

Enhancing Brain Function

2015

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Topics to be discussed today.
Beta amyloid protein / APOE4
Factors to stimulate brain exercise, turmeric etc
Exercises for each neurotransmitter
Diets MIND
Nutrient list to consider
SCN, Body clock, definitive meridian.
Constitutional colours
Popp carcinogenic 380nm. Is 380 a sign of cancer??
Monochromic colours
Composite 7colours.
Relationship 7 colours to ROS
Hypoxia, porphyria and 400nm
Selenium phosp –Glut perox, deiodinase and high cholesterol,
other seloprotein enzymes. The gluten myth. Kamut wheat.
Complementary colours.
LED Light therapy – Complex 4
Complementary foods- carotenoids, flavonoids
Patient protocol using the 7 biophoton acetates. EID
Red acetate and amino acids
All about amino acids

Markers to consider in enhancing brain function

Amyloid beta protein fragment 1-42

ENERGY

Mg-ATP
DNA Polymerase
CoQ10 (Ubiquinone)
Complex III Cytochrome c reductase
Cytochrome C
Complex IV Cytochrome c oxidase
Cardiolipin
CO
CN
Malondialdehyde

HYPOXIA

O2
Hemoglobin
ALA
PBG
Uroporphyrin III
Coproporphyrin III
Protoporphyrin IX
Heme

ROS

Superoxide, NADPH
H2O2
Hypochlorite
Nitric oxide

Homocysteine
APOE4
Probiotics

Beta Amyloid Protein

In 1991, the *amyloid hypothesis* postulated that extracellular amyloid beta deposits are the fundamental cause of the disease. Support for this comes from the location of the gene for the amyloid precursor protein (APP) on chromosome 21, together with the fact that people with trisomy 21 (Down Syndrome) who have an extra gene

copy almost universally exhibit AD by 40 years of age. Also, a specific isoform of apolipoprotein, APOE4, is a major genetic risk factor for AD. Whilst apolipoproteins enhance the breakdown of beta amyloid, some isoforms are not very effective at this task (such as APOE4), leading to excess amyloid build up in the brain.

Further evidence comes from the finding that transgenic mice that express a mutant form of the human APP gene develop fibrillar amyloid plaques and Alzheimer's-like brain pathology with spatial learning deficits.



The *tau hypothesis* proposes that tau protein abnormalities initiate the disease cascade. In this model, hyperphosphorylated tau begins to pair with other threads of tau. Eventually, they form neurofibrillary tangles inside nerve cell bodies.

When this occurs, the microtubules disintegrate, destroying the structure of the cell's cytoskeleton which collapses the neuron's transport system (can be the effect of mercury toxicity). This may result in malfunctions in biochemical communication between neurons and later in the death of the cells.

**Memory loss leading to Alzheimer's degenerative changes begin in the hippocampus which starts to shrink so short term memory is affected first.
The brain loses its plasticity and its ability to make connections between neurones, many of which will die.**

Decline occurs because of
1. Learned Non – Use
2. Noisy brain or brain dysrhythmia
3. Absence of Rapid formation of neuronal assemblies. Every mental act creates different networks.

The most impressive protection from cognitive decline was from
1. Exercise – walking 2 miles a day or bicycling 10 miles a day.
2. Healthy diet – 5 a day+
3. Normal body weight BMI 18-25
4. Low alcohol
5. No smoking

Walking reduces the risk of dementia by 60% - research showed this at Cardiff University – followed several thousand men between ages 40 and 59 testing them every 5 years for 30 years.

Aerobic exercise and Turmeric are the best epigenetic modulators of brain neurogenesis.

Exercise stimulates the production of Glial Derived Neurotrophic Factor (GDNF) Brain Derived Neurotrophic Factor (BDNF) which stimulate new brain cells and connections.

Increased running and environmental enrichment reduces the loss of acetylcholine and dopamine cells. Smaller stresses prepare the body for greater stress and stimulate growth such as walking fast and breaking a sweat. Continuous stress leads to neuronal loss.

Most growth is in the hippocampus that turns short term memory into long term memory and in the basal ganglia especially the striatum.

Exercise increases learning proportional to the rise in BDNF. A combination of learning and exercise maintains brain plasticity.

Learning turns on genes that express more GDNF and BDNF facilitates learning. The more you learn the better you become at learning. A sedentary lifestyle is a significant risk factor to memory loss, heart disease, cancer and diabetes.

Exercise becomes more important as we age – not less.

**Learned non-use occurs due to lack of stimulation and exercise. This is seen in people who have strokes.
People learn not to use bits of their brain that don't work.
Exercise stops a newly injured system from going down.**

**Exercise should be one of the first recommendations made with a person with early signs of Alzheimer's disease.
The worst thing is to decrease activity.
Strength training, stretching and coordinated movement exercises must be included.**

Walking 3x a week for 45 minutes each time is the goal. Start with 10 minutes 3x a week for the first 2 weeks. Increase by 10 minutes every 2 weeks.

Stages in Healing the Brain

High education decreases the risk of dementia. Researchers in California have shown that most 90 year olds do not have dementia.

Glial cells make up 85% of all the cells in the brain. Their main function is detoxification and immunity.

The blood brain barrier is there to protect the brain from toxins..

The brain has no lymphatic system. (No good rubbing NL reflexes for the brain!)

1. Neuronal Stimulation.

Light

Sound

Electricity

Vibration

Movement

Thought

all help to revive dormant neurones.

Optagenetics

The "far-fetched" possibility of using light for selectively controlling precise neural activity (action potential) patterns within subtypes of cells in the brain was articulated by Francis Crick in his Kuffler Lectures at the University of California in San Diego in 1999.

Francis Crick was the first person to propose that light may switch on some neurones and switch off others.

In 2010, optogenetics was chosen as the "Method of the Year" across all fields of science and engineering by the interdisciplinary research journal *Nature Methods*. At the same time, optogenetics was highlighted in the article on "Breakthroughs of the Decade" in the academic research journal *Science*.

2. Improve state to regulate and modulate the brain to achieve homeostasis. Thoughts turn on some neurones and others off. Once neurones are turned on by thought then blood flows in the area. Internal neurostimulation using thought helps the brain to build new circuits.

3. Neuromodulation is the balance between excitation and inhibition and quietens the noisy brain. Works on the Reticular Activating System (RAS) in the brain stem. Stimulation by light, sound, vibration, electricity all resets the RAS.

