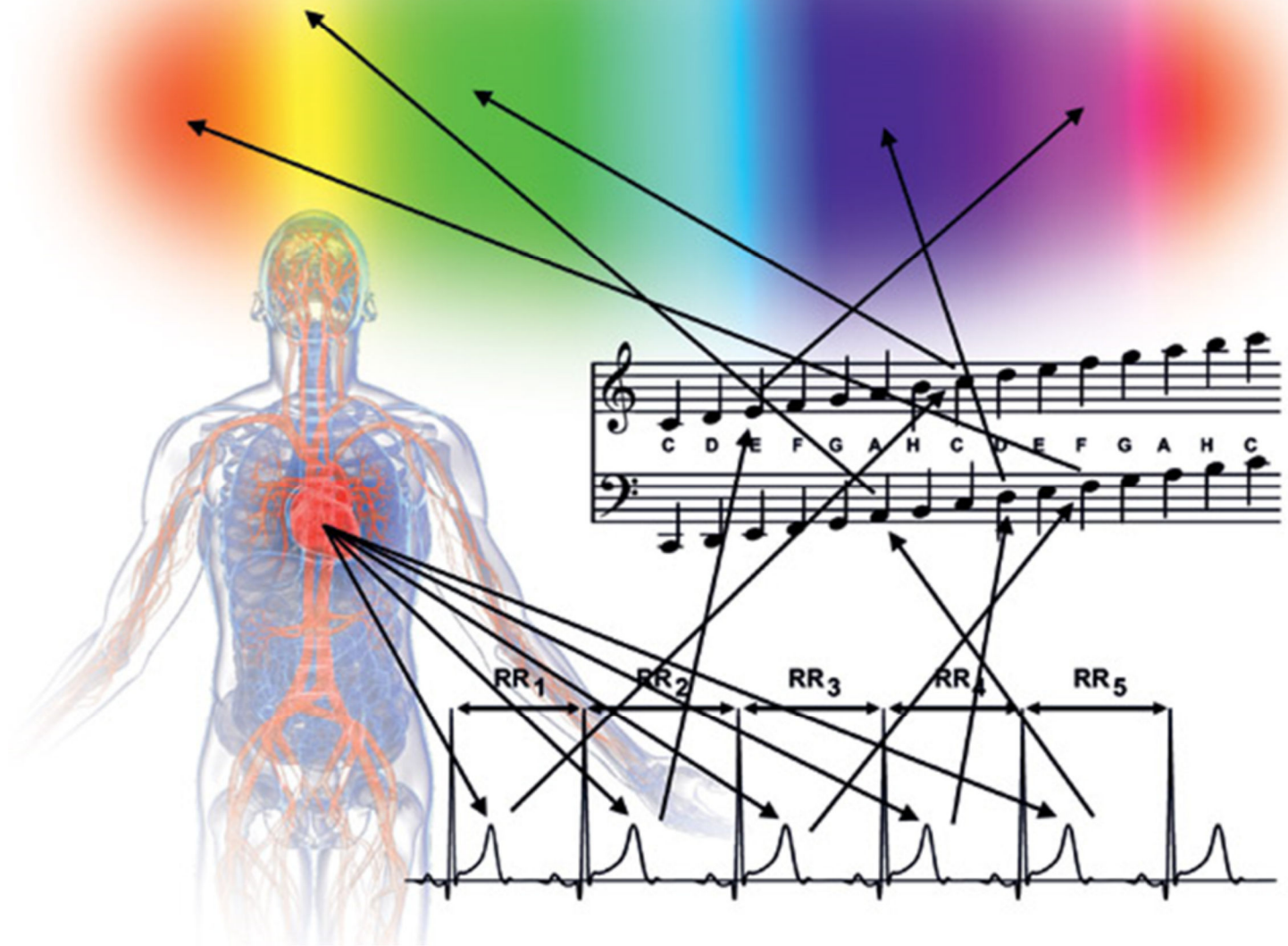


# Journal of Optometric Phototherapy

April 2018



## 5280 Color Fields

Translation of body's own frequencies into sound and color-light

Association of Functional Color Field Changes with Imbalance, Spatial Misjudgment, and Nausea in the Treatment of Post-Concussion Syndrome Patients

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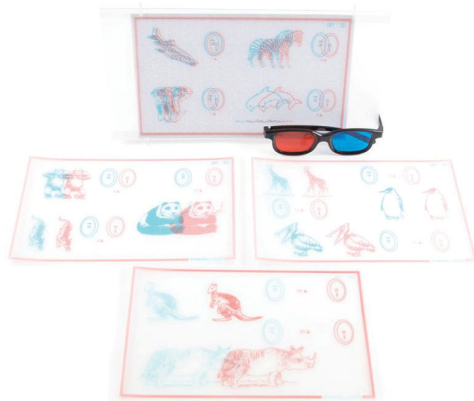
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THE THERAPEUTIC APPLICATION OF LIGHT TO THE VISUAL SYSTEM

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# The President's Message

## Education Mentorship Fellowship

It is exciting to hear more and more practitioners integrating Syntonics into their practices. As more come to understand the importance of balancing the nervous system with Syntonics, our mission in education, mentorship, and fellowship becomes increasingly vital. Interestingly, social media is organically driving demand as patients and parents become aware of the value of Syntonics.

Here at the College we are ramping up our programs to more effectively assist novice practitioners to integrate Syntonics into their practices. Additionally, we are in the process of updating our website to facilitate the locating of Syntonic practitioners for potential patients. I want to encourage our non-members, members, and experienced fellows to join us in Utah for the 101 course and confer-

ence. In this age of electronic communication, personal interaction is still the best way to more deeply understand Syntonics and its appropriate application.

With any organization, it is only as good as its people. We are doubly blessed with great people and a wonderful message in Syntonics. I invite you to join us in sharing the joy of Syntonics in Utah!



~ Hans F. Lessmann, OD, FCSO, FCOVD

## Pre-Conference: Syntonic Phototherapy 101

Wednesday and Thursday, May 16 and 17, 2018

**Introduction to Syntonic Phototherapy and Scientific Update** by Ray Gottlieb, O.D. Ph.D., FCSO

**The History and Theory of Syntonic Phototherapy** by Larry Wallace, O.D. Ph.D., FCSO

**Pupils** by John Pulaski, O.D., FCSO

**Visual Fields and Butts String** by Mary VanHoy, O.D., FCOVD, FCSO

**Syntonic Treatment Protocols**, by Rob Fox, O.D., FCOVD, FCSO

**Review of Syntonic Syndromes and Cases** by Rob Fox, O.D. and John Pulaski, O.D.

**Integrating Syntonics into your Practice including Instrumentation and Testing**

by Phil Bugaiski, O.D., FCOVD, FCSO

**Hands-on clinic: Visual fields and Pupils**, by CSO Faculty

## Pre-Conference: Advanced Syntonic Track

Thursday, May 17, 2018

**Advances in Understanding the Autonomic Nervous System** by Ray Gottlieb, O.D., Ph.D., FCSO

**Advanced Analysis of Colour Visual Fields** by Denise Hadden, FOA [SA], FCSO,

**Concussion Treatments** by John Pulaski, O.D., FCSO and Robert Fox, O.D., FCOVD, FCSO

**Optometric Photo Therapy and Postural Rehabilitation** by Larry Wallace, O.D., Ph.D., FCSO

**Syntonics and Strabismus** by Brenda Montecalvo, O.D., FCOVD, FCSO



# 5280 Color Fields

Stefanie Marie Ohrns, B.A., COVT

## Abstract

*Background:* The purpose of this research is to study the relationship that altitude and oxygen levels have on a color field. Typical color field sensitivities range from most sensitive to least, green, red, then blue. However, color fields at a mile above sea level show a different outcome; sensitivities show red, green, and then blue.

*Methods:* Color fields were administered to 21 Denver, Colorado residents ranging in age from 14 to 74. The research group inhaled oxygen after their initial field and then immediately a repeat field was completed. The control group was also given 2 consecutive color fields to rule out the patient getting better at taking the test.

*Results:* With these experiments, the goal was to demonstrate that when oxygen was added the red field in a color field would increase. The findings demonstrate that not only did the red field increase with the increase in oxygen but all fields increased.

*Conclusion:* The color fields show the circulatory system is working harder for Colorado residents creating strain on the system, hence producing a constricted red field. When the circulatory system is given aid with the addition of more oxygen the red field appears more normal and can mirror that of other patients at lower altitudes.

“Mile-High” or 5,280 feet above sea level is where Denver, Colorado is located. At this altitude the amount of oxygen in the air is decreased, forcing a person’s autonomic nervous system into overdrive to deliver oxygen throughout the body. The stress of this response could potentially influence the findings of a syntonics functional visual field. This paper will be exploring the effect that altitude and oxygen levels may have on the results of a person’s functional visual field, specifically the color field.

In Denver, there is 17% less oxygen in the air than at sea level.<sup>4</sup> Visitors can demonstrate symptoms of altitude sickness, ranging from headache, muscle aches, sleepiness, nausea, fatigue, and shortness of breath. These symptoms are a result of hypoxia. Hypoxia is when bodily tissues are oxygen deprived due to the lack of oxygen in the blood.<sup>5</sup> The body ultimately has an autonomic response where the sympathetic nervous system increases heart rate, resting metabolic rate, and the production of red blood cells. The parasympathetic system is then stimulated to reduce the maximum heart rate.<sup>3</sup> These two systems, the sympathetic and parasympathetic, are what influence the color field in a functional visual field.

A functional visual field measures generalized constriction of form and color as well as an enlarged blind spot.<sup>2</sup> According to Larry Wallace, O.D., color fields are the most sensitive part of the visual field, providing information on both the physical and emotional state of an individual. The information derived from the field is used to determine the type of therapy to use and the effectiveness of the therapy.<sup>1</sup> This field of study is coined Syntonics, based on the work of Dr. Harry Spitler. In Spitler’s book, *The Syntonic Principle*, he states “Syntonics” is derived from the word syntony or balance, where he refers to a physiologically balanced integrated nervous system.

In the color field, each of the colors correlate with specific health findings. Green field constriction is related to immune dysfunction or toxins in the system. Red field constriction involves long standing health problems, specifically in the circulatory system. Blue field constriction correlates with heart and adrenal system issues as well as stress and headaches.<sup>7</sup> Typically, color sensitivities range from green to red to blue, with green being the smallest of the fields.<sup>1,2,6,7</sup>

However, in Denver, with the increase in altitude, decrease in oxygen, and the presence of hypoxia creating the need for the autonomic nervous system to be heightened, the results are not in agreement with this finding. It appears that color sensitivities range from red to green to blue, with red being the smallest of the fields. These results became apparent after studying Syntonics and comparing color fields from different parts of the United States. When this pattern continued to develop, a more in depth study was warranted. The goal of this research was to show the red field being tied to the circulatory system would increase with the introduction of more oxygen. Research into this matter was conducted in the form of oxygen inhalation, continuous positive airway pressure (CPAP) machines, and locating to a lower altitude.

