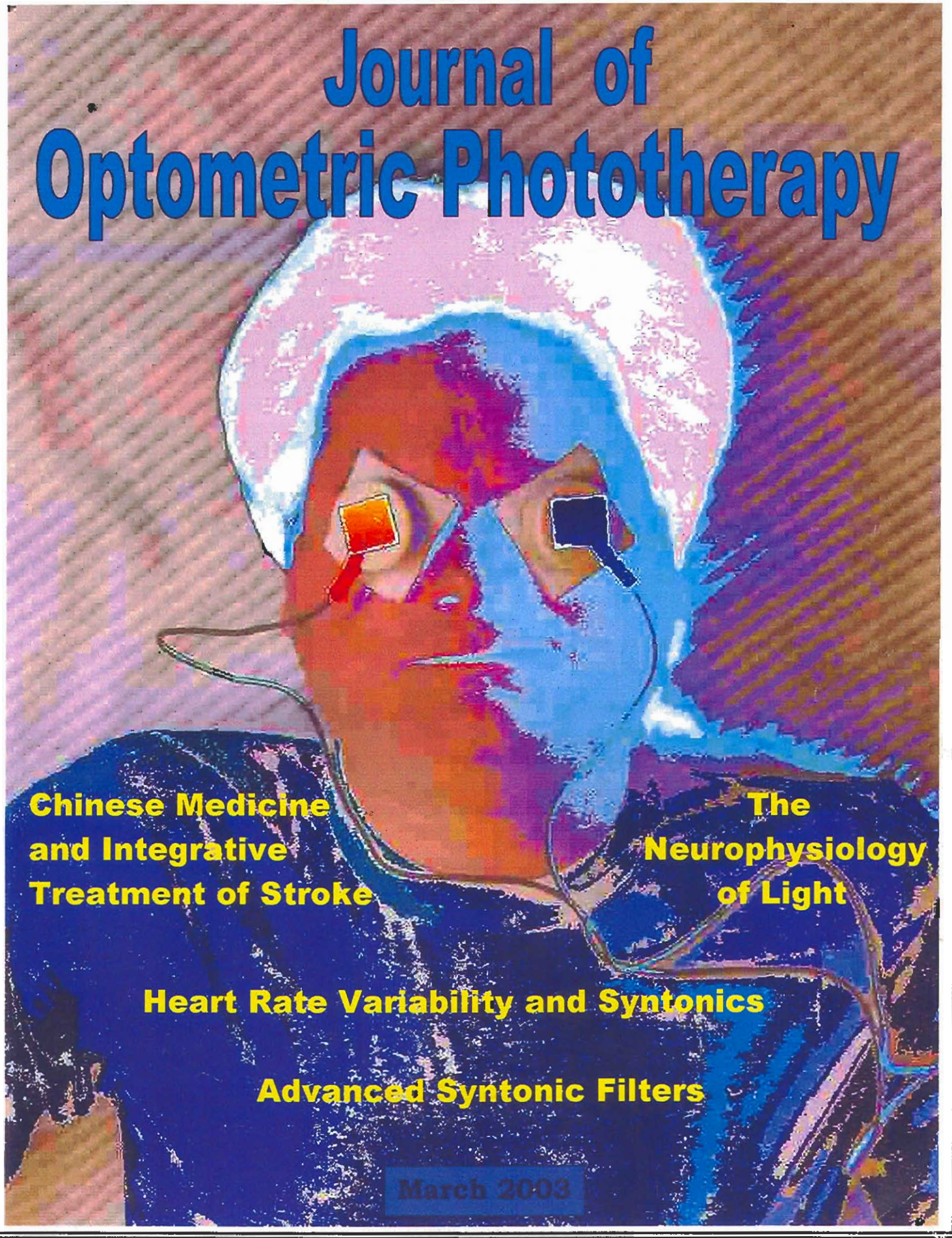
Journal of Optometric Phototherapy



Chinese Medicine and Integrative Treatment of Stroke

The Neurophysiology of Light

Heart Rate Variability and Syntonics

Advanced Syntonic Filters

March 2003

The College of Syntonic Optometry is a nonprofit corporation dedicated to research in photoretinology - the theraputic application of light to the visual system.

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ABOUT THE COVER:

The cover illustrates the application of micro-current therapy to each eye. The treatment delivers low levels of elecromagnetic current to stimulate retinal circulation and restoration by many actions including increased ATP production within the cells. This emerging technology is gaining widespread study and application in treating degenerative eye disease. The roots of this therapy began in the 1920's and the use of low frequency electromagnetics was common. Dr.Spitler employed direct current to treat various external eye disorders as well treating in the visible spectrum. It was his work, which stimulated Dr. Larry Wallace's research and development in patenting a bioelectronic treatment for macular degeneration. Optometry is leading the way in these applications of energy medicine.

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College of Syntonic Optometry

A NONPROFIT CORPORATION DEDICATED TO RESEARCH IN PHOTORETINOLOGY,
THE THERAPEUTIC APPLICATION OF LIGHT TO THE VISUAL SYSTEM

March 18, 2003

Dear Colleagues,

Interest in optometric phototherapy is going through a major growth spurt. In the recent Journal of Optometric Development published by COVD, volume 33, #3, the theme was light therapy and had featured articles by Dr's Steve Ingersoll, Roberto Kaplan, and Rob Fox illustrating the power color and Syntonic therapies. Also Dr's Ray Gottleib and Mary Van Hoy will soon present featured lectures on Syntonics at the Great Lakes OEP Conference. The College is receiving more and more inquires about our conference and home study course. The use of light therapy and research is exploding word wide.

Our organizational brethren at OEP, COVD, and NORA are giving increased attention to CSO, and a joint conference with NORA is in the planning stages. The Chicago School of Medicine has invited Ray Gottlieb and myself to speak on Syntonics at their major conference on continuing education in March. CSO has also been invited to submit research proposals and input on several emerging studies on color therapy.

The scientific field of quantum biology is unraveling the mysteries of how light affects and communicates with each cell and atom in the body. We will be very privileged to have at this year's conference one of the worlds foremost experts in quantum biophysics, Dr. Marco Bishof from Germany whose seminal work in biophotonics will add another major chapter to our work. Also we will have leading edge lectures by Dr's John Thomas, Helge Prosak, Peter Jaillet, Denise Hadden, Amiel Francke, Barbara Kogan, Ellis Edelman, Joseph Shapiro, Sarah Cobb, and The College Faculty. As usual our conference is at the cutting edge of optometric light therapy in particular and energy medicine in general. I hope you will all come to support our great organization as well treating yourself to a wonderful experience.

Sincerely Yours,

Larry Wallace, O.D.,FCSO
President, CSO

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LETTERS

The opinions expressed in this section are those of the writers, and do not necessarily reflect the view of the *Journal of Optometric Phototherapy*. We reserve the right to edit letters. Email Sarah, **eyeamsarah@hotmail.com**

Dear Fellow Vision Therapy Practitioner;

I am very proud of our profession and the type of functional vision care we are capable of providing to our patients. But still optometric vision therapy is not very readily accepted, even by our optometric colleagues. I feel this is partly because we are all doing different levels of "vision therapy" and calling it the same thing.

Possible different levels are: 1. Orthoptics 2. Pleoptics
3. Visual training, 4. Vision therapy, 5. Syntonics
6. Visuopathy , 7. Neuro-visuopathy

Because of this, vision therapy means something different to each one of us. Therefore other professions do not see any logic or commonality to the different ways vision therapy is administered among the different offices. We are unique in that the visual system is represented in 80% of the brain area. If we can normalize the visual system, we can normalize about 80% of the brain's functional ability.

I believe all of us who wish to help do creditable research to prove the efficacy of vision therapy should put our heads together and develop standardized testing for standardized diagnoses and standardized therapies to remediate those diagnoses.

Testing might best be served by dividing into different areas; 1. Ocular health,
2. Refractive error, 3. Visual information gathering skills,
4. Visual perception skills 5. Visual information processing skills,
6. Visual integration with the other sensory systems.

I have decided to dedicate the rest of my life to achieving this goal. If any of you would like to contribute to this endeavor your help will be greatly appreciated. You can start by taking your last five [5] completed therapy patients and list:

1. Testing done with the resulting diagnoses
2. The instrumentation needed to do the testing.
3. The therapies and instrumentation utilized to remediate the various diagnoses.
4. The time or sessions required to normalize the visual functions treated.

I will compile all of this information received from all participants in this endeavor and send copies to all participants. Then we all can decide what tests and protocols are to be used in the research, and the therapies to be used with the protocols for administering therapies for various diagnoses.

The next step requires you to have a computer that can be dedicated to vision therapy only. Dr. Wayne Pharr has agreed to place all of the agreed testing, diagnoses, and treatment protocols into his OIC Automated Vision Therapy Management System, so that we all can be working from the same page. The OIC system allows for easy gathering of findings and results for professional analysis.

I know that this is a large commitment on your busy schedules, but I feel that it will have very positive results for the future of functional optometry. Scores of future patients will benefit from the increased efficiency of visual performances in their school, work, and play.

I anxiously await your reply and any suggestions or comments you care to make.

Yours for better vision,

Dale A. Fast, O.D., F.C.S.O.

For more info on research go to; http://www.syntonics.org.
Email replies to: research@vision.cc, Fax: 1-916-424-6230
Mail: Dale Fast, O.D., F.C.S.O.,
6548 Fordham Way, Sacramento, CA 95831-2220

CONGRATULATIONS

H. Riley Spitler Award 2002

John Downing, O.D.

To honor his visionary leadership in advancing ocular phototherapy, instrumentation, technique, and education worldwide.

CONGRATULATIONS

H. Riley Spitler Award 2002

Dale Fast, O.D., F.C.S.O.

In recognition for creating "Blue Book" and many other contributions to syntonics.

CHINESE MEDICINE AND INTEGRATIVE TREATMENT OF THE STROKE PATIENT

By
Sondra St. Clair, N.D.

Brain injury can be a devastating and life-changing event. Currently 5.3 million Americans live with disabilities resulting from brain injury and more than 1 million are treated in emergency rooms annually.[1] There are a number of causes of traumatic brain injury including falls, auto accidents, violence (primarily from firearms) and stroke. This article will focus on stroke induced brain injury as it accounts for 600,000 incidents yearly with 4.5 million currently documented stroke survivors in this country. According to PBS, 10% recover almost completely, 25% with minor impairments, 40% with moderate to severe impairment requiring special care, 10% require nursing home care, and 15% die shortly after.[2,3] For those that remain functional, sequella are often numerous and can impact cognitive, physical and emotional functions affecting every aspect of the patient's life.

Cognitive dysfunctions include difficulties in sequencing, balance problems, short term memory loss, unilateral neglect, slowed ability to process information, trouble concentrating, difficulty keeping up with a conversation, difficulty finding words, impaired judgment, organizational problems, and inability to parallel task.[1]

Physical consequences include seizures, muscle spasticity, loss of taste or smell, increased need for sleep, pain, paralysis, impaired motor function, and speech dysfunction. Brain injury often affects the visual system and can result in double vision, special distortion, headaches, migraines, loss of vision, visual field loss, decompensated visual skills, balance and vestibular dysfunction, midline shift, changes in proprioception, light sensitivity, binocular coordination decompensation, disorientation, disequilibrium, photophobia, ocular motor decompensations of increased esophoria and esotropia, hyperphoria/hypertropia, color agnosia, movement agnosia, cyclophoria/cyclotropia, suppression, compromised reading and writing skills, head tilt, and blurred or fluctuating vision.[4,5]

Emotional effects include emotional lability, depression, fatigue, irritability, lack of initiating activities, mood swings, denial of deficits, impulsive behavior, agitation, and egocentric behaviors.[1]

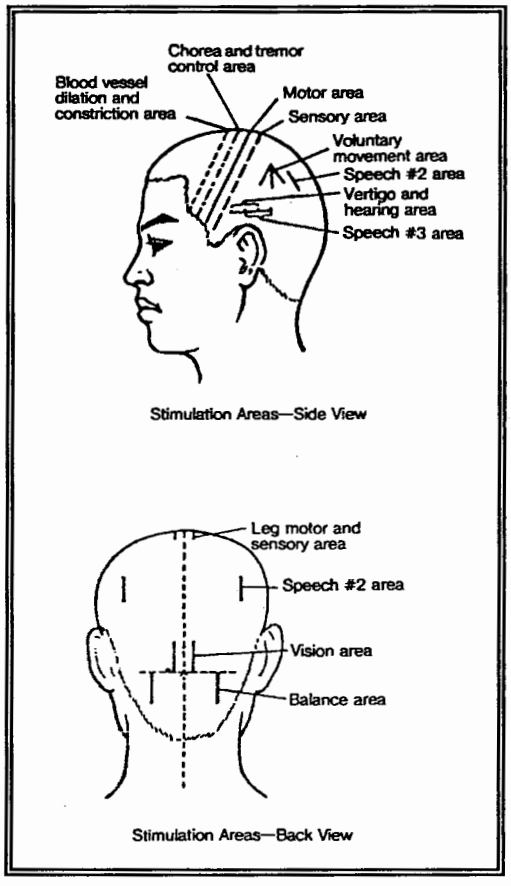
Stroke is multifaceted in causative factors. The western medical viewpoint strives to understand stroke through the western physiology model. Per this theory stroke is either an ischemic or hemorrhagic trauma to the brain resulting in destruction of the brain tissue (infarction). The damage is a result of reduced oxygen and glucose needed by the brain cells for survival. Ensuing complications after initial trauma are attributed to ischemic penumbra via excitotoxic reaction.[6,7] Within these parameters, there are the obvious external cerebral insults, as well as those generated internally which can result from disrupted clotting mechanisms, embolism, or thrombosis. Western medicine attributes a propensity for stroke to various diseases such as diabetes, heart disease, arrhythmia, hypercholestremia, aneurysm, carotid occlusion or transient ischemic attack (TIA), cardiac murmur, sleep apnea, smoking, high blood pressure, stenosis, and certain chemicals such as phenylpropanolamine (PPA) and conjugated estrogen.

Traditional Chinese medicine (TCM) has a different physiological model and thus, its viewpoint for treatment also differs. Stroke is a sudden exacerbation of a long-standing physical condition. In Chinese medicine, all bodily functions are considered to be interrelated energetic functions of the viscera. Chronic illnesses that can preclude stroke are primarily spleen, liver, and kidney imbalances. These imbalances can manifest into the western medical diseases listed above. The advantage of Chinese medical differential diagnosis is that one may make a diagnosis much earlier, often long before a western medically diagnosable condition appears. This allows TCM to not only treat but also prevent strokes.

At this point a brief overview of the Chinese medical functions of spleen, liver and kidney will be helpful. The spleen is responsible for digestion of food and converting food into nutriment and blood. The liver ensures a smooth flow of these nutrients and the blood to the tissues. The kidney is linked with genetic information and the aging mechanism. Natural laws of

aging slowly deplete the kidney energy. As this energy diminishes, the body weakens and genetic predispositions manifest. The kidney energy is depleted not only through time, but is depleted more quickly through harsh living, improper diet, and excessive work. As the kidney energy wanes, so declines the function of other organs. The spleen's digestive energy in particular declines.[8] Western medicine confirms this by acknowledging the need for digestive aids in the elderly.

Each medical modality has its unique way of treating the stroke survivor. Chinese medical treatment differs drastically from the western approach because its theoretical basis is entirely different, that the body is an interconnected network versus the western model of isolated and separate organ functioning. There are a number of other alternative therapies that can assist in treating brain injury sequella including behavioral and neuro-behavioral optometry, homeopathy and flower essences. The complementary modalities to be discussed here are acupuncture, herbal therapy, nutrition, and retinal phototherapy.



Depending upon the origin of the stroke, western medicine selects the procedure or drug of choice. In cases of hemorrhagic stroke, surgical intervention can reduce pressure on the brain tissues. With an ischemic stroke an injection of tissue plasminogen activator (t-PA) within the first 180 minutes can help more quickly dissolve the clot, lessening the amount of cerebral necrosis.[7] In either type, further treatment is geared towards rehabilitation with physical and occupational therapies and prevention of further injury with anti-coagulants. If the causative factor is carotid occlusion, endarterectomy or carotid angioplasty/stenting may be performed. With atrial fibrillation, antiarrhythmic drugs might be used. Diabetes often increases arteriosclerosis and thus the appropriate medications would be prescribed. Patients with hypercholestremia may be managed with cholesterol lowering agents. Patients with high blood pressure may be treated with beta-blockers and ACE inhibitors. These medicines treat symptoms but do not address the cause of the disease.

Current thought in western medicine is that the patient must learn to live with the resulting disabilities. Rather, it would be beneficial to brain injury survivors if all medical fields understood that brain function may be restored and that future brain cell death can be arrested by decreasing excitotoxic activity, increasing regeneration of nerve tissue and rerouting of neurological impulses.

Acupuncture is commonly used to treat stroke sequella in China and is quite successful at speeding recovery and increasing function. In TCM treatment is tri-fold, treating locally at the site of the lesion to stimulate cellular and neuro-pathway response, (see figures 1 & 2), treating distally to the affected motor response areas, and treating systemically according to TCM principles, which focuses on strengthening the organ imbalance. Diagnostic possibilities include strengthening the digestive function of the spleen to increase the blood supply as in anemia and atrial fibrillation, balancing the liver as in hypercholestremia or high blood pressure, or strengthening the kidneys for degenerative conditions.

Different modalities often correlate in their thinking. This is a good indication that treatment is on the right track. In Chinese medicine, stroke often results from imbalance of spleen energy, the digestive function in TCM manifesting as weak blood vessels, atrial fibrillation, sensitive digestion, anemia, and fatigue. The patient with these indicators might benefit from herbs and supplements that enhance digestion such as HCl, betane and ginseng (a known stress adaptogen which must be used with caution in patients with high blood pressure). In TCM terminology patients with high cholesterol levels often have imbalances in liver function. Western medicine science attributes cholesterol production to the liver. For years people have attributed high cholesterol levels to food consumption; however, diet modification seldom significantly lowers cholesterol levels. This indicates that the source of high cholesterol is internal, the liver. The production of cholesterol by the liver is a natural response to environmental stress to keep the nervous

system functioning correctly. Our American livers are under enormous stress due to chemical and emotional toxins (neuro-peptidal reactions). The premise of TCM is to balance liver function by removing toxins. In an ideal world you would also reduce emotional stress. Herbal formulas to detoxify the liver, such as Xiao Yao Wan, help to reduce high cholesterol. Chrysanthemum and hawthorn have also been shown to reduce high cholesterol levels, the chrysanthemum working primarily on the liver and the hawthorn assisting the spleen's digestive function. For the patient with high blood pressure, one must examine the causative factors and determine whether there are accompanying conditions such as anemia, irritability, flushed face, etc. as there are many different types of hypertension in TCM. An unappealing supplement is Lumbricus (earth worm), which reduces hypertension in the excessive type patient with a reddened face, irritability and enlarged abdomen. Now imagine the hypertensive patient who is pale, frail, thin and might also have hypercholestremia. Bo Jen Mi Tea reduces fat absorption from foods, benefits spleen (digestion), removes atherosclerotic plaque, reduces high blood pressure, and decreases the chances for heart disease and stroke. These formulas can be used as both prevention and treatment for stroke. Depending upon the overall symptomatology, the trained physician discerns which formula to use. In a parallel to western medical theory, Dan Shen, a mild herbal blood thinner similar to aspirin but with blood enhancing properties as well, is often recommended to patients with heart disease. To speed recovery of sequella, Ren Shen Tsai Zao Wan is specially formulated to increase circulation to the brain and extremities and to increase motor function.

There are a number of nutritional supplements available to assist the stroke patient. One of the downfalls of nutrition, however, is it follows the western medical symptomatic approach to health care. For example, here is a grocery list of supplements recommended by the National Stroke Association the goal of which is to maximize brain nutrition. These supplements include alpha lipoic acid, acetyl carnitine, pycnogenol, DHA, lutein, Ginko biloba, and omega 3 fatty acids.[9] It is also suggested to use supplements with antioxidative properties such as carotenoids, and vitamin E to prevent low density lipids (LDL) oxidation. (Please note that with vitamin E you must be cautious if your patient is also taking blood thinners.) If your patient has high homocysteine levels, suggestions are folic acid or other homocysteine reduction combinations.[10] Others on the list include colloidal vitamins and minerals, taurine, vitamin B, probiotics, and betane.[11]

Retinal phototherapy (syntonics) diagnosis is based upon results of an extensive 21 point exam, functional field measurements which in addition to offering much visual information, provide detailed information on the size of the optic nerve head and scotomas. These are of particular interest in brain injuries, and alpha omega pupil findings. The information gathered from these exams correlates to TCM in that it is related to spleen, liver and kidney function. For example, high blood pressure might manifest as exophorias, accommodative spasm or excessive IOP upon examination. Accordingly, correct syntonic color selection such as upsilon omega will address the underlying conditions through parasympathetic stimulation while treating the visual dysfunction. In TCM these colors balance the liver function, often the cause of hypertension. Similarly, for the patient with atrial fibrillation post heart attack visual manifestations might include field constriction around the optic nerve head, scotomas, and acuity loss. This can be treated using the guidelines in the syntonics Blue Book, which might lead you to select mu delta or alpha delta. which stimulates the Sympathetic function would be stimulated and in TCM terminology the spleen strengthend.[12]

Retinal phototherapy is ideal for treating post stroke visual sequella because it too views the patient as a whole and interconnected being. Once a comprehensive visual exam is performed, treatment colors may be appropriately selected. Often the patient will have constricted fields with an enlarged blind spot indicating pressure on the optic nerve from cerebral swelling. Immediately post stroke, the prescription is often upsilon omega D for ten minutes combined with mu upsilon for ten minutes, 8-10 sessions. The first color combination has the effect of reducing the cerebral swelling and decreasing the glandular function in the brain. This helps to minimize the decoupling of the cerebral blood flow and reduces the subsequent metabolic imbalances, minimizing the secondary cytotoxic effects. It also has the additional benefit to the patient as emotional lability is often eased with this sedating color combination. As the patient improves, the prescription is typically modified to mu upsilon for twenty minutes to continue resorption of the cerebral fluids. The fluids are resolved, further damage minimized, and the neuro-motor pathways may reestablish. Additionally, remember that most brain injury patients are light sensitive so it is imperative to keep the patient away from all fluorescent light sources to reduce the chance of inducing seizures.