Autonomic Nervous System resetting is by neuromodulation. Increased sympathetic system leads to poor healing. Increased parasympathetic leads to rest, digest and repair. Increases sleep, growth and repair, recharges the mitochondria, turns on social engagement systems.

**4. Neural Relaxation
Sleep catch up. In sleep the glial cells open up and detox. They are 10x more active then than in the awoken state.
Too little sleep leads to a toxic brain.
Too much sleep increases the risk to stroke? (too sedentary lifestyle?)**

5. Neural Differentiation and Learning
Brain does best in making fine decisions or differentiations.
Exercises that make subtle distinctions like in light and sounds are best.

Exercises for each Neurotransmitter

Exercises to stimulate Acetylcholine
Resistance / Weight training

Exercises to inhibit Acetylcholine
Yoga, stretching tight muscles to loosen up.

Exercises to stimulate Dopamine
Running - aerobically

Exercises to inhibit Dopamine
Sailing or any sport that they can achieve in

Exercises to stimulate Noradrenalin – Aerobics class – build heart rate up.

Exercises to inhibit Noradrenalin –Sprinting anaerobically to burn up noradrenalin.

Exercises to stimulate Serotonin
Walking outside in daylight,
Gardening

Exercises to inhibit Serotonin
Tai Chi (calm and relaxing)

**Exercises to stimulate Histamine
Dancing**

**Exercises to inhibit Histamine
Stretching, Mobility exercises,
Flexibility, Oxygenation.**

**Exercises to stimulate GABA
Golf**

**Exercises to inhibit GABA
Skipping, opens up, improves
oxygenation, coordination.**

**Exercises to stimulate Excitatory
Skating – ice skating, roller
blading, scooting.**

**Exercises to inhibit Excitatory
Interval training (fast / slow to
break up hyper states.)**

Diet for Dementia

Diet for Dementia (M. Morris combination of Mediterranean diet and the DASH diet)

1. 4 / 5 Leafy green vegetables
2. Orange / Red fruit and vegetables
3. Berries
4. Nuts especially almonds and walnuts
5. Beans and pulses

6. Olive oil or rapeseed +pumpkin seed oil
7. Fish - oily
8. Skinless chicken
9. Whole grains – gluten sensitivity?
10. Red wine – resveratrol and other polyphenolics.

Summary of Nutrients to Consider for Managing Memory Loss and Dementia

- 1. Energy production**
- 2. Mitochondria regeneration**
- 3. Hypoxia**
- 4. Antioxidants**
- 5. Detoxification**
- 6. Acetylcholine synthesis**

- 1. Energy production**
B Complex
Smart Magnesium
alpha Lipoic Acid
Smart Thinking Oil (DHA)
Selenium phosphate for T4>T3

- 2. Mitochondrial regeneration**
Smart Zinc for DNA polymerase
CoQ10
Smart Turmeric
Vitamin B12
Folates
Vitamin B6 (P-5-P)
Vitamin C
Smart Thinking Oil (DHA)
Coconut oil

2. Mitochondrial regeneration
Smart Vitamin D3
Alpha Lipoic Acid + AcetylCarnitine

3. Hypoxia
Smart Thinking Oil (DHA)
Glycine, 5MTHFolate
Vitamin B12 (Adenosylcobalamin)
Smart Magnesium, Smart Zinc
Biotin, CH₂H₄Folate / H₄Biopterin
Vitamin B6 (P-5-P)
Vitamin C
Iron

4. Antioxidant Support
Reduced Glutathione / Selenium phosphate
Smart Turmeric
Cloves / Cinnamon
Smart Vitamin E
Lutein, Ginkgo biloba
Lemon balm
Rosemary
Green tea

5. Detoxification

Glutathione – needs Vit C, a-Lipoic acid, Selenium phosphate, NAC
Smart Turmeric
Coriander
Yarrow
Lemon balm
Black walnut tincture
Smart Probiotics

6. Acetylcholine Synthesis

Smart Magnesium
B Complex
Choline or Phosphatidylcholine
Vitamin B1 (Thiamine PP)
Manganese
Smart Zinc
Acetylcarnitine

Bruce Ames

Formula

Acetyl-L

Carnitine 400mg

(Burns fats)

+

α-Lipoic acid

100mg

(Co-enzyme and
Antioxidant)

Probiotics

Improve the biome and increase resistance to neuro-degenerative diseases.

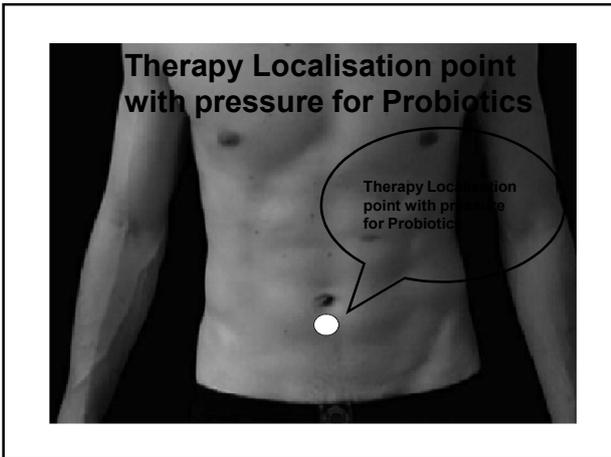
**Microbiome disturbance is due to the food we eat.
Gut organisms contain 99% of the genetic material in our bodies. It is a DNA store. It influences the brain.
Antibiotics and over hygiene effects the biome and increases the risk of Alzheimer's.**

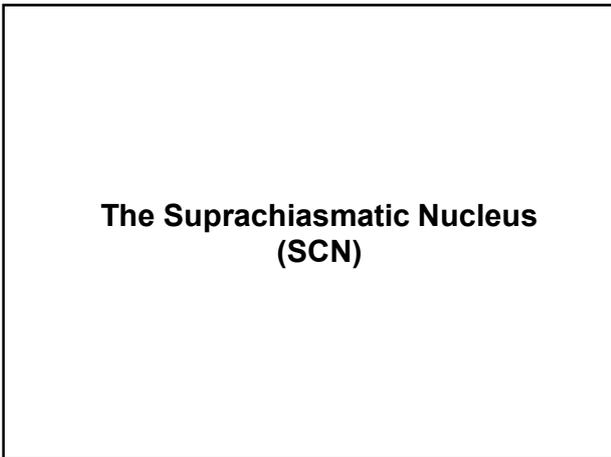
People with the greatest diversity of the biome have the lowest incidence of Alzheimer's. Diversity increases gut integrity. Gram negative bacteria (Clostridium – C.difficile) increase Lipopolysaccharide (LPS) which creates inflammation and permeability especially in autism, Parkinson's and Alzheimers.