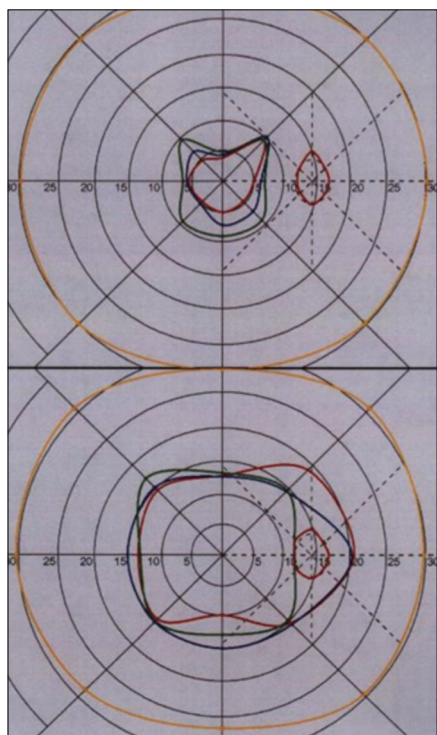
Functional visual fields were administered as trained by Dr. Robert Fox on the campimeter, by the Belgian manufacturer Optomatters, with a grey background, using a 1.5 mm colored circle wand, in a dimly lit room. Each field was performed by the same practitioner. If the patient wore lens correction, it was removed. The left eye was first, followed by right. The motion field was measured first by having the patient report when they saw something moving and to disregard color at that time. Next, the colors, white or green and red or blue, where the patient was instructed to report what color they perceived. Finally, the blind spot was mapped out, going



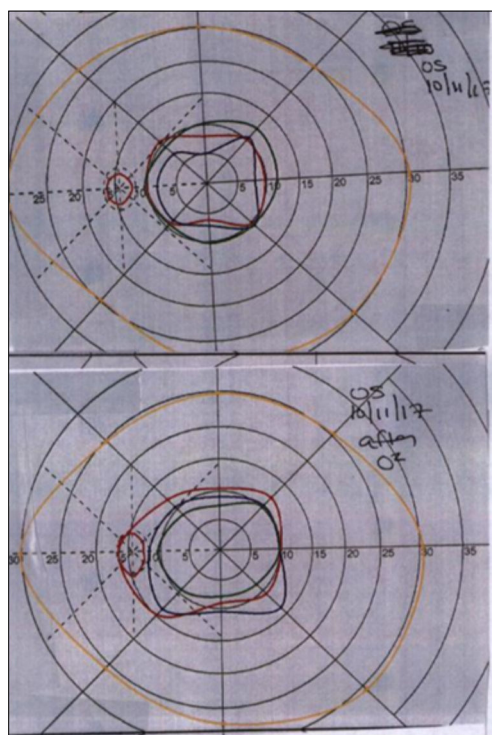
from seeing to not seeing. It should be noted that for this study, all 21 participants, were Colorado residents with ages ranging from 14 to 74. All participants were in relative good health, the only notation was participant/figures 1 and 3, who reported high blood pressure and Type 2 diabetes. In order to rule out participant learning curves, this study also included a control group of 5 participants. This group performed the initial color field as all others but then waited 3 minutes and a repeat field was done. These participants showed no change in their fields and the repeat field was almost identical to their initial field.

Figures 1-4, ranging from most constricted to least, all show an initial red color field as the smallest field com-

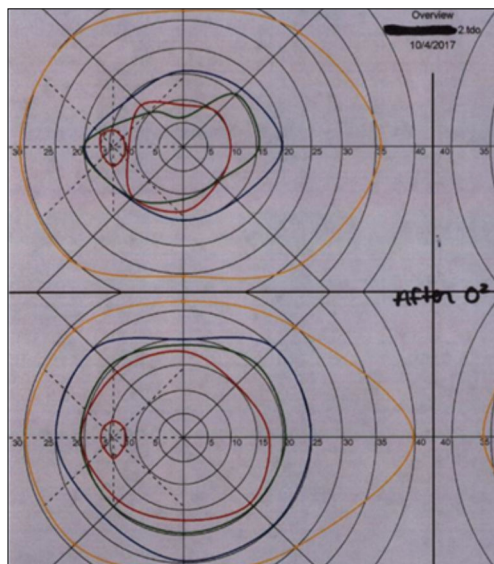
pared to the other colors. After the initial field was taken, all of these participants were asked to take 3-5 deep breaths from a canned air canister. Unfortunately, for this experiment, oxygen tanks and masks were unavailable so research determined the next most efficient way of delivering 95% pure oxygen was through Boost Oxygen. Boost Oxygen Natural Oxygen is 95% purified oxygen that comes in a can and is used as a supplement to enhance sports recovery, alleviate high altitude effects, remedy hangovers/fatigue, and promote a heightened sense of personal health and well-being. Boost states their supplemental oxygen is the #1 recommended remedy for the symptoms of altitude sickness caused by the deprivation of oxygen to the body.



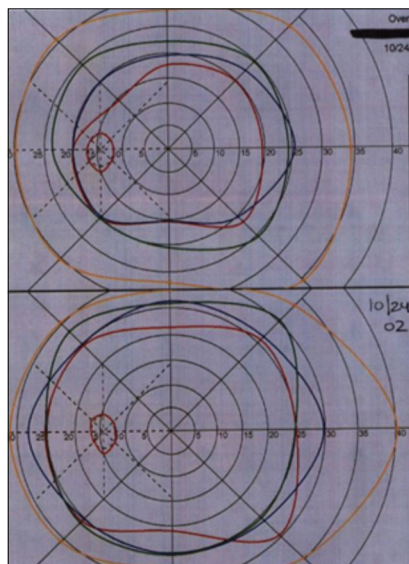
**Figure 1**



**Figure 2**



**Figure 3**



**Figure 4**

Once the oxygen was inhaled, the participant waited 2-3 minutes before repeating the field in the same order as the previous one. In these four cases (Figures 1-4) it shows that with the introduction of oxygen the red field indeed increased. In Figure 1, the red field went from a 5 degree field in some parts to 15 degrees. In Figure 2, the red field even became the largest of the colors, expanding beyond the blind spot in one area. In Figure 3, while the red field is still the most constricted, it increased in size from the smallest point at 9 degrees to 18 degrees. Figure 4 was the most enlarged field but here too, with the oxygen inhalation, it increased in size with the most constricted point at 15 degrees expanding to 25 degrees. It should be noted, that 100 percent of the participants that inhaled the oxygen had at least a 5 degree enlargement in their red field, 92 percent in their green field, and 100 percent in their blue field.

Figures 5 and 6 are different experiments but are still experiencing an increase in oxygen levels. The participant in Figure 5 began using a continuous positive airway pressure or CPAP machine. The initial field shows colors all interlacing and lacking uniformity. Here, green appears to be the smallest field with one point at the 5 degree mark. This participant's functional visual field was completed in the same manner as all others except the repeat field was conducted after a night on the CPAP machine. The repeat field shows the red field to be the smallest, most constricted field of the colors but there is more uniformity to the colors and not as much interlacing.

In Figure 6, the initial field was conducted the same as all prior fields but this par-



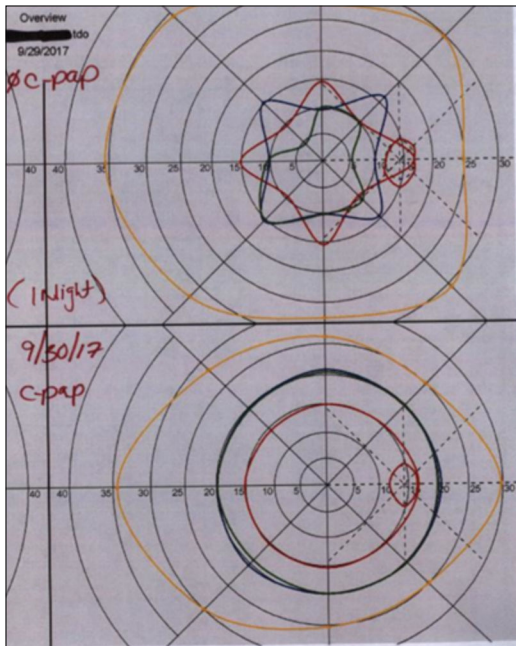


Figure 5 (C-PAP)

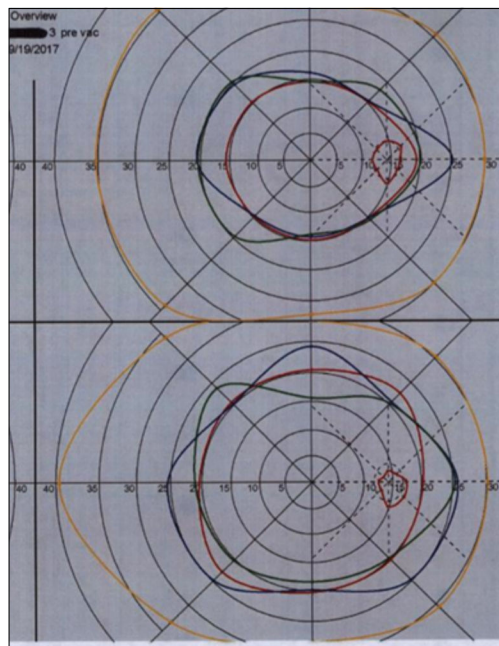


Figure 6 (Vacation at sea level)

Participant spent a week at sea level, then came back for a repeat field. Like the others, the initial field shows red to be the smallest, most constricted. Whereas, the repeat with a week at sea level with higher oxygen levels shows an increase in the red field expanding the green field in two spots: going from a 15 degree field to a 20 degree field, respectively.

The evidence seen in these fields shows the circulatory system is working harder for these individuals creating a strain on the system, hence producing a constricted red field. When the circulatory system has some help with the addition of more oxygen in the blood stream, the red field appears more normal and can mirror that of other patients at lower altitudes. While residents living at a mile above sea level can benefit from additional oxygen, so can many other people not necessarily in Denver, Colorado. Oxygen is needed for all parts of the body to function properly. With these experiments, the goal was to demonstrate that when oxygen was added the red field in a color field would increase, but the findings conclude that not only did the red field increase with the increase in oxygen but all fields increased. It should be noted that even though the fields increased with higher levels of oxygen, oxygen will not take the place of optometric phototherapy. If Denver residents were at a lower altitude their bodies may not have to work so hard to maintain regulation or balance and they could focus on other ways of healing. Phototherapy offers aid to the autonomic nervous system through wavelengths of light that have great benefits to a patient for a multitude of reasons and conditions. It is easily obtainable for patients suffering from visual dysfunctions, amblyopia, strabismus, traumatic brain injury, reading difficulties, and headaches to do optometric phototherapy and alleviate symptoms but a little oxygen can go a long way too.

**Acknowledgements:** Robert Fox, O.D. for sharing his knowledge and education in the field of Syntonics and endless support with patients.

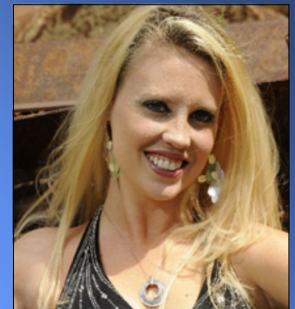
Jeri Schneebeck, O.D. and Jennifer Redmond O.D. for their continued daily support and opportunities for education.

