 UNESCO declared an International Year of Light (IYL) which was so successful they felt its legacy should culminate in the founding of an International Day of Light, the first of which will be celebrated on **16 May 2018**. This date follows the **ILA Oslo Conference 13-15 May 2018** – and a perfect opportunity to celebrate IDL!

“We have been thrilled and delighted at the success of the UNESCO International Year of Light and decided unanimously that whilst ahead of the zeitgeist in declaring ILD three years earlier, it was entirely appropriate to transition ILD into the newly declared **International Day of Light (IDL)** to be celebrated henceforth on **16 May each year**. ILD’s inception may have been something of a catalyst for the more far reaching and widely recognised **UNESCO International Day of Light**. I feel optimistic and excited at the prospect of celebrating the inaugural IDL on **16 May 2018** and look forward to doing so for many years to come! It will definitely be in my diary from now on.”

- Pauline Allen



**Pauline Allen is the Founder and Principal of The Sound Learning Centre in London and Chair of International Light Day (ILD).**





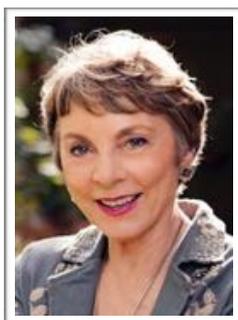
## ILA Conference

### Message from ILA Conference Co-ordinator

“ In the era of on-line everything - social media, entertainment, webinars, encyclopaedic and instructive information sources - there is often a question as to why one would necessarily spend a deal of money travelling to an exotic location to attend a conference. And though all the sources above enrich our lives in many ways, far more than was possible in the past, nothing equals the immense pleasure of re-connecting with old friends, forging new acquaintanceships, sharing colleagues' experiences and insights while being together to explore the offerings of the venue, and being the first to hear the latest research and findings in the fields of the therapeutic uses of light and colour.

Having been attending ILA conferences since 2007 and involved in the planning of these events since 2010, I feel I have been exceptionally privileged to have worked with so many dedicated people and to have had the annual opportunity to be stimulated by enquiring and interesting minds. I urge anyone who has the means to attend an ILA conference to seize that chance. See you in Oslo?”

Lyn Doole



Lyn Doole retired in 2005 as a professor in the Faculty of Nursing, Miyagi University, Japan. She has served on the ILA Board in various roles and is also currently the Communication Officer.

## Florida 2017

Each year, ILA Members and others interested in light and its application to health, gather for the annual International Light Association Conference and AGM (Annual General Meeting).

The programme of speakers is always outstanding - informative, insightful, and dare we say 'illuminating!' Having a central theme each year, the ILA conference aims to present speakers of excellence who are experts in their field, and a range of interesting content.

**This year sees the 14th Annual ILA Conference held in the 'Sunshine State' of Florida, USA.**

**Welcome to all conference participants - presenters and attendees.**

**We hope you enjoy the event!**



<http://www.international-light-association.org/event/conf-2017>

## Oslo 2018 Message from the Conference Organiser

“Since ILA’s inception in 2003, the association has been closely linked to Norway, having its registered headquarters there until 2015. Norway and its Scandinavian neighbours share a rich heritage of light therapy innovators, beginning with Dr. Niels Ryberg Finsen from Denmark who won the 1903 Nobel Prize in medicine for his work in healing tuberculosis with light. Today numerous forms of light therapy are actively practised here, as witnessed by the Nordic Light Association - an ILA Chapter - and deserving great recognition for their remarkable results.

Our keynote speakers will be drawn from *Norwegian light therapy specialists* who will share their expertise and talk about the *latest discoveries in light medicine*. They will be supported by an exceptional gathering of speakers and light therapy pioneers from around the world, as at all ILA conferences. Light-in-Action workshops will highlight practical knowledge about various light and colour therapy modalities. In addition, a lively exhibition of the most innovative exhibitors will showcase their new light-based products and services.

We welcome all to attend the ‘*LIFE LIGHT*’ Conference”.

**Randi Marie Eide**



**Randi Marie Eide is a retired psychiatric nurse by profession. She was one of the founders of the International Light Association and a Board member until 2015, rejoining to host Oslo 2018.**

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**The International Light Association is delighted to announce  
“LIFE LIGHT”  
the 15<sup>th</sup> Annual ILA Conference on Light and Health  
Scandic Fornebu Hotel,  
Oslo, Norway May 13 -15, 2018.**

~~~~~ **SAVE the DATE - Join us at ILA Oslo 2018** ~~~~~

More information and program details will be announced in coming months.  
Follow on the ILA website: <http://www.international-light-association.org/>  
And on the ILA Facebook page: <https://www.facebook.com/ilacolor/>



**See you in Oslo! - Vi sees i Oslo!**