Because stroke is usually a later complication to another disease we have the opportunity to prevent many of the internally originated brain injuries. The integrative

approach to medicine allows us to better understand and better provide treatment according to the individual's physiological tendencies and predispositions. For example, the atrial fibrillation stroke patient who tends towards anemia will have a much higher risk than average of hemorrhagic stroke if he is put on anticoagulants because of his inherent weakness in digestion, assimilation of food, increased homocysteine levels and a weakness in the blood vessels. If we take an integrative approach, treatment would be to increase blood production, strengthen digestion while prescribing medication to address the atrial fibrillation. Once the body is more vital, the atrial fibrillation will be alleviated as well as the need for the medication.

We have the opportunity to use integrative techniques to restore the quality of life by blending a mixture of the best of all worlds. To do this, however, we need to look at each patient as an individual, as a complex of his or her unique physical composition. With this perspective, we can treat and minimize symptoms while at the same time using methods that will reduce the risk of future insult. In the medicine of the future, I look forward to a world in which many health care professionals work together for the optimal outcome for the patient. There is an old adage; "He who is first always looks wrong, by definition."

For further information on TCM or alternative medicine, please contact Dr. St. Clair at stclairconsulting@hotmail.com, or miraclehealings.com. Special thanks to Charlie Butts, O.D. master syntonics consultant and to Susan Golden, R.N. for input and editing.

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[1] CDC Report Shows Prevalence of Brain Injury. CNN, Atlanta, April 14, 1000.
[2] Who Cares: Chronic Illness in America. PBS.org/fredfriendly/whocares/awareness/dir_stroke.html
[3] Neuro-Trauma Law Nexus. neurolaw.com/brain.html#statsTOC

[4] Lehr, R.P. Jr. Brain Functions and Map. Neuroskills.com/tbi/brain.html
[5] Cohen, A.H. Visual Problems Associated with Acquired Neurological Events. Optometrists Network, 1996-2000.

[6] Thomas, J.A. Acquired Brain Injury and Hidden Visual Problems. Optometric Extension Program Foundation, Inc. Information Bulletin V-123, 1994.
[7] National Stroke Association, 2002. stroke.org/stroke_risk.cfm
[8] O'Connor, J., Bensky, D., Acupuncture: A Comprehensive Text. Shanghai College of Traditional Medicine. Eastland Press, 1984.

[9] National Stroke Association. Stroke.org/pages/strok_nutrition.cfm
[10] Wilson, P.W.F. Homocysteine, Vitamins, and Cariovascular Disease. NHLBI's Framingham Heart Study. NIH/NHLBI contract No1-HC-38038
[11] Halloran, G. Vision Improvement. Presented to The College of Syntonics Annual Conference, May 18, 2002.
[12] The Blue Book. College of Syntonic Optometry, 1995-1998.

SYNTONIC ADVANCED FILTERS

Compiled and summarized from syntonics literature

By
Dr. Ray Gottlieb, Dean, CSO

The following syntonic filter prescriptions were compiled from the *Syntonogram* and other syntonic writing beyond the basic course in order to preserve and present a review of advanced techniques of using syntonics phototherapy for various visual conditions and pathologies. These prescriptions were suggested by practicing optometrists based on their personal clinical experiences. This explains why there may be several different, possibly contradictory, prescriptions for the same ocular condition. In spite of the very specific and often complex nature of the prescriptions, there is no suggestion here, nor in the original articles, of scientific reasons why these should necessarily work nor any attempt to statistically prove their efficacy.

There is much in the earlier practice of syntonics that has fallen by the wayside. For example, most practicing syntonists today would not think of treating Argyle Robinson pupil, astigmatism or blepharitis with syntonics. In addition, most of today's syntonists don't 'nascentize' before treatments and tend to minimize or ignore morphological analysis (body typing) in prescribing.

In the past, syntonics treatments included three to five minutes of nascentization before each phototherapy session in order to increase the effectiveness of light therapy. The idea was that a static physiology was less easily influenced than one already put into motion by nascentizing. Until the early 1960's 'syntonizers' came with two external filter sets called scopes that were the size and shape of the syntonizer's viewing aperture. These were attached to the top of the instrument. The scopes were swiveled down to hang in front of the patient's eyes for nascentation and then moved up to rest on top during treatment. Patients looked through one or both of these filters at steady (non-flashing) white light (no therapeutic filters inserted).

The 'not-local' (N/L) nascentizing scope, deep red glass on one side and violet on the other, filtered out all but the extreme ends of the visible spectrum. The N/L scope could be placed with red over the right eye and violet over the left or turned around the other way. Red was used on the non-dominant eye. The N/L scope was to prepare to treat ocular problems resulting from systemic imbalance ("ocular deviations from normal due to deeper seated trouble"). Newer syntonizers don't have attached nascentizing scopes but come with a reversible welder's goggle with red and violet filters.

The local nascentization (L) scope was of green glass and could be swiveled to cover the N/L scope in order to cut down the extreme spread of the frequency transmitted and the amount of illumination reaching the retina. Patients looked through both scopes at white light for three to five minutes. L was used for conditions related just to the eye such as retinal detachment or contact lens abrasion ("the ocular departure from normal lies solely within the eye or its appendages"). Notice that both L or N/L were sometimes suggested for the same condition and that several, such as asthenopia were broken down into subtypes like 'nervous' asthenopia that called for (N/L) and those presumed due to local, eye-based causes, such as 'retinal', 'muscular' or 'accommodative' asthenopia, where (L) was used. There is no L filter manufactured these days, but the green filter *'mu'* in combination with the N/L glasses might work. Perhaps one of these days we will be able to generate clinical data to determine the usefulness of nascentization.

In the past, patients of definite morphological types, pyknic (P), syntonic, (S) and asthenic (A) were prescribed different filter combinations for the same visual condition. In the early days, patients were syntonized according to their morphological classification plus consideration of the underlying cause of their manifest ocular symptoms. Generally rounded, easygoing pyknic types (parasympathetic predominating) being physically slow and sluggish, required mental and nervous stimulation so low frequency (red end) of the spectrum were used. Slender, nervous asthenic individuals (sympathetic predominating) required depressing or slowing down and so required high frequency light (violet end of the spectrum). *The Syntonic Principle* describes this in depth.

Syntonics as it is practiced today will evolve to incorporate more of its past into its future. The goal of this summary is to encourage an awareness of practices and procedures lost in the current phase of syntonic phototherapy. Perhaps some of you will use the information below and find that it stimulates significant and reliable healing to your patients.

SYNTONIZATION

P=pyknic type, **S**=syntonic type, **A**=asthenic type

ACCOMMODATION
Spasm of - **P** - Tonic L-Upsilon or Omega - Clonic - Theta Upsilon. **S** - Tonic L- Omega - Clonic – Omega. **A** - Tonic L-Omega & D or Upsilon or Omega - Clonic - Delta Omega

Lack of Accommodation –
P - Functional – L-Theta. For Paretic - N/L-Alpha Theta, Mu Theta, on alternate days.
S L-Functional - Delta D, N/L-Paretic - Alpha Delta, Mu alone, on alternate days
A L-Functional - Delta, Alternate with Upsilon Delta on 1-1 basis.
N/L-Paretic - Delta, Mu Delta, on alternate days.

Myopes with low accommodation (usually type **P**) - Seem to respond best to Mu Pi.

Low Accommodation (in general) - L-Delta and N/L-Alpha Omega.

Push-up Blur-out Low - Male- N/L-Alpha Delta altenated with N/L-Mu. Female N/L-Alpha Upsilon alternated with N/L-Mu

AMBLYOPIA
Congenital
P N/L-Mu Theta, **S** N/L-Mu, **A** N/L-Mu Delta
If nerve head is very pale, use the above on first appt then alt with below on alt days:
P L Alpha Theta - flashing, **S** L Alpha - flashing, **A** L Alpha Delta-flashing

Toxic (usually affects one eye), effecting indirect and direct vision
P N/L-Mu Theta (flashing may be used), **S** N/L-Mu (flashing may be used), **A** N/L Delta (flashing may be used)

Exanopsia - **P** L Alpha or Alpha Theta- flashing, **S** L Alpha -flashing, **A** L Alpha Delta -flashing
Also listed are: Mu Upsilon and Omega, L-Alpha Delta and L-Mu, N/L-Mu Delta; L/Mu Upsilon on 1-2 basis, Mu Delta & Delta Omega, Low acuity with irritability. Delta - flashing followed by rotary exercise, Amblyopia with low reserves - L-Mu Upsilon

Diminished visual acuity without interference of lenticular opacity and no visible extra ocular or intra ocular pathology: Delta, Mu-Delta, Mu-Theta Correct general health conditions, including vitamin and mineral efficiency. Immediate improvement in vision, which will continue if indicated physical conditions have been corrected.

ANTIMETROPIA - L-N

ARGYLE ROBINSON PUPIL N/L Mu Delta

ASTHENOPIA
1). Asthenopia - Delta or Mu Upsilon
2) Accommodative Asthenopia - **P** L-Theta, **S** L-Omega, **A** L-Delta D
3) Muscular asthenopia - **P** L-Theta Omega, **S** L-N, **A** L-N or Delta Omega It is difficult to determine what frequency in Asthenopia, be governed by the clinical results
4) Nervous Asthenopia -**P** - N/L-N or Theta Omega, **S** - N/L-N or Omega N, **A** - N/L-Delta Omega or Omega N
5) PUPILLARY ASTHENOPIA - N/L-Alpha Omega or N/L-Alpha Lambda Delta or N/L-Mu Delta or Omega N or N/L-Alpha Lamda (Alpha Omega Pupil)
6) Retinal asthenopia – L-Mu^{10} alternated with –Alpha Theta^{10} 1-1 Basis.

OCULAR DISCOMFORT - 1) Upsilon, Mu Upsilon, Alpha Upsilon. 2) N/L-Delta Omega and N/L-N. 3) Mu Upsilon and N/L-Upsilon, Mu Delta. 4) N/L-Alpha Delta, N/L-Omega N, Alpha Delta. 5) N/L-Omega N, Mu upsilon, Alpha Delta alternated with Mu Upsilon.

ASTHMA - N/L-Alpha or **P**-Mu Delta – maybe Alpha Omega

ASTIGMATISM - L-Mu Upsilon, Alpha Omega – to slightly reduce the M

BLOOD PRESSURE (low) - 1) N/L-Alpha Upsilon, 2) N/L-Alpha Kelta (kidney involvment. 3) N/L-Alpha Upsilon works best or Alpha Lambda and sometimes N/L-Alpha Omega.

BLOOD PRESSURE (high) - 1) N/L-Delta Omega, 2) Delta Omega or N/L-Theta if high diastolic pressure with N/L-Delta alternately on the 1-1 basis (muscle invlovement)

BLEPHRO SPASM - N/L^{3} – Omega N^{8} – Mu $Upsilon^{5}$ – $Upsilon^{5}$ – Upsilon $Omega^{8}$
N/L^{3} – Mu Theta or Mu $Delta^{10}$ – Theta or $Delta^{10}$

BLEPHARITIS Possible causes: some illumination malfunction, infection of mucous membranes, glare, wind dust, smog, chemical fumes, uncorrected ametropia, muscle imbalance, vitamin and mineral deficiency, anemia other metabolic disturbances.
N/L^{3} – Mu Theta or Mu $Delta^{10}$ followed by Theta or $Delta^{10}$

BUZZING - Delta Omega or Upsilon Omega – flashing

CHALAZION - L-Mu Delta or N/L-Mu Upsilon alternated with N/L-Mu Omega on 1-4 basis

CHOROIDITIS AND CHORIORETINITIS - L-Mu^{6} followed by Delta or $Theta^{6}$, also remember L-Upsilon Omega
CHORIORETINITIS AND YELLOW EXUDATES IN RETINA - N/L^{3}-Mu $Delta^{10}$ or Mu $Theta^{10}$ (according to type) Theta or $Delta^{10}$ (according to type) for heavier kick, use Delta Theta
If luetic – N/L-Mu $Delta^{6}$, Mu^{6}, followed by Delta or $Theta^{6}$ (also remember Upsilon Omega)

COLDS – N/L-Upsilon Deep seated cold Alternate – Upsilon, Upsilon Delta 1-1

COLOR FIELD - L-Mu Upsilon and R/G-Mu Delta, G/F-Mu Delta and Mu Theta, Las few followed by Alpha $Delta^{5}$, Expanded R/G-Mu Delta and L/Mu Upsilon, 2-1 basis

COLOR FIELD CONSTRICTED BLUE – a blue field constriction indicates an organic condition and is generally the most difficult to handle. Proceed as follows: **P** N/L-Alpha Upsilon or Alpha Omega or Alpha Delta, **S** N/L-Alpha Omega, **A** N/L-Alha Omega or Alpha Lambda.

Blue Field Contraction – Look for bluish or purple lips or for swollen ankles, if either is present, N/L-Alpha Omega. An occasional pyknic patient will show blue lips and wheeze considerably but will not exhibit swollen ankles. In such a case eyes can best be normalized by N/L-Alpha Delta. If sclera is yellowish, N/L-Mu Delta

COLOR FIELD CONSTRICTED GREEN - It is often possible to enlarge a constricted green field through specific Syntonization. **P** N/L-Mu Theta, **S** N/L-Mu, **A** N/L-Mu Delta. Special nascentizing R/G^{3} followed by Mu Delta G/R^{3}. (Get a piece of green that will make ruby glass look yellow.)

COLOR FIELD CONSTRICTED RED - Constriction of the red field, being systemic, will require careful consideration. **P** N/L-Mu Theta, **S** N/L-Mu, **A** N/L-Mu Delta.

COLOR VISION – Alpha Delta – Mu Delta

CONTACT LENS ABRASION – Mu $Upsilon^{13}$-Delta N^{6}-Upsilon Omega N^{10}

CONJUNCTIVITIS (chronic red) - L-Mu Pi, if painful vision. Also L-Mu Upsilon, if red field contraction use N/L-Mu Delta. Allergic causes: hair worker, hair dye, face power containing orris root, mascara, lip stick colored with analine, eyelas treatment, dandruff, oranges, tomatoes, chocolate, gasoline fumes, sweet milk and chicken. MG-Mu Theta, R/G-Mu Delta and L-Mu Upsilon on 2-1 basis.

CONSTIPATION AND INDIGESTION WITH OCULAR DISTURBANCE - N/L Delta

CONVERVENGE INSUFFICIENCY For low 'Push Up' break (8'+): Try 3 degree base out prism OU (total 6) = +1.25 OU in trial frame before your syntonizer. Flash - Mu Delta 5, rest 3 minutes, then 5 min. more, rest 3 and 5 more. In addition to the syntonic application, convergence is brought in and accommodation is pushed out. We widen the area of compensation, we create a new situation.
Corneal Scars – L-Mu Upsilon

DARK CIRCLES UNDER EYES – Mu Pi

DEPRESSION WITH LOW BLUR, BREAK AND RECOVEY - Female - N/L-Alpha Pi or N/L-Alpha Upsilon, Male - N/L-alpha Delta, sometimes N is all that is necessary.

DISK FUZZY – N/L-Delta or L-N or N/L-Mu Delta (with fetid or rank breath) Occasionally N/L-Delta Omega

DIZZINESS (eyes blurry, HA) – N/L-Alpha Upsilon, or N/L-Alpha Upsilon or N/L-N (if associated with thumping headache) (caution using N/L-Mu Delta). Ocular Vertigo – N/L-Mu Theta N/L-Alpha Upsilon N Alpha Upsilon - Alpha Omega

DUCTION RESERVES LOW – 1) N/L-Alpha Upsilon - Female and N/L-Alpha Delta – Male.
2) N/L-Alpha Pi or N/L-Delta; N/L-Alpha Lambda; If female under 45 with vertical lines on upper lip.
3) N/L-Alpha Upsilon; N/L-Alpha Lambda; If dark circles under eyes, Female, or N/L-Mu Upsilon if lower lid droops.
4) N/L-Alpha Omega or N/L-Delta, occasionally N/L-Alpha Delta, most Males respond.
(Avoid Alpha Upsilon and Alpha Lambda in women.)
5) N/L-Alpha Omega^{3}
6) Also do not forget the value of Mu to balance departure of normal whether hypertonic or hypotonic.
7) Low Reserves during menopause – Delta Omega with occasional headache Rx.
Functional – Alpha Theta alternatated with Alpha.
8) Low Recovery Adduction - L-Delta

GLAUCOMA - (for pain in glaucoma) - Upsilon or L/Upsilon Omega or L-Delta Omega (some secondary types may be aided by L-Alpha Delta, alos N/L-Mu Upsilon ^{10}- Upsilon Omega N ^{10}

HAY FEVER (with red eyes) N/L-Mu Upsilon before attempts at wave optics adaptation, If of piknic type eye can be made comfortable by N/L-Alpha Delta. Also Upsilon Omega D or Alpha Delta, if chronic then Mu Upsilon or Upsilon Omega D

HYPEROPIA - L-Omega (tends to stabilize ciliary activity), N/L-Mu is of value in about 50% of these cases. also N/L-Alpha Upsilon

HYPERTENSION - N/L-Delta Omega N/L-N

INFLAMMATION - Between outer Canthus and Cornea - N/L^{3} - Mu Upsilon
Between inner Canthus and Cornea - N/L^{3} - Theta Omega

LACHRYMATION AND SWELLING - Mu Upsilon alternated with Mu Delta on 2-1 basis, L^{5}-Mu Upsilon^{10} - Upsilon^{5}

MYOPIA - L-Mu Upsilon - 2 treatments and alternate L-Mu Omega - 1 treatment.
L-Alpha Omega - try in progressive myopia. Mu Upsilon - Mu Pi alt L-Omega
L-Mu Upsilon - if with Exotropia or Exophoria
L-Mu Upsilon - can sometimes helP materially. Of static type - some pink type of filter lenses will enable the prescription of lower minus powers. Try N/L-alpha Omega, if Mu Upsilon fails in progressive myopia.
L-Omega d or Delta Omega with good accommodation, N/L-Mu - Monocular flashing, Exo - Mu Upsilon or Alpha Upsilon alternated with Mu 1-1 basis. If no change use cruxite A1 or AX.

NERVOUSNESS - N/L-Delta N and N/L-Alpha Omega. Nervous Irritability of Ocular Origin - Upsilon D and N. Hyperexcitability with Exhaustion - N/L-Mu Upsilon - 4 days, then N/L-Alpha Delta - 26 days.

NYSTAGMUS - L-Omega, L-N or L-Mu Upsilon, N/L Delta Omega or Theta Omega, Upsilon Omega, Omega N, Traumatic - N/L-Delta Omega or Theta Omega

OCULOMOTOR PARALYSIS - Treatment #1 - N/L-Delta S Refer, #2 - N/L-Alpha Delta

PAIN - 1) N-Delta if from constriction or congestion. 2) L-Alpha Omega, 3) L-Upsilon Omega if this makes worse switch to L-Delta Omega. 4) L-Mu Upsilon. 5) L-Upsilon Omega or L-Delta Omega. Refer if no relief after two treatments. 6) L-Mu Upsilon - use if pain is releived to finish up case before final lenses prescribed. 7) Mu Upsilon - Mu Delta 1-1 basis for pain in head. 8) L-Upsilon Omega N until pain stops, then L-Mu Upsilon D. Finish off with 2' L-Alpha Lambda, then Mu Upsilon D.

PHORIA – Proceed as below (not flashing):
Esophoria – **P** L-Upsilon or Omega, **S** L-Pi or Upsilon, **A** L-Omega or Omega N
Exophoria – **P** L-Theta, **S** L-Delta, **A** Mu Delta or Delta
Hyperphoria – Mu Delta – Alpha Omega – Mu Delta in one treatment
Post Climateric exophoria – N/L-Alpha Lambda 5 days, rest, then repeat.
Exophoria with Amblyopia – L-alpha Theta followed by Mu Upsilon.
High Exophoria – Delta, alternated with Mu Delta, occasionally Delta Omega or Mu Upsilon.

PHOTOPHOBIA - Dialated pupils - 1) N/L-alpha Omega. 2) Exopthalamus, with dilated upils - N/L-Mu8 followed by N/L-Alpha Omega for 6 minutes. 3) Contracted pupils - L-Upsilon. 4) Normal pupils - Pi Upsilon. 5) Mu Pi. 6) L-Mu Upsilon.