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**About the Author:**

Stefanie Ohrns graduated from the University of Colorado Boulder in 2010 where she received a BA in Psychology and an Elementary Education License. She has worked as a vision therapist since 2007 and became certified from the College of Optometrists in Vision Development in 2012. Stefanie is the Para Optometric Program Speaker Co-Chair for The Colorado Vision Summit Committee, where she has spoken at conferences in 2011 and 2016. Stefanie is also a member of the Neuro-Optometric Rehabilitation Association. She has been a volunteer with Special Olympics vision screenings for 3 years. Stefanie enjoys working with patients with binocular dysfunction, amblyopia, strabismus, pushing athletes to their peak performance, however, her passion is traumatic brain injury. She loves working one-on-one with her patients and seeing the difference vision therapy makes in their lives.





# Translation of body's own frequencies into sound and color-light

Rasmus Franciscus Gaupp-Berghausen, Dipl.-Ing. in Landscape Architecture and Planning, MSc in Agricultural Science

Probably one of the oldest approaches of healing throughout the entire world is through sound, rhythms and light. Every mother tries to bring her child to sleep by singing, humming or offering some comfort with nice soothing sounds.

We humans are literally sound. The word person is derived from per-sonare, which means "sound going through".

From quantum physics we know that the more we divide matter into smaller parts the closer we get to a level in which everything finally ends in vibrational energy.

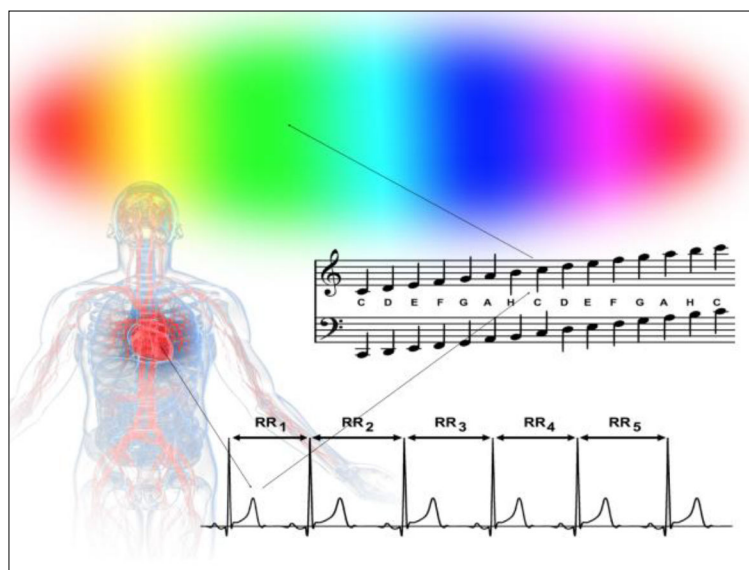
Even though our technical world gets more and more specialized, new findings, methods, remedies and approaches help us to live a long and healthy life. Yet many health related issues remain and in some areas even become continuously worse.

Today we have more than 40,000 defined symptoms, we define up to 16,000 genetic caused diseases and we try to solve these problems in more than 50 medical specializations and professions. Despite more and more accurate and technical practice of medicine, the cancer rate, for example, continuously increases. Cardiovascular and circulatory diseases are recognized as the leading cause of death in our society. According to the WHO, one-third of the global deaths are caused by heart related diseases. We could continue with all these kinds of figures.

Focusing on all the different and isolated topics is maybe the main reason why so many problems are still not solved today or are even continuously increasing. Jiddu Krishnamurti once beautifully said: "Analysis is paralysis".

Are we living in a world where the huge technical health apparatus and pharmaceutical dominated approach can maybe not solve all the problems we face today? Did we reach a point, despite this amazing technology and knowledge medicine has gained, where the conventional therapy has reached its summit?

Many people today come to the conclusion that medicine has to open its gate to new or maybe old/ancient understandings of healing. Maybe our ongoing war and



fight against diseases is not always the proper way to deal with the problems we face today. An often quoted statement of Albert Einstein says: "We cannot solve our problems with the same thinking we used when we created them".

Life and health seems to be much more than the sum of its, for us humans, separated and divided parts.

But what is healing and when does healing actually take place?

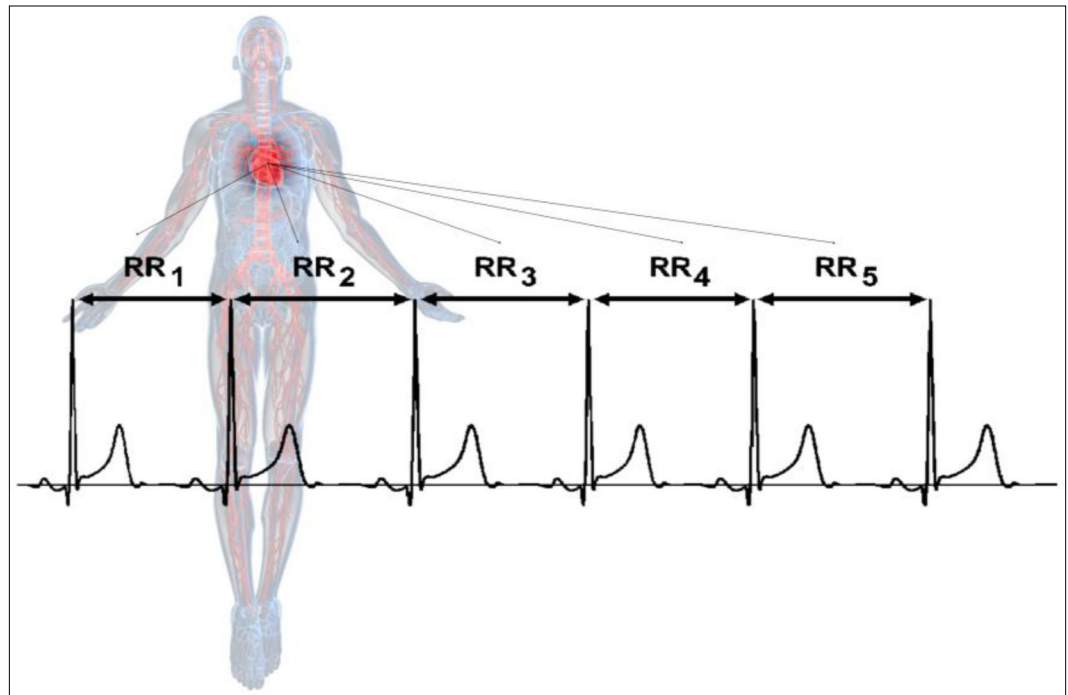
We know that no one has ever healed another person. We can accompany, support, guide and help another person, but the healing process itself has to be done by each individual him or herself. We are made of several trillion cells. Each second we produce and replace about 50 million cells. There is an intelligence in our body, which no therapist can even closely comprehend and understand.

One interesting observation is that we humans have an always changing rhythm of our heart beat. The Heart Rate Variability is regarded today as a global indicator of the regulatory capacity of the human.

This is maybe why also in a physical perspective our heart is much more than a pump. It is the center of life itself, it is unique with each single heart beat.

For me the most beautiful description of life is: "Life is Change in Movement".

The HRV is an analytical method in medicine, describing the variability of the heart rate, which has been established already for a long time. This is regulated by rhythmic changing activity of the parasympathetic and sympathetic division of the autonomic nervous system (ANS). A healthy human heart beats (in contrast to the general assumption) in relation to the distance between each heart beat not exactly regularly but subtle irregularly (RR1, RR2).



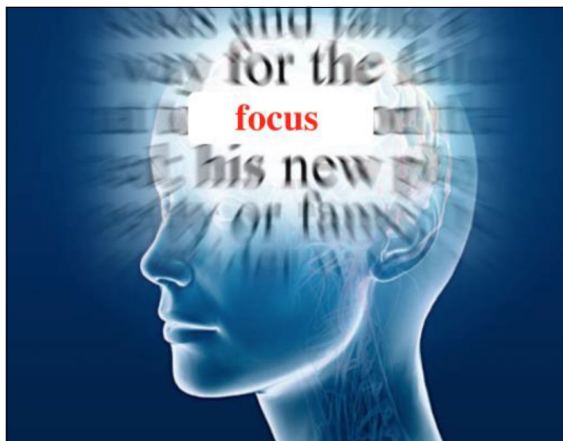
### Heart Rate Variability

Stress situations, caused by physical and / or mental stress, leads to an adaptive response of the heart, showing a decrease in the variation range from beat to beat of the heart rate. On the other hand, the variation range increases during rest and relaxation.

Several thousand studies related to HRV show one common fact; the better the HRV the better we regenerate, adapt to stress and the more efficiently we respond to supplements and medications.

### Focus of the brain – Reduction of the HRV = Focus of the heart (?)

A very interesting observation is the direct influence of our ratio / thinking to the HRV. The moment we focus with our thoughts the moment our HRV values decrease.



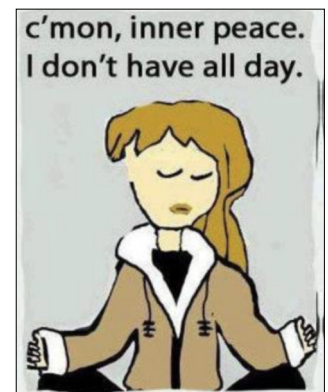
Through our continuously chattering mind, our worries and daily focus on all kind of matter we literally “train” our heart to beat less variable. We teach our children already in very young age to focus. We tell them that they have to focus and concentrate to become successful one day. We tell them how they have to “bring it to the point”.

The brain with its ratio could also be described as a “focus organ”. As we can only focus with our eyes to one layer/point, our brain as well can only focus on one thought at a time. One cannot have two thoughts, no matter how intelligent one is, at the same time.

This focus of the ratio can literally be shown in a live plot of the RR intervals of the HRV. The interesting observation I made during the last years is that the moment a person becomes present, meaning no thoughts, no worries or focus, simply be completely in the ‘Here and Now’, the HRV automatically starts to increase again.

