

Overview of the Significance of Colours

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Colour has a physiological, psychological and social impact on a person's health, wellbeing and status in the world; from the positive stimulating effects of warm colours to the mental relaxation and soothing effects of cool colours. The internal organs also reflect the colours that show on the surface of the body, for example: in the pigment of faeces, urine, menstrual blood, vaginal discharge, tongue coating, lips, eyes, phlegm, etc.¹

The Tibb approach to colour therapy is to classify colours in terms of their qualities. Recognising these qualities gives us a better understanding of how colour therapy works, thereby enabling one to match the appropriate colour to the specific Temperament.² Colour healing has been practiced for centuries by the Egyptians, Babylonians and Assyrians in the art of heliotherapy, which is the treatment of disease by exposing the body to the sun's rays; the therapeutic use of the sun bath.³

Early civilisation utilised daylight and the sun; the vibrant colours of yellows and reds; displayed by the warmth of the sun, for being active, for hunting and gathering other food, as well as protecting the family from danger. During the day the body increases the metabolic rate and glandular secretions in order to meet these demands. During the night the cool colours of dark blue enables the body to be inactive and at peace, relaxed and at rest. It is the time for quietness and passivity.

In Ancient Greece colour therapy was used in healing to restore balance. The use of colours for treatment was used in two different ways: indirect healing involved the use of stones, dyes, oils, ointments, plasters and salves to treat disease; and direct healing which involved exposure to sunlight. Colour was intrinsic to healing, which involved restoring balance.⁴ The Greeks considered colour as a science. Hippocrates, amongst others, abandoned the metaphysical side of colour, concentrating only on the scientific aspect.

Colour Therapy

Colour therapy, also known as chromotherapy, has been used for centuries, dating back from ancient Egypt, to treat diseases. The theory behind chromotherapy lies in the fact that all matter, which includes cells, organs, tissues and atoms, is composed of energy; each vibrating at their own specific frequency. A deviation from the respective frequency is believed to cause either depletion or an excess of the ideal frequency, resulting in disease.

"All forms of matter are really light waves in motion."

Albert Einstein

In Tibb the frequencies can be compared to the qualities of heat, moisture, coldness and dryness, which determine the overall temperament of an individual. Every person has a temperament according to the dominance of the humours in the body, which represents the person's healthy state. When the temperament of an organ or system becomes abnormal, due to a quantitative or qualitative disturbance of the humours, a person becomes ill.⁵

Colour therapy is therefore understood to help to balance the frequencies of cells which are malfunctioning, and restoring them to their natural state of radiant wellbeing.⁶

Hydro chromotherapy understands that water is a medium for the absorption of colour, which is believed to be the best remedy for removing toxins from the body. Edwin Babbitt stated that all vital organs have a direct connection with the skin through arteries, blood vessels and capillaries, and colour rays can affect the entire blood stream through circulation and elimination of toxins.⁴ In Tibb the Phlegmatic humour has an ***expulsive*** force which flushes out impurities, transports vital nutrients, and helps eliminate wastes, which is useful for inflammatory conditions of the hot and dry Bilious temperament. Fever causes heat which expels excess phlegm into a thinner substance, which can be eliminated from the body as perspiration.⁷

The visual impact of colour plays a significant role in interpreting visual information to the brain. This is based on electromagnetic radiation, which is reflected, transmitted or irradiated by an object. The generation of electrical impulses or vibrational energy activates the biochemical and hormonal response, by either stimulating or suppressing the respective organ and systems of the body. The electrical impulses can be compared to the stimulating effects of the sympathetic nervous system, and the suppressing effects of the parasympathetic nervous system.

Warmer colours are stimulated by the sympathetic nervous system and increases energy and blood flow; while cooler colours are stimulated by the parasympathetic nervous system, and decreases energy and blood flow. The Sanguinous and Bilious temperaments in Tibb have warmer qualities and colours, with more energy, and are extrovert in nature,

compared to the Phlegmatic and Melancholic temperaments, which have cooler qualities and colours, with less energy, and are introvert in nature.