PRESBYOPIA – 1) early presbyopia and /or unequal accommodation to retard the need for near lenses - 3 treatments in one day: L-Mu Upsilon, L-Upsilon Omega D, L-Omega D. Add push-up exercises on small print. Correct general health conditions and add B complex and minerals. 2) L-Delta Omega to relieve distress, or Theta Omega.

PTREGIUM – L-Mu Upsilon. Or N/L-Delta Omega$^{5 \text{ to } 10}$. Mu Upsilon^{15,} with pain.

PTOSIS-TRAUMATIC – N/L-Alpha Lambda

PUPIL ARGILE ROBINSON – N/L-Mu Delta

RETINAL HEMORRHAGE - L-Upsilon Omega (use in emergency and refer)

RETINITIS – L-Mu Pi as local aid. A) N/L-Delta Omega; N/L-Alpha Omega; N/L-Alpha N also high blood pressure. B) N/L-Mu Delta or N/L-Mu Theta (Diabetic)

RETINAL DETACHMENT – L – Mu Upsilon (If improvement after ten sessions, alternate with L-Alpha Theta (this should not be used longer than 4 minutes in the beginning to prevent Fatigue.

SCOTOMA – L-Mu Delta – Alternate (gas or menthol alcohol), L-Alpha Delta on 1-1 basis.

SINUS – 1) Acute – N/L-Mu Upsilon – until free drainage, then followed by Mu Delta to clear out sinus.
2) Chronic – N/L-Delta Omega – until free drainage, then shift to Mu Delta until clears up.
3) Ocular in origin – N/L^3, Upsilon^6, follow with Mu Upsilon^{10,} (one application) Repeat for total of 4.; Follow next with N/L^3-Mu Delta $^{10\text{-}12}$, if pain comes back repeat the first part for 4 treatments. The applications are daily. A total of 8 should do the trick.

SORE THROAT – Mu Pi

STYE - 1) L-Alpha (after cone comes to point) 2) L-Mu Upsilon (beginning styes) 3) N/L-Pi Omega D, to relieve headache, then L-Mu Pi. 4) N/L^3-Mu Upsilon, when comes to point use Alpha which will bring it to head.
BEGINNING STYE: N/L^3-Alpha Omega^5-Mu Upsilon^5, N/L^3-Delta Omega^5 – Upsilon^5-Upsilon Omega D^5 (Two applications, If pain persists, repeat the Upsilon Omega D) If inflamed eyes or painful vision N/L^3-Upsilon or Pi

TICS –Involving eyes – L-Omega or L-Omega N

TOXIC (to lessen) 1) N/L-Mu Delta. 2) L-Mu Upsilon, alternated with L-Mu Delta

TRACOMA L-Upsilon^8, followed by L-Mu or L-Mu Upsilon^6

TROPIA – 1) **P** L-Omega, **S** L-Omega N, **A** L-Omega D. 2) Low Adduction L-Delta or Mu Upsilon or may require N/L-Alpha Omega, if pupils dilated. 3) Eso: **P** Omega (N/L-Theta Omega), **S** Omega N, **A** L-Omega D (N/L-Delta Omega. 4) Toxic eso: N/L-Mu Delta Mu Theta. 5) Delta Omega or Theta Omega.

YELLOW SCLERA – Muddy yellow, N/L-Mu Delta, Jaundiced N/L-Delta.

ENDOCRINE

THYROID Stimulate (Alpha Delta - Male) (Alpha Lambda - Female)
PITUITARY Stimulate (Mu Delta or Mu Theta)
Suppress (Mu or Omega D)
ADRENALS Stimulate (Alpha Omega) Supress (Mu)
PINEAL Stimulate (Alpha Omega) Suppress (Alpha Delta or Alpha Upsilon)
THYMUS Stimulate (Mu) Suppress (Alpha Omega or Alpha Upsilon)
GONADS Stimulate (Alpha Delta Male, also Alpha Omega) Alpha Upsilon, Alpha Lambda, Alpha Omega - Female)
Suppress (Upsilon Omega D or Mu to stimulate Thymus in Child)
PARA THYROID Under active (Mu Theta)

Bp + Pr_ -111 = BMR+/- 4% (If falls within + 15 mill - 15 is within physiological limits)

OPACITIES

Peripheral
1) L-Mu Upsilon and N/L-Alpha Omega – alternate 4-1 basis.
2) L-Mu Upsilon and Alpha Delta for 1 minute after treatments and Mu Delta once in a while.
3) L-Mu Delta in Diabetic.

Central
1) L-Mu Upsilon and N/L-Alpha Omega – alternate 4-1 basis.
2) N/L^3, Alpha Omega^{10}, Mu Upsilon^5, Mu Delta^5
3) N/L^3-Delta Omega^8 (flashing), Mu Upsilon^{10}, Mu Delta^8 (flashing)
4) N/L^3-Alpha Omega^{10} (flashing), Mu Upsilon^5, Mu Delta^5

5) N/L[3]-Mu Delta[5], Delta Theta[5], Mu Theta[5], Theta Alpha[5]. Use 20-30 mg. Vit. C, 50 mg. Riboflavin daily plus calcium, phosphorus and iodine. (Also used for relieving headaches due to 'hang-over'.
6) N/L[3]-Alpha Omega, Mu Upsilon[5], Mu Delta[5] (flash the stimulative or long wave high frequencies)
7) N/L[3]-Mu Delta[5], Delta Theta[5], Mu Theta[5], Theta Alpha[5], Mu[5]. Alternate with N/L[3]-Alpha Omega[5], Mu Upsilon[5], Alpha Omega[5], Mu Upsilon[5]. Use 30 mg. Vit. G, 100 Mg. Vit. C, 25,000 Vit A, 100 units Vit. E, increase intake of fluids 8-10 glasses of juice or water.

Senile
1) L-Mu Pi or L-Mu Upsilon
2) L-Omega or N. Sometimes can be stopped by using Mu Delta.
3) **P** – L-Mu Pi (Mu Upsilon, if advanced)
   S – L-Mu Upsilon
   A – L-Mu Upsilon or Omega or Alpha Delta 1 min., Mu Upsilon for 4 treatments, Mu Upsilon D if advanced.

Note: if after 8 syntonizations no improvement in vision is apparent, try L-Alpha Delta for 1 minute and then Mu Upsilon for 4 more syntonizations. If after this there is no improvement, the case will likely not respond to syntonics.

Diabetic
1) L-Mu Delta in Diabetic. Prognosis not good. Should be guarded. May try N/L-SD.
2) **P** – N/L-Mu Theta S or N/L-SD
   S – N/L-Mu Delta
   A – N/L-Mu Delta

Occupational
1) L-Mu Delta S Heat – Prognosis not good.
2) **P** – L-Mu Theta
   S – L-Mu or Mu Delta
   A – L-Mu Delta (Omega or N)

Accommodative
P – L-Upsilon for 8', finish with Delta for 2'
S – L-Omega for 8', finish with Delta for 2'
A – L-Omega D for 8', finish with Delta for 2' and Alpha Delta

Note: Longer time of treatment may be used but maintain proportion.

HEADACHE

SUPRA-ORBITAL OR FRONTAL - not flashing - **P** L-Pi or Pi-N, **S** L-N, **A** L-Upsilon or Upsilon N
OCCIPITAL (usually thumping) - flashing - **P** N/L-Mu Theta, **S** N/L-Mu, **A** N/L-Mu Delta (Note, This usually makes the headache worse for a short time.)
VERTICAL (usually woman) - Not Flashing: **P** N/L-Mu - Mu Pi, **S** N/L-Mu, **A** N/L-Mu Upsilon.
PERIODIC - the migraine type - Not Flashing: **P** N/L-N or Omega or N Delta, **S** N/L-N or Omega or N Upsilon Omega, **A** N/L-Delta N. Syntonize daily for twenty days as a minimum.
MIGRAINE OF OCULAR ORIGIN - Regularly recurring sick headaches with ocular disturbances, use N/L-Omega or N/L-Delta N. (Treat for not less than 21 days and treat daily. Very difficult cases. Can use prism technique using 'Infinity Abduction' -1.5 prism base-in in each eye.
ALLERGY (causes: Calf brains, sweet breads, sweet mile, eggs, beef, wheat products and fresh pork.
Syndrome: Twitching extra ocular muscles, scintillating scotoma, a moving scotoma usually up and toward the temple, photophobia, headache nausea, vomiting, sleep when headache gone: N/L-Mu Upsilon
Special with heart complications - N/L-Omega N
NERVOUS HEADACHE - N/L-Omega, N/L-Alpha Omega, N/L-N.
BRAIN TUMOR THROBBING HEADACHE - Mu Delta
HYPEROPIC MIGRAINE HEADACHE - N/L[3]-Delta N[8]-Delta Omega[8] for 21 days

HEADACHE CHART

HEAD AREA – side view	USUAL Rx	AUXILLARY SYNTONIC Rx
1Center of forehead high up -	N/L-DeltaN/L-N	N/L-Delta Omega
2 Top of head -	N/L-N	N/L-Alpha Upsilon or N/L-Delta Omega or Mu Pi
3 Mid-ear bet eyes and tip of ear -	If esophoria - L –Upsilon L-Omega, if exophoria - L-Theta L-Delta	N/L-N or N/L-Alpha Delta Pain may increase for a short time better eventually.
4 Directly above ear or ears	N/L-Delta N	N/L-N or N/L-delta Omega D
5 Band-like above eyes	N/L-N	N/L-Pi D.
6 Back of head level of ears	N/L-Delta Omega	N/L-Mu Upsilon.
7 Base of brain	N/L-Delta Omega	Theta Omega D or N/L-N makes pain worse for a short time.
8 Mastoid Area -	Not generally amenable to Syntonics – refer to aurist.	

HEAD AREA – front view	USUAL Rx	AUXILLARY SYNTONIC Rx
a. Center of forehead	N/L-Delta or Theta	N/L-Mu Delta, May increase pain for a time
b. About 1' above supraorbital ridge	N/L-Mu	N/L-Alpha Omega.
c. Directly over eyes	N/L-Mu Upsilon	Upsilon Omega D
d. Both sides above root of nose	N/L-Mu Pi or Mu Upsilon until free from pain, then use N/L-Mu Delta	

Vertical and occipital - N/L-alpha Omega; N/L-Alpha Omega[8]
Frontal - L-Upsilon
Near Point - N/L-Omega
With high exophoria N/L-Delta Omega
Throbbing headache - Mu Delta.

O.E.P. 21 Point Visual Analysis

The following Syntonic prescriptions have been determined by experience as being the best one to be used in conjunction with other orthoptic measures in the six case types below. (Syntonists will not overlook the value of Mu.)
A - N/L-Delta: N/L-Mu Delta; G/F-Mu Delta
B1 - Alpha Omega; L-Alpha Delta
B2 - Alpha Delta alternated with Mu on a 1-1 basis for Male, Alpha Upsilon alternated with Mu on a 1-1 basis for female.
B3 - N/L-alpha Omega; N/L-Mu
C1 - With + lens, L-Omega; L-Delta Omega. Without + lens, L-Delta; N/L-Alpha Upsilon.
C2 - N/L-Mu Delta; G/F-Mu Delta

Syntonic prescriptions to stabilize or Neutralize High or Low Analytic Findings of the O.E.P. 21 Point Visual Analysis. As a result of several years experience with syntonics and the work of the graduate clinic foundation, members of the College have adduced the following syntonic prescriptions for the purpose of lowering high findings or raising low findings of the several analytic findings required for case typing.

Syntonists who are students of both techniques have found that cases heretofore hard to type due to difficulty in interpretation or placement of some one or more of the findings, are so stabilized that the typing is easily done. Prescriptions shown above the line are to lower high findings and those below the line are to raise low findings.

3. Delta or Alpha Upsilon / Omega or Delta Omega
4. Omega or Delta Omega
5-6. Omega or Delta Omega / Alpha Delta alternated with Mu on a 1-1 basis for the male and Alpha Upsilon alternated with Mu on a 1-1 basis for the female.
8. Delta / Omega or Delta Omega.
9. /Alpha Delta alternated with Mu on a 1-1 basis for Male and Alpha Upsilon alternated with Mu on a 1-1 basis for female.
10. /Break - Alpha Delta alternated with Mu on a 1-1 basis for Male and Alpha Upsilon alternated with Mu on a 1-1 basis for female or try Delta, Alpha Upsilon, Alpha Omega.
11. /Delta or Theta S or Alpha Omega or Mu Delta or Delta Theta.
13B. Omega or Delta Omega / Mu Delta or Mu Theta or Alpha Delta alternated with Mu on a 1-1 basis for Male. Alpha alternated with Mu on a 1-1 basis for Female.
14A/14B - Alpha Delta alternated with Mu on a 1-1 basis for the Male
15A. Alpha Upsilon alternated with Mu on a 1-1 basis for the Female / Omega or Delta Omega - Omega N
16B/17B. Omega or Omega N or N / Delta or Mu Delta or Alpha Upsilon (Note N/L-Alpha Omega is often all that is needed.
4 - 11 - 13 - 17 - Delta or Mu Delta or Mu S

Syntonics, Vitamins and Age Related Macular Degeneration A Case History

By
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My introduction to syntonics was like many things in life, a chance affair. I had heard of an unusual therapy being conducted by one of my peers. To say that the comments were uncomplimentary is a minor understatement. Yet the practitioner was someone that I had come to admire and trust for his lateral thinking and insight into optometric therapies. So I took the chance and attended a weekend seminar on syntonics that he was presenting. While I found the concepts rather baffling, I was very impressed by the caliber of some of the other attendees and the case histories being presented.

And so it was that I ventured down the path of no return. My initial interest was to use syntonics with learning delayed children but I was amazed by the improvements reported in patients with age-related macular degeneration (ARMD). So when my patient LL first presented I was willing to have a go. It is interesting to note that ophthalmology has now discovered the value of low level light stimulation in the management of this condition with the introduction of sub-threshold laser therapy for the management of dry ARMD.

The syntonic treatment chosen for the management of an ARMD case is dependent on the nature of the condition itself. The two commonly recognised forms of ARMD are referred to casually as "dry" and "wet". The primary difference is the exudative nature of the latter and the associated edema, visual loss and distortion of images. The wet form is also far more aggressive (active inflammation) with its end stage being loss of central vision.

Vitamin therapy for the condition requires the application of high dosages of vitamins, in particular anti-oxidants viamins E and C, zinc, luteine, cysteine) and anti-coagulation agents, Bilberry. However any intensive application of such agents should be done with care as it is possible to induce systemic complications. My current preferred mode for introducing the aforementioned nutrients is via dietary modification. Spinach and parsley are Nature's vitamin pill and I advise patients to consume between 2-3 cups per week, preferably raw. It allows proactive therapy with minimal complications.

Optometric assessment of the progression or otherwise of the disease is typically limited to visual acuity, fundus appearance and visual fields, invariably Amsler grid.

The LogMAR system was used to determine visual acuity. It has been designed for use with low vision patients and is easily calibrated over a range of working distances.

A 90D lens was used to assess the condition of the macular as required. At times the patient was also referred for ophthalmological review, especially when changes in function were noted.

Amsler grid can be used in a number of ways. The most common and quickest application is to identify distortion of the lines and the presence of central scotomata. When LL was assessed the depth and position of the scotomata were mapped on most occasions. This was initially for my benefit to see if syntonics actually worked. A grid of black lines (one of these has to be white!) printed on black paper was used. The grid was 12cm by 12cm and viewed from around 30cm. Two targets were used; a 3mm White and a 3mm Red. The depth of the scotoma was assessed by asking the patient to describe the relative brightness (bright - normal, dull - relative loss or not visible - absolute scotoma) and colour (colour red - normal, dull colour - relative loss or no colour absolute loss).

So let us now return to patient LL. I initially saw LL on 30th January 1997. A female, aged 75 years, who presented with best corrected acuity in her LE at 6/12. An associated central metamorphopsia was noted with Amsler grid. Vision in the RE was 6/6 and remained stable throughout her therapy.

Subsequent ophthalmological assessment revealed: "Left exudative ARMD with occult choroidal neovascularization. Unfortunately there is no treatment..." And furthermore, "Ultimately her left

central vision will continue to deteriorate as she develops more florid signs of 'wet' ARMD."

At that stage I chose to simply prescribe Eyevite as a preventative measure for the RE.

LL next presented on the 16th December 1997. Best corrected vision in her LE was now 6/38+. A marked central scotoma was observed with Amsler grid. The size and depth of the loss was plotted and is presented in Figure 1.

There was quite a large central scotoma encroaching onto fixation along with a marked loss of colour perception. Syntonics and intensive vitamin therapy commenced. The colours chosen were Violet and then Turquoise. Both were applied for 10 minutes with a total of 20 minutes each day. Therapy was administered using one of Simon Grbevski's home syntonic units. Violet and Turquoise were chosen for their anti inflammatory and healing effects. Intensive antioxidants, as discussed earlier, were also administered.

LL returned after one week of syntonics. Incredibly best corrected acuity was now between 6/24- and 6/19=. LL also reported that vision felt better after using the "light." Furthermore there were improvements in her Amsler fields with a significant reduction in the size of the central scotoma and an increased field of colour awareness (Figure 2).

LL's next visit was on 15th January 1998. Visual acuity was 6/24-. LL was very excited that she could now see people's faces again with that eye. However she also reported being a bit run down after all the Christmas festivities. Amsler findings now indicated variable changes with her white field being possibly better while the colour field was worse (Figure 3).

LL's next visit was 6 weeks after commencing syntonics. Vision was still between 6/24- to 6/19+. However the Amsler fields continued to show further improvement (Figure 4). Over the following months visual acuity did not change significantly and always fell between 6/24 to 6/15=. However visual fields continued to improve (Figures 5 to 7). Of interest is the gradual reduction in the dull zone as the absolute scotoma stabilised suggesting healing of the partially damaged retinal tissue. Therapy ceased once stabilisation was achieved in the visual fields after 4 months.

So the question that needs to be raised is whether syntonics was responsible for the improvement? Or was it rather a spontaneous resolution? Remember the ophthalmological diagnosis of progressive with no treatment. The spontaneous resolution is highly unlikely given the underlying pathology. How much improvement was vitamin based? These are unanswered questions.

Three months following discharge LL presented again now complaining of funny vision in the LE once more. She had been treated by her general practioner with an intravenous anti chelating drip over the past 8 weeks. Visual acuity was still stable around 6/24- to 6/15=. Amsler grid revealed an increase in the central field loss (Figure 8). A subretinal haemorrhage was observed inferior to the left fovea. Ophthalmological evaluation indicated that no treatment was possible.

Syntonics was reintroduced using the same colours but now twice daily, namely in the morning and the evening. After 2 months of syntonics LL felt that vision was stable. Vision acuity was poorer (6/48 to 6/38). There was no distortion apparent on Amsler suggesting no oedema. Amsler field plots were largely unaltered with a possible improvement with the white target and a reduction with the red (Figure 9). LL purchased a home syntonics unit having decided to perform the treatment everyday.

With the benefit of hindsight, this crisis may have been avoidable. The disease is chronic. Treatment should therefore also be chronic. LL was discharged with provision to return if any change was noted

One year later (9th October 1999) LL presented once more complaining of poor vision this time following a retinal angiogram 5 days earlier. Visual acuity in the LE was below 6/75. TheAmsler grid was completely missing apart from the small section in the top R corner. LL was referred back to ophthalmologist who advised that no action or treatment was warranted with the diagnosis being "Fairly large pigment epithelial detachment associated with a macular haemorrhage."

The syntonic therapy was intensified to 15 minutes of Violet followed by 5 minutes of Turquoise. The Violet component was increased to minimise the eodema. Visual Acuity using a LogMAR chart was 1.8/24.

One month later with 90D lens the left macular looked like a "blister," a large retinal bubble at the fovea surrounded by haemorrhages and now some hard exudates.. But LL could now identify Amsler lines even though they were very distorted. Visual acuity had worsened and was now LogMAR 1.8/60. LL was still aware of the very poor vision and the central scotoma in

the left eye. Spinach was introduced into the diet: two to three cups per week.

Three months later there had been an improvement in vision now LogMAR 1.8/24. LL had maintained the syntonics over this period as per the instructions given. She had also started eating spinach daily as discussed at the last visit.
The Amsler grid was dull but the lines were now visible and straight! A ring of raised retinal tissue at the border of the initial detachment was revealed with the 90D lens. But the centre was flat and looked to be back in contact with the choroid.

Five months later vision had improved to LogMAR 1.8/9.5=. LL had continued syntonics as before and was still eating spinach daily. The Amsler grid lines were now just hazy and straight. Retinal evaluation revealed as before: raised surround but foveal area flat.

Seven months following the vision loss, vision had improved to 6/19=, as good as her best acuity prior to the central detachment. LL continued the syntonics as before and maintained the daily diet of spinach. Amsler grid lines were still hazy and straight. The appearance with 90D was unaltered.

Lemon colored filter for 20 minutes was now introduced in the morning only to try to stimulate the retinal tissue and remove any toxins. The Violet and Turquoise combination was retained for night therapy to try to prevent significant oedema recurring. After another month vision had improved even further to 6/15=. However 90D showed some central thickening so Lemon was removed and the Violet and Turquoise combination was resumed for both morning and night.