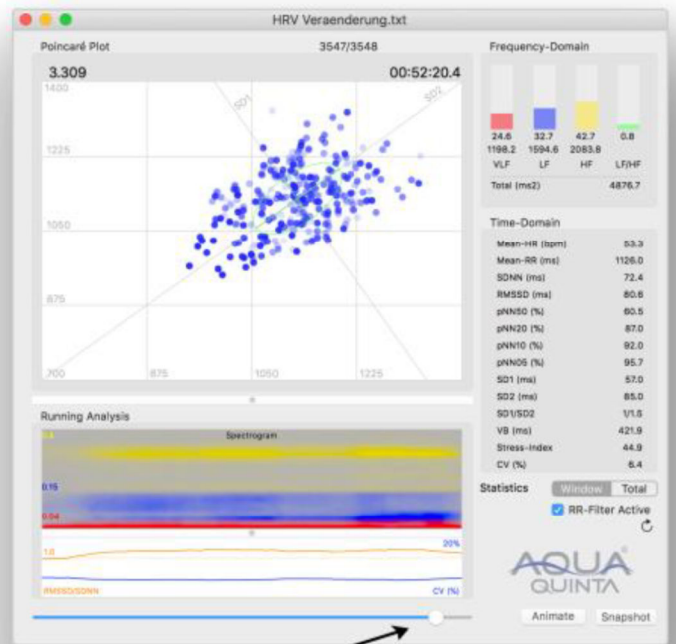
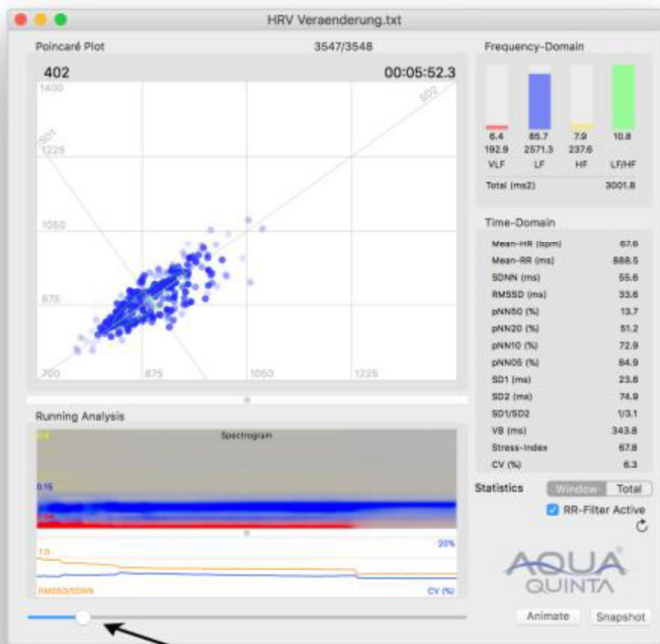
The moment we think we are not present we are in a horizontal movement. Thought needs time. Thought has developed through time and needs time to express itself. The problem is that the thinker cannot say to the thought: “Stop thinking”.

Especially if we are overloaded with worries and fears it is difficult to stop thinking about it. If a person gets a very bad diagnosis from a practitioner it is literally impossible to stop thinking and focusing on the problem we have to face. This focus and fear leads to a further decrease of the HRV values and thus nurtures the defined problem.



(Source Stacy Ranieri / Pinterest)

So, the main question is: How to become present? How can we relax and reach a state, where real healing can take place? How can we interact / get in coherence with the continuously changing frequency of our surrounding? Through meditation practices we can learn to calm our mind. The problem is that it takes quite an effort to learn and reach a deep level of



Document changes during treatment

meditation. Further if we are very stressed, and especially worried in our daily life, or even if someone gets diagnosed with a serious illness, it becomes very difficult to reach a high level of inner peace.

It is interesting that the moment we use and are aware of our senses and the information which is being sent to the brain, the thought and focus ceases. In that state the HRV increases and the sympathetic activity decreases.

We cannot really hear, feel, taste, smell, and also really see and think at the same time. We can use our senses superficially and think at the same time. But if one really sees, observes, without comment, really sees (or use another sense) without separating oneself with the brain and its comments, the brain gets quiet.

In the ancient Sanskrit texts of the Vedas, the Upanishads is already beautifully written

*“...What cannot be seen with the eye, but that whereby the eye can see...What cannot be heard with the ear, but that whereby the ear can hear...”*

The German word end or quit is *aufhören*. Auf-hören literally means to listen to something. So, the moment we really listen, our thinking activity stops. The separation from the Me/I/Ego to the surrounding, the separation from the observer to the observed ends through listening “auf-hören”.

### “Sound and color light deriving from the heart”

For me probably the most interesting part to study is the heart. The heart is much more than a pump, beating about 100,000 times a day, circulating daily several tons of blood through our body. The heart is, at least in any culture, the center of love, compassion, happiness, empathy and even health.

I think the heart is our connection to life itself--to lifelines and thus finally healing--not only in a spiritual term, but actually in a physical interaction with its surroundings, causing the “ease” in life or if disconnected (by the brain (?) dis-“ease”.

But what makes the heart so special, besides it tirelessly transporting blood through our body?

Christiaan Huygens, a Dutch scientist, mathematician, and inventor described in the seventeenth century the interaction of two pendulum clocks, the so-called entertainment or spontaneous synchronization.



Christiaan Huygens

It is interesting that our heart seems to interact with its surrounding too: not only in a spiritual way, but actually in a physical phenomena of coherence. Our heart interacts with the frequency of oth-



er hearts. Our heart seems to interact with any internal and external frequency.

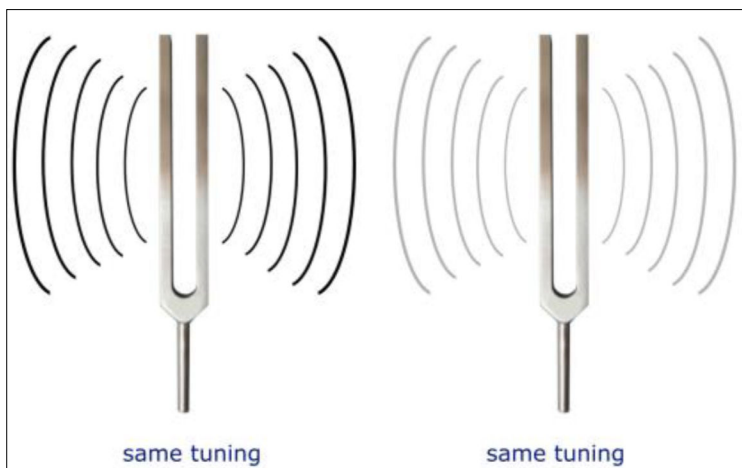
My work today focuses on these phenomena. I think the cause of life, health and growth in nature is based on these coherence phenomena. The extremely low Schumann frequency for example, which is part of the earth's electromagnetic field spectrum is said to be between ~8 Hz to 14Hz (first and second level).

An interesting observation shows that our muscle cells, even if they get isolated on a petri dish, keep on vibrating between the same frequency ranges.

Studies of researchers like Vladimir Voikov/Russia, Gerald Pollak/USA and Emilio Giudice/Italy raise the question that maybe a resonance phenomena causes a change of the pH range in a closed media, like in a muscle cell? Maybe this is an overseen source of energy sustaining life processes on cellular level.

What is coherence and what are the effects? The simplest way to explain coherence is with resonating tuning forks. If you hit one tuning fork and the other has the same tuning or a tuning which is in a harmonic musical proportion, like the octave, fifth or alike, thus a direct overtone to the sound emitted, it resonates, implying that it takes up the vibration and starts to vibrate by itself.

This experiment can be done easily. If you have a piano and hit a note, you will literally feel the vibration on your finger if you gently try to touch the strings of related first or second overtones.



The first overtone is the octave, the second the fifth, etc. So, if you play a Do, all the other Dos and the Sols will also start to vibrate.

### How do we get an octave?

If you take a sound, let's say 256 Hz (Do) and double its frequency you will hear the octave Do' with 512Hz. If

you divide a string exactly in the middle, for example by pressing the finger on an instrument, the remaining string will vibrate exactly twice as fast, thus we get the same result and hear the octave.

The interesting thing is, that we can continuously divide a string by 2 – 4 – 8 – 16 – 32 and so on and we will always get exact a sound which is 1, 2, 3 ... octaves higher than the sound the string would play without any division.

The mathematical symbol for eternity is the lying  $\infty$ ...

What implication does this have?

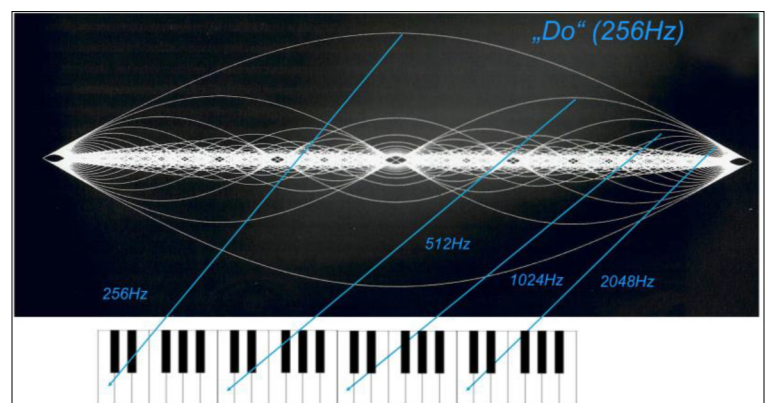
The word information literally means that a vibration is translated into a form: In-Form. It is interesting that in relation to vibration and coherence as described above is that you can translate a vibration, based on doubling the frequency, and still generate resonance. Simple example would be if you read the letter A in a very little size or a big letter A, you still get the same information. You do not read more A!...

Information is as it seems not necessarily dependent on the size itself.

If the heart has more functions than only circulating blood, the continuously changing frequencies of our heart, deriving from the interactions of the heart with body functions, as the respiration cycle etc, but also from interactions from outside (there is probably no complete closed system in this universe), may be the actual source for our continuously ability to regenerate thus keeping health sustaining functions literally alive.

In 2011, I launched a technology, which translates the frequency of the heart, based on the HRV, into an audible and visible frequency range.

Through this so called "Sound of Soul" technology it is possible to encounter oneself live 'Here and Now' in sound and color-light.

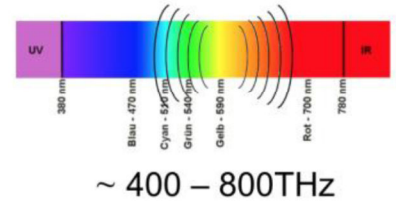
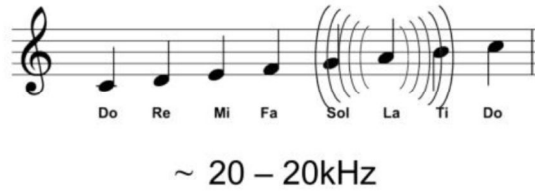
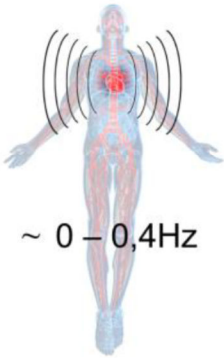




### Law of Resonance

Same tunings and tunings, which are X-Octaves higher/lower resonate

(Formula:  $f \times 2^n$ )



Sound and color-light are probably the two frequency windows in which we humans, but probably all living beings on this planet can most easily interact. The frequency window differs of course between species. We hear from about 20 to 20,000 Hz, which would correspond to 10 Octaves on the piano, whereas dogs can hear up to 50,000Hz or bats even up to 120,000Hz.

The technology *Sound of Soul* translates the continuously changing frequencies of the heart, from the frequency range 0.003Hz to 0.4Hz to the audible range and further to the visual range of light, which is about 400-800 THz (terahertz).

The sounds and colors you experience in the ‘Here and Now’ are based on the continuously changing frequencies of your Heart Rate Variability.

