

## What is Light Energy Support?

Light is essential to life and the “application” of Light Energy has been used for thousands of years. Long before ancient cultures understood what it was, they recognized the Sun as the source of the planet’s energy and the provider of life. Ancient Egypt deified it as Ra, the “sun god”, and believed that bathing in light of varying colours would promote the healing of certain ailments. Chinese texts going back thousands of years describe treating skin and mental disorders with a range of colour and light therapies. Even the father of modern medicine, Hippocrates, understood the power of light and encouraged sitting in sunlight as a cure for various disorders.

Over the thousands of years since, significant advancements in science have occurred, resulting in a greater understanding of how light energy affects biology. The most notable advancements have happened in the latter part of this century.

In the early 1990s, NASA and Quantum Devices began trying to discover how to make plants grow in space. This collaboration resulted in a new understanding of how light interacted with biology and soon after, research turned to understanding the effect of light energy on human and animal cells.

Their research led to the discovery that Light Energy can help support the body in the reduction of pain and inflammation by increasing blood flow and circulation through a natural response, oftentimes without the need for expensive or addictive drugs.

In further research, it’s been discovered that Light Energy applied in specific colours is much more beneficial:

Infrared Light can penetrate deeply into the body and has the most potential to support the body’s natural healing of severely damaged tissue. The longer non-visible wavelengths of the infrared spectrum makes it ideal for the deeper applications to bone, cartilage, tendons, discs, teeth and inflammation concerns. Light stimulation also increases blood flow, which can help the body to bring nutrients and cellular growth factors to areas that need them most.

Red Light seems to assist wounds heal faster than they would without the application of red light. It has also been shown to increase cellular activity at the dermal level and stimulate collagen production, which dictates the strength of skin.

Blue Light acts as an antibacterial agent and seems to have a special ability to reset our biological clocks. Application of blue light has been shown to significantly reduce the symptoms of Seasonal Affective Disorder, among other mood disorders, as well as being able to increase alertness or fight insomnia depending on the application time.

## What is an LED Light Energy Application Device?

Light Emitting Diode, or LED Light Energy Application Devices are a non-intrusive and cost-effective way to help the body heal itself, often without need for additional drugs, surgery or other invasive methods.

LEDs that emit Red, Blue and Infrared light are set into a flexible, neoprene “pad”, and then attached to a main control box and power source. This control box powers the LEDs and allows them to pulse light directly to the body, which has been shown to be more beneficial than non-pulsed lights.

As science and technology advance, it has been discovered that LED Light Energy Application Devices can be a better alternative to lasers for several reasons; LED Devices are easier and safer to use than lasers, enabling them to be used at home. LED Devices also provide a more cost-effective delivery method of Light Energy

## How does an LED Light Energy Application Device Work?

The device’s LED pads are placed against the skin and the control is set to the frequency necessary for the desired result. The LEDs create a warm, comforting feeling while the light energy does its work. The combination of Red, Blue and Infrared LEDs (invisible to the naked eye) penetrate deep into the body and help it release *Nitric Oxide*, the body’s own natural “pain killer”. Nitric Oxide occurs naturally within the body and is a molecule that signals smooth muscle cells found in the arteries, veins, capillaries and lymph vessels to relax. When these muscles are in a relaxed state, the blood vessels open (dilation), allowing increased circulation.

Human cells are also capable of converting Light Energy into usable cellular energy called *adenosine triphosphate (ATP)*, the “fuel” within the cell. The production of ATP provides the body the energy to decrease inflammation and heal itself. The process is similar to how the skin produces Vitamin D when exposed to sunlight.