LL continued with the syntonics, twice daily, and ate the spinach daily. Her vision remained at this level until mid 2002 when she experienced a massive central retinal haemorrhage resulting in loss of all central function.

So what is the moral of the story if after all the work vision was ultimately lost?
Personally I found the eventual loss of vision in her left eye every disappointing, but if I had done nothing then LL would not have had the vision that she had for the duration of the therapy. LL was always extremely excited about the improvements in the left eye, especially when given the prognosis that nothing could be done with more traditional treatments.

ARMD is typically a bilateral disease. LL is also pleased to think that if the therapy was able to help the weaker eye as much as it did then it surely must have reduced the risk of a similar event in her good eye. LL continues with the syntonics twice daily and continues to eat her spinach.

Figure 1: Initial Amsler findings 16th Dec 1997

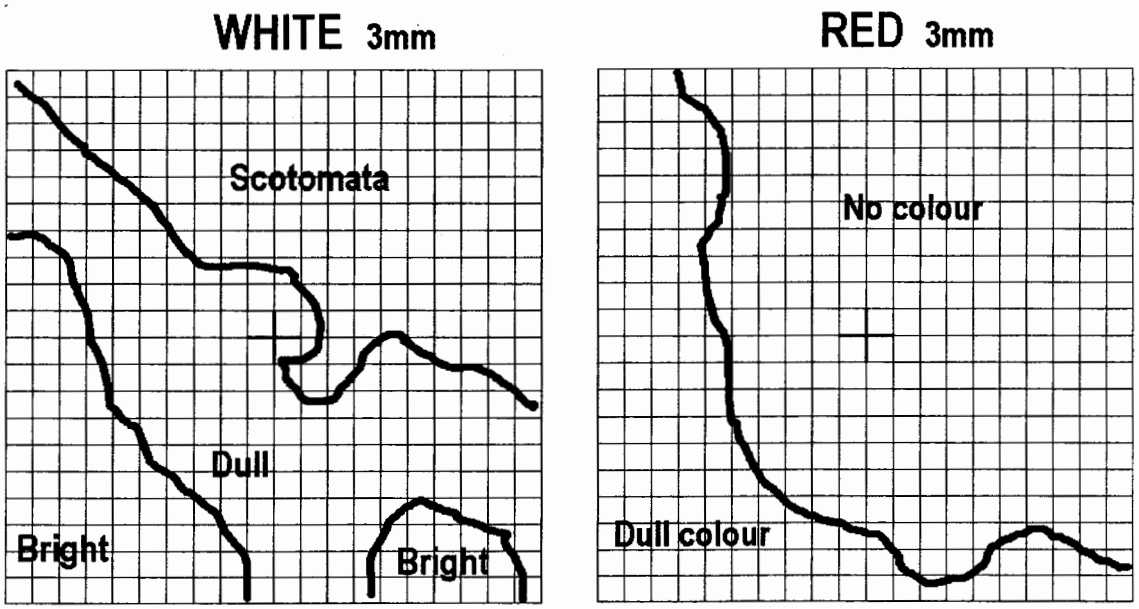


Figure 2: Amsler fields after 1 week of syntonics

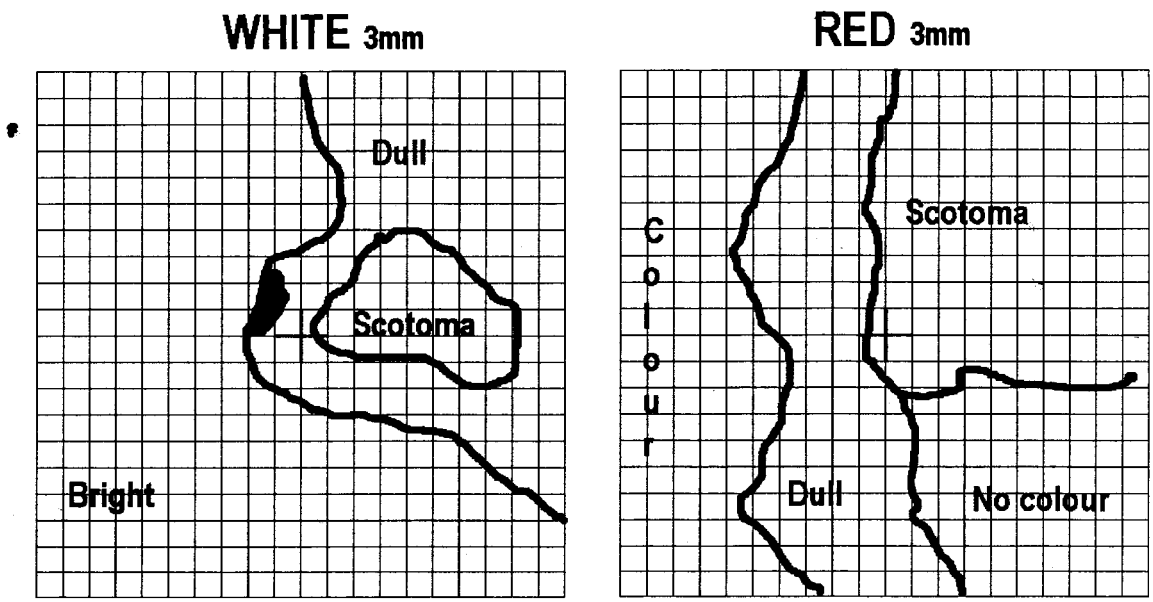


Figure 3: Amsler fields after 4 weeks of syntonics

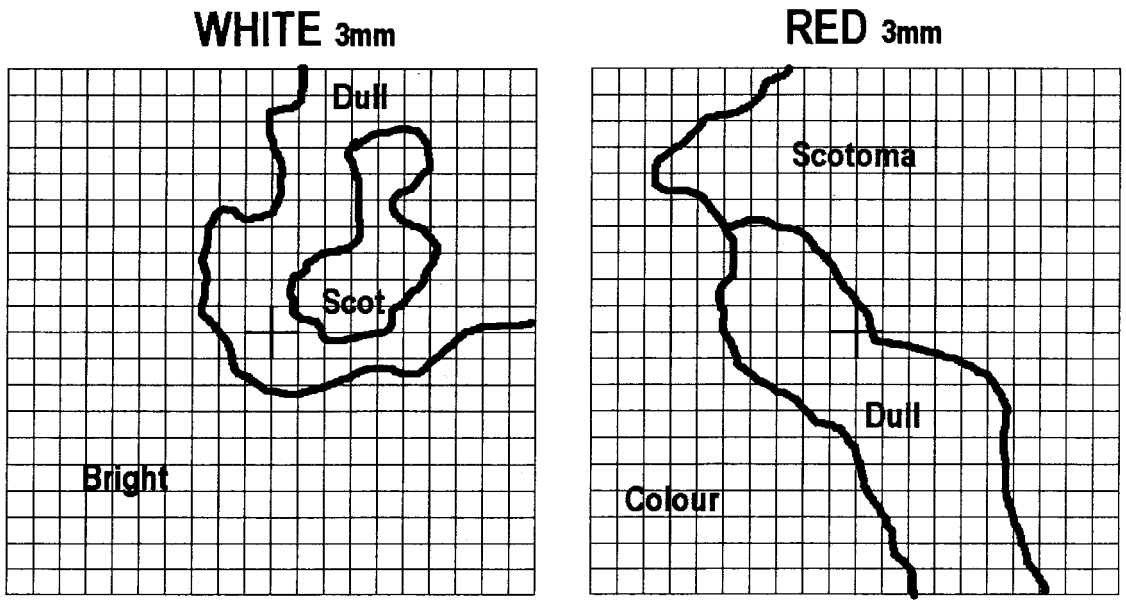


Figure 4: Amsler fields after 6 weeks of syntonics

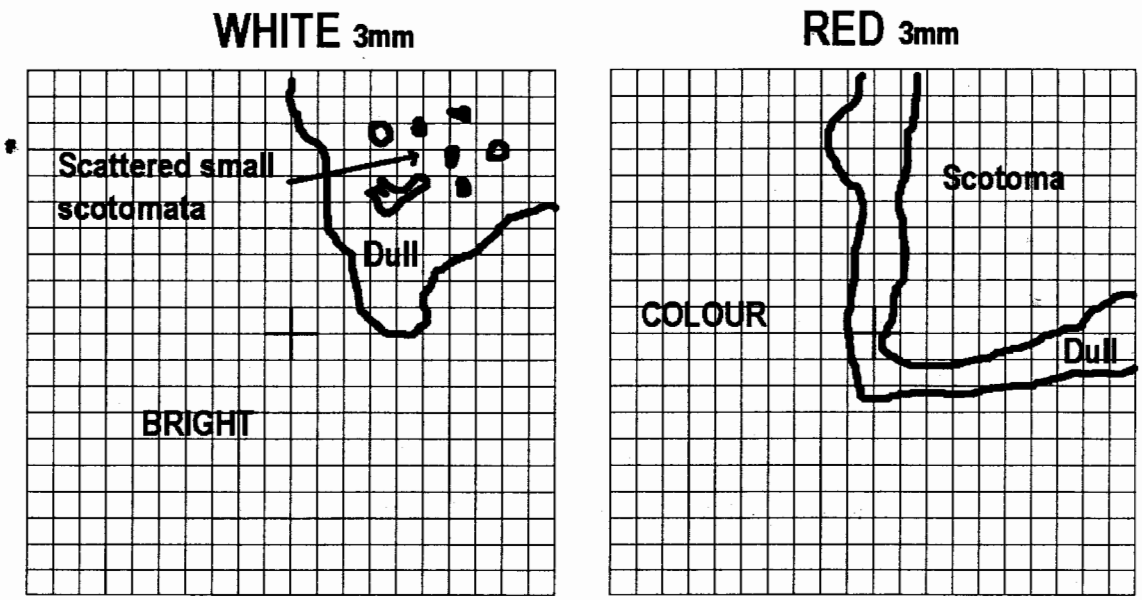


Figure 5 Amsler fields as at 19th February 1998

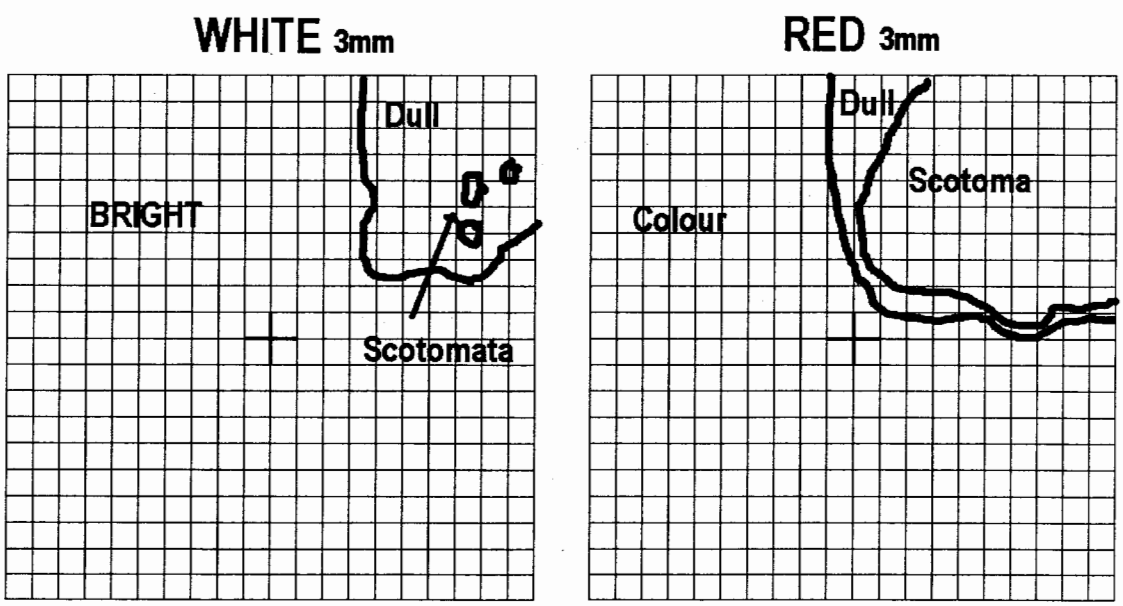


Figure 6: Amsler fields as at 19th March 1998

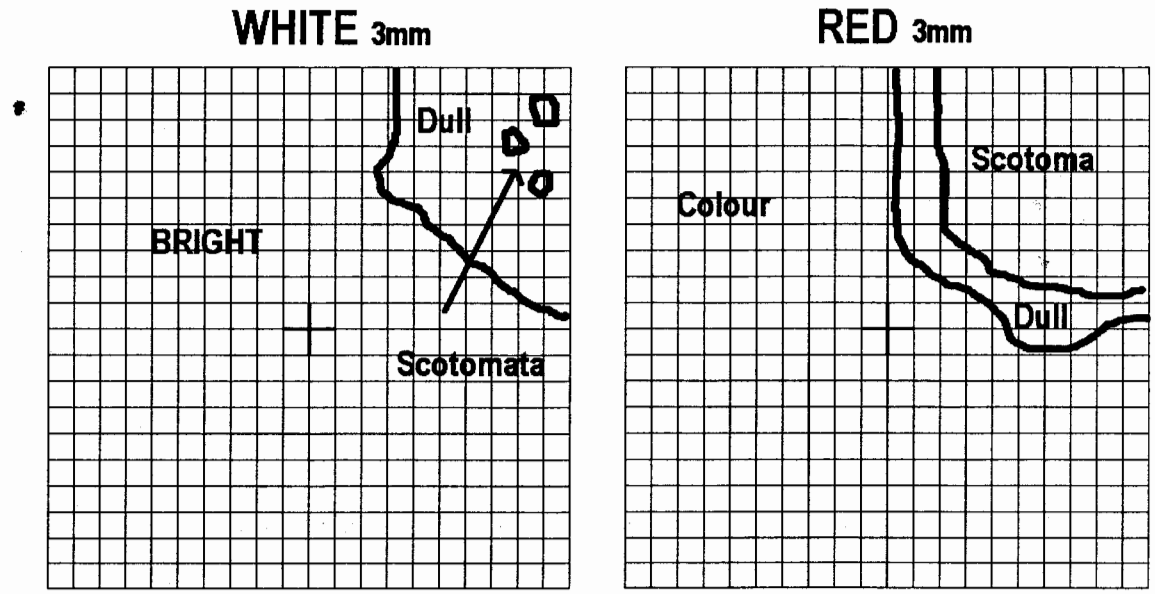


Figure 7: Amsler fields as at 18th April 1998. Syntonics stopped

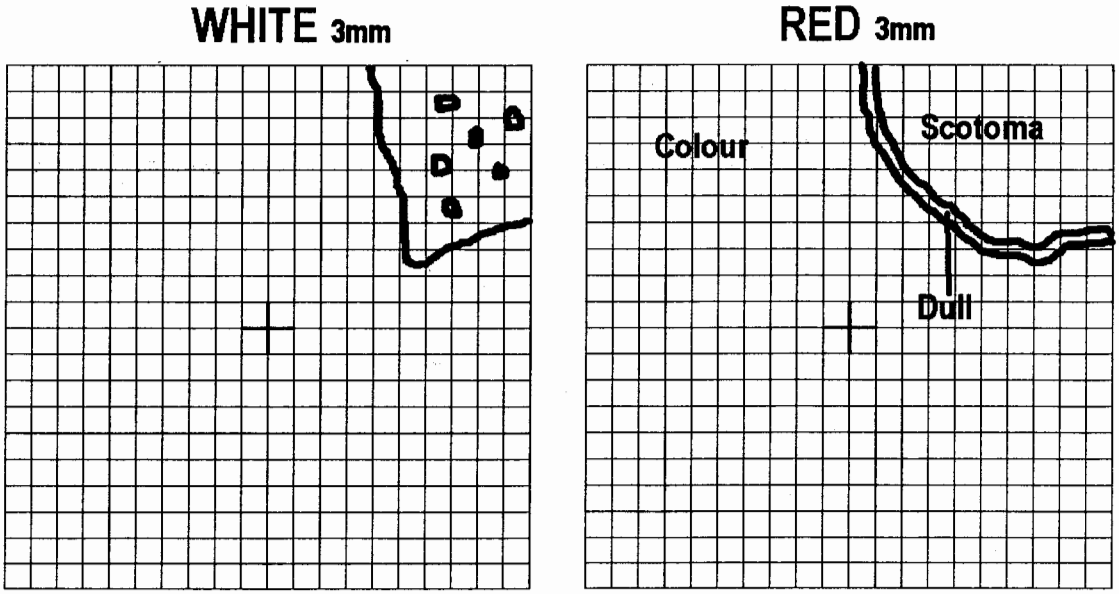


Figure 8: Amsler fields as at 16th July 1998 – a new crisis

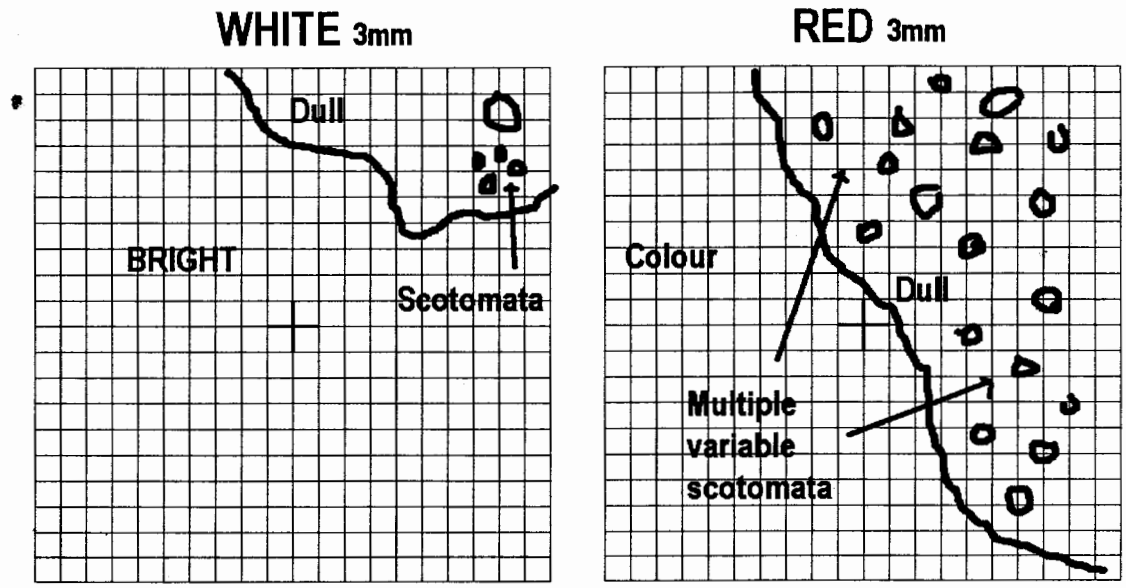
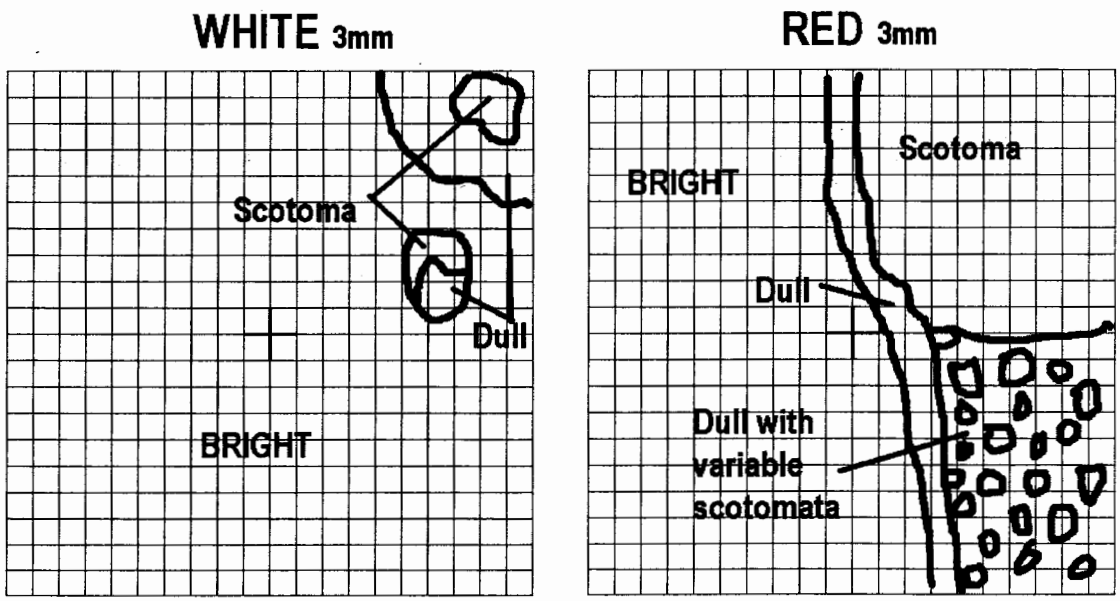


Figure 9: Amsler fields as at 24th September 1998 after 2 months of syntonics



Visual Fields and a New Model of the Island of Vision

By
Geoff Shayler, BSc., FCOptom., FCSO

Introduction

Over the past few years, following training in the assessment of "functional visual fields", as I became interested in the potential of syntonic phototherapy, I have been surprised by the number and variety of patients who are experiencing difficulty with their vision for which I previously had no answer. I believe that many of these difficulties can be easily explained when we look at their ability to not just "see" in the periphery but also to be able to process that information – ***vision.***

In this article, I want to share some concept ideas relating original concepts of the field of vision to more present day potential for understanding our processing of peripheral information.