Further it is possible to connect yourself together with another person simultaneously and experience how two hearts react and communicate in form of music and color-light, resulting in a unique encounter of real coherence. The experience of your own color-light is generated through the dominant sound per pulse cycle (sounds are “octave”-ated into the color-light spectrum). Another option is a color-light experience, regulated by the breathing cycle (Respiratory Sinus Arrhythmia / RSA). In this option you can apply given or own defined color light spectra.

### Principle of Sound of Soul

Through this method you are making music, conducted by your heart, your inner vibration.

You hear and experience yourself. You reflect yourself in form of sound and color light.

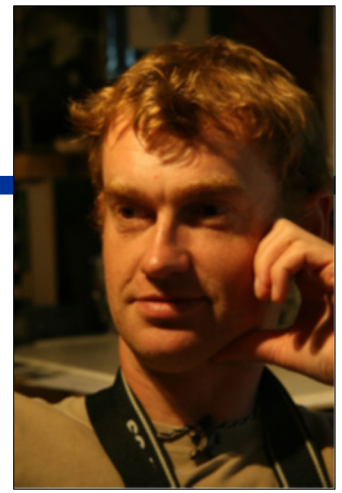
But what benefits do we get from “listening to our heart”? Is our heart really more than only an organ, which pumps blood throughout the body via the circulatory system, supplying oxygen and nutrients to the tissues and removing carbon dioxide and other wastes?

Through the evaluation of the simultaneous recorded HRV data, we see how the effects can bring benefit to the human. This year a study has been initiated, in which the effect during Angioplasty will be observed.

When I launched Sound of Soul 2011, I had my doubts if anyone would think this approach could be interesting. Today doctors, dentists, gynecologists, oncologists, surgeons, practitioner, psychiatrists, alternative doctors, healers, nutritionists, life coaches, simply anybody who is interested in the liveliness, and beauty of the heart and its self-regulation ability are already working with this approach. I was allowed to introduce this method in 25 countries. This new therapy tries to emphasize the beauty of each individual.

(Further Information: [www.aquaquinta.com](http://www.aquaquinta.com))

# About The Author: Rasmus Franciscus Gaupp-Berghausen



Rasmus Franciscus Gaupp-Berghausen was born 01.09.1974 in Austria. Between 1993 and 2002, he studied Landscape Architecture and Planning at the University of Bodenkultur in Vienna and Agricultural Science at the Royal University of Veterinary and Agriculture in Copenhagen. R. Gaupp-Berghausen put his main focus during his studies in Europe and also further studies in Central America on water.

His first master thesis in Denmark focused on the interaction of nutrients between soil and water (*The significance of leaching to nutrient loss under humid tropic conditions in oil palm production sites*). The second master degree in Vienna focused on the removal of endocrine disruptors in water (Das Verhalten von radioaktiv markierten endokrinen Modulatoren bei der Aktivkohlefiltration). Besides becoming trained in the chemical and biological evaluation of water, his main goal was and is to understand how real quality, especially in relation to water, can be determined.

Besides these studies, R. Gaupp-Berghausen has spent years studying alternative approaches regarding water quality. Due to many seminars and lectures he attended, of which several have been organized by him, he realized that only based on the chemical and partly physical methods used today, water quality cannot be described and determined sufficiently. Even before he learned about Dr. Masaru Emoto's technology and approach regarding water testing, he wondered why the same water samples, (and other fluids as for example blood, milk, or plant liquids) despite identical chemical properties, can show completely different forms and patterns when examined under the dark field microscope. It seems that further properties, and especially qualities, which are today unfortunately still neglected or even ignored from the water technological side, have to be determined and described to get a more holistic picture of real quality. Water, especially, seems to be more than only the sum of H<sub>2</sub>O and its ingredients.

In the last years, R. Gaupp-Berghausen cooperated with different scientists to expand his knowledge and experience regarding water. Countless visits to Japan, Russia, USA, Egypt and research centres in Europe and cooperation with researchers Dr. Masaru Emoto/Tokyo, Dr. Ibrahim Karim/University Cairo, Dr. Konstantin Korotkov/University St. Petersburg, Minnie Hein/University Stuttgart has led to a deeper understating of water: an understanding, which is not only related to its materialistic describable properties of water.

In cooperation with Dr. Emoto, R. Gaupp-Berghausen founded in 2004 the laboratory *Hado Life Europe* in Liechtenstein. The main focus of the research and work conducted at *Hado Life Europe* is the evaluation of water or water containing liquids on their form-giving characteristics/changes despite chemical/and or microbiological identical properties.

Since the opening of the laboratory, it has received more than 2000 samples from all over the world. Their origin varies from so called holy springs like Lourdes, Fatima or Zamzam, to springs which are referred as healing water (as used in Wellness centres and Spas), to normal springs and tap water. Further water samples were from big rivers and streams like the Amazon, Nil or Mississippi or even samples from very remote places like the Antarctic, Machu Pichu or Tibet. During these years, he experienced that frozen water magnified under the microscope showed different qualities depending on their recognizable harmonic structures.

To determine quality and thus the positive effect of water to humans and nature both chemical and biological as structural properties, according to R. Gaupp-Berghausen, have to be considered.

Interesting observations during the last years were made regarding vibration. Water seems to have the property to react on any kind of vibration. Experiments with microwaves, ultrasound or just simply with music, have demonstrated that water is able to reflect these impacts and reflect their quality in form-giving processes.

It is interesting the obvious direct relation between harmonic intervals, as we encounter them in music (teaching of harmonic), and the property of water to create beautiful (for the human perception as nice and positive experiences) and recognisable harmonic shapes.

Applied examination methods of *Hado Life Europe* are today: water ice crystal photography (samples are frozen by more than -20°C and examined with up-light microscopy), 'drying' pictures with dark field microscopy (water samples are dropped on glass slides and the process of drying and the remaining substances after drying is examined), and the GDV (gas discharge visualization) technology.



One field in which Gaupp-Berghausen has been conducting research during the last years is in relation of ultrasound and its affect on Amniotic Liquid. The target is to evaluate if a modulation of vibration can lead to a quality enhancement. The main assumption of this work is that the more harmonic and thus recognizable a structure, the more positive effect it might have to its surroundings. Further research should show that different vibrations have an influence of the structure and that a modulation of the vibration itself can have beneficial properties.

The latest work of R. Gaupp-Berghausen is in relation of HRV (Heart Rate Variability) and Music. Through algorithms the vibrations of the HRV are directly translated into audible frequencies of sound and visible frequencies of color light.

In 2009, R. Gaupp-Berghausen opened the company *Aquaquinta* and in 2011 this technology was for the first time launched under the name *Sound of Soul* ([www.aquaquinta.com](http://www.aquaquinta.com)), making this technology and its understanding available for everyone.

The beauty in this work is that everybody is able to experience one's own heart vibration live in the 'Here

and Now' in the form of sound and light. The music deriving from the HRV is as individual as the fingerprint and can be effectively applied for all kind of therapies. The music itself is not only for therapeutic use, but also a wonderful way to show the unique vitality of each one of us. At the same time, *Sound of Soul* technology provides professional HRV measurement and analysis.

Since its launch, *Sound of Soul* has already spread into 20 different countries. People from all kinds of different health related fields are interested in working with this new approach. It is already applied by general practitioners, doctors, hospitals, natural health practitioners, hypnotists, life coaches, nutritionists, music therapists, healers, schools, or simply for private use. These are basically people who are open-minded to encountering and working with the human body's own beauty and its wonderful ability of self-healing.

During the last years Rasmus Gaupp-Berghausen has been invited to over 40 countries to present his work in lectures and workshops. He speaks, besides German, English, Danish and Spanish fluently. He lives today with his wife and four children in the western part of Austria.

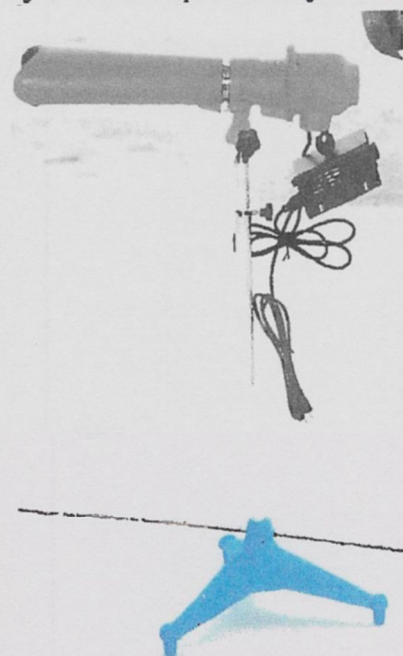
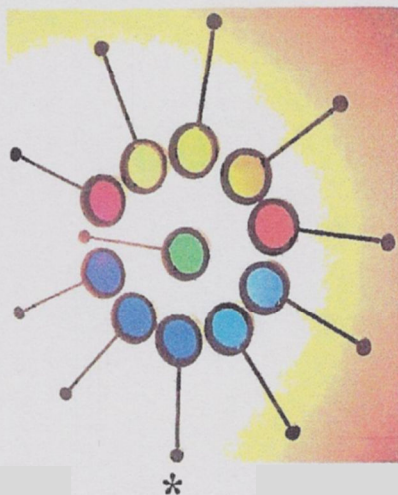
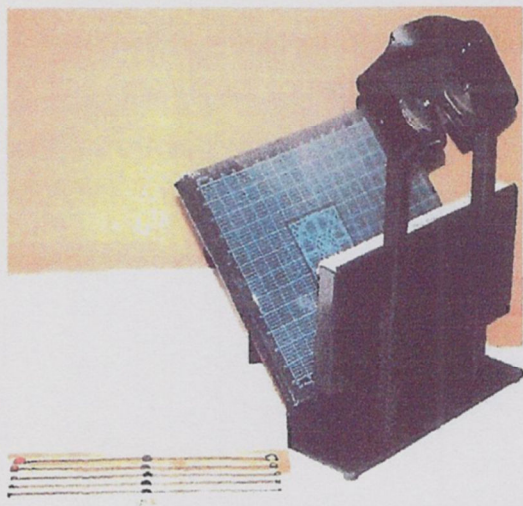
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# Association of Functional Color Field Changes with Imbalance, Spatial Misjudgment, and Nausea in the Treatment of Post-Concussion Syndrome Patients

Steven J. Curtis, OD, FCOVD, FNORA

## Background:

The purpose of this retrospective review is to investigate the relationship of functional color fields with imbalance, spatial misjudgment, and nausea in post-concussion syndrome. Secondly, a therapeutic goal for color field improvement in this patient population is proposed.

## Methods:

The participants are 60 consecutive post-concussion syndrome patients presenting to this author's clinic. The design is a retrospective review of subjective and objective measures one week before and 38 days after initiation of neuro-optometric rehabilitation. The main measures reviewed are functional color fields, the Berg Balance Scale, survey responses in imbalance, spatial misjudgment, and nausea, and visual evoked potential amplitudes.

