Revival Chiropractic
AUSTIN, TX

RED LIGHT THERAPY

POTENTIAL HEALTH BENEFITS OF RED LIGHT INCLUDE:

- STIMULATING HAIR REGROWTH IN BOTH MEN AND WOMEN
- REDUCING ACNE INFLAMMATION AND BREAKOUTS
- REDUCTION OF FINE LINES, SAGGING SKIN, SUN DAMAGE, WRINKLES AND STRETCH MARKS
- ELIMINATION OF PSORIASIS
- DECREASING JOINT AND MUSCLE PAIN
- ACCELERATED COLLAGEN PRODUCTION
- REDUCTION OF INFLAMMATION & INCREASED CIRCULATION
- REDUCTION OF NEUROPATHIC PAIN (SCIATIC NERVE PAIN)
- FASTER ATHLETIC RECOVERY
- EFFECTIVE ECZEMA & PSORIASIS TREATMENT
- PROMATE CELLULAR HEALTH
- INCREASED TESTOSTERONE IN MEN
- REDUCED ARTHRITIS PAIN
- WEIGHT/FAT LOSS

AND SO MUCH MORE!

SCHEDULE YOUR WEEKLY SESSIONS TODAY!

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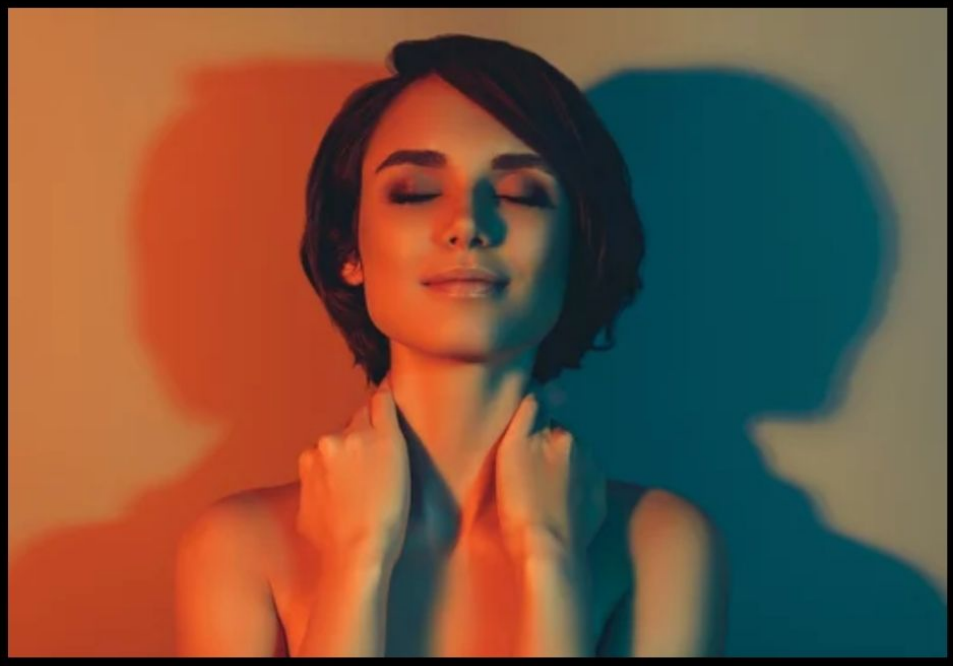

WHY US FOR RED LIGHT THERAPY?

PROFESSIONAL MEDICAL GRADE

FDA APPROVED

FIVE (5) WAVELENGTHS AT ONCE

FOR THE PERFECTED BLEND OF DEEP RED LIGHT

BOTH NEAR INFRARED AND INFRARED RAYS

EXTENSIVE RESEARCH

MOST POWERFUL AND ADVANCED DEVICE AVAILABLE

HARNESS THE REGENERATIVE HEALING WAVELENGTHS OF THE SUN WITHOUT THE PROBLEMATIC UVA AND UVB LIGHT RAYS!

