

A Pilot Feasibility Study of the Effects of Color and Light Therapy for Patients with Chronic Fatigue/Myalgic Encephalomyelitis

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Summary of Current Evidence

Patients with chronic fatigue and myalgic encephalomyelitis have a multitude of health concerns adversely affecting their quality of life. Patients frequently report persistent disabling fatigue, un-refreshing sleep, headaches and pain. The U.S. Pain Foundation cites that over 50 million Americans experience pain every day.¹ According to the Centers for Disease Control, in 2017, over 500,000 Americans have chronic fatigue syndrome, and 3 million Americans have fibromyalgia. Although pharmaceutical interventions are commonplace for the reduction of pain, they can also have adverse side effects and often are not sufficient to reduce pain.

According to Alison Bested, MD, former director for the Neuro-Immune Institute, in the publication, *Chronic Fatigue Syndrome Myalgic Encephalomyelitis: A Primer For Clinical Practitioners*, “Myalgic encephalomyelitis/chronic fatigue syndrome is a complex, chronic medical condition characterized by symptom clusters that include pathological fatigue and malaise that is worse after exertion, cognitive dysfunction, immune dysfunction, un-refreshing sleep, pain, autonomic dysfunction, neuroendocrine and immune symptoms.”² “Despite the substantial progress that has been made in understanding the underlying biology of ME/CFS, we still don’t have a sufficiently accurate diagnostic test, or a proven treatment.”²

To help reduce the debilitating symptoms that patients suffer and improve quality of life, this pilot study investigated the feasibility and efficacy of the applications of colored light therapy for pain relief for patients with CFS/ME. The colored light instrument used was non-invasive and has been used in Europe for several decades. It was invented by Peter Mandel, who has trained as a nurse, physician and chiropractor at the University of Heidelberg, has studied at the Academy for Naturopathy, in Hannover, and studied acupuncture in Hong Kong and additional complementary medicine modalities including eye diagnosis and reflex zone therapy. He has an honorary Doctorate of “Medicina Alternativa” in Alma-Ata, and is renowned for his work in colorpuncture, especially in Europe.

Esogetic Colorpuncture™ is the application of colored light frequencies to acupuncture points on the surface of the skin to regulate the energetic systems of the body. Mandel’s clinic in Germany has treated thousands of patients for over four decades. His philosophy and decades of research is explained: “If the healthy cells of the body have a harmonious, uniform quality of light flow, then it is logical that sick cells must have a disharmonious flow of photons.”³ He worked closely with biophysicist Dr. Fritz Popp who inspired Mandel’s work based on his studies in which he measured the presence of cellular light emissions called biophotons. In 1981, Popp performed an experiment together with his student Martin Rattemeyer, which showed that the helical molecules of DNA are the main source of biophoton emission in the cell.⁴ This conclusion has been supported by the later experiments of Wei Ping Mei, Hugo Niggli and Roeland van Wijk.⁵

Other researchers have succeeded in measuring what they call ultraweak photo emissions (UPE) of the body and cells. Popp believes, as Mandel does, that disturbed light emissions passing from one cell to another stimulate disease processes in the body. This inspired Mandel to

create colorpuncture protocols, with the belief that chaotic cellular light communications can be corrected by introducing corrective light frequencies via the skin.⁶ It is believed that the application of colored light on the body of the participants can coordinate homeostasis or a healthy balance according to Dr. Mandel. More than 10 years of investigations by Popp's group showed that the characteristic of the "hyperbolic decay" of the re-emitted radiation observed in these measurements is a reliable indicator for the coherence of biophoton emission, an additional property of cell radiation besides intensity that meanwhile has become one of the most fundamental criteria in biophoton research. Coherence – the order and interference ability of light – is the principal property of laser light and the prerequisite for the informative and regulative ability of biophotons, which is postulated by Popp's biophoton theory.⁷

An early research study by Manohar Croke, MA, the Director of the U.S. Esogetic Colorpuncture Institute, who has a Diplomate in Esogetics™ and is trained in trauma therapy working with acupuncturist, Rosemary Bourne, in the American Journal of Acupuncture, reviewed European studies using Esogetic Colorpuncture™ Therapy for treating a variety of difficult health problems including migraines, insomnia, bronchitis, ADD and uterine fibroids. Their findings showed a dramatic improvement of symptoms after colorpuncture treatments. They concluded that although this was a review of small studies, colorpuncture therapy may offer fast, economical, non-invasive and non-toxic methods for treating health problems.⁸ It should be noted that insomnia and migraines are particularly challenging for some patients with CFS/ME.