## Results:

Patients who obtained a 20% or greater improvement in functional color fields exhibited on average a 63%, 98%, and 71% greater improvement in symptoms of imbalance, spatial misjudgment, and nausea, respectively, compared to patients whose functional color fields improved less than 20%. Clinical testing using the Berg Balance Scale revealed a 380% greater improvement in balance performance compared to patients whose functional color fields improved less than 20%. Visual evoked potential amplitudes demonstrated an inverse relationship with symptom improvement in imbalance, spatial judgment, and nausea.

## Conclusion:

A direct correlation is revealed between functional color field improvement and recovery from imbalance, spatial misjudgment, and associated nausea when patients receive neuro-optometric rehabilitation. A hypothesis resulting from these observations is that visual system pathways involved in balance and spatial awareness are therapeutically affected by optometric intervention and functional color fields can be utilized as a clinical marker to gauge change. Additionally, a therapeutic goal of 20% or more in blue color field improvement could be considered when optometrists treat post-concussion syndrome patients presenting with symptoms of imbalance, spatial misjudgment, and associated nausea. Finally, the inverse relationship of visual evoked potential low contrast am-

plitude findings may provide speculation that therapy directed toward these symptoms acts to a greater extent on the auxiliary and secondary visual pathways that integrate with other balance mechanisms than it does on the primary visual pathway.

**Keywords:** post-concussion syndrome, multi-sensory integration, spatial awareness/misjudgment, Berg Balance Scale, optometric phototherapy, functional color fields, visual evoked potential

## Introduction/Background

Balance difficulties are present in approximately 50% of patients with post-concussion syndrome.<sup>1</sup> **Post-concussion syndrome (PCS)** is a set of symptoms that may continue for weeks, months, or more than a year after a concussion.<sup>2,3</sup> Patients exhibit balance challenges in numerous ways. This includes: disequilibrium, not feeling grounded, stumbling, difficulty with turning, clumsiness or difficulty coordinating movements, looking downward to confirm the location of the ground, and holding onto something when standing. As a result, patients are at risk for falls and resultant further injury.

The classical medical view of balance difficulties involves association with vestibular dysfunction. And a commonly followed standard of care for imbalance by medical physicians is a referral to a physical therapist specializing in vestibular therapy. Although this protocol often results in a successful outcome, it is not unusual for this single sensorimotor therapy approach to fail. Balance is dependent on the integration of multiple sensory inputs including visual, vestibular, and somatosensory systems.<sup>4</sup> These three systems form a "tripod" which is used in nearly all activities of daily living to correct and provide balance and instinctive awareness of one's location in the environment.

Brain injury can cause damage to an isolated system compromising the integrity of the tripod due to sensory conflict. However, brain injury more often results in damage to the integrative networking of these multiple sensory signals, otherwise known as multi-sensory integration. **Multi-sensory integration** describes a process by which an intact, well-developed brain can integrate information from multiple senses and modulate these in-

puts for optimal awareness and reactivity to the environment.

When vision is a causative component, the resultant imbalance is often accompanied by difficulties with spatial awareness. **Spatial awareness** is the ability to be accurately aware of oneself in space. It is an organized knowledge of objects in relation to oneself in that given space. Spatial awareness also involves understanding the relationship of these objects when there is a change of position.<sup>5</sup> Deficits in spatial awareness lead to **spatial misjudgments**. For example, a patient may have difficulty navigating crowded stores, doorways, curbs and stairs. They may also miss-reach and inaccurately grasp for objects.

A basic explanation of the underlying neural mechanisms responsible for balance and spatial awareness is of value for this article. It is commonly thought that there are two primary pathways of visual input, the parvocellular pathway and the magnocellular pathway. Dr. Deborah Zelinsky explains that the magnocellular visual pathway consists of both sub-cortical processing (superior colliculus) for the reflexive “Where am I”, and cortical processing (parietal lobe) for “Where is it?”<sup>6</sup> There is also extensive interplay amongst these networks that is synchronized in a healthy brain. For example, the superior colliculus receives both retinal and cortical input and utilizes this information to influence brainstem structures and the spinal cord for motor output involved in balance and gait.<sup>7</sup> Additionally, the parietal lobe mediates several aspects of spatial awareness such as navigating and reaching into the environment. This is accomplished via the posterior parietal cortex (PPC) containing neurons responsible for changes from retinal-centered to body-centered coordinates.<sup>8</sup>

Nausea is often present and associated with balance difficulties when the vestibular system is a causative factor. This is because the vestibular system is highly innervated with the gastrointestinal system.<sup>9</sup> Therefore when there is vestibular dysfunction, or the vestibular system is being affected by inefficient visual inputs during visual-vestibular integration, the gastrointestinal system will sometimes display the effects.

Optometry has an opportunity and a responsibility to help rehabilitate patients who have imbalance and spatial misjudgment via the visual system. Optometric tools such as lenses, prisms, filters, and tints can be used to stimulate the retina and alter the optic flow to the brain.<sup>6</sup> These methods of changing visual inputs thereby affect brain function.

**Optometric phototherapy** is the application of filtered light (within the visible spectrum) through the pupil

to the retinal blood supply and to retinal photoreceptors. It is a method of neuromodulation using phototransduction - photons of light activating a graded change in membrane potential and a corresponding change in the rate of transmitter release onto postsynaptic neurons.<sup>10</sup> Optometric phototherapy is becoming a more frequently utilized technique during neuro-optometric rehabilitation.

During clinical use of optometric phototherapy, the effect that the prescribed light has on brain function is clinically gauged with functional color fields. **Functional color fields** is a near point visual field test used as an indicator of visual performance and therefore of brain function.

### Methods

The participants were 60 consecutive PCS patients presenting to the authors clinic during the period of February 8, 2016 to July 12, 2017. No patients were excluded. Each patient was de-identified via meeting safe harbor requirements under section 164.514(a) of the HIPAA Privacy Rule.<sup>11</sup> Forty-nine of the 60 patients presented with the symptom of imbalance, 49 with spatial misjudgment, and 26 with nausea. Patient ages ranged from 14 to 73 with a median age of 36.5. The time between most recent concussion and initiation of treatment ranged from 24 to 1468 days with a median time of 734 days. Twenty-six were men and 34 were women. The number of previous concussions ranged from 0 to 14. No patients had received any prior optometric vision rehabilitation.

The neuro-optometric rehabilitation protocol utilized targeted multi-sensory integration via simultaneous application of optometric phototherapy, vestibular stimulation, auditory stimulation, and gradually applied versional and vergence oculomotor therapy. It consisted of 12 consecutive days of in-office visits each lasting 75 minutes followed by 18 days of home therapy. During the 12 days of in-office therapy, each patient received colored light therapy progressing through magenta, ruby, yellow-green, yellow-blue, violet, and magenta again. The order, exposure time, and combination of filters was determined based on integration of principles taught by the College of Syntonic Optometry and the Sensory Learning Institute. The subsequent 18 days of home light therapy was magenta. The vestibular stimulation and the auditory training were techniques and proprietary programs of the Sensory Learning Program. The oculomotor therapy was minimally applied initially consisting of five to ten minutes of monocular (progressing to binocular) saccadic and pursuit activities. Convergence therapy was gradually introduced as tolerated without aggravating patient symptoms. These activities increased in difficulty during the in-office phase of treatment. Balance activities were gradually added to further rehabilitate integration of sensory motor pathways.



The clinical measures that were reviewed included functional color fields, a balance assessment test, visual evoked potential amplitudes, and symptom survey responses by the patient in the areas of imbalance, spatial awareness, and nausea. These measures occurred one week prior to the initiation of the therapy and 38 days post initiation of the therapy.

The functional color fields (green, red, and blue) were measured monocularly utilizing the FCF Tester computerized program. The parameters for each patient were the following: 1.6 mm diameter target size; target presentation speed of 36mm/second; target brightness setting for each color was 176 (no unit); random order of presentation of the three colors; each target presentation began at 30 degrees from center; twelve meridians were tested at 30-degree intervals; central fixation target was a single digit that randomly changed and flashed at a frequency of once per 1500ms.

The balance assessment was obtained using the **Berg Balance Scale (BBS)**. This is a widely used clinical test of a person's static and dynamic balance abilities. The BBS is generally considered to be the gold standard of functional balance tests.<sup>12</sup> The test comprises a set of 14 simple balance related tasks, ranging from standing up from a sitting position, to standing on one foot. The degree of success in achieving each task is given a score of zero (unable) to four (independent), and the final measure is the sum of all the scores.<sup>13</sup>

	SCAT3 Reported balance improvement	Berg Balance Scale improvement	SCAT3 reported nausea improvement	ABI Survey reported spatial misjudgment improvement
Color fields increase OU of >20%	57.4% (N=14)	31.7% (N=14)	96.3% (N=9)	24.4% (N=14)
Color fields increase OU of <20%	35.2% (N = 22)	6.6% (N = 23)	56.3% (N = 12)	12.3% (N = 21)
Improvement differential between ">20%" and "<20%"	63.1%	380.3%	71.1%	98.4%

Table 1

Visual evoked potential amplitude measurements were obtained monocularly using the Diopsys Nova 32 special frequency configuration with multi-contrast stimulus pattern at both low contrast and high contrast to test the integrity of the magnocellular and parvocellular pathways, respectively. The **visual evoked potential (VEP)** objectively measures functional responses of the primary visual pathway including the retina, optic nerve, optic radiations, and visual cortex. Electrical signals are measured from the electrophysiological activity at the visual cortex. VEP recordings have been used for a variety of applications that involve neuro-visual disorders including traumatic brain injury.<sup>14</sup> To be included in data, patient responses were required to have a minimum of 80% reliability factor. See "N" values in Table 7.

The symptom survey used for patient symptom reporting of imbalance and nausea was from The Sports Concussion Assessment Tool, 3rd edition (SCAT3). This is a widely used concussion survey that measures a global range of self-reported symptoms. The patient rates 22 symptoms on a scale from zero to six.<sup>15</sup> The tool utilized for subjective tracking of the symptom of spatial misjudgment was an acquired brain injury symptom survey this author developed. The patient rates 15 symptoms on a scale from zero to four.

### Results

An overview of color field changes comparing pre and post therapy revealed a positive correlation between color field size increase and improved

		SCAT3 Balance improvement	
Color field increase:		>20%	< 20%
Green	OD	51.5%	38.6%
	OS	30.9%	47.8%
Red	OD	56.4%	50.2%
	OS	53.3%	39.3%
Blue	OD	63.8%	31.5%
	OS	65.5%	26.5%

Table 2

		Spatial Misjudgment Improvement	
Color field increase:		> 20%	< 20%
Green	OD	35.1%	22.6%
	OS	35.5%	28.7
Red	OD	42.4%	32.6%
	OS	42.4%	28.7%
Blue	OD	53.2%	8.6%
	OS	40.7%	-15.1%

Table 3

		SCAT3 Nausea improvement	
Color field increase:		> 20%	< 20%
Green	OD	76.7%	51.9%
	OS	69.4%	51.2%
Red	OD	83.3%	37.5%
	OS	70.8%	47.5%
Blue	OD	86.7%	46.4%
	OS	83.3%	41.8%

**Table 4**

		Berg Balance Scale Improvement	
Color field increase:		> 20%	< 20%
Green	OD	28.2%	9.1%
	OS	26.2%	5.4%
Red	OD	35.0%	8.4%
	OS	35.5%	6.9%
Blue	OD	29.8%	8.9%
	OS	29.6%	8.0%

**Table 5**

Regarding balance, the patient group (n=14) who exhibited a greater than 20% increase in the average of all three color fields in both eyes reported an average balance improvement of 57.4%. The patient group (n=22) who exhibited a lesser than 20% increase in all three color fields in both eyes reported an average balance improvement of 35.2%. This represents a 63.1% difference. Substantial differences between the “>20%” group and the “<20%” group also existed in Berg Balance Scale, spatial awareness, and nausea of 380.3%, 98.4%, and 71.1%, respectively.

balance (as evidenced in the SCAT3 symptom survey and the BBS). This propelled a review to look at whether a certain threshold exists in color field improvement relative to balance improvements. After examining changes in balance measures at color field improvements of 10%, 20%, 40%, 60%, and 80% it became evident that 20% was where a significant increase in improvement in balance occurred. The patients who obtained 40% or above increase in color fields did not report a greater improvement in balance compared to the 20% group. Further review of the 20% group revealed a parallel improvement in spatial misjudgment and nausea with the improvements in balance measures. See table 1 for a summary of these findings.