*In the following pages of this Information Package, you will find a Frequently Asked Questions section and a Resources, References & Research section. Both will help you garner a greater understanding of the information we have touched on here and are worth reviewing.*

*Several articles have been written on the benefits of using Light Energy and there is a wealth of helpful information out there. For your convenience, we have compiled a list of resources and articles from recognizable sources. Please take the time to read through a few of these intriguing layman’s articles and the exciting research we have to look forward to.*

**Disclaimer:** *Light Energy Application Devices are not intended to diagnose, treat, cure, mitigate or prevent disease. If you have a disease or medical condition, consult with your physician or health care practitioner prior to using a Light Energy Application Device. Use only as directed.*

## Frequently Asked Questions

**WHAT IS LED LIGHT ENERGY APPLICATION?** LED Light Energy Application and Light therapy is being used in both clinical and home settings in several countries. It uses light emitting diodes (LEDs) to deliver Red, Blue and Infrared light to the skin. Lights in the Red and Blue Spectrum are visible, while lights in the Infrared Spectrum require viewing through a device such as a lens to be seen, as they are not visible to the naked eye. These three wavelengths of light can stimulate a beneficial and innate cellular response within the body that activates the release of Nitric Oxide (NO), thereby increasing circulation.

**CAN ANYONE USE LIGHT ENERGY APPLICATION?** Most LED Light Energy Application equipment is safe to use and can be used without medical supervision by an individual at home. Sessions can also be performed by a health care professional in a clinical setting. The equipment and/or sessions are affordable, completely safe and non-invasive. As is the case with most modalities, we recommend consulting with your doctor or health care professional prior to use, especially if you are pregnant, light sensitive or taking any medications that cause light sensitivity such as Tetracycline.

**DOES LIGHT APPLICATION EQUIPMENT REQUIRE A PRESCRIPTION FROM A PHYSICIAN?** No. Infrared and LED Light Application devices do not require a prescription and anyone may purchase a system for personal use without a prescription. A prescription or doctor's referral may be necessary in order to have sessions performed in a clinical setting reimbursed by your health care or extended medical plan. This, however, is not related to purchasing or using a system.

**WHAT HAPPENS WHEN LED LIGHT ENERGY APPLICATION EQUIPMENT IS USED?** The LED Light Pads are placed on the body and the equipment's array of infrared and visible light diodes create a comforting warm feeling under the pads. The light energy combined with the warmth dilates the blood vessels under the pads, which can cause an increase in circulation. This can create a feeling of relaxed calmness and may help in the reduction and/or alleviation of pain.

**In addition to feeling relaxed, clients may experience:**

- decrease in local swelling
- decreased inflammation
- decreased muscle spasms and tightness
- decreased tension
- increased range of motion
- increased lymphatic drainage
- increased venous dilation and flow

**HOW DOES LED LIGHT ENERGY INCREASE CIRCULATION?** When applied to the skin, Light Energy prompts the body to release Nitric Oxide from the hemoglobin. The Nobel Prize in Physiology of Medicine was awarded to three scientists in 1998 for their discoveries on Nitric Oxide's effect on the cardiovascular system. Nitric Oxide occurs naturally within the body and is a molecule that signals smooth muscle cells found in the arteries, veins, capillaries and lymph vessels to relax. When these muscles are in a relaxed state, the blood vessel open (dilation), allowing increased circulation.

**WHAT IS THE DIFFERENCE BETWEEN AN LED AND A LOW-LEVEL LASER?** Both contain diodes and can be made of the same materials; usually silicon with specific minerals added in specific amounts to produce different colours. In lasers, the diode is mounted in an area lined with reflective material that sends, generally, only one wave-length of light. The result is a narrow beam of light that is concentrated into a beam. LEDs and low level laser devices have similar effects, though LEDs can provide those effects over a larger area at once than low level lasers, thereby requiring less application time. LEDs also provide a more cost-effective manner to receive the positive effects of Light Energy.

**HOW DOES LIGHT ENERGY REDUCE PAIN?** Undergoing a Light Application Session prompts the body to release Nitric Oxide, which has been shown to be essential for wound healing even if chronic or traumatic and has been touted as the body's natural painkiller.