Reduce Inflammation

Near-infrared (NIR) light reduces overall inflammation in the body by decreasing the presence of inflammatory markers. This reduction can help ease the symptoms associated with joint pain, sore muscles, autoimmune diseases, arthritis, traumatic brain injuries, and spinal cord injuries.

Improve Circulation

In many studies, LED light therapy has been clinically proven to increase the diameter of blood vessels and to improve circulation. What's more, LED light therapy also protects red blood cells against oxidative stress and limits platelet loss during surgical procedures.

Reduce Recovery Time

For high-performance athletes (and those who train like them) LED light therapy can help accelerate muscle repair following fatigue and injury. Mitochondria within cells are particularly responsive to LED light therapy, and muscle cells are exceptionally rich in mitochondria. LED light therapy may also stimulate stem cells, further assisting in muscle recovery.

Promote Cellular Health

The most significant benefit of LED light therapy is the effect it has on the body's cells. One of the most critical outcomes of LED light therapy on cellular function is the stimulation of collagen production. Collagen strengthens hair, is responsible for the health of connective tissue, and provides our skin with firmness and elasticity.

Stimulate Hair Growth

Alopecia, or hair loss, is a common disorder affecting 50% of males over the age of 40 and 75% of females over 65. Studies have shown that LED light therapy can stimulate hair growth. Red light wavelengths are believed to stimulate epidermal stem cells in the hair follicle, shifting the follicle into the anagen (active growth) stage.

Reduce Pain

In a clinical study, neuropathic pain caused by a spinal cord injury was dramatically reduced by the application of red light treatment. Near-infrared light wavelengths reduce overall pain by easing joint stiffness and soreness, diminishing inflammation, easing muscle spasms and enhancing blood flow.

Increase Fertility

Around the age of 30, male testosterone levels naturally start to decrease. Men hoping to achieve a natural boost to their sex drives, sexual satisfaction, fertility, and physical performance can reap benefits from LED light therapy. Red and near-infrared wavelengths can stimulate photoreceptor proteins in the testes causing higher testosterone production. Other studies have theorized that low-level light therapy may affect the pineal gland in the brain, which bears a significant impact on reproduction.

Improve Skin Health

LED light therapy can dramatically transform the skin. Red light wavelengths in particular target the mitochondrial chromophores within skin cells, generating production of collagen proteins. Collagen stimulation yields more holistic and enduring benefits than simply resurfacing the outer layers of the skin. Stem cells may also be activated, increasing tissue repair. The result is accelerated healing and wound repair, improved appearance in hypertrophic scars, a reduction in fine lines and wrinkles, and improved skin texture.

What Exactly is Light Therapy?

Light therapy is among the earliest recorded healing modalities. Solar therapy was first used by the Egyptians, and forms of light therapy were also practiced by the ancient Greeks, Chinese and Indians.

There's no question that light exerts biological effects: in fact, the body needs light to be healthy. Clinical studies are now establishing how different wavelengths of light affect the body at a cellular level, the conditions that can be successfully treated using light therapy, and the optimal conditions needed to absorb the benefits of light-based treatments.

All light falls along a spectrum of wavelengths. Red and infrared light that falls within the wavelength range of 650-850 nanometers (nm) is extremely beneficial, and often referred to as the "therapeutic window". These wavelengths of light are bioactive in humans, which mean they have a biological effect on the body like antibiotics or vitamins and affect the function of our cells.

Red light emits wavelengths between 620-700 nanometers (nm). All red light wavelengths are effective and offer health benefits, although certain wavelengths are more powerful than others–particularly those that fall between 630-680 nanometers (nm). Visible red light within this range can penetrate deep into the skin, offering rejuvenating and balancing outcomes for a range of health conditions.

How LED light therapy Works

During a LED light therapy treatment, chromophores within our cellular mitochondria absorb red and infrared light photons, and convert them into energy. Mitochondria are the powerhouses of cells, responsible for making adenosine triphosphate (ATP), the cell's form of energy, and enhancing the consumption of oxygen.

Once this red light energy has been absorbed by the body, it is then used by the cells to build new proteins such as collagen and elastin, and to assist with cellular regeneration. Red light gives cells a helping hand, ensuring mitochondria reaches its potential by providing it with a full tank of fuel which results in optimal performance for the organism.