How do we, as optometrists normally measure "vision"?

In order of quality from bad to good we have the following levels.
This relates mainly to our understanding of central vision.

Level (a) Blind
- No awareness of light, no reaction to light

Level (b) Blind sight
- No awareness of light but objectively reacts to light stimulation *of which the patient is subjectively unaware*

Level © Light perception
- Our first real sense of vision is light perception. We can measure the threshold value of this but this gives very little idea of what we actually see, so we can consider this as a very gross measurement of little consequence and use in an individual with "normal" sight.

Level (d) Hand movements
- Hand movements give a higher order of understanding of vision - is our patient aware of the movement of objects

Level (e) Finger counting
- An awareness of light and dark, some poor quality of detail available

Level (f) Snellen Chart
- High quality of vision - ability to see and identify detailed information

Now let us consider how we examine peripheral vision.

In the past the peripheral field was measured by the use of a moving target against a screen such as the Bjerrum screen, but this has been superseded by the use of automated field screeners using flashing lights.

These instruments have gained a reputation for reliability and their use is not affected be the competence, or lack of!, of the practitioner.

When we look at the list above of vision acuity tests, the perception of light is only at the Level © test level.

Can we get more information by moving the assessment of the visual field into "acuity levels" (d), (e) and (f) ?

Comparison of measurements relating Visual acuity - central v periphery

Central vision

Light perception
Hand movements
Finger counting
Snellen letters

Peripheral vision (rough guide)

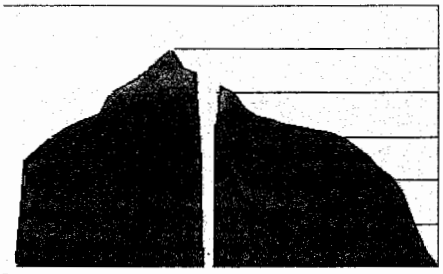
Pen torch in periphery
Confrontation test using a hand as target
Confrontation test - awareness of separated fingers

Peripheral vision (detailed assessment)

Light perception - automated perimeters
Campimetry (Bjerrum) awareness of white moving target
Campimetry - awareness of black edge of white target
Campimetry - awareness of complete ring around white target
(Campimetry – colour fields – not covered in this article)

The "Island of vision"

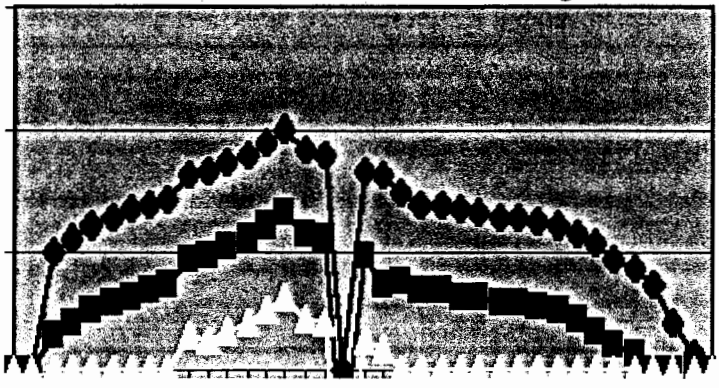
The early research by investigators such as Traquair measured the field of vision using different size target and an isoptre plot was produced similar to those found in cartography. These plots were therefore combined to form a 3 dimensional island which incorporated a infinitely deep "well" on the temporal side – the physiological blind spot.



nasal **blind spot** **temporal**

(Details taken from Traquair, Clinical Perimetry 5th edition, Schie & Albert, Adlers Textbook of Ophthalmology, 1969)

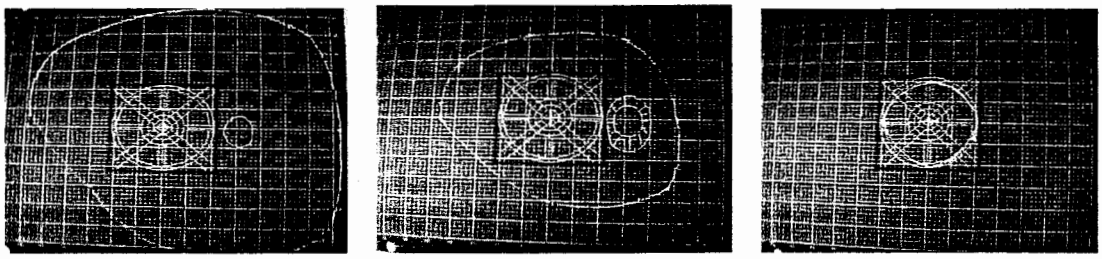
If we now consider raising the measure threshold level *or the "island" sinking into the "sea*", we obtain the following



Blue – (diamond) . normal field
Purple – (square) .. plot of field moving threshold up approx 1/3rd
Yellow – (triangle) plot of field moving threshold up further 1/3rd

which will give us the following field plots :-

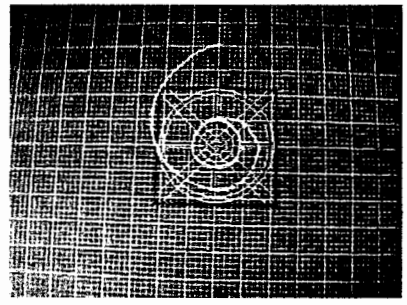
Blue threshold **Purple threshold** **Yellow threshold**



A child, with so called "malingering" or Streff syndrome, will often exhibit these restricted fields .
It is therefore conceivable that these children actually have a low functional *threshold throughout their field of vision.*
Note that these children also frequently experience reduced VAs - 6/9 or worse

Consider for a moment an island in the sea around which the tide is rising.
As the tide comes in the island will become smaller. A man walking continually along the shore would appear from above to be walking in a spiral, i.e. a "so called" hysterical field.
This therefore suggests that, in the so called "hysterical" situation, we can consider this sinking of the "island of vision" into the "sea of dark" as the individual is put under stress.

When "high tide" is reached, the "hysterical" field will change from a spiral into a circle, a "malingering" field.

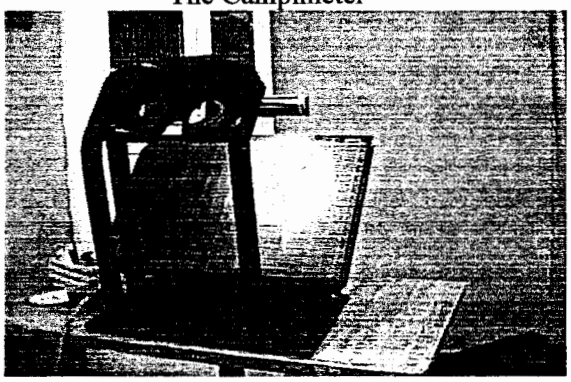


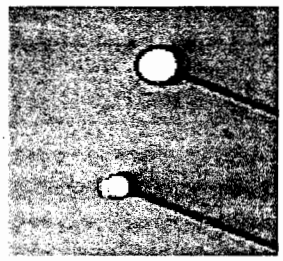
At this juncture, I should like to point out that I feel the terms "malingering" and "hysterical amblyopia" should be thrown into the bin. The suggestions that children are malingering or hysterical when they cannot cope at school only adds to their problems and suggests that no treatment other than seeing the psychologist is available. There appears to be no research that indicates that psychological intervention is in any way helpful to these individuals. I am happy with the optometric term "Streff" syndrome, as it is phonetically close to the word "stress".
I would like to include here a new term that may also be more acceptable when discussing these ideas in mainstream optometry :-

RAP – **R**estricted **A**wareness of **P**eriphery
I certainly find that it is easier for mainstream optometrists to consider restricted awareness of periphery than restricted fields of vision which are normally related to pathological conditions. It is also more easily understood by the parent, than thinking their child has some severe tunnel vision like Grandpa with his Glaucoma

Assessment of functional visual fields

The Campimeter





The campimeter supplied by Rex Cross is used in the same manner as a conventional Tangent or Bjerrum screen, however, the technique we use provides more information on the efficiency of peripheral function..

This is the way that I was initially taught the techniques of Campimetry by Dr Wayne Pharr OD MCSO using just the normal white target supplied by Rex Cross. This, 2 degree, white target is inset into a black ring.

The three levels of testing:

Level 1) The Awareness field

The field is plotted by moving the 5mm (2 degree) white target in towards the centre from non-seeing to seeing with the patient advising as soon as they first see the test target whilst concentrating on a small cross at the centre of the target. The point at which they first observe the target is marked on the chart . The vertical, horizontal and oblique meridians are measured. *This is the field that you have the potential to use at this time - that is actively wired up to the brain, ready for use!*

Level 2) The Perceptual field

Place the target near the centre and ask the patient to notice that there is a black ring around the target. Explain that their job this time is to again concentrate on the centre, but as they notice the white spot coming in, they are to tell you when they are first aware that the white spot has a black edge to it. Mark the chart and continue to test as before. *This is the field you use when walking, being aware of things and reacting to them, mind that dog, where is the kerb, etc.*

Level 3 The Activation level

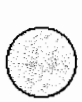
Place the target near the centre and ask the patient to notice that there is a complete black ring around the target. Explain that their job this time is to again concentrate on the centre, but as they notice the white spot coming in, they are to tell you when they are first aware that the white spot has a complete black ring around it *This is the field that is used for detailed viewing such as reading*

In my experience, in a normal field, measured on the campimeter, levels 1, 2, & 3 are generally reduced about 5 degrees between each level with the diameter of level 1 about 55 degrees.

Consider the situation when you are sitting in the car, waiting at traffic lights.

RED

YELLOW

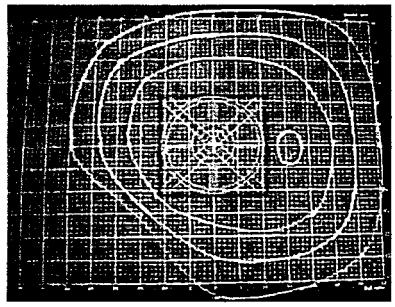


GREEN

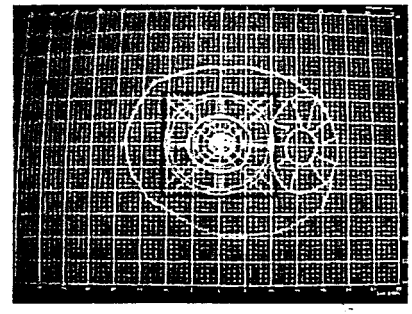
If you are looking straight ahead, the traffic lights are within your peripheral vision range, but, without looking more directly at the lights, you are unable to see the lights change –

a simple comparison of level 1 and level 3 fields
(this particular example obviously also includes colour fields)

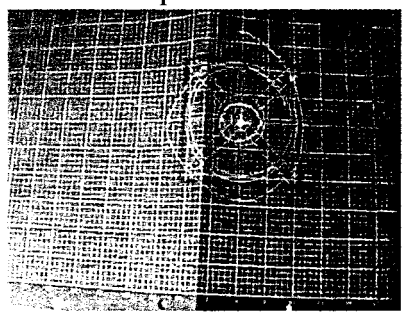
The normal field



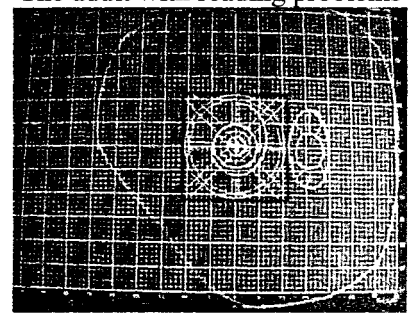
The child with a restricted functional field



A "spiral" field



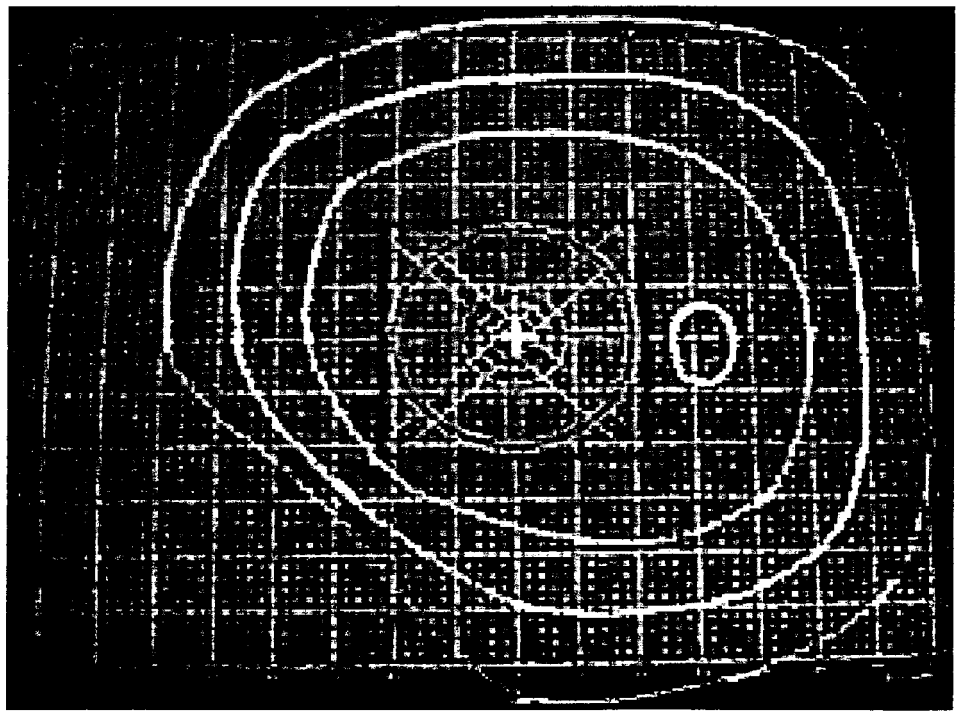
The adult with reading problems



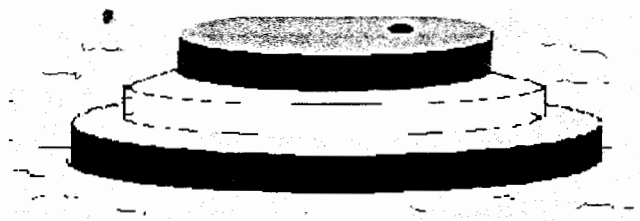
In the following selection I have tried to demonstrate the effect of looking at this 3 level field test in a similar way to the original Traquair model in 2 and 3D format which help me understand the problems

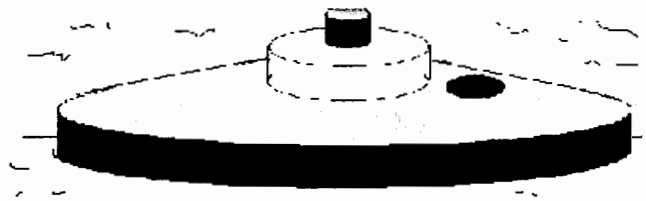
Some field plots which show these different levels of testing :-

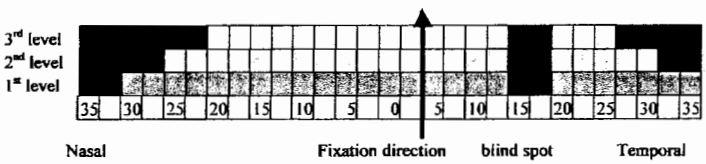
The normal field

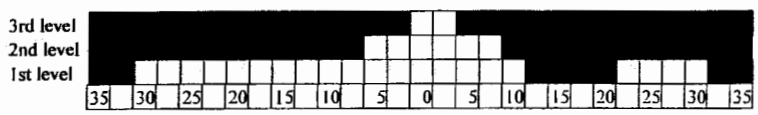


Using this 3 level way of examining the visual field " we can again plot this as an island of vision :-



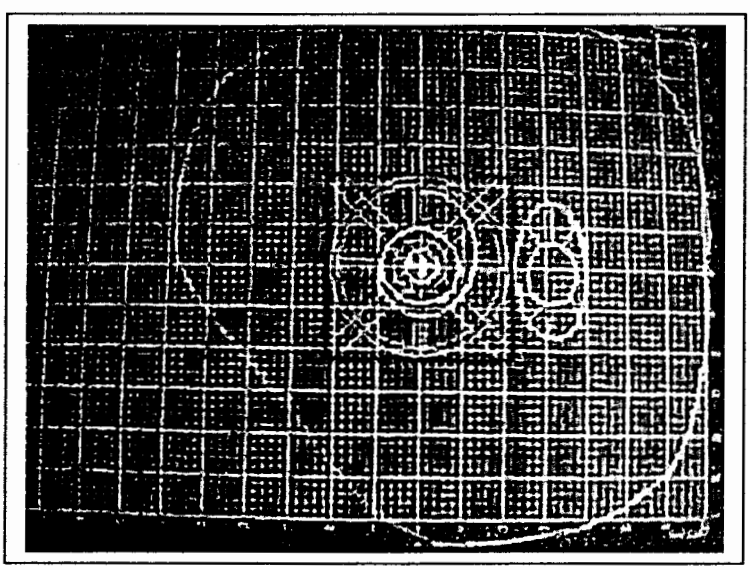


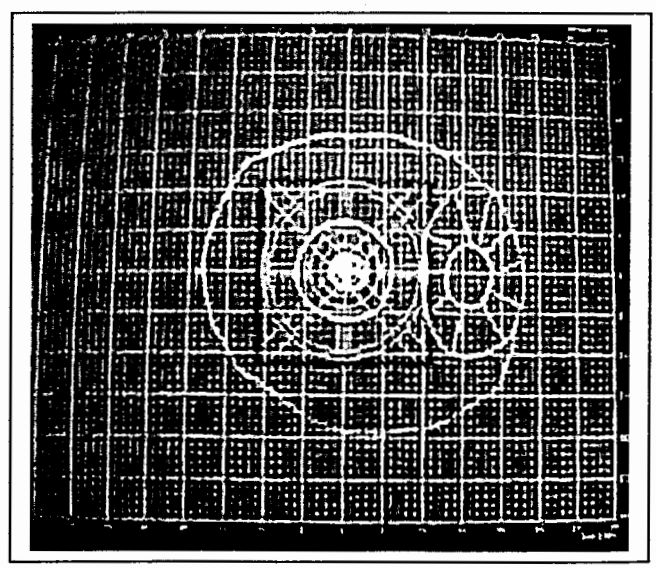


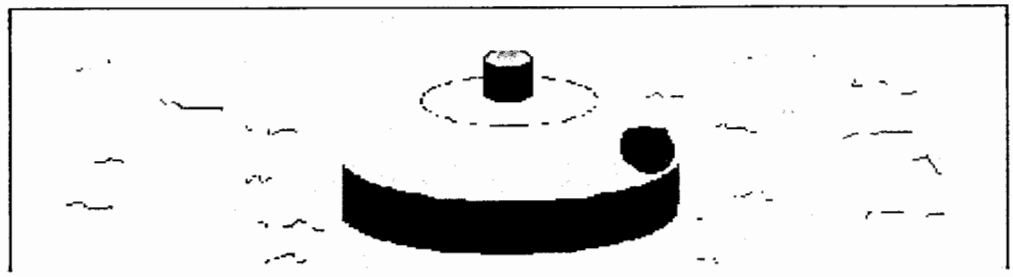


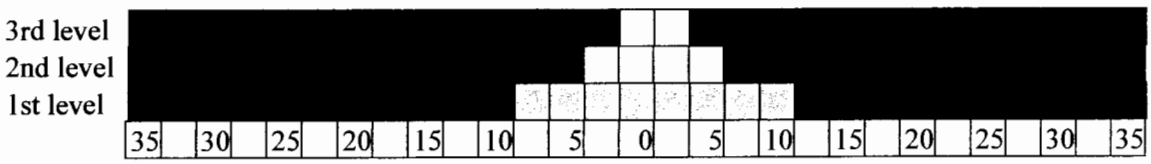
In an adult with a "reading problem

For a child with a restricted field this is what you may typically find (though the field is frequently much smaller) :-



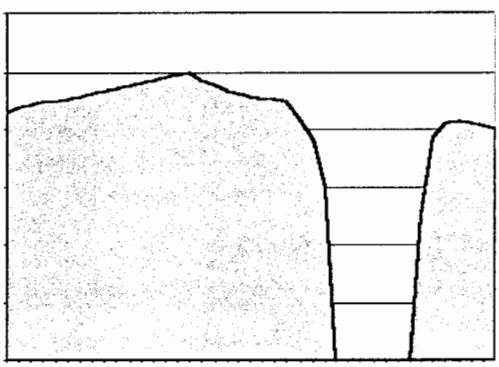






The Physiological Blind Spot

The physiological blind spot , the area relating to the optic nerve insertion into the back of the eye, is also measured during Campimetry.



The blind spot is measured using the 1 degree white target moving from inside the expected blind spot from non-seeing to seeing and marked on the chart

Whenever I have found the level 2, and 3, fields restricted, the measured physiological blind spot has always been enlarged..

This relationship between restricted "detailed" fields and enlarged blind spot size is a useful confirmation that a defect is present and not just down to the inability of the patient to carry out the required tests.

As can be seen from the diagram, the higher up the overall field "threshold Level, the larger the blind spot will be .