Tibb and other traditional philosophies do not have the technology to qualify, quantify substantiate or recognize vibrational frequencies and energies as part of their philosophical principles. *Tibb*, however, understands the influence of qualities in relation to temperaments, which places emphasis on the **quality of the colours** and its relation with the temperaments, as well as its **corresponding effects** on the body by the autonomic nervous system.

The qualities of heat, moisture, coldness and dryness are in a constant state of motion, according to the interaction of man and the environment; from the food that we eat, the air that we breathe our emotions, movement and rest, sleep and wakefulness and elimination, as well as other lifestyle factors. Health will only be maintained as long as the overall quality of the humours is in harmony with the overall quality of the individual's temperament. Tibb Institute.¹⁰ Tibb understands that the inborn intelligence of health, or **Physis**, acts to heal the body when it is sick, restore it when it is depleted, and to develop and thrive when supported with a healthy lifestyle.

The qualities of colours in relation to temperament

The qualities of colours has been allocated to correspond with the characteristics of the temperaments concerned, as well as the physiological and psychological effects that the autonomic nervous system has on the body, namely:

- The **Sanguinous** temperament has **hot and moist** qualities, and its humour is blood. It is represented by the colour of **red**, due to its association with blood, vitality, motion, energy, optimism and extrovert nature. It has a cheerful, playful, persuasive, likeable, sociable, and talkative disposition. Red also stimulates the sympathetic nervous system.
- The **Bilious** temperament has **hot and dry** qualities, and its humour is yellow bile. It is represented by the colour of **yellow**, due to its association with a fiery temperament, excitable, short tempered, impatient, and impulsive, with a restless nature and are prone to behavioural disorders. Yellow stimulates the intellect, and it has an alkalising effect, as well as strengthening the nerves. Yellow also stimulates the **sympathetic** nervous system.
- The **Melancholic** temperament has **cold and dry** qualities, and its humour is black bile. However, because of the negative connotation with the colour of black, its closest representation is the colour of **purple/violet**, as a dark purple may look black in colour. Tibb a purple colour of the body is a sign of coldness and dryness, as it is a colour that belongs to black bile.²⁹

- Purple is associated with wisdom, mysticism and purification. It is philosophical, logical, enquiring and analytical. Purple is the colour of good judgment, and it is often used by people seeking spiritual fulfilment. It is also sceptical, anxious, and negative, as well as introvert in nature.
- The **Phlegmatic** temperament has **cold and moist** qualities, and its humour is phlegm. It is represented by the colour of **blue**, because of its association with the nervous tissue, which has a **moist and hot** to **cold and moist** temperament. The colour of blue calms the nerves as well as cools the body. Blue stimulates the **parasympathetic** nervous system. The element of water and its quality of moistness is essential for the effective functioning of the nervous system. Blue is often associated with depth, stability, reliability and efficiency. It is the coolest colour and it represents inspiration, sincerity and spirituality. It is peaceful, patient, cool-minded, loyal and honest.
- The colour of **orange** has **dry and hot** qualities and it denotes a warm, optimistic, and extroverted personality. The characteristic of orange is assertive rather than aggressive, and more light-hearted and less intense than red.¹¹
- The colour of **green** has **moist and hot** qualities and it relates to self-love and the ability to give and take unconditionally, as well as environmental awareness and peace. It is linked with harmony and balance, and it is in the middle of the colour spectrum.¹²

Why does colour matter?

Substantial research has been conducted to show why colour matters, and how colour plays a pivotal role in all our visual experiences, from marketing, brand identity and signage, to attracting attention, signalling emotional feelings, and affecting memory and increasing participation and awareness.

The application of colours in Tibb can be implemented by using the colours which are beneficial to the temperament, as well as to the particular symptom or emotion concerned. This includes, as examples, wearing certain colours of clothing, such as blue for calming if one feels angry, or wearing red to increase energy and evoke feelings of passion, whereas yellow can be empowering, and orange can help to alleviate depression. Painting the walls yellow in the classroom can stimulate intellectualism.