You could compare the process to photosynthesis, where plants absorb sunlight and convert it into complex molecules. In LED light therapy, we absorb the energy of the red light photons to enhance our cellular potential, promote oxygen utilization within the cell, and generate ATP, or cellular fuel.

There's nothing mystical about it--the process by which red light transforms bodily tissue at a cellular level has been scientifically proven. Improving the performance of mitochondria in the body improves the body's overall performance and health.

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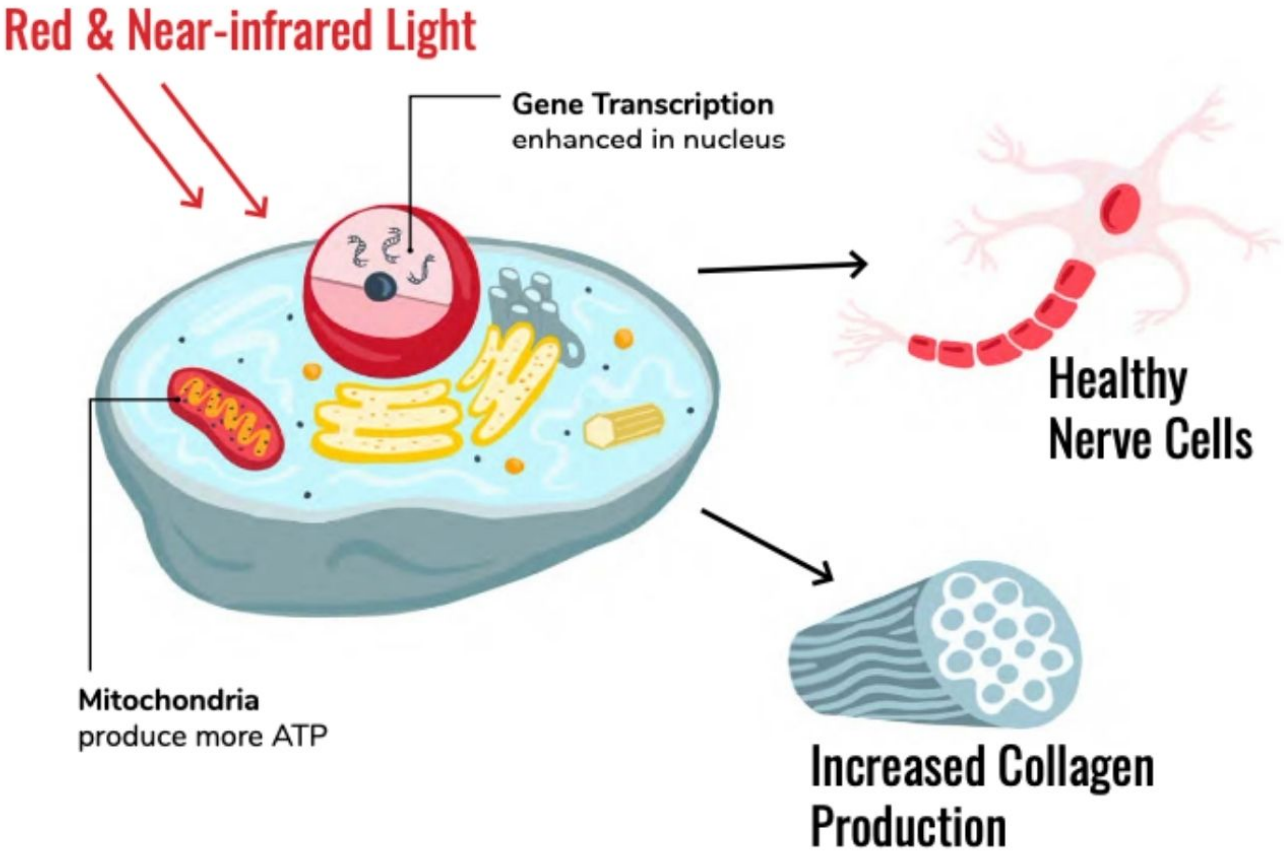
Understanding Red Light Wavelengths

Sunlight includes a component of red light; it is this light wavelength that contributes to the enhanced sense of well-being we experience after a few hours outdoors. LED light therapy devices, such as those offered by PlatinumLED, harness the regenerative healing red light wavelengths, without the more problematic UVA and UVB light rays that can cause skin cancer and premature aging.

