

# A HISTORY OF COLOR THERAPY

*Excerpts from the book "Discover Color Therapy" by Helen Graham*

The effects of color on life must have been of great significance to early human beings, whose very existence was governed by light and darkness. Most living things appear to be vitalized by the bright reds, oranges, and yellows of daylight -- and calmed and rejuvenated by the blues, indigos, and violets of the night. For the ancients, the colors that make up sunlight were each considered to show a different aspect of the divine and to influence different qualities of life. Color is therefore an important feature in the symbolism of ancient cultures throughout the world, and the origins of healing with color in Western civilization can be traced back to the mythology of Ancient Egypt and Greece.

## IN THE ANCIENT WORLD

According to Ancient Egyptian mythology, the art of healing with color was founded by the god Thoth. He was known to the Ancient Greeks as Hermes Trismegistus, literally "Hermes thrice-greatest", because he was also credited with various works on mysticism and magic. Teachings attributed to him include the use of color in healing. In the Hermetic tradition, the Ancient Egyptians and Greeks used colored minerals, stones, crystals, salves, and dyes as remedies, and painted treatment sanctuaries in various shades of color.

Interest in the physical nature of color developed in Ancient Greece alongside the concept of the elements — air, fire, water, and earth. These fundamental constituents of the universe were associated with the qualities of coldness, heat, wetness and dryness, and also with four humors or bodily fluids — choler or yellow bile, blood (red), phlegm (white), and melancholy or black bile. These were thought to arise in four organs — the spleen, heart, liver, and brain — and to determine emotional and physical disposition. Health involved the proper balance of these humors, and disease would result if their mixture was in an unbalanced proportion. Color was intrinsic to healing, which involved restoring the balance. Colored garments, oils, plasters, ointments, and salves were used to treat disease.

By the end of the Classical period in Greece, these principles were included in the scientific framework that was to remain largely unchanged in the West until the Middle Ages. In the first century A.D., Aurelius Cornelius Celsus followed the doctrines established by Pythagoras and Hippocrates and included the use of colored ointments, plasters, and flowers in several treatises on medicine.

## DURING THE MIDDLE AGES

With the coming of Christianity, however, all that was pagan was exorcised, including the healing practices of the Egyptians, Greeks, and Romans. The progress of medicine throughout Europe was effectively halted while those who clung to traditional principles and practices of healing were persecuted. The ancient healing arts, preserved by secret oral tradition passed on to the initiates, thus became hidden or "occult".

It was an Arab physician and disciple of Aristotle, Avicenna (980-circa 1037), who advanced the art of healing. In his *Canon of Medicine* he made clear the vital importance of color in both diagnosis and treatment. Avicenna, noting that color was an observable symptom of disease, developed a chart which related color to temperament and the physical condition of the body. He used color in treatment -- insisting that red moved the blood, blue or white cooled it, and yellow reduced pain and inflammation -- prescribing potions of red flowers to cure blood disorders, and yellow flowers and morning sunlight to cure disorders of the biliary system.

Avicenna wrote also of the possible dangers of color in treatment, observing that a person with a nosebleed, for example, should not gaze at things of a brilliant red color or be exposed to red light because this would stimulate the sanguineous humor, whereas blue would soothe it and reduce blood flow.

The Renaissance saw a resurgence in the art of healing in Europe. One of the most renowned healers of the period was Theophrastus Bombastus von Hohenheim (1493-1541), known as Paracelsus, who attributed his understanding of the laws and practices of medicine to his conversations with witches (women who were primarily pagan healers purged by the Church).

Paracelsus regarded light and color as essential for good health and used them extensively in treatment, together with elixirs, charms and talismans, herbs and minerals. A great exponent of alchemy, Paracelsus insisted that its true purpose was not to make gold, but to prepare effective medicines. He used liquid gold to treat ailments of all kinds, apparently with a good deal of success. Consequently his fame as a great physician spread throughout Europe.

## **ENLIGHTENMENT, SCIENCE & HEALING**

However, after the Middle Ages Paracelsus and other alchemists lost their prestige when mysticism and magic were overtaken by rationalism and science. By the eighteenth century, "enlightenment" had taken on a new meaning. It was the name given to a philosophical movement that stressed the importance of reason and the critical appraisal of existing ideas. Reason dictated that all knowledge had to be certain and evident; anything about which there could be doubt was rejected. As a result the divine gradually disappeared from the scientific world view.