Colours are displayed in the advertising medium to elicit certain messages which reflect a particular brand, and which are aimed to entice the consumer to buy the respective products or services. Very often the portrayal of colours and the messages elicited are subconscious, and the response by the consumer may be impulsive or it may create a feeling of confidence and power, as well as to promote a sense of shared commitment, status, sentiment and belonging. Tibb has blue and green colours on its logo to represent honesty, reliability, truth, sincerity and efficiency.

Advertisements in colour are read up to 42% more often than the same ads in black and white. Colour can improve readership by 40 per cent, learning from 55 to 78 per cent, and comprehension by 73 per cent.¹³

Statistics on Colour Research

The following research conducted by the secretariat of the Seoul International Colour Expo reveals that:

- 92.6 per cent of people put most importance on visual factors when purchasing products, and that 84.7 per cent thought that colour played an important part in their decision to buying products.
- 5.6 per cent based their importance on the sense of touch, whereas hearing and smell only drew 0.9 per cent.
- Colour increases brand recognition by up to 80 per cent;
- Colour can improve readership up to 42 per cent more than the same information in black and white.¹⁴
- People make a subconscious judgment about a person, environment or product within 90 seconds of initial interviewing, and that 62 and 90 per cent of that assessment is based on colour alone. Marketing exploits the natural weaknesses of human beings.¹³
- Research done at the Max-Planck-Institute used a recognition memory paradigm to assess the influence of colour information on visual memory for images of natural scenes. Subjects performed 5%-10% better for coloured than for black-and-white images, independent of the duration of exposure.¹⁵

There is scientific evidence to suggest that colours have physiological and psychological effects on the body, and which are utilised in treatment of many conditions, such as skin conditions and cancer. Infrared radiation may have beneficial effects on skin texture and wrinkles by increasing collagen and elastin contents from the stimulated fibroblasts. Research has shown that the content of collagen and elastin produced by the fibroblasts increased after infrared radiation, and with 25-50% improvement in colour tone of the skin.¹⁶ In Tibb the qualities of heat and moisture of red has stimulating effects, with increased energy to enable the production of fibroblasts.

It is believed that UV light therapy slows down the overgrowth of some skin cells by altering the function of the immune system, which helps many skin conditions and wounds to improve or completely heal. However UV light can damage the skin cells and collagen and destroy vitamin A and C in the skin. UV light also limits the formation of free radicals in the skin. UV light can cause skin dryness (purple of the Melancholic temperament is cold and dry), irritation, sunburn, unwanted brownish discoloration of skin, nausea and headache.¹⁷

The Effects of Light and Colour in Plants

Light is a source of energy and information for plants. It is needed as energy in photosynthesis and it provides plants critical information about its environment to germinate and to grow to a certain size or shape, when to flower and when to change from vegetative growth. Plants react to quality, intensity, duration and the direction of light.¹⁸

Photosynthesis is fundamentally driven by photon flux rather than energy flux, but not all absorbed photons yield equal amounts of photosynthesis (Barnesl et al, 1993). Blue and green photons result in about 25% less photosynthesis than red photons.¹⁹

Blue light irradiation promotes growth and increases antioxidants in lettuce seedlings. Many studies have clearly shown that variation in light quantity, quality and photoperiod can be manipulated to affect growth and control developmental transitions.

Research done at the Nanjing Agricultural University in China studied the effects of light on rice seedlings. It was established that **red-blue** LED **increased the root number**, stem diameter, healthy index, root activity, and root soluble sugar content of the rice plants. The colour red has stimulating and growth properties due to its hot and moist qualities which are beneficial for the cold and dry qualities of the roots and soil. **Yellow** LED increased the plant height and leaf pigment content at the initial growth stage because of the **hot and dry** quality of the **sun**. Overall, red-blue LED was more beneficial to the culture of strong rice seedlings.²⁰ The appearance of plants under red and blue lighting is purplish grey colour.²¹

Indoor farming, also known as Pink houses, is a concept whereby food and crops can be grown within buildings by the use of a combination of red and blue light (the qualities of moisture facilities this growth). By not using all the other colours, which is white light, indoor vertical farms can cut down on their power bill with low-energy light emitting diode (LED) which emits just the right shade of magenta. This light correctly matches the photosynthesis needs of the plants, which grow at a rate of almost 20 per cent.²² Originally John Ott experimented by using ultraviolet light to grow healthy plants.