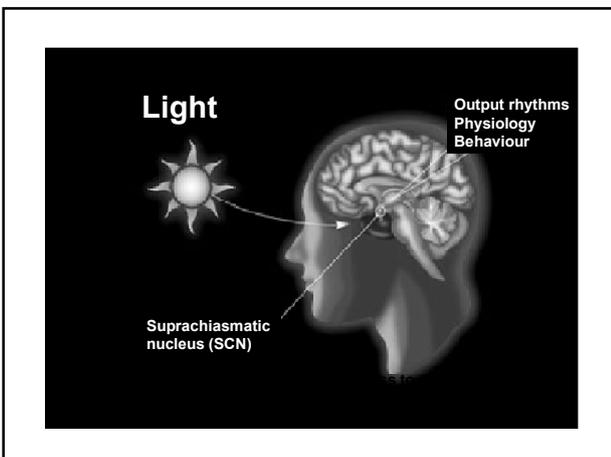
Propionic acid (C3) is a metabolic poison. It increases Omega 6 to Omega 3 ratios, alters neurotransmitters, influences glutamate influx into the mitochondria.

**Bifidobacteria Bifidus
Lactobacillus Acidophilus
Lactobacillus Bulgaricus
Lactobacillus Casei
Lactobacillus Plantarium
Lactobacillus Rhamnosus
Streptococcus thermophilus**

Smart Probiotic







The suprachiasmatic nucleus or nuclei (SCN) is a tiny region located in the hypothalamus, situated directly above the optic chiasm.

It is responsible for controlling circadian rhythms.

The neuronal and hormonal activities it generates regulate many different body functions in a 24-hour cycle, using around 20,000 neurons.

The SCN interacts with many other regions of the brain. It contains several cell types and several different peptides (including vasopressin and vaso active intestinal peptide) and neurotransmitters.

The SCN is situated in the anterior part of the hypothalamus immediately dorsal, or *superior* (hence supra) to the optic chiasm (CHO) bilateral to (on either side of) the third ventricle.

The SCN sends information to other hypothalamic nuclei and the pineal gland to modulate body temperature and production of hormones such as cortisol and melatonin.

Most aspects of mammalian behaviour and physiology show circadian rhythmicity, including sleep, physical activity, alertness, hormone levels, body temperature, immune function, and digestive activity.

The retinohypothalamic tract (RHT) is a photic neural input pathway involved in the circadian rhythms of mammals. The origin of the retino-hypothalamic tract is the intrinsically photosensitive retinal ganglion cells, which contain the photopigment melanopsin.

At the optic chiasm, visual information continues toward the back of the brain, where it is processed into images that we can consciously perceive. The neurons carrying information to the SCN, however, take a different path. They exit the optic chiasm and turn upward, toward the SCN .

The SCN also controls "slave oscillators" in the peripheral tissues, which exhibit their own ~24-hour rhythms, but are kept in synchrony by the SCN.

Light sensitive structures in the human body

1. Rods and Cones via rhodopsin, iodopsin and melanopsin
2. Hemoglobin
3. Myoglobin
4. Cytochromes such as
 - Cytochrome b
 - Cytochrome c (oxidase)
 - Cytochrome p450

Heme-dependent enzymes

- Catalase
- Myeloperoxidase
- Eosinophil peroxidase
- Various peroxidases
- i-Nitric Oxide Synthase (iNOS)
- Cystathione synthase
- Cytochrome p450
- Cytochromes for energy production
- Sulfite oxidase
- Thyro-peroxidase
- COX 1 and COX 2 Tryptophane pyrrolase

All these functions of the nucleus are carried out by special types of neurons which have the ability of photo-induced gene expression. There is a feedback mechanism that can readjust the cycle, according to change of light in surroundings.

The photo signals that it receives are relayed through this photo induced gene expression mechanism, to produce appropriate adjustments. These genes are called 'clock genes'. This sets the body clock, back in phase with the circadian rhythm and this process is called entrainment.

SCN Point (The Definitive Point)



Identifying the Definitive Meridian

1. Therapy localise the SCN point (should remain strong)
2. Cross Therapy localise to each meridian B&E point
3. Only one will weaken. This is the *definitive* meridian
4. You can confirm with the respective neurotransmitter vial
5. Identify weak associated muscle

Yang points begin or end on the face.

Yin points begin or end on the trunk.

B and E Points

ChristygnarR, April 19th 2010

Yang points indicate neurotransmitter deficiencies.

Yin points indicate neurotransmitter excesses

B and E Points

ChristygnarR, April 19th 2010

**The Body Clock
and
Alarm Points**

The Body Clock
Each meridian has a 2 hour period when it has a greater energy than at other times.

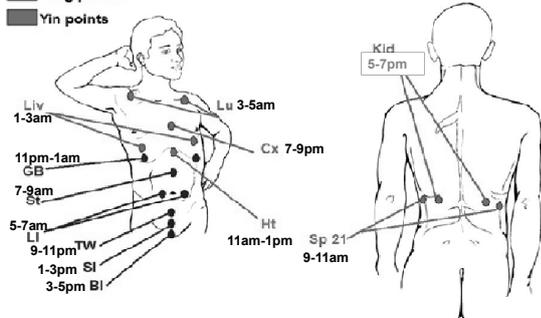
Large Intestine 5-7am
Stomach 7-9am
Spleen 9-11am
Heart 11am - 1pm
Small Intestine 1-3pm
Bladder 3-5pm
Kidney 5-7pm
Circulation sex 7-9pm
Triple Warmer 9-11pm
Gall Bladder 11pm-1am
Liver 1-3am
Lung 3-5am



Picture taken from "Applied Kinesiology Synopsis" by David Walker DC

Alarm Points

■ Yang points
 ■ Yin points



Christopher R. Asher-Smith 2009

NOW TIME

These times are Standard time.
Allow for 1 hour advancement
during summer.