In a study conducted in 2013 in a retirement home in Switzerland, Dr. Fausto Pagramenta and his colleagues offered colorpuncture (they called it chromopuncture) to 12 patients receiving weekly therapeutic sessions for one year to treat their pain. After one session, pain was reduced by participants by 30%, and comparing pain levels before and after the one year study, pain was reduced by 89% with complete pain disappearance for 11 of the 12 participants.⁹ In addition, they cite in their study, "Study on the efficacy of chromopuncture for pain treatment in the setting of a retirement home", that the "subjects' quality of life increased noticeably according to their subjective assessment." Mandel states that the colorpuncture treatments affect both body and mind at the same time, which would explain the subjects improved experience of quality of life, even as their pain was reduced. The reduction of pain for elderly patients is significant because pain is difficult to alleviate.

Previous research conducted by the principal investigator on the use of colored light therapy with oncology patients, although anecdotal, is significant. In a paper published in June, 2018, *"Is color and light therapy an effective complementary therapy for oncology patients? An analysis of one practitioner's anecdotal experiences"*, "Initial analysis based on participants reports indicated that color and light has proved to be effective in the reduction of common problems that people with cancer experience including side effects from chemotherapy and radiation treatments, nausea, vomiting, and pain." In addition, "the results of this initial study with 33 patients showed promise that the application of colored light could make a significant difference in the reduction of pain, promotion of wound healing, improvement in mood and improvement in overall quality of life."¹⁰

Manohar Croke, MA, Diplomate ECP, who studied with Dr. Mandel and currently teaches colorpuncture in the U.S. stated that: "...by choosing this method of precise light applications (colorpuncture), Mandel has been able to develop a highly precise system of light treatments, one in which Morse code-like light signals can be used to target a wide variety of physical symptom and psychological issues." In her book, *Energy Psychology Using Light and Color*, Croke explains that the system of Esogetic Colorpuncture includes many treatments that are designed to bring up and release the imprints of subconscious trauma and stress that often underlie challenging situations of illness and pain. Mandel's goal has been to create "information medicine," by which specific frequencies of colored light are applied to a series of points (called acu-points) on the skin to send precise signals to the body.¹¹ Anecdotal research by the PI has shown this integrative therapy as a promising intervention particularly for oncology patients and the authors hope that this pilot study would show that colored light applications are an effective modality, particularly for the reduction of pain for patients with CFS/ME. Previous studies have shown that colorpuncture (applications of light therapy on the body) have been effective protocols for pain reduction for patients with chronic and acute pain and migraines and for the reduction of pain for oncology patients.

Methods

This pilot study was conducted in 2020-2021 at the Neuro Immune Clinic at Nova Southeastern University in Fort Lauderdale, FL, a world renowned center for treating patients with CFS/ME. An IRB approved this study. All COVID precautions were taken during the study. As previously cited, pain is a large problem for these patients and improving their quality of life is of course, important. Flyers were circulated and the doctors at the clinic also spoke to patients who qualified for the study about their possible interest in participating.

Patient Criteria

All patients who participated met the criteria of a diagnosis of either ME or CFS. Patients completed informed consent forms and finished a baseline questionnaire that evaluated their pain before and after treatments with color and light therapy. Vital signs were taken, and no fees were paid to participants. All information was locked and complied with HIPPA. Forms used included the McGill Pain Questionnaire and SF-36, short form commonly used for pain assessments. No adverse reactions were reported.

Treatment Protocols

The treatments used were analyzed by the authors and administered by Dr. Roseman. All patients received the same protocols during each session except for Protocol 4, which offered individualized light therapy treatments for pain identified by the patient.

Tools for Treatment

All treatments used a combination of two models of the Esogetic Light Pen, a simple hand-held device. Both models were made by the Colorpuncture Institute in Germany. Dr.