**IF LIGHT ENERGY REDUCES PAIN, WHY DO I HURT MORE AFTER MY FIRST FEW SESSIONS?** While rare, some clients may experience an increase in localized pain or discomfort after a Light Energy Application Session. Oftentimes in areas that have experienced an injury, there can be a buildup of damaged tissue that can decrease blood flow and circulation to the area. A Light Energy Application Session promotes the increase of blood flow to the area, and it is this increased circulation that can cause a feeling of pain or discomfort. The pain you may feel is not a bad thing though; it indicates that healing is taking place within your body. It is similar to the discomfort one might feel after returning to the gym for exercise after a period of absence.

**IS THERE ANYONE THAT SHOULDN'T USE LED LIGHT APPLICATION?** While LED Light Energy Application equipment is safe to use for people of all ages as well as animals, there are some instances where it is not recommended without a thorough discussion and approval from your medical doctor or health care practitioner. Examples of these instances include:

- use on women who are pregnant
- over sites of known malignancy
- use on person's undergoing chemotherapy or radiation treatment
- use on persons that have received steroid or cortisone injections 2 weeks prior, or will receive 2 weeks subsequent to receiving a Light Energy Application

Research has also been conducted into the theory that Blue Light may contribute to the advancement of Macular Degeneration. While this has not been proven beyond theory, it is recommended that any person's that have, may have, or are concerned about Macular Degeneration do not place the eyemask attachment over their eyes.

**WHO HAS STUDIED THE THERAPEUTIC EFFECTS OF LED LIGHT APPLICATION?** The research and study of LED Light Energy Application Therapy has been done by a vast array of learning institutions, doctors and curious people. The following is just a sample list of those that have conducted clinical studies on the effectiveness of LED light therapy:

- National Cancer Institute
- Mayo Clinic, *Jeffery Basford, MD*
- Stanford University, *Kendric C. Smith*
- Massachusetts General Hospital, *Wellman Labs*
- NASA, *Dr. Harry T. Whelan*
- Marshall Space Flight Center
- University of British Columbia, Vancouver BC

**WHO USES LED LIGHT APPLICATION THERAPY?** LED Light Application and Light Therapy can be used on humans as well as animals. Here is a sampling of who is using it:

Acupuncturists	Lymphatic therapists	Psychiatrists
Athletes	Massage therapists	Psychologists
Biofeedback practitioners	Medical doctors	Reflexologists
Chiropractors	Naturopaths	Reiki practitioners
Colon therapists	Nurses	Spas
Counselors	Osteopaths	Sports medicine therapists
Dentists	Pet owners	Trainers
Healing centers	Physical therapists	Veterinarians
Hypnotherapists		

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## Resources, References & Research

### In Light Wellness Systems

*Innovative Manufacturer of Quality LED Light Energy Devices*

<http://www.ilwsystems.com/light-therapy/>

<http://www.youtube.com/user/ilwsystems/videos>

*How LED Light Energy Affects the Body*

[http://www.youtube.com/watch?v=P-gWK\\_XEvMI](http://www.youtube.com/watch?v=P-gWK_XEvMI)

*LED Light Energy & TBI's*

<http://www.youtube.com/watch?v=IVtKpcMJZUk>

*Testimonials*

<http://www.youtube.com/watch?v=-wMe2hnRhdQ>

<http://www.youtube.com/watch?v=PH2E-9CVkSA>

### General Uses and Benefits of Light Therapy

*Mayo Clinic*

<http://www.mayoclinic.com/health/light-therapy/MY00195>

*E-How*

[http://www.ehow.com/about\\_6617355\\_led-light-therapy-treatment.html](http://www.ehow.com/about_6617355_led-light-therapy-treatment.html)

*Cancer.org*

<http://www.cancer.org/treatment/treatmentsandsideeffects/complementaryandalternativemedicine/manualherbalandphysicaltouch/light-therapy>