TO TEST THE NOW TIME

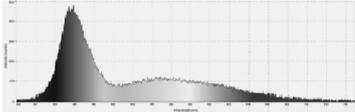
Therapy localise the alarm point
for the current (horory) meridian. A
strong muscle should weaken. If it
does not then the NOW TIME is
not correct.

NOW TIME CORRECTION

Right handed people therapy
localise to the NOW TIME point
and either the practitioner taps
SCN point or the patient taps SCN
point with their left hand fingers
sixty times at 2 X a second.
The reverse holds for truly left
handed people.

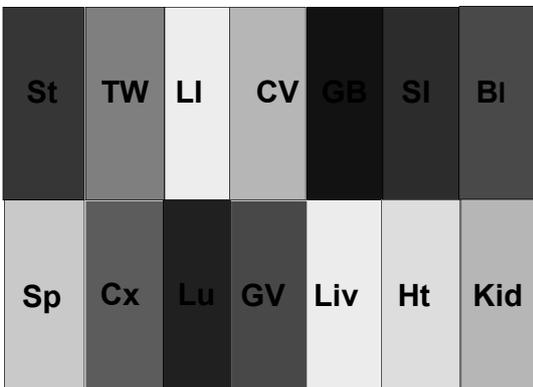
Photons and Biophotons

Cytochrome p450 was so named because the enzyme was discovered when it was noted that preparations of microsomes that had been chemically reduced and then exposed to carbon monoxide exhibited a distinct peak at 450nm



The original 7 colours of Isaac Newton's spectrum. Each acetate wavelength was from the mid range figure for each colour.





The 3 constitutional body type colours. Weakening to any of these is a photon challenge – not a biophoton.



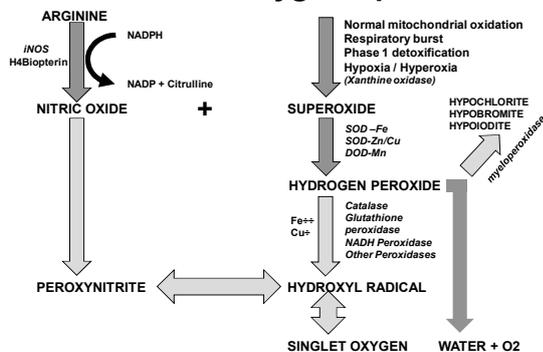
History of Biophotons
Alexander Gurwitsch
Dinshah Pestanji Ghadiali (SpectroChrome)
Fritz Popp
Philip Sykes
Philip Walpole and Hilary Pitman
Francis Crick

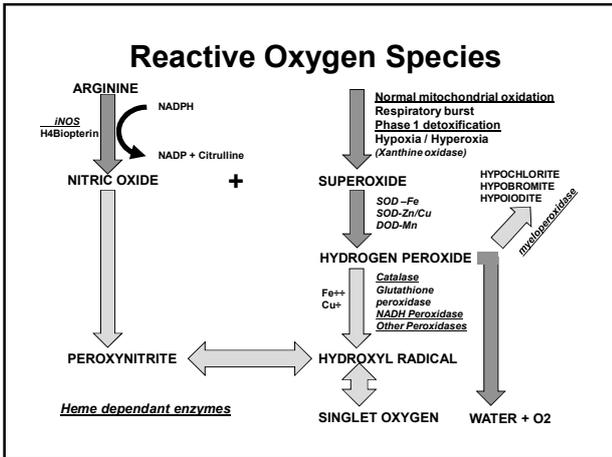
Popp chose to work specifically with UV light because of the experiments of a Russian biologist named Alexander Gurwitsch who, while working with onions in 1923, discovered that roots could stimulate a neighbouring plant's roots if the two adjacent plants were in quartz glass pots but not if they were in silicon glass pots. The only difference being that the silicon filtered UV wavelengths of light while the quartz did not. Gurwitsch theorized that onion roots could communicate with each other by ultraviolet light.

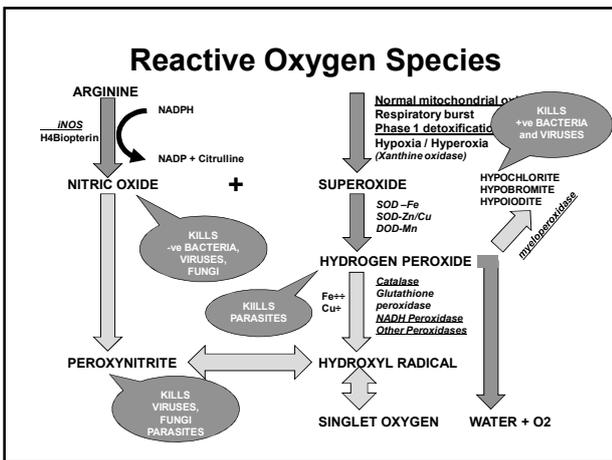
What Popp discovered was that benzo[a]pyrene (the cancer producing molecule) absorbed the UV light, then re-emitted it at a completely different frequency -- it was a light "scrambler". The benzo[e]pyrene (harmless to humans), allowed the UV light to pass through it unaltered. Popp was puzzled by this difference, and continued to experiment with UV light and other compounds. He performed his test on 37 different chemicals, some cancer-causing, some not. After a while, he was able to predict which substances could cause cancer. In every instance, the compounds that were carcinogenic took the UV light, absorbed it and changed or scrambled the frequency. Each of the carcinogens reacted only to light at a specific frequency -- 380 nm (nanometres) in the ultra-violet range.