As therapy takes place and the fields expand, (the threshold moving down and exposing more of the island) so the blind spot reduces to normality. i.e. an enlarged blind spot is an indicator *that these more subtle fields are restricted*

In many children with restricted fields, (less frequently in adults), the level 1 field is too small to measure the blind spot, but as the fields recover to allow this measurement, the blind spot *will be enlarged* until the fields normalise

Further levels of assessment?

To return to the initial concept of the measurement of vision, we can consider 2 more levels below level 1 :-

The next lower field will be the field measured by conventional static perimetry, i.e. **P**erception of **L**ight - Level PL, and, at the bottom will be the peripheral equivalent of "**B**lind **S**ight" - Level BS.

Peripheral "**B**lind **S**ight" (Level BS)

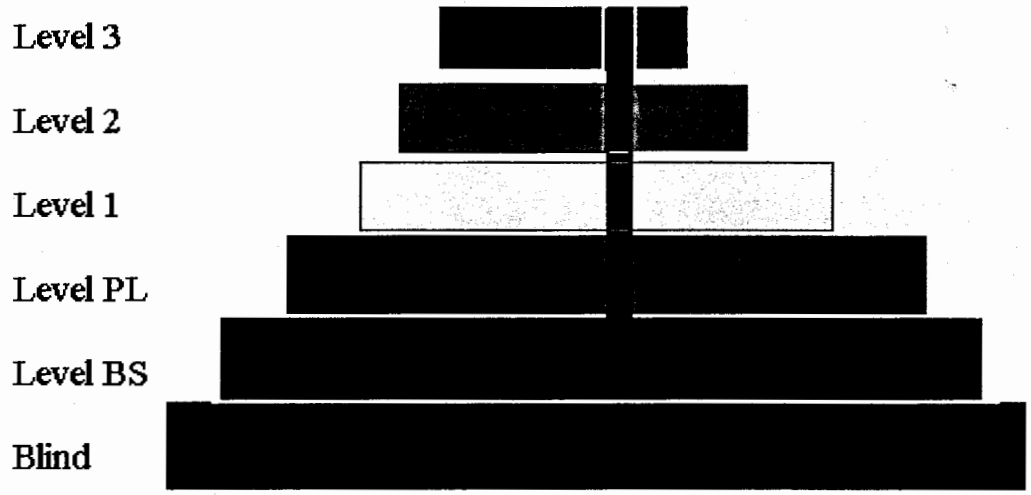
Let us consider at this time this consideration of peripheral "blind sight".

One of the questions often raised when examining the "malingering child" with a small, sometimes less than 5 degree field, is how can he possibly walk, run, even just function with such a small field.

If they had a pathological field this small, they would be technically blind and totally unable to cope, however if we consider that at a sub-perceptual (or subconscious) visual level they *are* able to utilise this peripheral vision, Level BS, then this would explain their better than would be expected ability than that suggested by their field size. (We now know that apart from the main visual (magno and parvo) systems from eye to brain there are at least 9 others which are not fully understood at this time.)

It may also be appropriate to consider that most people are unaware that they have a large blind area, the physiological blind spot, on their temporal side, as the brain is clever in completing the picture even when information is missing

This is quite logical when one considers that all the connections are in place from the eye to the brain, but the individual is simply not processing the visual information at a functionally perceived level
We can therefore produce a functional model of the "island of vision" which incorporates all types of visual field assessment



Comparison of measurements relating Visual acuity - central v periphery

Central vision	**Level**
Light perception	(PL)
Hand movements	(1)
Finger counting	(2)
Snellen letters	(3)
Peripheral vision (rough guide)	
Pen torch in periphery	(PL)
Confrontation test using a hand as target	(1)
Confrontation test - awareness of separated fingers	(2)
Peripheral vision (detailed assessment)	
Light perception - automated perimeters	(PL)
Campimetry - awareness of white moving target	(1)
Campimetry - awareness of black edge	(2)
Campimetry - awareness of complete ring	(3)

Focus Limitations and Accommodative Flexibility

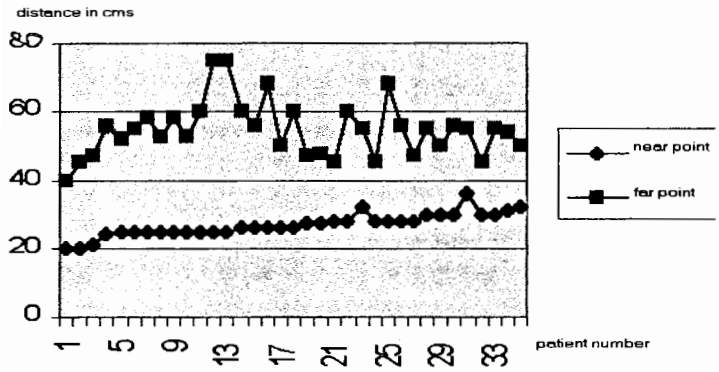
One of the interesting aspects of observing children with RAP (restricted awareness of periphery) is that they exhibit a limited range of clear, near focus, which I have termed their range of Accommodative Flexibility

Accommodative Flexibility, for me, is a measure of the near and far points of a subject reading small print (n7). This is the print size on the near vision chart developed by Professor Ed Howell from Australia.

The range of clear, near reading ability for n7 print for a normal average child is in the region of 8 to 80 cm.

Accommodative Flexibility in a child with a severely restricted functional field can be limited, for example to as little as 18 - 24 cm (i.e. print is only clear for them when held between 18 and 24 cm from the eye)

Over the years it has always been a puzzle to me that mature patients requiring the same reading "add" had different "depths", or range of focus.

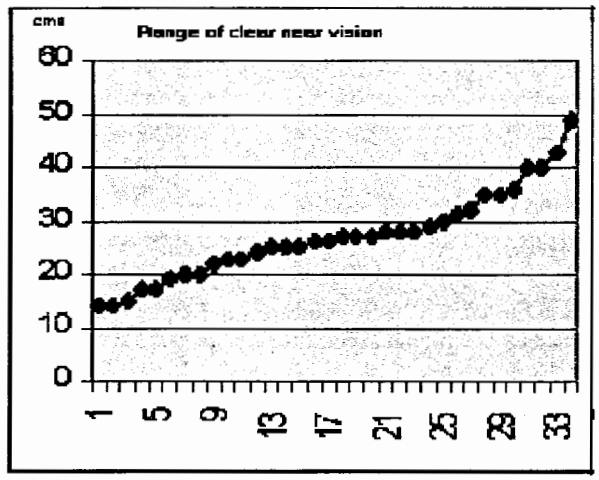


After observing this visual anomaly in children I decided to look at the accommodative facility in mature adults I carried out a study on a group of adults who were supplied with a +2.25Add. This group was selected on the basis that with a +2.25 add, they would be expected to have normal VAs and no residual accommodation, and were retrospectively selected over the past 6 months of patients seen during my normal clinics with this add 34 individuals were included in this study with an age range of 51 to 80 with an average age of 64.56 years

Plot of accommodative flexibility - range of clear near vision for 34 presbyopic patients

The average mid point of focus range was found to be 27cm.

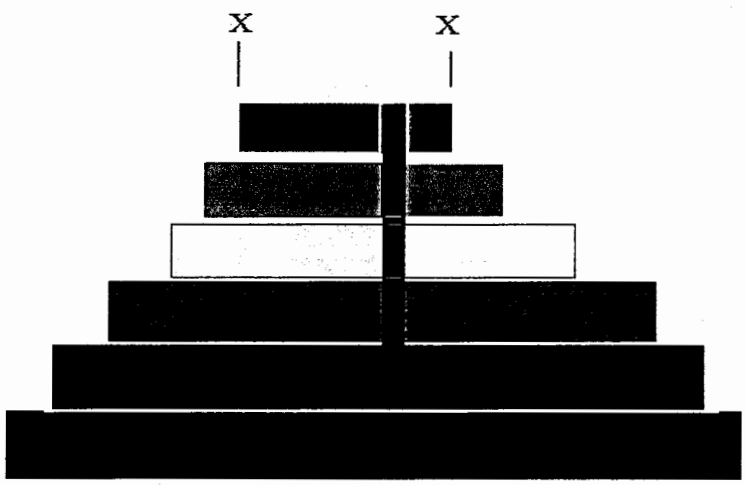
On examining their functional fields, it became apparent that those with a large Level 3 field had a good accommodative flexibility range whilst those with a small Level 3 had a very restricted range.



Relationship between accommodative facility and the functional visual field.

When we carried out Campimetry on these patients it became obvious that those with a limited accommodative facility were the same individuals who demonstrated restriction at levels (2) and (3)

The smaller the level 3 field - the more limited is accommodative facility



When we go back tour concept of the "Island of Vision", we therefore find that there are some important links :-

1) The higher the island, the better the visual acuity
2) The wider the top of the island, marked X—X, level (3) of the campimetry plot, the better the accommodative flexibility
3) The wider X—X is, the easier reading and in particular scan reading and comprehension will be
4) This investigation also demonstrates that "functional fields are "3 dimensional" - detailed processing in periphery is linked to depth of range of near, clear focus.

In other words the diameter of the level 3 field X---X' is directly related to accommodative flexibility, the range of clear, near vision.

One final aspect of this investigation is that the above investigation indicates that patients with accommodative flexibility less than 20 cm, should undergo further investigation on their functional fields. Why. Because these individuals are under performing visually. We as Optometrists have the tools to help these patients develop more efficient visual systems leading to more comfortable reading, more relaxed computer use and at the end of the day happier patients!

Is this just the occasional adult patient with problems? No! These are your problem patients, restricted depth of field with reading specs, varifocal intolerances, pathological problems with worse than normal acuity, postural problems relating to trying to look at a VDU screen (all ages),etc. Many of our patients who have suffered traumatic brain injury, stress, stroke and depression also fit into this group.

From the above figures it would appear that 17% (1 in 6) of the patients in my study could be achieving better visual performance.

Conclusions

1. Functional visual field examination should not be considered a defunct, or outdated, technique.
2. Functional and static automated visual field tests can complement each other and not be thought of as providing an exclusive result
3. Automated field tests are excellent for the detection and monitoring of eye disease
4. Automated static field tests are quick and easy, and ideally suited to large scale use for the detection of eye disease
5. Functional field tests are helpful in determining the origin of inefficient visual performance
6. Functional field tests are essential to identify the visual processing difficulties experienced by children with educational difficulties
7. Functional field tests are invaluable in monitoring the progress of vision therapy
8. When VAs are reduced from expected - check functional fields

AND FINALLY

9 When the depth of reading range (accommodative flexibility) is limited - check functional fields

10 Functional Visual fields restrictions are a visual problem and as such should be investigated and treated by a appropriate eye care professional – the Optometrist

References:

Obviously there are many references relating to my initial understanding of visual fields, many of which can be found in the Blue Book of the College of Syntonic Optometry.

I would like to thank Dr Larry Wallace and Dr Ray Gottlieb for presenting the Basic Course in Syntonic Optometry in England In 2001, and for their assistance by email since then!.

In particular I would like to extend my thanks to Dr Wayne Pharr who nagged me mercilessly to start investigating fields using the campimeter and his 3 stage method of assessment and twisting my arm up my back until I started treating my patients with syntonics. His knowledge and experience was invaluable in helping develop my understanding of this complex area. You will find more information on his website www.vision.cc

Mentors Talk

An Interview With Dr. Charles Butts and Dr. Ellis Edelman

By Sarah Cobb

A conversation with Charlie

Q. Why does syntonics work?

A. Syntonics is so effective because it puts the autonomic nervous system in balance. Once the sympathetic and parasympathetic is in proper relationship, it takes care of itself. This is as simple as I can make it. As you know, it is not simple and you have to understand the physiological system to apply it.

Q. Charlie, when you look at a campimetry measurement of a functional field, what is the first thing you consider?

A. The first thing I look at is the size of the field. Then I look at the optic nerve head to see if there is any swelling. I look for scatomas and lastly colors. Exo, eso, squints, fusional problems are all complaints. We have to correct the causes then the complaints go away.

Q. **What kind of cases is nascentization recommended?** This is an excellent question. For best results always use it. Truthfully, I think the reason for its loss is that we can't pronounce it.

A. **Sometimes I hear syntonics simplified as basically use the blue end for exophoria and the red end for esophoria. Just how much does consideration is given to a phoria in a case?** I use this only in squints, otherwise it is only a complaint.

Q. Regarding color fields. How much influence does color fields have in your overall diagnosis and decision on what frequencies to use?

A. None, it only tells us how sensitive the periphery is (blood supply).

Q. Why should a voltage reading on the college syntonizer be 145? Why is it important to have the voltage and type of bulb correct?

A. Spitler used a 105 volt bulb boosted to 125 volts to make more efficient the spectrum produced by the bulb. The bulb produces heat, the gasses in the bulb are important. G.E. would only sell us 105 watt bulbs in lots of 10,000 so we had to go another way. They put this in their computer and said we had to boost 120 volts to a minimum of 145 to get the same effect as a 105 bulb. Recently I was suffering from an allergy attack so I used a color (frequency) I often use to quell them. But nothing happened. I couldn't 'get the fast results that I was use to. So I got out my meter to check the voltage at the wall and found that it was only 105 volts. The variac booster voltage output was only 120 volts so the mystery was solved. *What this illustrates is that any frequency you project is only as good as the light source you are using.* Today the boosters are small and have a good flasher on it. In my opinion the college syntonizer is still the most versatile instrument on the market.

Q. Did you have a mentor when you first started out? How did you start?

A. I didn't have a mentor because there weren't any. I started by study, study, study. I read Spitler every three months until it started to make sense.

Q. What about flashing light? In what type of case would it be used?

A. Spitler said never flash on the blue side because it acted as a tranquilizer.

Q. Tell us in syntonic terms, what's going on with strabismus and amblyopia?

A. Amblopia and squint have much in common if you take a functional visual field. It tells you the reason for both. How? In squint is 2 to 3 degrees larger than the form field. For example, if the form field is 10 degrees the squint is 7 to 10 degrees. This tells me the patient throws the eye into a desensitized area to where they see two objects in space instead of two identical objects. They can tolerate the dissimilar objects and focus on one without confusion. This applies to people under the age of 16 years. After this, for some reason, the form field expands but the squint remains. But you treat them as if the field loss is still there. And it works. If you have a patient that has had surgery, you loose 50% of success of helping. Surgery is only 12% successful. By using the proper therapy you can expect to correct at least 80% of these cases. Some of mine straightened in as little as 8-10 therapy treatments with no other therapy. You can have amblyopia with or without squint so I will take them both at the same time. It has been my experience that this is caused by the amount of swelling around the optic nerve head. The swelling as it goes into the fovea as a triangle is desensitizing this area to where you do not receive the object clearly. The field charts can demonstrate it very easily. The greater the swelling the greater loss of acuity. If you are blocking the input to the optic cortex from the eye you are loosing output also. In swelling you are loosing blood supply into the eye also which causes a desensitizing of

the cones and rods in this area. So now you not only have a desensitizing of the area by the loss of blood but also the nerve energy as input and output. Optometrists should know what I mean by the statement input and output. Traumas, of short standing are harder to accomplish than traumas of long standing. My thoughts are that the swelling in short standing takes longer for the system to heal itself. In a long-standing trauma the body has had time to accomplish as much healing as it can. Otherwise, body has healed itself as much as it can, taking much of the swelling (reduced the fluid in the brain) as possible. You may be able to correct a long-standing trauma in one series of ten treatments, where a short standing trauma may take several series to correct. Assuming no permanent damage has occurred.

A. How do the abnormalities occur?

Q. Traumas, physiological imbalances, emotional stresses and visual stresses must be considered. Once you have one of these stresses as a long-standing problem, all of them become a factor. I mean that an emotional stress will cause you to become physiologically stressed and visually stressed. A visual stress can cause an emotional and physiological imbalance and a physiological stress can cause an emotional and visual imbalance. All of these affect the visual fields. So why do we want to run a functional field? An optometrist can correct a visual field loss with the correct therapy and it will correct the physiological imbalance and emotional imbalance. Otherwise, these are all interconnected. Start by taking functional fields on all of the patients that have a trauma and are having visual problems. Take a field on all clients of low acuity and find out why. Take a field on all squints and find out why. When you start finding out why it will make you a better optometrist. Read *Spitler* every three months until it starts to make sense to you. If you are doing everything I'm telling you here it will fall into place in a year or two. It took me longer. Even though I was doing an average of 23 patients a day and running fields on all of them, it started falling in place and I could see it was all inter-related.

Q. We appreciate your support, enthusiasm for syntonics, and unconditional love for the college. In closing, do you have any advice?

A. I will say what I have said many times. The more you know, the more you don't know.

A conversation with Ellis

Q. The Macular Degeneration Foundation has announced that electrical stimulation was being found to help this disease. Didn't Spitler use it on his patients? What's happening with the electro-stimulation today?

A. Spitler apparently did use electro-stimulation in the treatment of Macular Degeneration. In his book, The Syntonic Principle, he briefly discusses the effect of an electrical stimulus to the proximal end of the cut optic nerve. The nervous response is equivalent to and identical with the response of the nerve to a short flash of light which falls upon the entire retina and which is not focused on a point thereon.
It appears a short flash of light may send a succession of impulses down the nerve along the fibers stimulated by the retina. An electrical stimulus will only excite a single impulse. He also mentions that an increase of intensity of the light will increase the number of impulses sent over each fiber. The sense organ responds more rapidly as a result of the increase in intensity. Dr. Larry Wallace has successfully treated many patients who have been diagnosed with some form of Macular Degeneration with electro-stimulation. Grace Halloran, PhD. uses electro-stimulation in her treatment of many ocular diseases such as glaucoma, R.P., and macular degeneration. Edgar Cayce in his books concerning vision anomalies mentions "low electrical stimulation" to the areas surrounding the orbit for a positive effect on restoring "sight".

Q. It has been said that the understanding of the autonomic nervous system has changed since Spitler's day. How has it changed?

A. Autonomic nervous system with the two divisions, namely the sympathetic branch and the parasympathetic branch have been described as being "fixed" or unchangeable in their respective functioning. I believe Spitler tended to accept this concept. However, when he introduced the use of light therapy in order to modify the balance existing within the autonomic nervous system, he inferred that perhaps changes could be made within that system. Today, traditional and orthodox teachings and concepts maintain changes within the autonomic nervous system probably can not be altered or modified. It appears alternative therapies such as syntonics, biofeedback, functional Optometry and functionally oriented Chiropractors practice to change the autonomic nervous system function endeavoring to create a balance of the two branches.

Q. If the phoria is out of balance does that mean the autonomic nervous system is out of balance too? Please explain.

A. Phorias originally were interpreted to measure the relationship of the extra ocular muscles. In fact traditional optometry as well as ophthalmology still teaches this idea in their undergraduate schools. Today, functionally oriented O.D.'s interpret the phoria measurement in terms of how the individual handles space, emotional status, processing of sensory-motor information and the tightness vs. flexibility of the visual system. There are expected responses during the measurements of the phorias. If there is an appropriate balance present within the autonomic nervous system (6exo at near or 1 or ½ exo at distance) the phoria response should be within the expected ranges. If the response shows an esophoric measurement especially at near this can be interpreted as being a sympathetic dominant individual because eso at near reflects a tendency to compress space. Thus, it means there is an imbalance existing within the autonomic nervous system. The individual probably shows reduced form field size, chronically enlarged pupils and many visual characteristics of a person who exhibits a "tight" personality intellectually as well as physically. On the other hand, an individual who is parasympathetic dominant will demonstrate many signs and symptoms of an imbalance existing within the autonomic nervous system. The phorias reflect just how this individual functions in terms of preferences, avoidance, emotional status and how he or she processes all types of information. The phorias reveal all types of information from a functional point of view

Q. Do you have any advice on how to facilitate the understanding of syntonic treatment to patients?

A. Understanding the syntonic treatment is rather difficult for the average person. Looking at different colors to alleviate certain conditions such as "crossed eyes" does not seem credible to the average parent or child. Even though we present scientific evidence and various studies to show the efficacy of the syntonic treatment in treating many anomalies including emotional states, the majority of the public is not convinced as to it's value. The bottom line appears to be how credible the doctor treating the individual appears to the patient. The outcome of the treatment in alleviating the problem will determine the acceptance by the patient. More documentation by syntonic practitioners is needed to prove the value of light therapy. It is important to have the majority of the optometric community utilize this approach.

Q. Why is syntonics an effective treatment for head injuries?

A. Syntonics has proven to be an effective treatment for head injuries. The majority of patients suffering head injury will have field defects, enlarged blind spots, exotropias, problems with balance and visual memory difficulties. There are many more visual-perceptual difficulties than what has been previously mentioned. The autonomic nervous system shows an imbalance with many times the sympathetic branch dominating. Syntonic treatment should be given as early as possible after the head trauma in order to be most affective. The majority of the problems can be alleviated with light therapy along with many optometric procedures especially lenses and nasal tapes.

Q. Why are acute conditions treated differently than chronic ones?

A. Many times, acute conditions can be considered even after 2 or 3 years. Examining the fields especially the blind spot areas will determine whether to treat the problem as acute or chronic. An experienced syntonic practitioner will make a decision how to treat the condition. Acute conditions require the use of the parasympathetic frequencies to reduce the edema, treat the injured areas and to quiet the system down. A second phase can be initiated using the sympathetic frequencies to rehabilitate the entire visual-motor-perceptual functioning. On the other hand a chronic condition which has existed over an extended period of time, such as amblyopia, can be treated with various frequencies in order to create an anabolic physiological approach.

