

The Neurophysiology of Light The Five Pathways by Dietrich Klinghardt M.D. Ph.D.
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Translated from Dr. Klinghardt's book-
"Lehrbuch der Psycho-Kinesiologie-ein neuer Weg in der Psychosomatischen
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In the German speaking countries of Europe, color therapy through the eyes has become very popular in recent years amongst alternative health practitioners and in spite of its American birthplace is more strongly represented at alternative medical meetings in Europe than it is here in the US at this time.

3 events were most instrumental to this rise in interest:

1. The publication and success of Dr.Klinghardt's German textbook on holistic healing (see below)
2. The inspired teaching of Steven Vasquez PhD, in Europe (originally facilitated by Dietrich's book and efforts)
3. The Photon Wave color-instrument which was originally conceived by John Searfoss OD and is being manufactured under guidance of color therapist Leona Vermeire in Belgium

Here is an English translation of 2 chapters of Dietrich's book.

Some Facts and Research on Using Color and Light for Healing

translated from:

"Lehrbuch der Psycho-Kinesiologie- ein neuer Weg in der psychosomatischen
Medizin" (Textbook of Psycho-Kinesiology – a new approach in psychosomatic
medicine)

Dietrich K.Klinghardt, MD, PhD

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During the 19th century the American surgeon, E. Babbit, M.D. proved that treatment with colored light could achieve very significant healing results through its effect on the human energy field, the light receptive autonomic nerve fibers in the skin and via the nerves that connect the eye directly with the limbic system[i].

In the beginning of this century the East Indian genius Darius Dinshah, who had immigrated into the USA, introduced a system of color therapy that involves shining the color onto the body or body regions for about 1 hour/day.

The American physician Riley Spitler, M.D. proved in the 30's that many patients with psychiatric illnesses could be cured or improved if the client looked into

a specially designed colored lamp[ii]. He developed several instruments and started the science of “Syntonic optometry”. He found that the optimum treatment time is twenty minutes a day for a course of twenty days. This should be followed by a pause of several weeks before another twenty-day cycle. He achieved impressive healings in patients with bipolar disorder, schizophrenia, depression and other psychiatric disorders[iii] [iv].

Colored light - when beamed into the eyes with a projector-like device – can activate repressed memories from childhood - even from the intrauterine period or from a past life - which may now become available to work with in a psychotherapeutic way[v]. In terms of modern neurophysiology we know now that distinct color frequencies can reactivate synapses in the brain[vi] [vii] which were previously blocked. If nerve conduction is reestablished in these areas, memories which were isolated, are reconnected with the synaptic network of the brain and can again be accessed and integrated by the conscious part of the brain. The detrimental effect of unremembered trauma on the body seems to lastingly and often completely disappear.

Memories connected to a physical or emotional trauma are held by circuitries in the limbic system, especially in the hippocampus and amygdala. These memories can be accessed with the correct color wavelength (for example, by using colored glasses). The exact color accesses the patient’s problem – just like accessing a hidden file in the computer. Recommended treatment time with color glasses is 1hr per day. However, worn in a therapeutic session, a few minutes can be sufficient. The effect can be amplified by projecting light with an instrument into the eyes, and modulating the light with flicker frequencies[viii]. Several “Syntonic” instruments with and without frequency modulation are available today. The effect can also be amplified and deepened by simultaneously using eye movements (example: Applied Psychoneurobiology) and/or tapping techniques (example: Mental Field Therapy). The quality of the light source (light bulb), the color filters and lens arrangements affect the therapeutic outcome. In our office we also use linear polarization filters at varying angles to reach more specific regions within the brain.

I use the term “color coding of memories”. Memories are color-coded! Use the right code and the memory surfaces. To make the connection to the repressed conflict-material, the practitioner has to determine the exact correct color. Spitler, just like Dinshah, spent much of his life determining which color frequencies are needed to heal specific illnesses.

Several methods of determining the correct color are available today.

- (1) Critical Flicker Fusion Test
- (2) Color Visual Field Test
- (3) Luescher Color Test
- (4) Autonomic Response Testing (ART) – using muscle-tone biofeedback
- (5) Steve Vasquez (Ph.D.) method - assessing emotional responses after color

presentation

(6) Heart Rate Variability

(7) Kirlian Photography - used by Peter Mandel's color puncture practitioners)

(8) Intuition and experience

(9) using the known physiological effects of color:

Blue – activates the parasympathetic nervous system.

calms – often used for hyperactive children.

Red – activates sympathetic nervous system.

Blue-Green – heals post-traumatic tissue-injuries.

Yellow – anti-depressive.

Yellow/Green – liver detox.

Magenta – brings deeply held conflicts and emotions to the surface.

Language is full of knowledge about the connection of color and emotion, for example:

He's got the blues (blue slows us down and makes already slow people depressed)

I am in a black mood (see discussion on black below).

She's green with envy (envy is a liver emotion and the correct color is yellow/green).

Red-Hot love (red brings out emotion in people – including sexual passion)

Colors can have two distinct - and often opposite - effects. Because of the color-coding of emotions, treatment with color can either trigger the expected color-typical physiological reaction or, instigate the release of a related color coded emotion or problem. Take blue light, for example. Blue light will usually have a sedative effect. However, if i.e. young man had been molested by his mother when he was a young boy- and she was wearing a blue bra at the time - blue may cause sympathetic arousal (distress) in this man until the trauma is healed.