Carcinogenetic substances using 380nm
Radium
4-OH Estradiol
4-OH Estrone
16-OH Estrone
Pregnenalone
Bisphenol A
??Aspartame, MSG

Reactive Oxygen Species

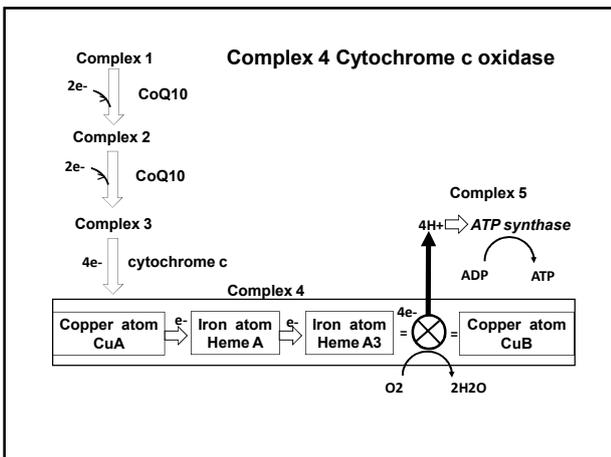






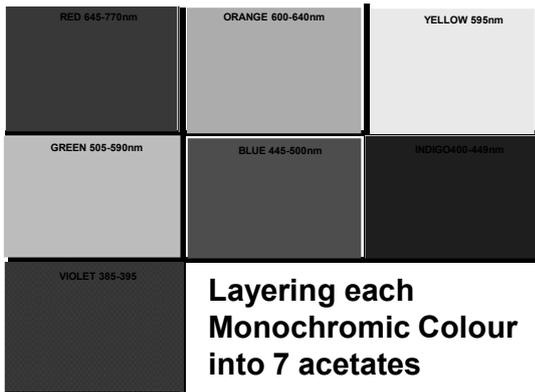
According to Bruce Ames each cell in the body suffers between 25,000-100,000 oxidative hits per day.

This figure is obtained by measuring the quantity of oxidised deoxyguanosine in the urine per day and dividing by the number of cells in the body.

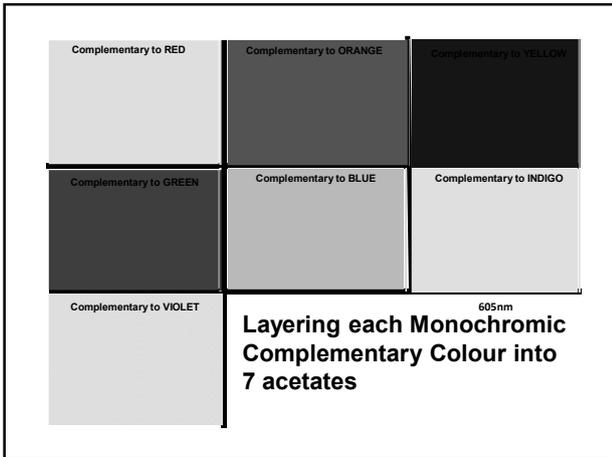


The 54 Monochromic Colours at 5nm intervals

**Layering each
Monochromatic Colour
into 7 acetates**



**Layering each
Monochromatic
Complementary
Colour into 7 acetates**



**Gas Chromatography
Dogs Smelling Cancer**

[https://www.youtube.com
/watch?v=Zh4exvknGwE](https://www.youtube.com/watch?v=Zh4exvknGwE)

**Biophoton Colour is the same as
using the Definitive Meridian,**

RED 645-770nm	ORANGE 600-640nm	YELLOW 595nm
GREEN 505-590nm	BLUE 445-500nm	INDIGO 400-440nm
VIOLET 385-395	Biophoton Colour is the same as using the Definitive Meridian)	

1. SUPEROXIDE ANION	= RED
2. HYDROGEN PEROXIDE	= ORANGE
3. HYDROXYL RADICAL	= YELLOW
4. SINGLET OXYGEN	= GREEN
5. NITRIC OXIDE	= BLUE
6. HYPOCHLORITE	= INDIGO
7. PEROXYNITRITE	= VIOLET

Challenge patient for weakening against

1. SUPEROXIDE ANION	= SUPEROXIDE + NADPH
2. HYDROGEN PEROXIDE	= H2O2
3. HYDROXYL RADICAL	= SUPEROXIDE + NADPH + H2O2
4. SINGLET OXYGEN	= H2O2 + HYPOCHLORITE
5. NITRIC OXIDE	= NITRIC OXIDE
6. HYPOCHLORITE	= H2O2 + NaCl + NADPH
7. PEROXYNITRITE	= NITRIC OXIDE + NADPH + SUPEROXIDE

RED 645-770nm Superoxide	ORANGE 600-640nm Hydrogen peroxide	YELLOW 595nm Hydroxyl radical
GREEN 505-590nm Singlet Oxygen	BLUE 445-500nm Nitric Oxide	INDIGO 400-440nm Hypochlorite
VIOLET 385-395 Peroxyntirite	Spectroscopic colours of the Reactive Oxygen Species (ROS)	

Scale of Transcription

Scale of Transcription
“On a Scale of 1-100 with 100
being the absolute perfect DNA
transcription for you – right now
your Scale of Transcription
calibrates at”

Protocol for using the Biophoton
Acetates
1. Do preliminary work up i.e.
Constitutional colour, Now
Time, Definitive meridian,
Definitive weak associated
muscle.

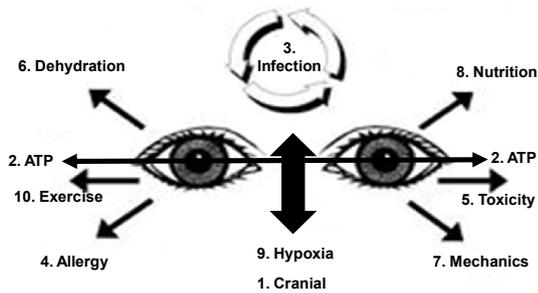
- 2. Challenge with each Biophoton Acetate starting with RED>ORANGE>YELLOW>GREEN>BLUE>INDIGO>VIOLET**
- 3. The one that weakens is the first one to diagnose etiology.**
- 4. Confirm type of inflammation with the appropriate ROS....**

- 5. From this weakness do EID to determine the cause and treat accordingly.**
- 6. Repeat Biophoton challenge until clear.**
- 7. Apply light therapy using the complementary colour for the first weakening Biophoton acetate.**
- 8. Treat trigger point**

Eyes into Distortion (EID)

1. In the clear from strength to challenge for any weakening eye positions.
2. From any positive TL thus from weakening to challenge for any strengthening eye positions.
3. From primary meridian alarm point thus from weakening to challenge for any strengthening eye positions.

Eyes into Distortion (EID)



- Hierarchy of Disease**
- Emotion
 - Hypoxia
 - Nutritional deficiency
 - Mechanical dysfunction
 - Dehydration
 - Toxicity
 - Allergy
 - Infection
 - ATP



ATP

Weakening will be negated with challenging with Mg-ATP.