A specific review of each color field in isolation revealed that the blue fields are the most strongly correlated with improvements in balance and spatial misjudgment symptoms. See tables 2 and 3. Nausea symptoms and Berg Balance Scale improvements are displayed in Table 4 and 5, respectively.

A comparison of temporal field versus nasal field improvement showed no difference in symptom improvement. However, the patient group that gained >20% in both temporal and nasal fields benefited far more than their <20% counterpart group. See Table 6.

VEP low contrast amplitude data exhibited an inverse relationship with imbalance and spatial misjudgment symptom changes. The groups that demonstrated no improvements in VEP low contrast amplitudes reported greater improvements in balance and spatial misjudgment than the groups that demonstrated improvements in VEP low contrast amplitudes. See Table 7. VEP high contrast amplitudes exhibited no consistent correlation.

	SCAT3 Reported balance improvement	Berg Balance Scale improvement	SCAT3 reported nausea improvement	ABI Survey reported spatial awareness improvement
Blue nasal field increase OU of >20%	66.7% (N=11)	32.9% (N=12)	85.7% (N=7)	50.0% (N=12)
Blue temporal field increase OU of >20%	59.4% (N=12)	33.6% (N=12)	81.5% (N=9)	53.5% (N=13)
Both blue nasal and temporal field increase OU of >20%	82.7% (N=5)	43.2% (N=7)	100% (N=2)	59.5% (N=7)
Neither blue nasal <i>nor</i> temporal field increased > 20%	10.8% (N=8)	8.9% (N=9)	52.5% (N=4)	9.25% (N=9)

**Table 6**

**Discussion**

The results of this retrospective study demonstrate the usefulness of functional color field testing as a clinical measure when monitoring the therapeutic effects on imbalance, spatial misjudgment, and associated nausea during neuro-optometric rehabilitation of PCS patients.

Rehabilitation specialists in various professions rely on established standardized goals when programming a patient's therapy for both clinical guidance and insurance documentation purposes. This study suggests a minimum of 20% increase in the blue color fields as a standard goal by optometric practitioners when providing vision rehabilitation for PCS.

Retinal anatomy supports that the blue fields are of primary interest when monitoring balance and visuospatial function. Blue light sensitive cones have a much greater existence in the peripheral retina than red and green cones. Additionally, origination of the magnocellular vision pathway (the pathway that provides the visual influences on balance and spatial awareness) in the retina is represented by parasol ganglion cells. These cells, like the blue sensitive cones, dominate the peripheral retinal geography when compared to the midget ganglion cells (parvocellular visual pathway retinal cells).<sup>16</sup> It can thus be construed that expansion of the blue color field would parallel enhanced magnocellular processing ultimately affecting performance in balance and spatial judgment.

This author proposes that percent change in field size be the specific method of quantifying the functional color field changes versus a specific field size. This allows the treatment goal to be universal and independent of the existing variance in equipment, methods, and parameters used during the measuring of color fields amongst practitioners.

VEP low contrast amplitudes demonstrated an inverse relationship with degree of improvement in balance and spatial misjudgment. This author speculates that the treatment acted upon secondary and auxiliary visual pathways (not represented by VEP testing) versus the VEP-based retina-geniculate-visual cortex pathway. And since the auxiliary and secondary pathways have more integration with balance related neural mechanisms, it is possible to have greater balance improvement inversely and/or independent from the VEP amplitude changes.

### Conclusion

This retrospective study provides evidence-based support for what the late Dr. Charlie Butts once stated, "functional color fields are a very sensitive method of monitoring the progression of a patient's vision therapy program, especially if optometric phototherapy is involved". This study involved a treatment protocol that utilized optometric phototherapy and oculomotor therapy to modulate the optic flow throughout the visual pathways of the brain while stimulating other mechanisms involved in balance. This multisensory approach demonstrated that imbalance and spatial misjudgment recovery after concussion is more efficacious if

	OD		OS	
	VEP Lc Amp Improved	VEP Lc Amp <u>Not</u> Improved	VEP Lc Amp Improved	VEP Lc Amp <u>Not</u> Improved
Balance Improvement	27.5% (N=12)	50% (N=11)	32.7% (N=10)	54.5% (N=11)
Spatial Misjudgment Improvement	15.9% (N=11)	31.1% (N=15)	26.7% (N=10)	31.3% (N=16)

Table 7

functional color fields expand beyond 20%, thus providing a mechanism to monitor progress.

Optometric clinicians should consider setting a therapy goal of a 20% or greater increase in blue color fields when establishing the plan of care for PCS patients that present with imbalance and/or spatial misjudgments. Of course, functional color fields should not be utilized in isolation but rather as an additional clinical marker to the patient's overall vision rehabilitation program. Further study is needed to investigate the application of this clinical marker in other patient population types. VEP did not demonstrate potential usefulness as a clinical marker for this patient population.

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## About the Author:

Dr. Steven J. Curtis is president of Riverview Eye Associates in Columbus Ohio where he provides general, developmental, and Neuro-optometric services.

He is on the medical staff of the OhioHealth Rehabilitation Hospital and the professional soccer team, Columbus Crew. Dr. Curtis is a fellow of the College of Optometrists in Vision Development and a fellow of the Neuro-Optometric Rehabilitation Association.

He frequently lectures to area physicians and therapists on the subject of vision. His role in this is to assist with the collaborative movement that is happening in rehabilitation by making sure non-optometric providers understand when Neuro-optometric involvement is indicated.

Dr. Curtis is enjoying the tremendous growth in his work with patients who suffer persistent vision disturbances after concussion including athletes from professional teams of the MLS and NHL.



# Book Review

## *Luminous Life: How the Science of Light Unlocks the Art of Living*

By Jacob Israel Liberman, OD, PhD  
with Gina Liberman and Erik Liberman  
Foreword by James Oshman, PhD

Jacob Liberman has played a leading role in advancing syntonics optometry. As CSO president (circa 1990), Jacob brought a major increase of new membership into CSO, including multidisciplinary practitioners and scientists. During Jacob's presidency, attendance at our annual meetings more than tripled. He invented a unique ocular phototherapy approach and designed a phototherapy instrument for this. His research article (and Ph.D. dissertation): The Effect of Syntonic (Colored Light) Stimulation on Certain Visual and Cognitive Functions. (*Journal of Optometric Vision Development*. Volume XVII/June 1986, pp 4-14) is, in my opinion, the best modern clinical research article in our field. His first book: *Light: Medicine of the Future: How We Can Use It to Heal Ourselves NOW*. Bear & Co. Rochester, VT published in 1991, is a landmark book that helped bring syntonics optometry, and light therapy in general, more into public awareness. His second book: *Take Off Your Glasses and See: A Body-Mind Approach to Expanding your Eyesight and Insight*. (1995 Three Rivers Press, NYC), continues to bring optometric vision therapy and natural vision improvement to wider public awareness. His third book: *Wisdom from an Empty Mind* (April 24, 2001) by Jacob with his son Erik Liberman is a series of one-page essays and accompanying quotes transcribed from live presentations Jacob has given around the world. It was a preview of *Luminous Life*. In fact, words and themes mentioned in all of Jacob's books echo down the years to appear in this, his latest book.

### ***Luminous Life***

*My brain is only a receiver, in the Universe there is a core from which we obtain knowledge, strength, and inspiration. I have not penetrated into the secrets of this core, but I know that it exists.*

— Nikola Tesla

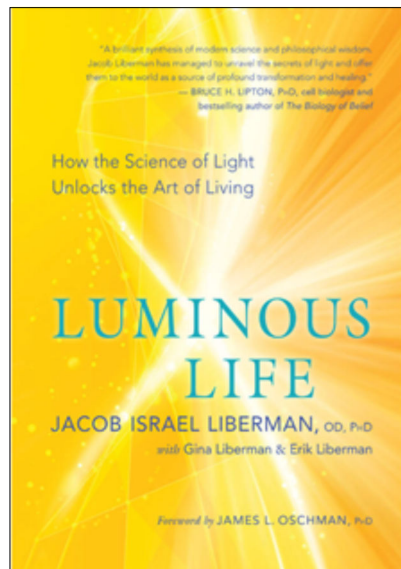
"Life," Jacob writes, "is a gift of light and when you *let light be there*, it illuminates your path and pulls you forward with an eagerness to learn what comes next." Throughout the book, Liberman describes his vision of "a better way to see and how we might experience it, learn to trust it, and let it slip us into a personal transformation that is at once, automatic, effortless, contagious and healing to ourselves and to the planet."

"When we stop searching, we start finding. By looking less, we see more. When we allow the light within us to merge with the light that guides us, we experience oneness. Without any effort, we relax into a state where we have no decisions to make. There is no confusion, second-guessing, thinking, or searching for answers. There is just being — an acceptance of life as it is." The text is full of polished reflections of this theme.

He reinforces, clarifies and expands his theme through examples from his own life experience, scientific findings about light, neuroscience, vision training, and wisdom from eastern spiritual teachings and western philosophy. He guides the reader on how to self-actualize these principles to live a more energized, less stressful, healthier and more meaningful life. He describes meditations, visualizations and vision training procedures to aid in this process.

For most of us, vision has become *division*, the process of splitting reality by choosing what we want over what we do not want. We excel when we stop thinking and start responding. When we try to anticipate and control what happens to us rather than responding to life as it presents itself, we tighten up and our performance drops. What we are looking for, he states, is *Presence*. "*Presence* is an involuntary response to an invitation by life's intelligence pointing us toward our maximum potential." "When we 'work' at being present, we remain locked up in a pattern of excessive effort and thinking." He reminds us that *Presence* is the cure, the guiding principle for successful optometric vision training and the ultimate goal of syntonics phototherapy.