The Neurophysiology of Light: the Five Pathways

1. The optic nerve travels from the retina, past the pituitary gland via the temporal lobe to the occipital lobe of the brain. This part of the visual system is dedicated to informing the conscious part of our brain of our surroundings.

2. An additional nerve bundle is leading directly from the retina to the hypothalamus (retino-hypothalamic tract)[ix]. This explains the above mentioned strictly physiological effect of color on the ANS:

- Blue stimulates the anterior hypothalamus, which harbors the main regulating part of the parasympathetic nervous system. This means that all colors in the bluish spectrum - from blue/green through blue to violet – normally have a sedating, digestion-activating, sleep-inducing effect.

- Red stimulates the posterior hypothalamus and therefore the sympathetic nervous system. Red provokes anger. All colors in the red spectrum - from magenta through red/orange to yellow - have a stimulating, sometimes even provocative,

character.

- Green mediates between both systems.

3. A side-branch of this nerve tract reaches the amygdala directly, bypassing the hypothalamus. The two corpora amygdaloidea are truly the color sensitive area of the limbic system and highly responsive to the color the eyes are exposed to. A study demonstrated that each monochromatic color frequency excites specific neurons. If adjacent, but dissimilar color-wavelengths are used, the same neuron stays unexcited[x]. Each frequency in the color spectrum therefore has its own specific neurological and psychological effect[xi] [xii].

The neurosurgeon, Norman Shealy, M.D.,PhD – discoverer and inventor of TENS (Transcutaneous Electric Nerve Stimulation) and developer of electric spinal chord stimulation, conducted a study investigating biochemical changes in the brain after beaming different colors into the eye (using a syntonics instrument called “Lumatron”). Remarkable changes were evident in the concentration of neurotransmitters in the cerebro-spinal fluid: norepinephrin, serotonin, beta-endorphin, cholinesterase, melatonin, oxytocin, growth-hormone, LH, prolactin and progesterone[xiii]. These results explain why the treatment with color projection into the eye can have a profound effect on the hormonal system, the emotions, stress levels, sleep, brain function, and many other aspects of the patient’s biochemistry and well-being. The profound effect of light stimulation to the retina on the body’s metabolism has long been established through the work of the brilliant German ophthalmologist Fritz Hollwich, M.D., Ph.D.[xiv].

4. A fourth nerve connection from the retina follows the lower optic tract, which is not used for vision and reaches the transpeduncular nucleus in the midbrain [xv]. This nucleus is also light and color sensitive[xvi]. From here the signal travels via the superior cervical ganglion back via the brainstem to the pineal gland. This pathway is – amongst other less understood functions – responsible for the circadian day-night rhythm and the melatonin production in the pineal gland when it gets dark[xvii]. This pathway has been given much attention lately in research concerning the treatment of seasonal affective disorder. Via secondary interneurons all of these pathways are connected with each other and virtually each area of the brain.

5. A fifth, and maybe most exciting way in which color finds its way inside the body, i.e. the subconscious mind, the immune system, the limbic system, the nervous system etc - has only recently been discovered. There are more and more scientific hints that light can charge particles that travel in the lymph and blood as well as axonally inside the nerves [xviii] [xix]. Researchers at the University of Vienna, Austria, found that albumin is one of the proteins able to be charged by colored light – and able to deliver this charge to tissues far away from the site of exposure. Through the outer layer of the skin light also affects pigments, fluorescent particles in the body fluids and inside the cells which travel in the blood and lymph. After being energized - in a color-wavelength and frequency specific way - they are transported to their target sites where the light-energy is discharged (116)[xx]. These light-discharges have an organizing and activating effect on cellular organelles

and the cell metabolism in the target tissue (such as the brain or inner organs)[xxi] [xxii] [xxiii].

This mechanism explains partially the effects of color-treatment via the skin - including the Dinshah Method, Peter Mandel's Color Puncture and the effect which colors of clothing have on mood and the immune system. A study showed that wearing black clothing immediately depresses the NK-cell activity and several other parameters used to judge the activity of the immune system. Black is carcinogenic. The opposite is also true: wearing rainbow colors stimulates the immune system and the mood. A chiropractor in Santa Fe, who I worked with for years, treated many clients successfully for many severe illnesses - by having them paint their toenails in specific colors (which he determined before with a biofeedback method). Wearing nail polish proved to be a truly medical intervention with many beneficial - and occasionally adverse - effects.

The German scientist Fritz Albert Popp PhD confirmed the prior research of Russian scientists and published many of his own papers, on the fact that all cells in an organism use subtle light emissions to communicate with each other constantly. Cells gossip, inform, celebrate and grieve[xxiv]. Only cancer cells behave differently: they do not emit light. Recent research in stem cell therapy brought to light another astounding phenomenon: when cells are ill or in distress, they also give off "microscopic" sound signals. If the sound of a group of dying cells is artificially amplified, it sounds like a group of weeping and grieving women. Injected stem cells (from embryonic umbilical chords) follow this signal and settle in the area to lend their support. Stem cells are compassionate. Cells care for each other. When things go wrong, such as in auto-immune diseases, they fight each other. Light (and sound) can have a profound effect on regulating and correcting inter-cellular communications.

I have been using color light therapy for 17 years in my medical practice specializing in the treatment of chronic pain and neuro-degenerative diseases with often astounding results. I have not observed any adverse effects, when the color and treatment protocol was properly selected. The teachings of the College of Syntonic Optometry provided the safe and necessary foundation.

Summary: a growing body of research on the physiological effects of light supports our position for the medicinal use of light and color.

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