By the nineteenth century, the emphasis in science was exclusively on the material rather than the spiritual. As medicine came under the umbrella of science it, too, focused on the material physical body, ignoring the mind and spirit. With the advent of physical medicine, and such treatments as surgery and antiseptics, interest in healing with color declined. It didn't resurface until the nineteenth century, and then not in Europe but North America.

In 1876, Augustus Pleasanton published *Blue and Sun-lights*, in which he reported his findings on the effects of color in plants, animals, and humans. He claimed that the quality, yield, and size of grapes could be significantly increased if they were grown in greenhouses made with alternating blue and transparent panes of glass. He also reported having cured certain diseases and increased fertility, as well as the rate of physical maturation in animals, by exposing them to blue light. In addition, Pleasanton

maintained that blue light was effective in treating human disease and pain. His work gained supporters but was dismissed by the medical establishment as unscientific.

However, in 1877 a distinguished physician named Dr. Seth Pancoast published *Blue and Red Lights*, in which he, too, advocated the use of color in healing.

Edwin Babbit's *The Principles of Light and Color* was published in 1878; the second edition, published in 1896, attracted worldwide attention. Babbit advanced a comprehensive theory of healing with color. He identified the color red as a stimulant, notably of blood and to a lesser extent to the nerves; yellow and orange as nerve stimulants; blue and violet as soothing to all systems and with anti-inflammatory properties. Accordingly, Babbit prescribed red for paralysis, consumption, physical exhaustion, and chronic rheumatism; yellow as a laxative, emetic and purgative, and for bronchial difficulties; and blue for inflammatory conditions, sciatica, meningitis, nervous headache, irritability, and sunstroke. Babbit developed various devices, including a special cabinet called the Thermolume, which used colored glass and natural light to produce colored light; and the Chromo Disk, a funnel-shaped device fitted with special color filters that could localize light onto various parts of the body.

Babbit established the correspondence between colors and minerals, which he used as an addition to treatment with colored light, and developed elixirs by irradiating water with sunlight filtered through colored lenses. He claimed that this "potentized" water retained the energy of the vital elements within the particular color filter used, and that it had remarkable healing power. Solar tinctures of this kind are still made and used today by many color therapists.

Chromopaths then sprang up throughout the country and Britain, developing extensive color prescriptions for every conceivable ailment. By the end of the nineteenth century, red light was used to prevent scars from forming in cases of smallpox, and startling cures were later reported among tuberculosis patients exposed to sunlight and ultraviolet rays. Nevertheless, the medical profession remained skeptical of claims made about healing with color.

## **TWENTIETH-CENTURY SCIENCE**

Investigations into the therapeutic use of color were carried out in Europe during the early twentieth century, notably by Rudolph Steiner, who related color to form, shape, and sound. He suggested that the vibrational quality of certain colors is amplified by some forms, and that certain combinations of color and shape have either destructive or regenerative effects on living organisms. In the schools inspired by Steiner's work, classrooms are painted and textured to correspond to the "mood" of children at various stages of their development.

Rudolph Steiner's work was continued by Theo Gimbel, who established the Hygeia Studios and College of Color Therapy in Britain. Among the principles explored by Gimbel are the claims of Max Luscher, a former professor of psychology at Basle University, who claimed that color preferences demonstrate states of mind and/or glandular imbalance, and can be used as the basis for physical and psychological diagnosis. Luscher's theory, which forms the basis of the Luscher Color Test, rests on the idea that the significance of color for man originates in his early history, when his

behavior was governed by night and day. Luscher believed that the colors associated with these two environments — yellow and dark blue — are connected with differences in metabolic rate and glandular secretions appropriate to the energy required for nighttime sleep and daytime hunting. He also believed that autonomic (involuntary) responses are associated with other colors.

Support for Luscher's theories was provided in the 1940s by the Russian scientist S. V. Krakov, who established that the color red stimulates the sympathetic part of the autonomic nervous system, while blue stimulates the parasympathetic part. His findings were confirmed in 1958 by Robert Gerard.