"Our degree of presence is directly related to how effortlessly and accurately our eyes are able to aim. It is a naturally occurring state that arises when our eyes and mind, triggered by light, focus on the same place at the same time. In response to light's invita-



tion and guidance, our eyes begin an intricate dance of *aiming, focusing, tracking and teaming.*”

Jacob’s enthusiasm and clarity sparked my interest and fired my eagerness to keep reading to discover what flash of insight would come next. As I read through the book, I was struck by the art and craft of Jacob’s writing; throughout he weaves a colorful tapestry – A spectrum knit from his personal yarns, woven together with optometric, scientific and spiritual threads, and decorated with powerful quotes. His writing is consistently easily graspable, meaningful and personal; a testable and practi-

cal vision of an enlightened understanding of light’s profound capacity to guide life. Our job is to be present, trust the light, and to merely follow as it leads us to our destination.

Jacob: “Barely a day goes by that I am not in awe of this marvelous world we live in and the people I encounter. I am excited to share what I’ve learned because it has transformed my life, and I believe it can transform yours as well.”

Let there be light, it’s a miracle.



## LIGHT AND FIELD THERAPY WORKSHOP with Denise Hadden, Optometrist

**May 5-6, 2018**

**Location:** Vision Transformation, Marisa Kruger, OD.,  
2535 S. Lewis Way #209 Lakewood, CO

Saturday and Sunday 8.30 a.m. – 12.30, 2.00–5.00 p.m.

Email for information: [syntonics@q.com](mailto:syntonics@q.com)

A workshop folder and certificate of attendance will be given.

Colour visual fields are the primary diagnostic tool in deciding whether Syntonic Phototherapy will be of benefit in the treatment of a patient. A functional field test may be used in conjunction with any medical or healing therapy and be a reliable indicator of the efficacy and outcome of any treatment. The training is for those who would like to have a more in depth understanding of the way in which emotions and deeply ingrained belief systems may be disentangled, interpreted and resolved during treatment and how charting functional colour fields becomes both a diagnostic tool and a deeply healing therapy.

This workshop will shed light on despair, PTSD, Trauma, Concussion and TBI, on Gifted and Twice Exceptional children and the impact of IQ, on Autism, ADD/ADHD and Learning Disabilities, on Iridology analysis, Chakra analysis, on unravelling auto-immune and intuition, and the impact on fields of the desire to die, suicide. It will also discuss the philosophical interpretations of light and awareness.

Denise Hadden is a pioneer in Field Analysis, an optometrist, author and Life Coach. She is an international speaker known for her work on field awareness and how this integrates vision, creativity, consciousness and the expansion of human potential. She has published two books, *New Light on Fields* and *Coaching the Invisible Fields*, which will be available at the workshop.





# Lighting Up Lives, 2018

Denise Hadden, FOA [SA], FCSO

On looking back at last year's article, it seemed to me that I am inundated with patients who have a subliminal desire to die. And so, I searched for a story, a patient who had presented with less trauma. I wanted to present a case with more hope and excitement for you – to give you more reason to embrace syntonics and enjoy it as a powerful additional therapy in your practices. However, the world is in turmoil and there seems to be no early warning ways to discover when someone reaches the point of taking their own life [and those of others]. Our conversations about death are unlikely to abate and functional fields are a powerful way to screen for mental health issues.

Nevertheless, and thankfully, this girl's expression of deep pain that appeared on my doorstep, has through her committed personal journey with syntonics, reached a place of peace. And there is no better story to tell than one of conquering our greatest challenges. Especially when it is done with light.

So, Jane appeared, 15yrs old but looked like a 12yr old – fine boned, tiny, beautiful and tortured. She was one of triplets – one triplet died shortly after birth and the other – her brother – was strong and well. They had all been in intensive care for months after the birth. She was on the autistic spectrum, extremely sensitive to almost everything, numerous surgeries in her first few years of life and now as a young teenager – acutely aware that her body was not growing at the same speed as her peers.

Adding to her shattered self-esteem was the realization that not even changing schools had increased her ability to make friends. She was isolated, withdrawn and unable to develop any close relationships.

When I first saw her, she presented as an angry, rude and controlling young teenager with such extreme sensory issues that she refused to put her face against the charter eyepiece. There was much posturing, moving around, needing to lie down on the couch in my office, refusing to speak, then aggressively answering some of my questions.

I remained still, centered and calm, only maintaining constant eye contact on her at all times and eventually she sat down at the charter and completed a full and reliable field.

I had received a good history via email from her mother but we had not been able to privately discuss her emotional state prior to the first consultation.

Charting a field gives an instant picture of where that person is on every level in their lives. When the blue target reaches 5 degrees without any recognition from the patient, I feel a palpable sense of despair within myself. It is despair at what I need to say, despair at knowing that this person no longer has any desire to continue on with life and that I am now witness to this.

Teenagers are particularly cunning in their ability to manipulate adults. They think they know it all [I remember this myself] and they really do think adults are stupid and completely unable to understand them.

Truly engaging with a teenager requires adults to be unashamedly truthful – for this is what teenagers need most from us.

When I had completed the field – I sat back – in very thoughtful mode and asked her how she had managed the test. A grunt was her response to this question.

Then I followed it up with – ‘I can see that you don't want to live anymore’ – which startled her and her mother. I kept my eyes firmly on Jane, visually pinning her to the spot.

Her face showed recognition, then she disguised it, feigning ignorance.

‘What's your reason for living?’ I asked.

‘Why?’ she asked me, showing some interest.

‘Because you need to know what it is or you won't live very long’ I replied.

The background to this – I discovered later from her mother – was that one of the girls in her class had committed suicide a few months prior. Jane had in the interim, sent a text to her father threatening to kill herself as she felt that her own life was also not worth living. Her parents reported that they had discussed these issues with Jane, changed her school as a result of this, and as she had been seen by a psychotherapist, there was no further cause for concern.

It took only one night doing a light program to produce a significantly positive response. Jane's mother contacted me the next day.

She said 'I don't know what has happened. Jane got up early by herself after doing the light last night. She came home from school and began tidying her room for the first time ever. She was calm, polite and amenable to us all – completely different behaviour. I am blown away by what I have just experienced in my child'.

One year later after ongoing intermittent light sessions and follow up appointments, Jane is doing well. Her fields are expanding and she happily described to me her

plans for her future and all the dreams that she wants to fulfill.

It was a truly wonderful experience for me to see her well. She is going to have challenges all through her life – but now she knows that she is not alone, that light is a resource she can return to at any point in her life.

This was written a month before the school shooting in Florida and it was with deep sadness that I heard this news. If the vulnerable children in our societies are not identified, this horrendous brutal loss of young lives and teachers will not stop.

Fields are biomarkers of trauma and give reliable information on the emotional state of a person. Using fields as a guide and light as a tool for change, we encourage the healing process to begin.

Contact CSO, attend the conferences, ask for a mentor who will guide you through the process of bringing light into your own life.

### About the Author:

Denise Hadden is an optometrist, light and field therapist, visual coach and author. She holds a degree in Optics from Manchester University, UK, is a fellow of CSO and holds certificates in Life Coaching and Acupuncture. Formerly in private optometric practice, where she focused on holistic healing methods, Denise now resides in UK and offers private consultations, workshops and training on her continually expanding work with field interpretation. [www.denisehadden.com](http://www.denisehadden.com)



## About The Cover

The Sound of Soul  
By Rasmus Gaupp-Berghausen

The cover depicts The Sound of Soul. It is a method of using the heart rate variability to support the self-healing ability of the body through sound and color that was developed by Rasmus Gaupp-Berghausen.

Read his article, *Translation of body's own frequencies into sound and color-light* found on page 7.

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CSO wishes to thank Mira-Flex for their continued support by donating the badge name tags.

**Sydney, Australia. 3 day course in 2018  
"Basic Syntonics to Fast Track Vision Therapy"**

Date and Venue to be announced shortly. To be presented by Simon Grbevski and Geoff Shayler.  
Contact: Simon on [simon@grbevski.com](mailto:simon@grbevski.com) or Geoff on [kinoptom@lineone.net](mailto:kinoptom@lineone.net) for more information

# Awards and Accomplishments

## Congratulations to . . .

Brenda Montecalvo, O.D., FCOVD, FCSO  
for receiving her Fellowship  
in 2016.



## College of Syntonic Optometry

### Charles C. Butts Award

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Pittsburgh, PA

June 10, 2017





# Hummingbird Hues, LLC

*"One Cannot Hold a Torch to Light Another's Path Without Lighting Their Own!"*

## Portable Light Units

### MODEL A - Portable Light Unit

- White or Silver Corded Light
- 3-Slotted Filter Collar with Defusing Lens
- 15w HD Natural Lighting OttLite®
- Set of 6 Glass Filters with Handle
- 2 Spacer Rings - Use 1, 2 or even 3 Filters at once.
- Black Zippered Filter Case
- Soft-sided Carry Bag



### MODEL B - Portable Light Unit

- Silver Corded Light
- 3-Slotted Filter Collar containing Defusing Lens
- 15w HD Natural Lighting OttLite®
- Set of 10 Glass Filters with Handle
- Silver and Black Aluminum Hard Case (13" x 10" x 5"), Molded Insert to Hold Light and Filters Securely



### MODEL C - Portable Light Unit

- This light unit is permanently mounted in case for easy set-up: Open case, adjust light angle, insert color filter(s), plug in and enjoy!
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- Travels well.

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Includes:

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- LED Lights
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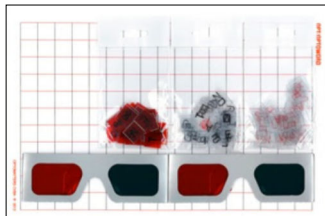


### **Books by Denise Hadden**

- ~ *New Light on Fields*
- ~ *Coaching the Invisible Fields: A New Way to Reach the Hidden Potential with Light and Visual Awareness*

### Vision Training Equipment

- \* *Optoword Game*
- \* *Optomatters Filtering Glasses & Polarized Glasses*
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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

## College of Syntonic Optometry

### 86th International Conference on Light & Vision

May 16-19, 2018

Sheraton Salt Lake City Hotel  
Salt Lake City, Utah, USA

Contact:  
Ron Wahlmeier  
Email: [syntonics@q.com](mailto:syntonics@q.com)

### **86<sup>th</sup> International Conference on Light and Vision speakers:**

#### **Healing Glaucoma with Natural Remedies, Including Energy and Information**

by Rev. Glen Swartwout, O.D.

#### **Clinical mental health, From Depression to Joy**

by Sara Makin, M.S., Ed.

#### **Advanced Case Studies**

Given by Chula Lerdvoratavee, O.D., FCOVD, and Steven Curtis, O.D., FCOVD, FNORA

#### **Optimizing Cranial Position and Mobility to gain System Homeostasis Through Influence and Body's Righting Mechanism**

by Michal Niedzielski, M.S., P.T.

#### **In Search of the Quantum Information Field**

by James Oschman, Ph.D.

#### **Syntonics and Medical and Recreational Marijuana: Cases and Observations**

by Marisa Kruger, O.D., FCOVD, CHom.

#### **Micro-current and Bio-regulatory Medicine for Eye Health**

by Fernando Pena, M.D.

#### **Advances in Photo-Medicine**

by Larry Wallace, O.D., Ph.D., FCSO and Raymond Gottlieb, O.D., Ph.D., FCSO