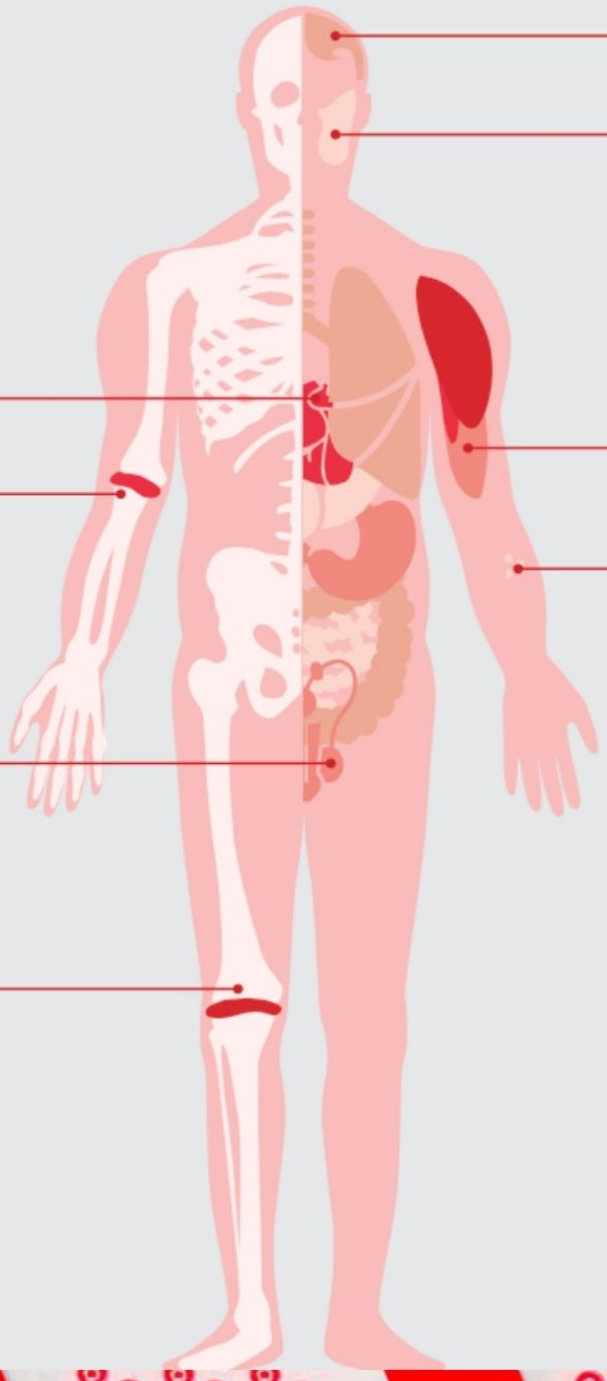
LED light therapy, therefore, is the therapeutic science of utilizing red and infrared light wavelengths to assist with the treatment of health conditions, and promote general well-being.

You may have also heard of LED light therapy referred to by other names, such as:

- Low level light therapy (LLLT)
- Photobiomodulation (PBM)
- Soft laser therapy
- Biostimulation
- Photonic stimulation
- Low-power laser therapy
- Cold laser therapy



Benefits of LED Light Therapy



- Hair Growth
- Skin Health
- Improved Circulation
- Reduced Inflammation
- Improved Recovery
- Cellular Health
- Increased Testosterone in Men
- Reduced Pain