Gerard found that red produced feelings of arousal, and was disturbing to anxious or tense subjects, while blue generated feelings of tranquility and well-being and had a calming effect. The discovery that blood pressure increases under red light and decreases under blue light led Gerard to suggest that psychophysiological activation increases with wavelength from blue to red.

Although cautious about his findings and insisting on the need for further research, Gerard highlighted the possible therapeutic benefits of the color blue, and recommended it as supplementary therapy in the treatment of various conditions. Among other suggestions, Gerard pointed to the possible uses of blue as a tranquilizer and relaxant in anxious individuals, and as a way of reducing blood pressure in the treatment of hypertension.

Dr. Harry Wohlfarth also showed that certain colors have measurable and predictable effects on the autonomic nervous system of people. In numerous studies, he found that blood pressure, pulse, and respiration rates increase most under yellow light, moderately under orange, and minimally under red, while decreasing most under black, moderately under blue, and minimally under green.

Subsequent research on plants and animals conducted by the photobiologist Dr. John Ott demonstrated the effects of color on growth and development. Plants grown under red glass were found to shoot up four times quicker than those grown in ordinary sunlight, and to grow much more slowly under green glass. However, although red light initially overstimulated plants, their growth was subsequently stunted, whereas blue light produced slower growth initially but taller, thicker plants later.

Rodents kept under blue plastic grew normally, but when kept under red or pink plastic their appetite and growth rate increased. If kept under blue light, animals grew denser coats.

During the 1950s, studies suggested that neonatal jaundice, a potentially fatal condition found in two-thirds of premature babies, could be successfully treated by exposure to sunlight. This was confirmed in the 1960s, and white light replaced the high-risk blood transfusions in the treatment of this condition. Blue light was later found to be more effective and less hazardous than full-spectrum light (the most common form of treatment for neonatal jaundice).

Bright white full-spectrum light is also now being used in the treatment of cancers, SAD (seasonal affective disorder -- so called "winter depression"), anorexia, bulimia nervosa,

insomnia, jet lag, shift-working, alcohol and drug dependency, and to reduce overall levels of medication.

The blue light found to be successful in the treatment of neonatal jaundice has also been shown to be effective in the treatment of rheumatoid arthritis. In studies by S. F. McDonald, most of those exposed to blue light for variable periods up to fifteen minutes experienced a significant degree of pain relief. It was concluded that the pain reduction was directly related both to the blue light and the length of exposure to it. Blue light is also used in healing injured tissue and preventing scar tissue, in the treatment of cancers and nonmalignant tumors, as well as skin and lung conditions.

In 1990, scientists reported to the annual conference of the American Association for the Advancement of Science on the successful use of blue light in the treatment of a wide variety of psychological problems, including addictions, eating disorders, impotence, and depression.

### **RECENT APPLICATIONS OF COLOR**

At the other end of the color spectrum, red light has been shown to be effective in the treatment of migraine headaches and cancer. As a result, color is becoming widely accepted as a therapeutic tool with various medical applications. A new technique, which has been developed over the past two decades as a result of pioneering research, is photodynamic therapy, or PDT. This is based on the discovery that certain intravenously injected photosensitive chemicals not only accumulate in cancer cells but selectively identify these cells under ultraviolet light. These photosensitive chemicals then exclusively destroy the cancer cells when activated by red light, whose longer wavelength allows it to penetrate tissue more deeply than other colors. PDT can be used for both diagnosis and treatment. Dr. Thomas Dougherty, who developed PDT, reports that in a worldwide experiment more than 3000 people, with a wide variety of malignant tumors, have been successfully treated with this technique.

### **OTHER THERAPEUTIC APPLICATIONS**

Color is also used therapeutically in a variety of non medical settings. In some cases its effects have been quite accidental, as in a report to me by the governor of a newly built prison in which each of its four wings had been painted a different color. Both he and his staff found that the behavior of the prisoners varied significantly depending on which wing they lived in, although their allocation to each had been random. Those in red and yellow wings were more inclined to violence than those in the blue and green wings.

Experimental research lends support to these observations. Viewing red light has been found to increase subjects' strength by 13.5 percent and to elicit 5.8 percent more electrical activity in the arm muscles. For this reason it is now used to improve the performance of athletes. Whereas red light appears to help athletes who need short, quick bursts of energy, blue light assists in performances requiring a more steady energy output.