Q. How often do unequal functional fields aggravate visual conditions?

A. Unequal functional fields are often observed in terms of their size and response to a light stimulus. Many conditions such as strabismus, amblyopias, cerebral insults and pathological conditions, ie., glaucoma, RP, , macular involvement and diabetic problems will demonstrate many times unequal functional fields.

B. **Do you have any more comments?**

C. It is important to take a very broad view of the individual's behavior. An individual can be looked at in terms of his skeletal muscular system (postural adaptations), emotional status, and also the flexibility of a person's mind. You have to go beyond the visual analysis because that alone will give you a very narrow point of view.

William Henning, ND, OD: The Practice of Modem Optometry (1939)

MYOPIA

Henning bases his approach on the ac/a reflex in which divergence induces relaxation of focus. He attempts to artificially produce esophoria of six prism diopters for every diopter of myopia and then provoke myopia reduction through less plus and base-in training with the appropriate frequencies.

1) Reduce minus and add base-out for full-time wear
2) Train with sedative frequencies and base-out. The aim is to increase esophoria without increasing the myopia.
3) When the induced phoria reverts back to the habitual, add two more base-out to the Rx.
4) Repeat until the esophoria equals the myopia (see above).
5) Cut minus and base-out from the Rx.
6) Train with sedative frequencies, plus lenses, and base-in to reduce myopia.
7) As-acuity improves, cut minus and base-out.
8) Repeat the entire process until the myopia is gone.

Lens prescription: cut the minus by half of the subjective (or by one diopter for cases of two or more diopters of myopia) and add two prism diopters base-out, for constant wear. Distance acuity should be about 20/40-20/60. The phoria should increase by two exo through the Rx. Being accustomed to the habitual phoria, the posture will readily change to revert to back to the original convergence through the prisms. To aid this readjustment, base-out treatments (using the near duction base-out recovery) combined with sedative (inhibited) frequencies BLUE-INDIGO, INDIGO, YELLOW-INDIGO, BLUE, and GREEN-BLUE are given to inhibit focus.

Use two different frequencies during one training period, beginning with a more extreme for a minute or two, then two or three minutes with a more moderate frequency. BLUE-INDIGO and BLUE for the first, INDIGO and YELLOW-INDIGO for the second, BLUE-INDIGO and YELLOW-INDIGO next, followed by INDIGO and GREEN-BLUE, and the whole procedure is repeated.

When the phoria through the distance Rx returns to its original posture, take a two week break from training, and then add two more base-out and repeat the training procedures until the esophoria becomes five times the dioptric value of the myopia or reaches ten base-out.

At this point, remove two base-out is removed from full-time prescription and train using the sedative frequencies as before but now train with base-in (base-in near duction recovery) and plus to induce inhibition to both convergence and focus. When the patient has reverted to the habitual phoria, a small amount of myopia will also have been eliminated (0.25 to 0.50 reduction). Check acuity often and when vision through the Rx improves to 20/20 or 20/25, prescribe 0.50 less minus and two prism diopters less base-out for constant wear. Continue the training, changing the training prism as the base-in duction recovery increases. Reduce two more base-out from the Rx when the phoria reverts. Check acuity to remove more minus from the Rx.

When all the prisms have been removed, give the patient a rest period of two or three weeks. Then if the acuity stays clear, again reduce the Rx by half (or one diopter if myopia is over -2.00), add two base-out for full time wear, and repeat the training using base-out and the sedative frequencies as before.

Very often it is necessary to repeat the entire procedure because only a small amount of the myopia was eliminated during the first series. Each time more of the myopia should be eliminated until the ametropia goes into slight hyperopia or the patient reaches the limit of change. If the patient returns after three to six months, the process can be repeated and more myopia can be eliminated.

The Neurophysiology of Light
The Five Pathways

By
Dietrich Klinghardt, MD, PhD

Translated from Dr. Klinghardt's book –
"Lehrbuch der Psycho-Kinesiologie- ein neuer Weg in der psychosomatischen Medizin",
Verlag Hermann Bauer, Freiburg, Germany 1995

During the 19th century the American surgeon, Dr. E. Babbitt, 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.[1]

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 H. Riley Spitler, M.D., after years of detailed research with colored light, concluded that light therapy applied through the eyes could augment the major control centers in the brain that regulate all body functions. Since the functioning of the eyes was directly dependent upon and mediated though the nervous system, this form of treatment directly affected visual function. With treatments designed according to each individual's physical and emotional make up, his treatments reduced stresses, both physiological and emotional.[2] 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 the over 3,000 patients he treated.[2 3]

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[4]. In terms of modern neurophysiology we believe now that distinct color frequencies can reactivate synapses in the brain[5 6] 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 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 patients' 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[7]. Several "syntonic" instruments 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 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:

- Critical Flicker Fusion Test
- Color Visual Field Test
- Luescher Color Test
- Autonomic Response Testing (ART) – using muscle-tone biofeedback
- Steve Vasquez (Ph.D.) method - assessing emotional responses after color presentation
- Heart Rate Variability
- Kirlian Photography - used by Peter Mandel's color puncture practitioners)
- Intuition and experience
- Using the known physiological effects of color:

  Blue – activates the parasympathetic nervous system. Calms – amazing 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.

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.a young man had been molested by his mother when he was a toddler- and she was wearing a blue bra at the time - blue may cause sympathetic arousal (distress) in this man until the trauma is healed.

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 - without interpretation.
2. It was discovered fairly recently, that there is an additional nerve bundle leading directly from the retina to the hypothalamus (retino-hypothalamic tract)[8]. This explains the 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 simulates 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.

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, which are not stimulated by adjacent, but dissimilar colors[9]. Each frequency in the color spectrum therefore has its own specific neurological and psychological effect[10 11].

The neurosurgeon, Norman Shealy, M.D.,PhD – discoverer and inventor of TENS (Transcutaneous Electric Nerve Stimulation) and the "spinal chord stimulator", conducted a study investigating biochemical changes in the brain after beaming different colors into the eye (with the "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[12]. 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.[13]

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 [14]. This nucleus is also light and color sensitive[15]. 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[16]. This pathway has been given much attention lately in research concerning the treatment of seasonal affective disorder.

5. A fifth, and maybe most exciting way in which color finds it's 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 [17] [18]. 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, that 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)[19]. 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[20] [21] [22].

This mechanism explains 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, treated many clients successfully for many severe illnesses - by having them paint their toenails in specific colors (which he determined before). 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[23]. 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.

SUMMARY

A growing body of research on the physiological effects of light supports our position for the potential medicinal use of light and color.

The Eye Movement Method

This method originates to some degree in the scientific research of eye movements, and the clinical observations of the psychiatrist Milton Erikson. He discovered that the eyes wander involuntarily in a predictable direction when a patient tries to memorize certain events. If a patient is prevented from looking in that particular direction she/he cannot remember that particular event. The eye movements open the synapse in the brain. Which makes the connection from the conscious part of the brain to the unconscious part, where memory is stored.

This phenomenon is also known during the REM phases of sleep.[24] [25] When we dream and process the memories from our day the eyes move rapidly forth and back in directions which are determined by the content of the processed events.[26] During this time emotionally loaded daytime memories are consolidated.[27] Most often the eyes move sideways, forth and back, but they may also move up and down as well as in diagonal directions. If a person tries to remember something that someone has said in the past. (acoustic memory) the eyes will move involuntarily gaze to the left. If, for example somebody tries to remember a scene of a film (visual memory) the eyes will move to the upper left. Bandler and Grinder, the developers of Neurolinguistic Programming, observed Milton Erickson during his work and developed the following schematic:[28]

As on the face of a clock:
1.30 = visual memories
3.00 = acoustic memories
4.30 = inner dialogue with the self
7.30 = kinesthetic sensation
9.00 = acoustic future projection
10.30 = visual future projection

The diagonal movement shows two main patterns:

a) Visual memories/kinesiologocal sensations
(eg "my past is depressing me").
b) Inner dialogue/inner projection
(eg " I can't imagine ever being successful").

An Overview of the scientific publications over the last few years regarding eye movements is presented below:

Eye movements in rhythmic patterns occur spontaneously if someone daydreams, visualizes, imagines, or if someone represses thoughts and feelings into the subconscious.[29]

Eye movements also occur spontaneously[30] in states of anxiety, intensive thinking and concentration.[31] When a person works intuitively, or is creative, has feelings, mediates or reviews emotionally loaded events, these 'thought patterns' are always are always accompanied by eye movements.[32 33]

The direction in which our eyes gaze determines whether we perceive the same object as ugly or beautiful. Eye movements determine the emotional coloring of what we observe. [34] In phobias, a similar phenomenon has been observed: depending on the direction of the gaze, the intensity of the fear fluctuates when the fear, causing object is looked at.[35] From studies in neurophysiology we know that eye movements activate synapses in the brain and make a connection between the cognitive conscious part of the brain, conscious memories and the unconscious. These activated synapses are located in the hippocampus- square in the middle of the limbic system- the main storage house for unresolved conflicts.[36 37]

During the APN treatment, the rhythm of the eye movements has significant impact[38 39] for the success of treatment. Spontaneously occurring eye movements have a clearly defined meaning: On one side, emotional memories are repressed into the limbic system,[40] consolidated and stored.[41] On the other side there is an immolation of the intensity of feelings that accompanies the memory.[42] Many articles on these issues have been published in recent years, many of which were inspired by the work of Francine Shapiro (Ph.D.)[43]

SUMMARY

Eye movements stimulate the limbic system, especially the amygdala and the hippocampus.[44 45] Repeated eye movements facilitate the neurological connection between the conscious part of the brain and deeply repressed conflicts. These conflicts now become treatable.[46 47] To access a suppressed memory the correct eye-movement direction has to be chosen (in addition to the right rhythm). I consider the eye movement to be a secret code that opens the door to the unconscious. In APN we call this: The eye-movement coding of memories. Memories are also color-coded.

In 1971 I encountered eye movement therapy for the first time. After a significant motorcycle accident I was brought to an 89 year old, modest and friendly women who was known as a healer in the area (Meersburg, Germany). She told me that the method she would be using was passed on within her family and goes back to Franz Anton Mesmr ("mesmerizing"), who was one of her direct ancestors and had lived in the same town over 300 years ago. She asked me to lie down on her kitchen floor guiding my inner attention to my skin lacerations, bruises and abrasions. She then took the crucifix-chain off her neck and used it as a pendulum in front of my eyes asking me to follow the movements. Then she washed my wounds with soap and water (which amazingly did not hurt). She repeated the pendulum treatment once more. After the treatment I was totally pain free and within two weeks all my wounds has completely healed without any scarring.

[1] Babbitt, E.: *The Principles of Light and Colour: The Healing Power of Colour*. 1878, Reprint, Secaucus N.J.: Citadel, 1976.
[2] Liberman, Jacob: *Die Heilende Kraft des Lichts. Der EinfluB des Lichts auf Psyche und Korper*. Bern, 1995.
[3] Ott, John: Health and Light. *The Effects of Natural and Artificial Light on Man and Other Living Things*, Columbus, Ohio: Ariel, 1973.
[4] Liberman Jacob: *Die Heilende Kraft des Lichts. Der EinfluB des Lichts auf Psyche und Korper*. Bern 1995.
[5] Neilsen, T.: *Affect Desensitization: A Possible Function of REMs in Both Walking and Sleeping States*. In: *Sleep Research*, 20, 1991, S. 10.
[6] Ringo, J. et al.: Eye Movements Modulate Activity in Hippocampal, Parahippocampal, and Inferotemporal Neurons. In: Journal of Neurophysiology, 71, 1994, S. 1-4.
[77] Barionuevo, G. u.a.: *The Effects of Repetitive Low-Frequency Stimulation Control and "Potentiated" Synaptic Responses in the Hippocampus*. In: *Life Sciences*, 27, 1980, S. 2385-2390.
[8] Moore, R.: *Visual Pathways and the Central Neural Control of Diurnal Rhythms*. The Neurosciences 3rd Study Program, Cambridge, Mass.: MIT, 1974.
[9] Hill, R.: *Single Cell Response of the Nucleus of the Trans-Peduncular Tract in Rabbit to Monochromatic Light on the Retina*. In: *Journal of Neurophysiology*, Vol. 26.
[10] Birrin, F.: *Color Psychology and Color Therapy*. Secaucus, N.J.: Citadel, 1978.
[11] Toupin, A.: *Photic Avtivation and Experimental Data Concerning Colored Stimuli*. In: Neurology (Minneap.), 16, 1966, S. 269
[12] Shealy, Norman: *Effects of the Lumatron upon Neurochemicals*. Lecture given for Dr. Shealy by Dr. Klinghardt at the 6th Int.Rehab. Med. Ass. Congress, Madrid, Spain, 1990.
[13] Hollwich, F.: *The Influence of Ocular Light Perception on Metabolism in Man and in Animal*. Berlin, 1985.
[14] Wurtman, R.: *The Effects of Light on the Human Body*. In: *Scientific American*, July 1975, Vol. 233, Nr. 1, S. 68-79.
[15] Hill, R.: *Single Cell Responses of the Nucleus of the Trans-Peduncular Tract in Rabbit to Monochromatic Light on the Retina*. In: *Journal of Neurophysiology*, Vol. 26.
[16] Wurtman, Richard u.a.: *The Medical and Biological Effects of Light*. In: *Annals of the New York Academy of Sciences*, Vol. 453, 1985
[17] Hebeda, K.: *Light Propagation in the brain Depends on Nerve Fiber Orientation*, In: *Neurosurgery*, 35, 1994, S. 720-724.
[18] Popp, Fritz A.: *Biophotonen. Ein neuer Weg zur Losung des Krebsproblems*. Heidelberg, 2. Aufl. 1984.
[19] Grass, F.: *Biophotons, CNS and the Possible Role of Pigments and Fluorescent Substances*. Biological Effects of Light Symposium, Atlanta, Georgia, Okt. 1995.
[20] Szent-Gyorgyi, A.: *Introduction to a Submolecular Biology*. Academic Press: N. Y., 1960.
[21] Szent-Gyorgyi, A.: *Bioelectrics*. Academic Press, N.Y.: New York, 1968.
[22] Hollwich, F.: *The Influence of Ocular Light Perception on Metabolism in Man and Animal*. Berlin, 1985.
[23] Popp, Fritz A.: Biophoten. *Ein Neuer Weg zur Losung des Krebsproblems*. Heidelberg, 2. Aufl. 1984.
[24] Aserinsky, E.: *Regularly Occuring Periods of Eye Motility and Concomitant Phenomena During Sleep*. In.: *Science*, 118, (1953), S. 273.
[25] The Biology and Function of Rapid Eye Movement Sleep. In.: Current Opinion in Neurobiology, 3, 1985, S. 355-369.
[26] Gabel, S.: *Information Processing in Rapid Eye Movement Sleep: Possible Neurophysiological, Neuropsychological, and Clinical Correlates*. In.: *Journal of Nervous and Mental Disease*, 175, 1987, S. 193-200.
[27] Tilly A.J.: *REM Sleep and Memory Consolidation*. In: *Biological Psychology*, 6, 1978, S. 293-300.
[28] Conner, J.O./J. Seymour: *Neurolinguistisches Programmieren. Gelungene Kommunikation und personliche Entfaltung*. Freiburg, 1995.
[29] Antrobus, J.S. Eye Movements Accompanying Day Dreams , Visual Imagery, and Thought Suppressions. In: Journal of Abnormal and Social Psychology, 69, 1964, S. 244—252.
[30] Day, M.E.: An Eye Movement Phenomenon Relating to Attention, Thought and Anxiety. In: Perceptual and Motor Skills, 19, 1964, S. 443-446.
[31] Teitelbaum, H.A.: *Spontaneous Rhythmic Ocular Movements: Their Possible Relationship to Mental Activity. In Neurology*, 4, 1954, S. 350-354.
[32] Monty, R.A. et al.: *Eye Movements and the Higher Psychological Functions*. Hillsdale, N.J..: Erlbaum, 1978.
[33] *ibid*
[34] Drake, R.A.: *Effects of Gaze Manipulation on Aesthetic Judgments: Hemisphere Priming of Affect*. In: *Acta Psychologica*, 65, 1987, S. 91-99.
[35] Merckelback, H./van Oppen, P.: *Effects of Gaze Manipulation on Subjective evaluation of neutral and phobia-relevent stimuli*. In: *Acta Psychologica*, 70, 1989, S. 147-151.
[36] Barionuevo, G. u.a.: *The Effects of Repetitive Low-frequency Stimulation Control and Potentiated Synaptic Responses in the Hippocampus*. In: *Life Sciences*, 27, 1980, S.2385-2390.
[37] Day, M.E.: *An Eye Movement Phenomenon Relating to Attention, Thought and Anxiety*,. In.: *Perceptual and Motor Skills*, 19, 1964, S. 443-446.

[38] Barionuevo, G. u.a.: *The Effects if Repetitive Low-frequency Stimulation Control and Potentiated Synaptic Responses in the Hippocampus*. In*: Life Sciences,* 27, 1980, S. 2385-2390.
[39] Larson, J./ Lynch, G.: *Thetta Pattern Stimulation and the Induction of L.T.P...: The Sequence in which Synapses are Stimulated Determines the Degree to Which the Potentiate.* In.: *Brain Research*, 489, 1989, S. 49-58.
[40] Ringo, J. et al.*: Eye Movements Modulate a Activity in Hippocampal, Parahippocampal, and Inferotemporal Neurons. In: Journal of Neurophysiology,* 71, 1994, S. 1-4.
[41] Tilly, A.J.: REM Sleep and Memory Consolidation. In: Biological Psychology, 6, 1978, S. 293-300.
[42] Neilson, T.: *Affect Desensitization: A Possible Function of REMs in Both Walking and Sleeping States*. In: *Sleep Research*, 20, 1991, S. 10.
[43] Shapiro, Francine: *Eye Movement Desensitization and Reprocessing Basic Principles, Protocols and procedures.* New York: Guilford, 1995.
[44] Barionuevo, G, u.a. *The Effects of Repetitive Low-Frequency Stimulation Control and Potentiated Synaptic Responses in the Hippocampus.* In**.** *Life Sciences*, 27, 1980, S. 2385-2390.

[45] Ringo, J. et al.: *Eye Movements Modulate Activity in the Hippocampal , Parahippocampal, and Inferotemporal Neurons.* In: *Journal of Neurophysiology*, 71, 1994, S. 1-4.
[46] Shapiro, Francine: *Eye Movement Desensitization and Reprocessing Basic Principles, Protocols, and Procedures*. New York Guilford, 1995.
[47] Barionuevo, G. u.a..: *The Effects of Repetitive Low-frequency Stimulation Control and Potentiated Synaptic Responses in the Hippocampus.* In: *Life Sciences*, 27, 1980, S. 2385-2390.

HEART RATE VARIABILITY AND SYNTONICS

By
Larry Wallace, O.D.

At the annual Syntonics Conference in 2001 and in our journal of March, 2002, we were introduced to an exciting new technology called Heart Math. Utilizing relatively inexpensive software one can monitor and measure through the heart pulse rate the state of the autonomic nervous system and physiological coherence of brain-heart regulation. Since much of the science of syntonics is based on the balance of these functions this information can be of great use to the practitioner and researcher of phototherapy. This article serves to report my experience using this technology with my patients, and point to some of the implications for use in optometric phototherapy.

Heart rate variability (HRV) is measured using a single pulse fed biofeedback device to monitor and analyze the beat frequencies of the heart to determine which part of the autonomic nervous system (ANS) is dominant, sympathetic or parasympathetic, or if the branches of the ANS are in phase lock or total balance, which represents a high state of psychological and physical wellness. This biophysical information can guide the practitioner for diagnosis or efficacy in treatment. The theory and application of Heart Math is explained in depth by Dr. McCraty in the Journal of Optometric Phototherapy, March, 2002.

I have concentrated on two aspects of this biofeedback information system: the entrainment of heart rate coherence reflecting the time the ANS is totally balanced and the Power Spectrum, which is a graphical depiction of which branch of the ANS predominates during the feedback process. Patients were tested before and after syntonic treatments to see if a shift occurred in ANS balance in the direction predicted by classical syntonic treatment: low frequencies (red-yellow) stimulating sympathetic activity, and high frequencies (blue-indigo) increasing parasympathetic activity. The power spectrum before treatment also was used as diagnostic information to determine which color to prescribe based on the patients ANS balance: if the sympathetic was dominant then a parasympathetic filter such as indigo or blue–green was prescribed. A post reading was done to see if the ANS shifted according to expected outcomes.