- 1. Challenge against DNA polymerase. If strengthens prescribe Zinc for DNA repair.**
- 2. Re-challenge eye position. If weakness returns challenge with nutritional composites e.g. Minerals, Vitamins, Fat soluble vitamins, Co-enzymes, Fatty acids, Probiotics.**

Infections
Challenge against
BACTERIA
ACUTE and POST VIRUS
FUNGUS
PARASITES **PROTOZOA**
 SPORAZOA
 NEMATODE
 TREMATODE
 CESTODE

Bacteria – Inositol
Zinc
Arginine
Olive leaf

Ginger
Ionic silver
Mannose
Thiamine / Silver
Golden seal

Virus – Iron
Zinc
Vitamin C
Echinacea
Ionic silver
Astragalus
Selenium
Garlic
Golden seal
Olive leaf

Parasites – Iodides
Garlic
Cumin / Cloves
Black walnut tincture
AP formula
Ginger / Turmeric
RED, GREEN, BLUE
Spice mixes

Coriander for cestodes
Cloves or nutmeg for nematodes

Fungi –
Zinc
Oregano
Probiotics
Sodium sulfate
Coconut oil
Coriander
Ginger
Other spices
Pau d’arco
AF Cream locally

Allergy

Allergen something
Eaten
Drunk
Inhaled
Transdermal

Identify and remove from exposure.
Look specially for Gluten
intolerance
Use Yarrow to supersede challenge.

Toxins

Challenge against
CHEMICALS
TOXIC METALS esp Al, Ni, Hg
RADIATION

Toxins

Chemicals -

- Black walnut**
- Coriander spice**
- NAC**
- Lemon balm**
- Rosemary**
- Yarrow**
- Other spices**
- Charcoal**

Toxins

Toxic metals – Black walnut
Coriander herb
Coriander spice
Lemon balm
 α -Lipoic acid
Yarrow
Glutathione

Vitamin C for nickel

Magnesium for Aluminium

Toxins

Radiation - Chlorella
Coriander spice
Smart Vitamin C
(Rutin)
Turmeric
Yarrow

**Selenium
(phosphate)**

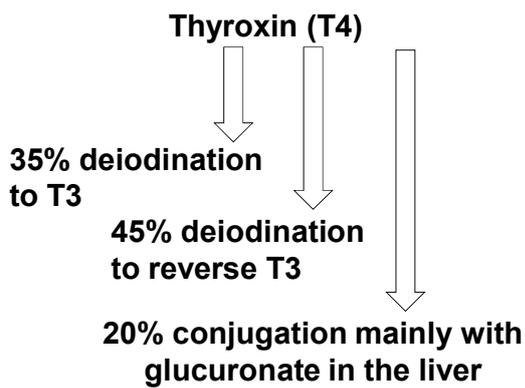
Selenium (phosphate)
Biosynthesis of selenoproteins
requires Cysteine or Methionine
+ Selenate (SeO_4^{--}) + ATP +
H₂O + a Selenium dependant
enzyme (*selenophosphate*
***synthetase*).**

Selenium (phosphate)
Sodium selenate 100mcg
Adenosine triphosphate 100mg

Open capsules up and dissolve
in water before swallowing.

Selenium dependant enzymes
Selenoproteins
At least 25 selenoproteins have
been identified, but the metabolic
functions have been identified
for only about one-half of them
Main ones are
1. Thyroid deiodinase (T₄ > T₃)
2. Glutathione peroxidase

1. Thyroid deiodinase (T4 > T3)
Three different selenium-dependent iodothyronine deiodinases (types I, II, and III) can both activate and inactivate thyroid hormone by acting on T₃, T₄, or other thyroid hormone metabolites essential for normal development, growth, and metabolism.

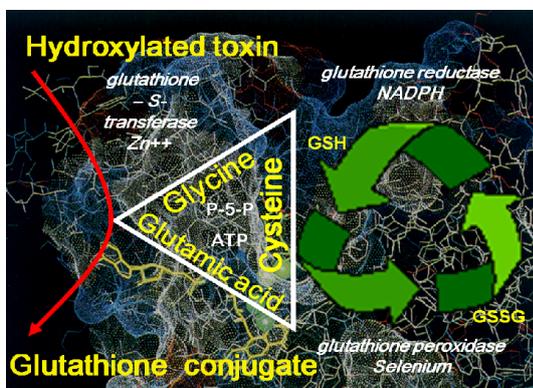


2. Glutathione peroxidase
Five selenium-containing glutathione peroxidases (GPx) have been identified:

1. Cellular or Classical GPx
2. Plasma or Extracellular GPx
3. Phospholipid hydroperoxide GPx
4. Gastrointestinal GPx
5. Olfactory GPx

Although each GPx is a distinct selenoprotein, they are all antioxidant enzymes that reduce potentially damaging ROS, such as hydrogen peroxide and lipid hydroperoxides, to harmless products like water and alcohols by coupling their reduction with the oxidation of glutathione.

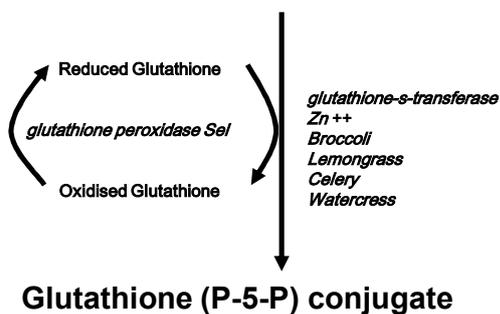
Sperm mitochondrial capsule selenoprotein, an antioxidant enzyme that protects developing sperm from oxidative damage and later forms a structural protein required by mature sperm, was once thought to be a distinct selenoprotein but now appears to be phospholipid hydroperoxide GPx..



Glutathione conjugation (cysteine, glycine and glutamic acid) is catalyzed by *glutathione-S-transferase*.

This enzyme is present mostly in the cell cytosol.

Phase 1 toxic intermediate



A failure in the glutathione conjugation would lead to covalent combination to DNA and RNA and other cell proteins creating serious cell damage. They are further metabolised before excretion. The glutamic and glycine groups are removed and an acetyl group donated by Acetyl CoA is added to the cysteine moiety.