Mandel, who created colorpuncture worked with a noted physicist, Dr. Fritz Popp to identify the precise light frequencies that are optimally effective. The Perlux F33, used colored caps attached to the front end of the penlight and the Perlux P117 uses insertable glass rods with a focused tip that apply light more precisely to points on the skin. The F333 was used specifically for pain control. Colored light was also chosen specifically for the protocols in treatments and was applied by shining light directly on the skin, on acupoints identified in specific protocols chosen. For each treatment, colored light was applied to a specific set of points on the body, treated in specific sequence using pre-specified colors. Each treatment was specifically chosen by Dr. Roseman based on the identification of exact locations on the body for pain relief. Using both of the pen lights, specific colors of light were applied to the appropriate acupoints indicated by the protocols chosen. An explanation of protocols selected follows.

Protocol One

The treatment was chosen because of its effectiveness in harmonizing and balancing the brain (medulla oblongata). This protocol works on the limbic system and can help regulate the hypothalamic-pituitary axis and endocrine imbalance. The seven points were treated for 30 seconds on the front and back of the body. Colors used included yellow, orange, violet and red. Acupuncture points included CV22, CV 6, CV17, GV 13, L5/S1.

Protocol Two

Because CFS/ME patients have compromised immune systems they received this treatment to stimulate their natural immune system responses. Four points on the leg were selected. Red light was used. The PI used selected points on the back of both legs on the median line on the back of the thigh, the back of knee, and other points identified.

Protocol Three

This protocol is an overall balancing treatment to reduce stress and balance all systems of the body. Using the Perlux F33, light was applied on specific points for the body's regulation systems. Colors used included red, orange, yellow, pink, blue, indigo and violet. Points included the groin, abdomen, solar plexus, heart, throat, forehead, and top of the head.

Protocol Four

The last protocol was determined by the location and quality of pain described by the patient and administered by the PI. Colored light of various hues was applied on specific points on the body in correlation with the patient's specific identified pain. Light was applied for 30 seconds or longer depending on the severity of the pain reported. Colors used included indigo, violet, blue, and pink. Based on Dr. Roseman's understanding and years of experience working with oncology patients who also report severe pain, the protocols selected differed from the traditional colorpuncture protocols.

Results and Discussion

The initial results from this pilot feasibility study are encouraging especially when the data supports the reduction of pain for many of the patients who participated (Figures 1 and 2, Table 1). Because patients with CFS/ME suffer so much from pain on a daily basis, we hope to conduct more rigorous studies with a larger patient population to add to the literature and to investigate more. Questions to consider include: What is the pain mechanism for patients with

CFS/ME and what can be done to ease their pain without pharmaceutical intervention? Can patients learn specific color and light therapy protocols to ease their pain daily? Would self-help applications of colored light be effective? How can healthcare practitioners who work with patients with CFS/ME help improve their quality of life using integrative medicine methods?

It should be noted that this year, Scientists Pierre Agostini, Ferenc Krausz and Anne L'Huillier won the 2023 Nobel Prize in Physics for using pulses of light to study the behavior of electrons. This bodes well for future research on the efficacy of how light can influence the body in work which could advance medical diagnostics. Although this study was small with only 10 patients, the reports of the effectiveness of reduction of pain using colored light should not be ignored. More research is needed and one of the challenges to gathering that data is the lack of research in the US from healthcare practitioners.

For all the patients in the study, a reduction of pain was identified, thus helping improve quality of life. As healthcare professionals are aware, pain is a significant problem for many patients; however, patients with CFS/ME commonly experience pain continuously. Witnessing a patient who is suffering is sobering and this non-invasive treatment offers hope to help remove or moderate that pain. Although patients in Florida at the Neuro Immune Institute have requested to continue this research, Dr. Roseman, the principle investigator now lives in another state. However, Dr. Roseman would like to continue her research in New Mexico in order to expand this study and perhaps work with an interested healthcare practitioner in the area. In the authors' opinion and experience, the trainings offered by Manohar Croke, MA, are excellent and it is hoped that those practitioners after their training will consider conducting pilot studies with their patients. The authors are excited about the possibilities of color and light therapies and hope to continue research.