*Wise Geek.com*

<http://www.wisegeek.com/what-is-infrared-light-therapy.htm>

*Women's Web.com*

<http://www.womensweb.ca/health/diabetes/mamma.php>

*Light Devices.org*

<http://lightdevices.org/>

### Nobel Prize Press Release

*Effects of Nitric Oxide on the Cardiovascular System*

[http://www.nobelprize.org/nobel\\_prizes/medicine/laureates/1998/press.html](http://www.nobelprize.org/nobel_prizes/medicine/laureates/1998/press.html)

## **NASA Clinical Trials**

*Reducing Cancer Patients Painful Side Effects from Radiation*

<http://www.nasa.gov/topics/nasalife/features/heals.html>

<http://www.nasa.gov/centers/marshall/news/news/releases/2003/03-199.html>

## **Study References - US National Library of Medicine, National Institutes of Health**

*Skin Rejuvenation/Anti-Aging/Collagen Production/Wrinkle Treatment*

<http://www.ncbi.nlm.nih.gov/pubmed/16414908>

<http://www.ncbi.nlm.nih.gov/pubmed/19587693?dopt=Abstract>

*Wound Healing*

<http://www.ncbi.nlm.nih.gov/pubmed/11776448>

*Introduction to Experimental and Clinical Studies Using Light Therapy*

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2939452/>

## **Science Daily.com**

*Light Therapy & PTSD*

<http://www.sciencedaily.com/releases/2010/06/100607065552.htm>

*Resetting Sleep Cycles*

[http://www.sciencedaily.com/videos/2006/0201-waking\\_up\\_teens.htm](http://www.sciencedaily.com/videos/2006/0201-waking_up_teens.htm)

## **Live Strong.com**

*Light Therapy & Weight Loss*

<http://www.livestrong.com/article/350530-weight-loss-light-therapy/>

## **Clinical Geriatrics.com**

*Depression and Sleep Disorders*

<http://clinicalgeriatrics.com/articles/Light-Therapy-Sleep-Disorders-and-Depression-Older-Adults>

## **Vancouver Sun, Newspaper**

*Light Therapy to Cut Infection*

<http://www.vancouversun.com/health/Vancouver+General+Hospital+uses+light+therapy+cuts+post+surgery/7694026/story.html>

## Published Articles

USA Weekend, "Light That can Cure You", Reed Karaim

<http://www.promolife.com/usaled.pdf>

Spirituality & Health, "Healing with Light", Jill Neimark

<http://www.photonicenergetics.com///Healing%20with%20Light%20Artical.pdf>

## Dedicated to the Study & Research of Light Therapy

UBC Hospital Mood Disorders Center

<http://www.ubcsad.ca/>

Massachusetts General Hospital Wellman Center for Photomedicine

<http://www.massgeneral.org/research/wellman.aspx>

## Books and Downloads

Rejuvenation: Using the Power of Light Dr. Lawrence DeRe

[http://www.amazon.com/dp/0615485367/ref=pe\\_175190\\_21431760\\_M3T1\\_ST1\\_dp\\_1](http://www.amazon.com/dp/0615485367/ref=pe_175190_21431760_M3T1_ST1_dp_1)

Proceedings of Light-Activated Tissue Regeneration and Therapy Conference Ronald Waynant & Darrel B. Tata

[http://www.amazon.com/dp/0387718087/ref=pe\\_175190\\_21431760\\_3p\\_M3T1\\_ST1\\_dp\\_1](http://www.amazon.com/dp/0387718087/ref=pe_175190_21431760_3p_M3T1_ST1_dp_1)

Red and Blue Light as Medicine Seth Pancoast

<http://catalog.borderlands.com/?act=viewCat&authorId=65>

## Free Download

<http://ia701202.us.archive.org/32/items/blueredlightorli00panc/blueredlightorli00panc.pdf>

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