Fat soluble toxins are primarily metabolized by phase 1, phase 2 liver detoxification. The most powerful component of this system is glutathione. Fat soluble toxins can completely eradicate total glutathione levels. When glutathione is depleted all of the thiols become depleted to include S-adenosyl-methionine (SAME), L-cysteine, L-methionine, cystathione, etc. Toxin exposure through glutathione depletion collapses methylation as SAME (the body's one carbon methyl donor) is depleted.

L-cysteine is the rate limiting step in the synthesis in glutathione. It is freely converted into glutathione. Be it during weight loss or other fat soluble toxin exposure in the course of normal day-to-day activities the glutathione may become completely depleted. Search PubMed, There are hundreds of articles which link methylation collapse to almost every cancer known. The toxin takes out the glutathione then overwhelms the body at which point methylation collapses This methylation collapse is not from a 5-MTHF reductase polymorphism, but from total depletion of the sulfur containing amino acid (thiol) substrate. When total thiol collapse occurs secondary to toxin exposure no amount of polymorphism attention will bring the system back to normal function. Thiol amino acid precursors are needed.

The resulting compound is a mercapturic acid, a conjugate of N. Acetyl Cysteine, which is then excreted in the urine.

N. Acetyl Cysteine is thus an excellent supplement to use to up-regulate this pathway.

N.Acetyl Cysteine aids detoxification

- 1. Glutathione**
- 2. Acetylation**
- 3. Sulfation**
- 4. Cysteine**

Other Selenium dependant enzymes

3. *Thioredoxin reductase* participates in the regeneration of several antioxidants, possibly including vitamin C and Vitamin E.

4. Selenoprotein P is found in plasma and also associated with vascular endothelial cells (cells that line the inner walls of blood vessels).

It functions as an antioxidant that protects endothelial cells from damage induced by peroxynitrite.

5. Selenoprotein W is found in muscle. Although its function is presently unknown, it is thought to play a role in muscle metabolism

6. Selenophosphate synthetase
Incorporation of selenocysteine into selenoproteins is directed by the genetic code and requires the enzyme selenophosphate synthetase. A selenoprotein itself, selenophosphate synthetase catalyzes the synthesis of monoselenium phosphate.

7. Methionine-R-sulfoxide reductase studies revealed that the protein catalyzes stereospecific reduction of oxidized methionine residues in reactions that use thioredoxin as a reductant.

8. Sep15 is mammalian protein located in the endoplasmic reticulum of the cell. Here, it binds UDP-glucose:glycoprotein glucosyltransferase, an enzyme that senses protein folding. Sep 15 has a redox function and is also implicated in cancer prevention

9. Selenoprotein V is expressed exclusively in testes and is thought to function in spermatogenesis.

10. Selenoprotein S is involved in retrotranslocation of misfolded proteins from the endoplasmic reticulum to the cytosol.

This protein may also be involved in inflammatory and immune responses.

Dehydration

1-2 litres per day
Ideally in glass bottles or titrate
into Miron Glass 1 litre bottles
Calcium / Magnesium ratio 2:1 or
less
Sodium < 20ppm
pH 7.4

Structure

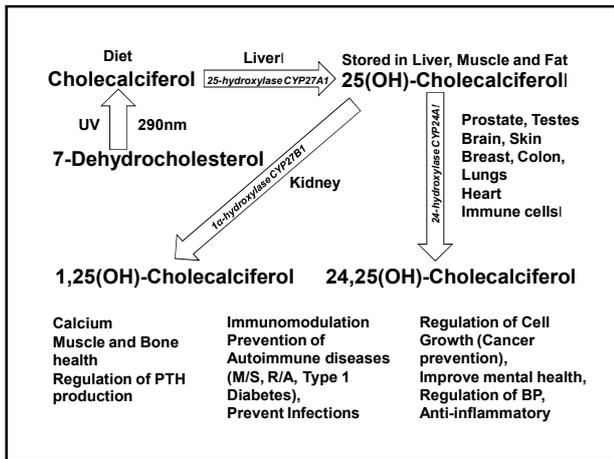
- 1. Cervical spine**
- 2. Thoracic spine**
- 3. Diaphragm (TL Kid 22)**
- 4. M/S joint**
- 5. Sternoclavicular joint**
- 6. Acromioclavicular joint**
- 7. Ribs**
- 8. Lumbar spine**
- 9. Upper extremity**
- 10. Lower extremity**

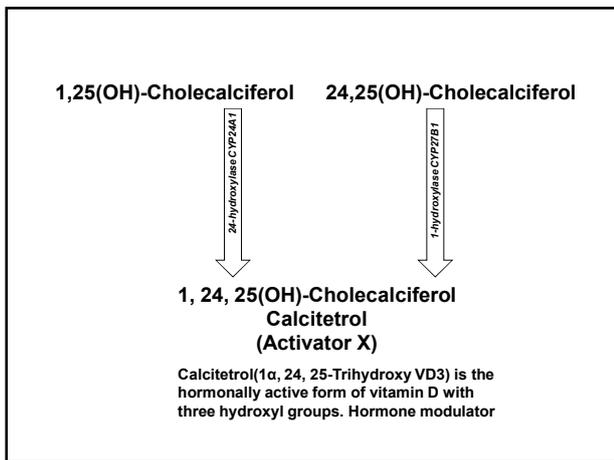
Nutrition

Challenge with nutritional composites e.g. Minerals, Vitamins, Fat soluble vitamins, Co-enzymes, Fatty acids, Probiotics, Saccharides.

Re-challenge eye position. If weakness returns challenge with nutritional composites again and repeat until clear.