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Bio

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Figure 1. Symptoms Before and After Treatments with Color and Light Therapy

List of Symptoms	Patients	Mild (Before)	Moderate (Before)	Severe (Before)	Total Symptoms Before Treatment	Mild (After)	Moderate (After)	Severe (After)	Total Symptoms After Treatment
Aching	1	Shooting, Stabbing, Cramping, Gnawing, Heavy	Sharp, Aching, Tender, Tiring-Exhausted	None	9	None	Aching, Tender	None	2
Cramping	1(2)	Sickenin g, Fearful	None	None	2	None	None	None	0
Fearful	2	Sharp, Aching, Cramping	None	None	3	Aching	None	None	1
Gnawing	3	Throbbing, Hot-Burning, Sickenin g	Sharp, Tender	Aching, Tiring-Exhausted	7	Aching, Tender	None	None	2
Heavy	3(2)	Throbbing, Hot-Burning	Sharp, Tender	Aching, Tiring-Exhausted	6	Aching, Tender, Throbbing	None	None	3
Hot-Burning	4	Sickenin g	Aching, Tiring-Exhausted, Tender	None	4	Tender, Tiring-Exhausted	Aching	None	3
Punishing-Cruel	5	Aching, Tender	None	None	2	Tender	None	None	1

Sharp	5(2)	Sickenin g, Punishin g-Cruel	Gnawing, Aching, Hot- Burning, Tender, Tiring- Exhauste d, Splitting, Stabbing	None	9	Aching, Stabbing, Gnawing, Hot-Burning	None	None	4
Shooting	6	Throbbin g, Punishin g-Cruel, Fearful	Shooting, Stabbing, Sharp, Gnawing	Aching, Heavy, Crampin g, Splitting, Tiring- Exhauste d, Sickenin g, Tender	14	Sharp, Throbbing, Shooting, Stabbing, Gnawing, Sickening	Heavy	Tiring- Exhauste d, Aching	9
Sickening	6(2)	Throbbin g, Sharp, Splitting	Cramping , Gnawing	Aching, Heavy, Tender, Tiring- Exhauste d	9	Throbbing, Shooting, Stabbing	Cramping , Heavy	Aching, Tender	7
Splitting	7	Aching, Tender	Splitting	None	3	Aching, Tired/Exhaust ed	None	None	2
Stabbing	8	Sickenin g, Punishin g-Cruel	Gnawing, Hot- Burning, Aching, Heavy, Tender, Stabbing	None	8	Stabbing, Cramping, Gnawing, Aching	Heavy, Tender	None	6
Tender	8(2)	Aching, Tender	None	None	2	Aching	None	None	1
Throbbing	9	Throbbin g, Heavy	Shooting, Sharp, Tender	Stabbing, Tiring- Exhauste d	7	Shooting, Stabbing, Tender, Tiring- Exhausted	Sharp, Aching	None	6

Tiring-Exhausted	10	Tender, Aching	Tiring-Exhausted	None	3	Tiring-Exhausted	None	None	1
	10(2)	Aching, Tender	Tiring-Exhausted	None	3	Aching, Tender	None	None	2