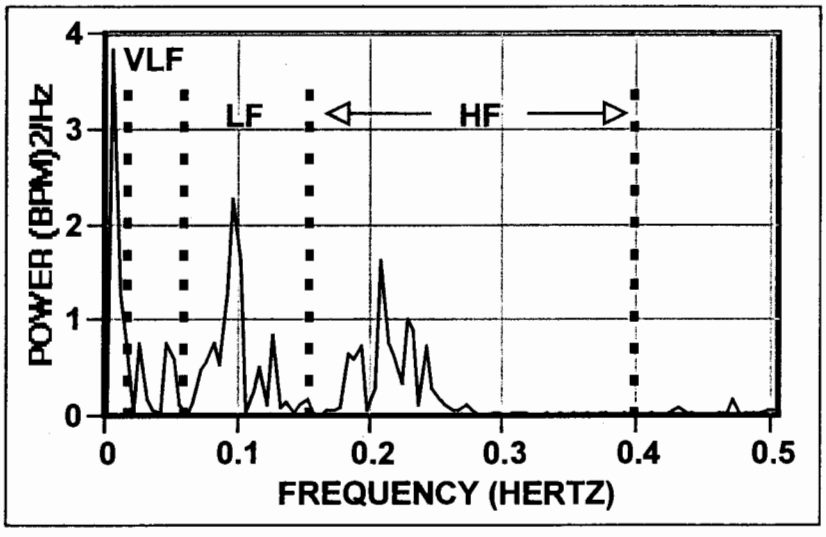
The power spectrum is obtained by spectral analysis of HRV revealing peaks of several frequencies:

High: .15 to < .4 Hertz;
related to vagal activity; parasympathetic

Low: .04 to <.15 Htz;
related to baroreceptors / blood pressure

Very low:.0033 to < .04 ;
relates to sympathetic action of ANS

Ultra low:0 to <.0033 ;
circadian activity in hormone systems



When the frequency peaks at .1 hertz the ANS is in phase locked balance; sympathetic with parasympathetic; a high state of heart brain coherence and wellness. This point would be the optimal balance we speak of so frequently in syntonics.

The data also includes the heart beat and entrainment scores which is the time the HVR is in this optimal state of ANS balance. Included are spectral power frequency peaks, entrainment scores for a 5 minute reading on each patient, syntoinc filter given, and direction of shift in the ANS as evidenced by the power spectrum.

Patient	Date	HRV	Syntonic Treatment	Outcome
ML	4-29	75 98 2 0 .05	I[10] BG[10]	] Symp
	5-31	63 33 25 42 .08		Parasymp
	7-17	87 16 44 40 .1		Balanced
MS.	4-18	81 46 48 6 .02	RU [10]YG[10]	Symp.
	4-18	76 43 45 12 .08		
	4-18	85 74 6 20 .8		Balance
JP.	4-18	44 56 0 .2	White flashing	Parasymp
	4-18	83 91 76 20 4 .06	Symp.Stim.	Symp
PF	4-24	69 45 35 20 .8	I[10] BG[10]	Balanced
	4-24	69 19 62 19 .04		Symp.
RF	6-5	78 68 38 2 .8	I[10] BG[10]	Parasymp
	6-5	87 46 48 6 .9		More Bal.
TD.	5-6	97 63 32 5 .9	RU[10]YG[10]	Bal.
	5-6	104 79 19 2 .01		Hi Symp
AS	6-7	80 85 15 0 .05	RU[10] Yg[10]	Symp
	6-7	79 66 34 0 .8		To Parasymp
	6-17	100 20 38 33 .8	I[10]BG[10]	Balanced
	7-3	101 65 23 13 .08/.15/.22		Several peaks; Bal.
(7-3 was a long term follow-up after syntonic treatment)				

DISCUSSION

The power spectrum and entrainment shifted for all patients after application of syntonic treatment. The basic filters used were RU[ruby] for 10 minutes and YG[yellow green] for 10 minutes to activate a sympathetic response and I[indigo] for 10 minutes and BG [blue green] for 10 minutes to activate parasympathetic response. The patient 's HRV did not always indicate a shift in the direction of ANS dominance as predicted by syntonic theory. Patient ML was sympathetic dominant, was given high frequency colors and indicated an expected shift towards parasympathetic dominance. MS was sympatheic dominant, was given a sympathetic frequency and became more balanced in parasympathetic dominance. This is counter to classical prescribing protocol . JP was parasympathetic dominant and showed marked shift to sympathetic dominance from flashed white light therapy, a presumed sympathetic frequency due to the disruptive effect of high stimulation associated with high flashing white light. PF was slightly in the sympathetic and moved more to balance after a parasympathetic frequency was given.

TD was in relative ANS balance and showed a major shift towards sympathetic dominance after low frequency stimulation. It is noteworthy to report the patient suffered a corneal herpes attack in the site of an old infection the very next day. We prescribed one session of indigo and the condition quickly resolved. Finally AS who had a history of chronically poor visual skills was sympathetic dominant, given RU and YG for long-standing dysfunction. The patient that day showed a significant shift towards parasympathetic dominance. On 6-17, showing a generally balanced state, he was given 6 sessions of indigo-blue green. This produced several significant peaks in the power spectrum. What was also noteworthy is that on 6-17 he was measured to have very poor accommodative amplitudes, a long standing condition found in previous examinations. On 7-3 his accommodative amplitudes increased 300%. My impression is that this improved ANS balance is reflected in this improvement. The heart rate measurements for all patients were basically stable or moved slightly in one direction or another without a lot of variation. The entrainment number represents a percentage of time that the ANS was in close balance and generally improved for all patients whose power spectrum peaked in the area of ANS balance: around the number .10. It is interesting that patient TD had a significant drop in entrainment when the color used created such a disruption in the ANS balance. In contrast patient AS showed such an improvement in entrainment as the ANS achieved more balance.

CONCLUSIONS

The use of HRV technology offers a wide range of applications for the syntonic practitioner. All the patients revealed changes in ANS balance after treatment with basic syntonic filters. The shift in ANS dominance was not always consistent with the basic theory that high frequencies (blue colors) activate parasympathetic actions and low frequencies (red colors) activate sympathetic action. This really validates what the experienced clinician already knows, each patient has an individual energy makeup that may require a prescription not consistent with the simplicity of the "balance board" approach. None the less, each patient showed a dominance in ANS and a shift after treatment. The initial dominance in the ANS can be a starting point for therapy , and a measure of filter efficacy in therapy. HRV is also used in many clinical settings as a therapy in its own right; to balance and calm the individual for a wide host of conditions.
Dr. McCraty's article discusses these applications at length. Heart Math offers the syntonic practitioner and researcher a new and exciting tool to expand and validate our work.

BIG BANG AND CREATION OF THE UNIVERSE

By
Ted Widing

With the theory of atoms, study of the quantum theory, the theory of relativity shows the interaction of particles in the formation of atoms. The above theories are covered extensively in creation of the universe, along with full color charts and illustrations.

The ©Model of the Big Bang shows three predominant colors, green, red, and blue. The colors are known as primary colors, and found in the strong nuclear force. If the spin and wavelength appears at certain relative temperature a spectral color of yellow will develop although not physically seen. They are created by particles called quarks held together by gluons. Quarks are identified as up, down, top, bottom, charm and strange, all of which have antiquark counterparts. It is noted that in the force, no photons occur as in the electromagnetic force. This force is made up of the hadron family of particles, when combined, can develop the additive color of white.

The primary colors are greatly effected by time decay, temperature and compression to create a bioelectron radiation to the autonomic system through a complex neurophysiological process. Although still in final testing, this theory is expected to have a very strong influence on neurons in the brain. See creation of the universe for a more complete discussion.

™Microsoft Encarta Encyclopedia 1993-2003 explains the following in the most simplistic form.

A number of pairs of pure spectral colors called complementary colors also exist. Among these pairs are certain yellows and blues, greens and blues, reds and greens, and greens and violets. (UVA Widing Research). Certain colors of the additive primary colors tend to absorb light, therefore are termed subtractive primary colors.

The absorptive colors are; red that absorbs green; yellow that absorbs blue; and blue that absorbs red. Since all color wavelengths are energy when they are absorbed, a non-color is developed termed BLACK LIGHT. When all wavelengths of energy are absorbed, a great amount of heat is created. This black light may be observed in the ©Big Bang Model as black holes and areas surrounding the big bang. Black light generates tremendous heat from trapped energy. The heat measured in kelvin degrees react differently on various elementary particles reducing some to subparticles. (Schmidt/Widing 1958-1959) As temperature increases, pressure is compounded which in turn creates friction then more heat. This pressure=friction=heat is duplicated on earth in volcanoes and oceanographic teutonic plate.

There is no question but that great THOUGHT and great care was taken in the creation of the elementary particles. There has been several theories presented in the past attempting to explain this miracle such as bondi and gold steady state theory in which they hypothecated that all universe just came together from space. Alternatetivly, the Invasionary Theory by Guth, which held that the universe was, always there, was shown by Higgs vacuum theory that space was a never ending and in a vacuum. In 1922, Edwin Hubbell proved the universe was expanding. Subsequently, Bell Laboratories proved that all space was equal in all directions. In any case, an associate of Guth had the last comment of the theories. If the universe just happened, it was the biggest free lunch we ever had.

The model of the big bang can be seen on the Widing Research Web Site www.lightsguide.com. When considering the complexity of the big bang and its particles, which formed the universe and life that developed within it, a series of evasive questions are brought forward. What are the curls, waves, angles, straight lines and other anomalies that show up in the basic big bang model? Viewing the Patrice Loiez/CERN Science Source/Photo Researchers, Inc. magnified picture show the intricacies of these. color anomalies. The different shapes show the interaction of particles explained in The Creation of the Universe from the College of Syntonic Optometry.

MY HUMBLE AND GRATEFUL THANKS ARE GIVEN TO THE CO-AUTHORS OF THE CREATION OF THE UNIVERSE WHO HAVE GIVEN ME SO MUCH HELP.

LECTURE SUMMARIES 2002

By
Dr. Hedge Prosak

Sondra St.Clair:
Comparison of Syntonic and TCM principles

Dr. Sondra St.Clair delivered a thoughtful and inspiring comparison of Syntonic and Traditional Chinese Medicine (TCM) colors and treatment principles.

First she introduced basic TCM concepts including chi, yin/yang, 5 element and organ cycles, and offered a more detailed introduction of the yin organs that relate directly to ocular function- liver, kidneys, spleen and heart. Dr. St.Clair combined the traditional Chinese colors for each meridian with the Dinshah/Spitler colors: red for kidney yang, orange for lungs, yellow and yellow/green for spleen, green for pericardium and triple warmer, blue/green and blue for liver, indigo for lung, violet/black for kidney yin, magenta for heart, kidney yin and yang, and white for both the conception and the governing vessels.

She emphasized the overlap of both systems and offered energetic explanations of treatment recommendations made by Spitler for some frequently encountered eye conditions. Indeed the Spitler recommendations are congruent with TCM treatment strategies. The same treatment colors can be used according to both systems.

Dr. St.Clair made yet another convincing case for the potent, promising and currently evolving combination of syntonic optometry and Chinese Energetics. Many vision problems can be optimally and lastingly resolved by the combined treatment of syntonics to balance the nervous system and light/acupuncture to address any underlying energetic and organ imbalance.

Larry Wallace:
Syntonics and Head Trauma

Dr. Wallace expanded on his previous talk on "Syntonics and Head Trauma", and introduced more specific recent studies to diagnose and understand the total body ramifications of head trauma. He made a convincing case fors as the most effective and harmless global treatment to reverse the trauma. Once the nervous system is rebalanced, the body will be more responsive to other forms of healing.

Dr Amenís offers Spect scans to specifically diagnose the areas most affected by the trauma. He lists the potential functional and behavioral symptoms related to the affected area. While Dr Amenis relies on drugs for treatment, Dr. Wallace would definitely recommend Syntonics.

Within the Heart Math system, head trauma often leads to total body incoherence, starting off with heart incoherence. Syntonic treatments will rebalance the nervous system and reintroduce coherence

According to Dr. Upledgerís craniosacral teachings, any head trauma will be accompanied by a variety of local energy stagnation cysts in various parts of the body. While Dr. Upledger works locally to dissolve the cysts, Dr. Wallace suggests syntonics as a global treatment to reach the same goal.

Dr Wisneski, a proponent of psychoneuroimmunology, believes that the pineal gland is of central importance to balance the nervous system and to coordinate events inside and outside of the body. Although he proposes that light, sound, touch or magnetism can be used for pineal treatments, he does not seem to be specifically aware of syntonics.

Dr. Wallace finally mentions NORA, and lists the various PTSV symptoms. Then he presents the practical results from syntonics treatments of persons with recent head trauma (including post cerebral vascular accident trauma), for a study he did at a multimodality clinic in Rochester, NY.

Most of his patients received treatment rounds of indigo and blue green- without flash. Patients with yet unreleased motor tension received initial treatments of

red or yellow green to release the freeze response. Visual fields including color fields enlarged for most patients in the study. Blindspots were reduced to normal limits.

Syntonics is indeed the little known secret, a noninvasive electrical treatment that can benefit most head trauma and post stroke patients, with the least amount of biochemical side effects or interference. Larry's journey has been to unveil the secret, and to share the enormous potential of syntonics with an ever widening audience.

John Downing: Neurophotocurrent Deficit

John Downing, O.D., made an inspiring and enlightening comeback with a retrospective analysis of 26 years of experience treating patients with colored light therapy in an adult holistic optometric light therapy practice. In presenting an original and unique way of looking at brain function, he used some new terminology that is different from traditional syntonics nomenclature.

First he summarized the essentials of photo neurophysiology. Light strikes the retina, is converted into direct electrical nerve current called *neurophotocurrent* which stimulates the visual cortex, cerebral cortex, limbic system, and brain stem, and entrains the hypothalamus to maintain balanced biological rhythms and proper functioning.

A partial physiological interruption of neurophotocurrent along the optic nerve decreases the amount of neurophotocurrent reaching the brain. This causes a depression of the visual field and a reduction in the brain's nerve flow, reducing its ability to function optimally. Dr. Downing calls this condition *neurophotocurrent deficit*, the treatment of which is within the scope of practice of optometry.

Symptoms of Neurophotocurrent deficit are rather diverse and include headaches, pain, learning problems, poor concentration and memory, poor coordination and athletic performance, hyperactivity, lethargy, fatigue, depression, seasonal affective disorder S.A.D., fear, anxiety, phobias, sleeping problems, stress, photophobia, vision problems, hormonal imbalances, poor self esteem, and other mental, emotional and physical problems.

Choosing the correct color stimulus is essential. John stressed repeatedly that the same color is not necessarily indicated to treat the same symptoms for in two different patients. After decades of studying and seeing more than 700 patients with Neurophotocurrent Deficit, he has developed a detailed and comprehensive treatment protocol for colored light therapy.

Dr. Downing feels that an individual's constitutional brain rhythm sets the dominance of the autonomic nervous system and he has developed a system to determine whether this constitutional brain rhythm is too fast or too slow. This fast or slow deviation from normal establishes a person's neurological type.

A fast neurological type corresponds to the syntonic sympathetic dominant and a slow neurological type corresponds to the syntonic parasympathetic dominant. However, his protocol for analyzing a person to determine the neurological type and the specific color stimuli used for treatment differs in many instances from traditional syntonics.

He presented some case histories to illustrate the importance of treating the patient, not the symptoms. He introduced two patients with epileptic symptoms, one a fast neurological type and one a slow neurological type. Colors from the blue end balanced the fast type, while treatments from the red side energized the slow type.

Epileptic seizures for both decreased dramatically. Two other patients shared the same symptom of amenorrhea and due to their different neurological constitutions they also required opposite color stimuli to correct their Neurophotocurrent Deficit and eliminate their amenorrhea.

The beauty with colored light therapy administered through the eyes is that it does not change just one symptom, but many symptoms for the patient. This is because it targets brain function, where major positive nervous system shifts can happen rather quickly.

The lecture left us with an exhilarating sense of the awesome potential of light, a reminder of how much we want to bring this modality into mainstream consciousness. Welcome home, John. Thank you for sharing your insights so that we may benefit from your experience and keep on working with light, one client at a time.

Edited by John Downing.

INTRODUCTION TO INTEGRATIVE BIOPHYSICS

By
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Prepared for publication in: Popp, Fritz-Albert / Beloussov, Lev V. (eds.): Lecture Notes in Biophysics, **Vol.1. Kluwer Academic Publishers, Dordrecht 2002.** A short excerpt follows:

Nonclassical light

Recent findings in the new field of "nonclassical light" confirm that these phenomena of quantum coherence are the more pronounced, the lower the intensities of the light, or in many cases, only are possible at low intensities (Pike & Walther, 1988; Meystre & Walls, 1991). Nonclassical light is light at very low intensities (single photons), which shows properties, such as antibunching and squeezed states, not explainable in the framework of classical optics. For this reason, it can only be treated nonclassically. Recently it has become clear that squeezed states actually are a more general concept than coherent states, and the latter should be considered as special cases of the former (Li, this volume). While in coherent states the uncertainty of momentum and that of position are equal, in squeezed states either the momentum uncertainty is bigger than position uncertainty, or vice versa. Therefore, in squeezed states, we still have coherence, but not a coherent state. Squeezed light can both be focused narrowly to a spot of atomic dimension, or extended over the whole volume of an organism. When the phenomena predicted and experimentally verified by this very young field of quantum optics became known, they perfectly seemed to fit the findings of biophoton research; recently the earlier proposition of Li (1992), Gu (1998) and Bajpai et al. (1998) that squeezed light existed in living systems was confirmed by Popp et al. (2001).

Bajpai, R.P., Kumar, S., Sivadasan, V.A. (1998) Biophoton emission in the evolution of a squeezed state of frequency stable damped oscillator. *Applied Mathematics and Computation*, 93, 277-288.

Popp, F.A., Chang, J.J., Herzog, A., Yan, Z, and Yan, Y. (2001) Evidence of non-classical (squeezed) light in biological systems (Physics Letters, accepted for publication). See http://www.lifescientists.de/publication/pub2001-08.htm

MICROCURRENT STIMULATION

Microcurrent stimulation has been used by mainstream medicine for years. However, its use as a treatment for macular degeneration has been limited to the fringes of medicine. The Macular Degeneration Foundation decided to study all available science and anecdotal evidence. We are very encouraged by what we learned and will be making an announcement in the near future regarding how people with ceriatn forms of macular degeneration may acquire a microcurrent stimulator for personal use.

RED LIGHT RESCUES RETINAS – March 4, 2003

Red light rescues retinas from methanol poisoning in rats. Shining red light into intoxicated rodents' eyes stops them going blind. Sitting methanol-poisoned rats under a near infrared light source for two and a half minutes each day reduces swelling in their retinal cells, making them "more responsive " to light. Researchers used a light-emitting diode that produces infrared light with ten times the energy of infrared from the sun, while remaining cool to the touch. The device is about the size of a cigarette packet and is lightweight and cheap. Researchers hope that light therapy might also alleviate other retinal diseases such as macular degeneration.
Nature News Service/Macmillian Magazines 2003

the healing power of light influences so many lives

Syntonic optometry has long known about the benefits of color light therapy as a primary or complementary treatment in a range of applications. Color light therapy unlocks the healing power of light energy in each of us. Spectrahue's state-of-the-art LumaLight 2000 series of handheld, desktop and wall/ceiling-mounted color therapy tools sets the standard in clinical applications of color light.

LumaLight 2000 deluxe – a powerful handheld torch

A selection of up to 18 color lenses. Battery operated and portable for professional or personal use anywhere. The most targeted applicator for color light. A gentle approach to wellness with a 2.3 volt lamp.

LumaLight 2100 - hands-free portable desk model

This professional state-of-the-art illuminator projects color rays up to 15 feet. Like the wall/ceiling-mounted 2050, it allows for longer applications of single color tonations.

The Spectrahue Edge

The color integrity of our illuminators is achieved through our pure crystalline quality lenses composed of vaporized minerals coated onto clear glass. Each lens is 80 per cent more effective in energy transmission and color ray purity than plastic, gel or color glass filtering systems.

for more information on our complete product line and our audio-visual instructional programs, contact your local distributor or

Spectrahue Light and Sound Inc.
(416) 340-0882
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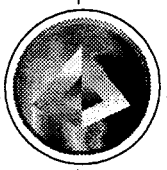


Spectrahue's mission is to be a global leader in developing the advanced knowledge and technology that empower people to use color light therapy for good health and the best possible feeling of well being.

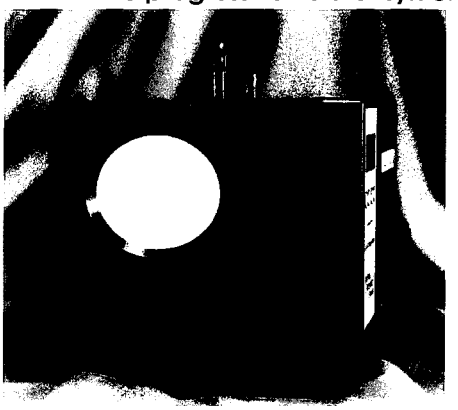
Spectral Illuminator™

Color Illumination System for Phototherapy

The *Spectral Illuminator*™ system is the most advanced phototherapeutic instrument available for experimentation and application of color therapy. Its versatility and complete programmability enables individually-customized treatment protocol parameters. The *Spectral Illuminator*™ has an unsurpassed reputation for dependability and utilization within the progressive field of syntonics.

Just some of the advanced features!

- Manual or Automatic control of both color and flashrate
- Completely Programable and Detachable Remote now available with pre-programmed CSO Protocols
- 20 Spectroscopically analyzed high-purity, vibrant colors evenly distributed across the entire visible spectrum
- Largest viewing aperture of any available instrument
- Continuous color or flashrates up to 15 cycles/second
- Unconditional 1-year parts and labor warranty



For price, delivery or additional information, contact:

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