**Vitamin D
Calciferol**





Enzymes that are induced by Vitamin D

Enzymes that are induced by Vitamin D
Tyrosine hydroxylase
Tryptophan hydroxylase
Cholesterol to pregnenolone
Pregnenolone to Progesterone
Nitric oxide synthase
Increases Glutathione levels

Hypoxia

Weakness negated with O2
Maybe due to
1. Phospholipid deficiency
2. Hemoglobin
3. Co-Q10

400nm

Patient Protocol for Hypoxia
 From weakness patient strengthens to HYPOXIC eye position
 Confirm using OXYGEN vial to strengthen
 Challenge using following vials

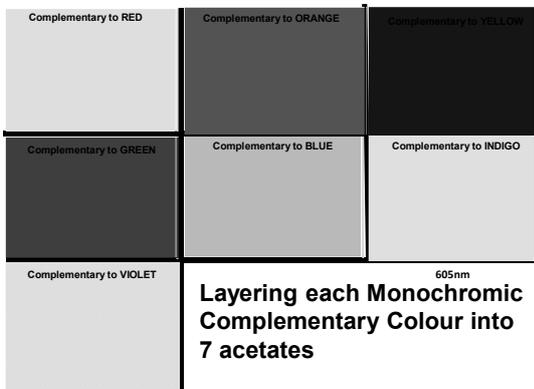
PHOSPHOLIPIDS	HEMOGLOBIN	Co-ENZYME Q10
EPO, BSO, Borage	Glycine	Co-Q10
Black cummin	Adenosylcobalamin	
Flax, DHA	Zinc	
Grape seed	Magnesium	
Hazelnut, Hemp	CH2H4Folate	
Macademia	H4Biopterin	
Olive, Coconut	Biotin	
Peanut	P-5-P	
Pumpkin	Manganese	
Super Omega 3	Vitamin C	
Walnut	Lutein	
WGO		

In my experience there will nearly always be an amino acid that will negate the RED Biophoton acetate challenge. Challenge against each Amino acid individually. Dose and prescribe at least 15 minutes before breakfast. Swallow only with water. Assess length of time for dose.

Warning
Beware of any amino acid product containing stearates or other compounds as they will inhibit absorption and utilization.

Prescribe only pure free form amino acids

Using the Complementary Colours for Therapy



Cvlife 2200Lm Zoomable CREE T6 LED



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- Material: High quality Aluminium
- Range charge: 300-500m
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Phototherapy involves the transformation of light energy to chemical, kinetic or heat energy in order to achieve a desired physiological result. As stated by the First Law of Photobiology, light energy must be absorbed by an atom or molecule in order to initiate a physical or chemical process.

Therefore, light that is used for therapeutic applications must be absorbed by a specific chromophore in the biological tissue.

The chromophore may be endogenous (naturally occurring in cells or tissue), or exogenous (deliberately added to cells or tissue for a therapeutic purpose).

Endogenous	Wavelength	Exogenous	Wavelength
Nucleic acid	260-280 nm	Psoralens	340-370 nm
Protein	280-300 nm	India ink	400-800 nm
Hemoglobin	400, 542, 554, 576 nm	Indocyanine green	805 nm
Melanin	400-800 nm	Porphyrins	400, 630 nm
Water	1400-10000 nm	Chlorins	650-690 nm
Lipid		Bacteriochlorins	720-780 nm
Flavins	420-500 nm	Phthalocyanines	670-740 nm
Porphyrins	400, 630 nm	Methylene blue	660 nm
Cytochrome c oxidase	620-900 nm	Rose Bengal	540 nm

Table 1. Endogenous (naturally occurring) and exogenous (added from outside) chromophores, and their main absorption wavelengths of importance in photomedicine.

Lutein absorbs in the 415-435nm range

Zeaxanthine absorbs in the 425-435nm range

β-Carotene absorbs in the 440-465nm range

Lycopene absorbs in the 470-515nm range

Thus making them all photosensitive in the blue spectrum.

Anthocyanidins

Most frequently occurring in nature are the glycosides of cyanidin, delphinidin, malvidin, pelargonidin (rich in strawberries), peonidin, and petunidin.

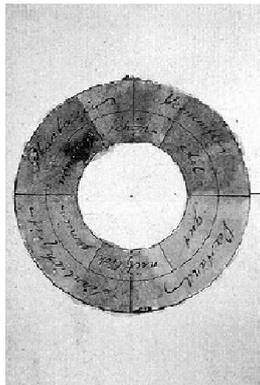
Present in Bilberry, Blueberry, Cranberry, Blackberry, Blackcurrant, Raspberry, Red grapes.

Anthocyanins can be used as pH indicators because their colour changes with pH; they are pink in acidic solutions ($\text{pH} < 7$), purple in neutral solutions ($\text{pH} \sim 7$), greenish-yellow in alkaline solutions ($\text{pH} > 7$), and colourless in very alkaline solutions, where the pigment is completely reduced.

Light emitting diodes (LEDS) are revolutionizing the whole lighting industry. Their availability in almost any wavelength and with steadily increasing total output power means that light delivery applications, previously thought to require an expensive laser, can now be performed at a tiny fraction of the cost (less than 1%) by LEDS compared with the equivalent laser source. Not surprisingly, LEDS are becoming much more widely used in medical applications (Barolet, 2008). LEDS have several differences from lasers however. Firstly the output wavelengths are much less monochromatic than lasers, with a typical LED having a Full-Width Half-Maximum of 30 nm compared to 2 nm for a laser. Secondly LED light is non-coherent, so for LLLT applications where coherence is considered important, this may be an important difference. Thirdly, the light is non-collimated, and this makes it very difficult to focus it into a fiber optic cable for endoscopic and internal applications. On the other hand, it is much easier to illuminate large areas of the body with LED arrays than it is with lasers,

Spectro-Chrome Therapy
Taken from the concepts of
Dinshah Pestanji Ghadiali

Dinshah probably took his concept of colours from Johann Wolfgang von Goethe's "Theory of Colours." Goethe proposed a symmetric colour wheel.



Dinshah's Chromatic Scale
contains 12 colours which
include
Lemon
Turquoise
Purple
Magenta
Scarlet

Dinshah's Chromatic Scale
All 12 colours can be made from just 5 gels.

RED
YELLOW
GREEN
BLUE
VIOLET

RED—Red
ORANGE—Combine Red and Yellow
YELLOW—Yellow
LEMON—Combine Yellow and Green
GREEN—Green
TURQUOISE—Combine Green and Blue
BLUE—Blue
INDIGO—Combine Blue and Violet
VIOLET—Violet
PURPLE—Combine Violet and Yellow
MAGENTA—Combine Violet and Red
SCARLET—Combine Blue, (Indigo) and Red

1. The Three Primary Keynotes of the Oscillatory Frequency of Colour are: Red, Green and Violet, standardized by Dinshah according to his Chromatic Scale.
2. The Three Secondary Colours are: Yellow, Blue and Magenta, standardized by Dinshah according to his Chromatic Scale.
3. The Six Tertiary Colours are: Orange, Lemon, Turquoise, Indigo, Purple and Scarlet; thus, the total of Twelve Colours is compassed by Dinshah according to his Chromatic Scale.