By comparison, pink has been found to have a tranquilizing and calming effect within minutes of exposure. It suppresses hostile, aggressive, and anxious behavior — interesting given its traditional association with women in Western culture. Pink holding

cells are now widely used to reduce violent and aggressive behavior among prisoners, and some sources have reported a reduction of muscle strength in inmates within 2.7 seconds. It appears that when in pink surroundings people cannot be aggressive even if they want to, because the color saps their energy.

By contrast, yellow should be avoided in such contexts because it is highly stimulating. Gimbel has suggested a possible relationship between violent street crime and sodium yellow street lighting.

Research has also shown that color-tinted eyeglasses can be highly effective in the treatment of learning difficulties, notably dyslexia. This was first discovered by psychologist Helen Irlen, but was regarded skeptically until recent investigations by the British Medical Research Council confirmed Irlen's claims. In June 1993, a new optician's device called the Intuitive Colorimeter was made available to British opticians so they could measure which tint — bright pink, yellow, green or blue — best helps people who normally see text as swirling, wobbling, or with letters appearing in the wrong order.

### **PHYSICAL EFFECTS OF COLOR**

Until recently, the function of light was thought to relate largely to sight. However, it is now well established that color need not actually be seen for it to have definite psychological and physiological effects. It can also be distinguished by blind, colorblind, and blindfolded subjects. This phenomenon, referred to as eyeless sight, dermo-optic vision, or bio-introspection, has been researched since the 1920s, when it was established that hypnotized blindfolded subjects could recognize colors and shapes with their foreheads, and that non hypnotized blindfolded subjects could precisely describe colors and shapes presented under glass.

Research in Russia during the 1960s was stimulated by studies of Roza Kulesheva, who, when blindfolded, could distinguish color and shape with her fingertips, and could also read this way. Other experiments found that Kulesheva was not exceptional; one in six experimental subjects could recognize color with their fingertips after only 20-30 minutes training, and blind people developed this sensitivity even more quickly.

Some subjects who could distinguish color correctly by holding their fingers 20-80 centimeters above color cards described experiencing sensations varying from needle pricks to faint breezes, depending on the color. Even when heat differences, structural differences in dyestuffs, and other variables were controlled, people were still able to distinguish colors accurately, whether they were put under glass, tracing paper, aluminium foil, brass or copper plates. The phenomenon remains something of a puzzle.

Understanding of these effects has come about only as a result of research into the hormones melatonin and serotonin, both of which are produced by the pineal gland in the brain. Melatonin is known to be the crucial chemical pathway by which animals respond to light and synchronize their bodily functioning with diurnal, lunar, and seasonal variations. Serotonin is a very important neurotransmitter in the brain, whose action has been linked with mental disturbances such as schizophrenia and hallucinogenic states.

Serotonin, a stimulant, is produced by day, whereas the output of melatonin — which is linked with sleep — increases when it is dark and has a generally depressive effect. This is reversed when it is light and production of melatonin drops. Its main site of action appears to be the hypothalamus, the part of the brain involved in mediating the effects of various hormones and regulating emotions. However, changes in the output of melatonin in response to light influence every cell of the body, notably the reproductive processes, which are very sensitive to such variations. Very high levels of melatonin have been found in women with ovulation problems and anorexia nervosa (a characteristic feature of which is amenorrhoea, or absence of periods), in men with low sperm count, and people suffering from seasonal affective disorder (SAD), which usually occurs during winter.

Depression in general appears to be closely linked with melatonin levels, and sufferers tend to show rapid improvement in response to natural sunlight or light therapy using full-spectrum lamps. Research has also confirmed that certain parts of the brain are not only light sensitive but actually respond differently to different wavelengths; it is now believed that different wavelengths (color) of radiation interact differently with the endocrine system to stimulate or reduce hormone production.

It might be thought that modern-day healing with color is based on the discoveries of Western science over the past few decades. However, it is based on an altogether more ancient and esoteric science whose principles and practices have yet to be acknowledged, much less verified by Western scientists. Healing with color is rooted in ancient mysticism, the major principles of which are common to many different cultures throughout the world.