The quality of the structure of seedlings, and hence the health of the plant, is directly influenced by the light spectrum. Raising seedlings irradiated with blue light has been shown to increase crop yield after planting because of the high accumulation of phenolic compounds.²³ In Tibb the qualities of moisture of blue light, together with heat, promote growth. Phenolic compounds are important for the quality of plant based foods and they are responsible for the colour of red fruits, juices and wines and substrates for enzymatic browning, and are also involved in flavour properties.²⁴

The Institute of Horticulture in Lithuania conducted research on the effects of different LED treatment of frigo strawberries which were grown in a phytotron chamber. The result confirmed that the **sole use of red light** caused an **elongation** of the flowering stems with a higher shoot ratio, but with a smaller size of the fruit. The combination of **red and blue** LED spectrum of colour is necessary for the development of frigo strawberries²⁵ (the quality of moisture facilitates the fruit to grow in size).

The Perception of Colour

Our perception of colour is controlled much more by our brains than by our eyes. There appears to be an auto-calibration mechanism, which allows the brain to balance the colours, despite variations of colour-sensitive cones.²⁶

In the past it was believed that our perceptions of the colour of light are connected to our emotional responses, and that our brains have a default way of processing the light that reaches the cells in our eyes. A scientist at the Medical College of Wisconsin, Joseph Carroll, argued that people do not see the same colours; one person may see red, while another may see the same colour in another way. He stated that "colour is a private sensation".²⁷

The colour blue represents the sky and the colour yellow represents the sun; **blue** light dominates at night when living things lie low and are **calm**; whereas **yellow** light dominates around sunrise and sunset when life is the most **active**. An experiment done by Neitz found that **changing** the colour, or **wavelength**, of ambient light has a much **bigger impact** on the day-night cycle of fish than changing the **intensity** of that light. This suggested that the dominance of **blue** light at night results in the feeling of **tiredness and sleep**, as opposed to the dominance of **yellow** light in the morning, resulting in the **waking up**.

Psychologists Stephen Palmer and Karen Schloss proposed that people are more likely to survive and reproduce successfully if they are attracted to objects with colours that look good to them, and they will avoid objects with colours that look bad to them. They believed that people should prefer colours which are associated with clear sky and clean water, as opposed to colours which promote negative reactions, such as brown, which is associated with rotting food and faeces.²⁸

"What is colour? No object of itself alone has colour.

We know that even the most brightly coloured object, if taken into total darkness, loses its colour. Therefore, if an object is dependent upon light for colour, colour must be a property of light.

And so it is."

Outerbridge, Paul (1896-1958)

Summary

Colour plays a pivotal role in all aspects of life; from the clothes one wears to the thoughts one feels and the influence which colour has on one's body and general wellbeing. Colours represent and exert both emotional and physiological properties, from the warmer, energetic and vibrant qualities of red, yellow and orange, to the cooling, calming and soothing colours of blue, green and violet. Colours portray a range of feelings, from joy and sadness, to anger and fear, each with their own qualities.

Evidenced-based research clearly acknowledges how the different wavelengths of colour produce specific autonomic responses in the body, thereby changing the bio-physiological functioning, as well as influencing the production, growth and height of plants.

People respond to colours more favourably when it produces a good feeling, and which are also associated with a common universal meaning, as well as promoting a sense of shared commitment, status, sentiment and belonging.

Various colours are also associated with energy and emotional levels; red and yellow is stimulating and cheerful; whereas blue and green are more calming and subdued. This knowledge is very beneficial in order to utilise colour therapy to balance one's emotions and to correct bio-physiological imbalances, such as introducing yellow to energise and to relieve depression; or blue to provide calmness for anxiety and tension.

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