Figure 2. Pain Levels Before and After Treatments with Color and Light Therapy

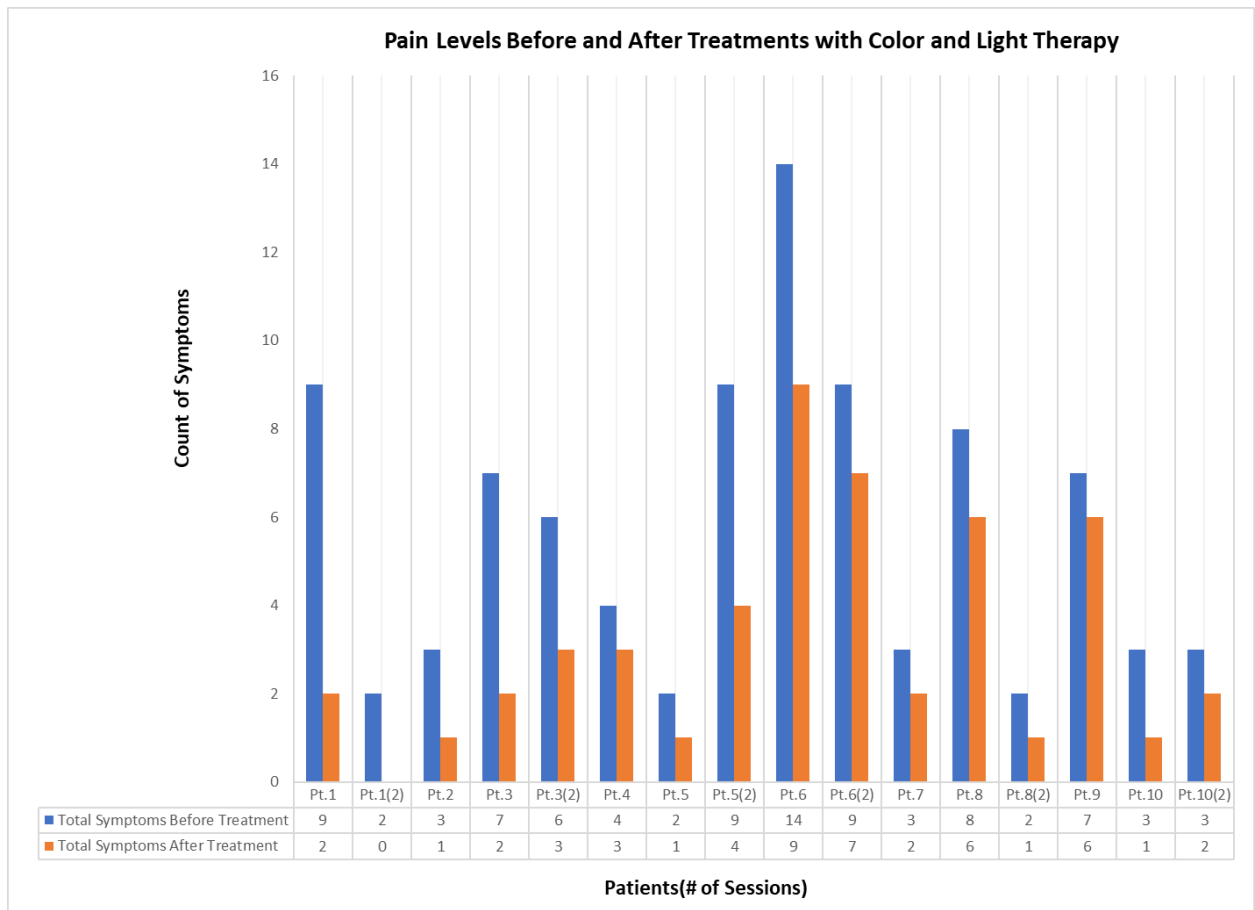


Table 1. Patient Comments

Patient 1	After Treatment 1: “Feels good, pain is a lot better and I can walk!”
	After Treatment 2: “Have had improvement, feeling good in a lot of ways, significant

	reduction in left hip pain, knee swelling never occurred again.” “I hardly use my cane anymore at all.”
Patient 2	After Treatment 1: “Made me feel sleepy and I am less anxious. I feel peaceful and I am very surprised! Not feeling neck or hip pain.”
Patient 3	After Treatment 1: “I feel better, headache is almost gone, felt an improvement in sternum pain, overall pain level decreased. “
	After Treatment 2: “Sternum pain never returned and I don’t have to cry myself to sleep. The pain in my neck is gone and feels good, and it really helped my hip pain.”
Patient 4	After Treatment 1: “I feel more comfortable with less pain!”
Patient 5	After Treatment 1: “My headache is gone!”
	After Treatment 2: “Pain went from burning hot to mild cramping, feeling less pain.”
Patient 6	After Treatment 1: “My inner thigh feels better and so does my calf pain.”
	After Treatment 2: “I feel calmer and my pain is not gone but is much better, especially in my back.”
Patient 7	After Treatment 1: “I feel much better, arms feel better, right leg feels better and left leg pain about the same.”
Patient 8	After Treatment 1 and 2: “Pain is a lot better!”
Patient 9	After Treatment 1: “Pain is not as sharp!”
Patient 10	After Treatment 1 and 2: I feel a lot better and pain in thighs is decreased a lot!”

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