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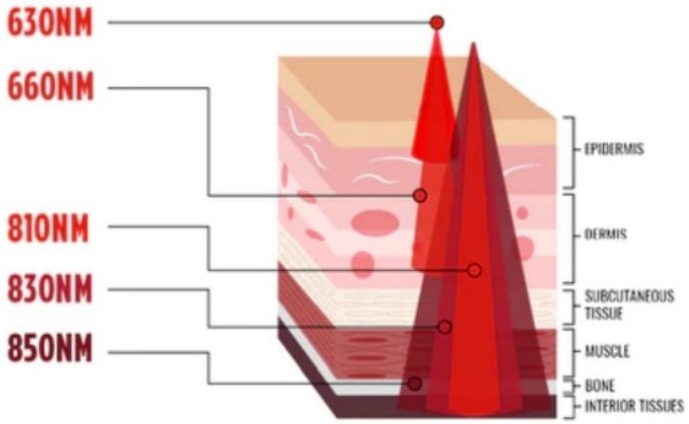
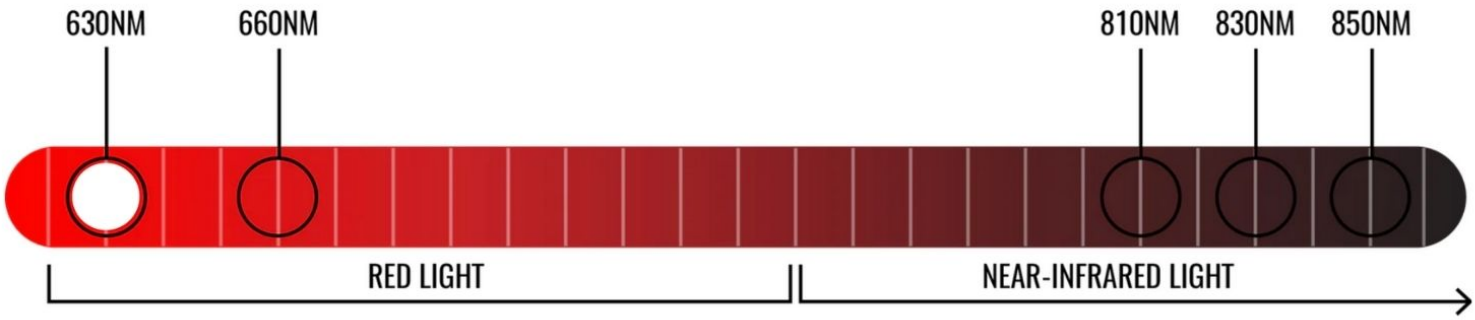
UNDERSTANDING THE 5 WAVELENGTHS OUR LIGHT WORKS AT:

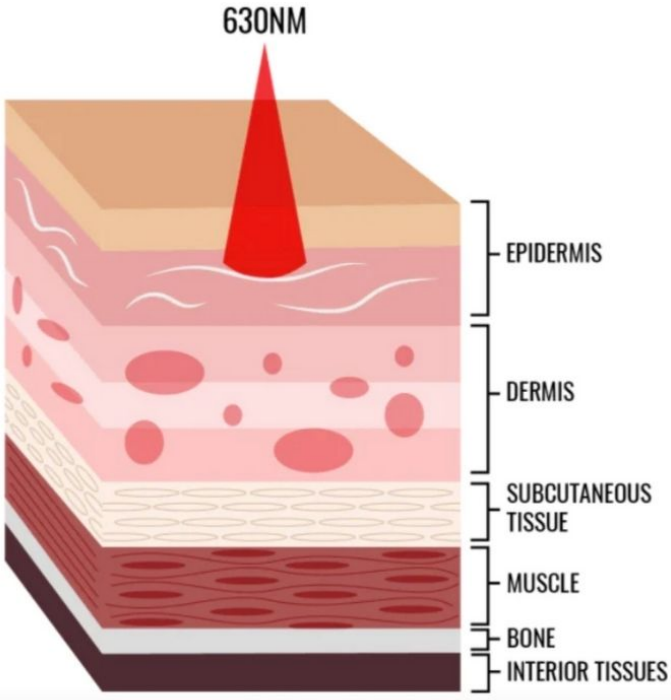




630NM WAVELENGTH

The 630nm wavelength is ideal for targeting all manner of skin concerns.

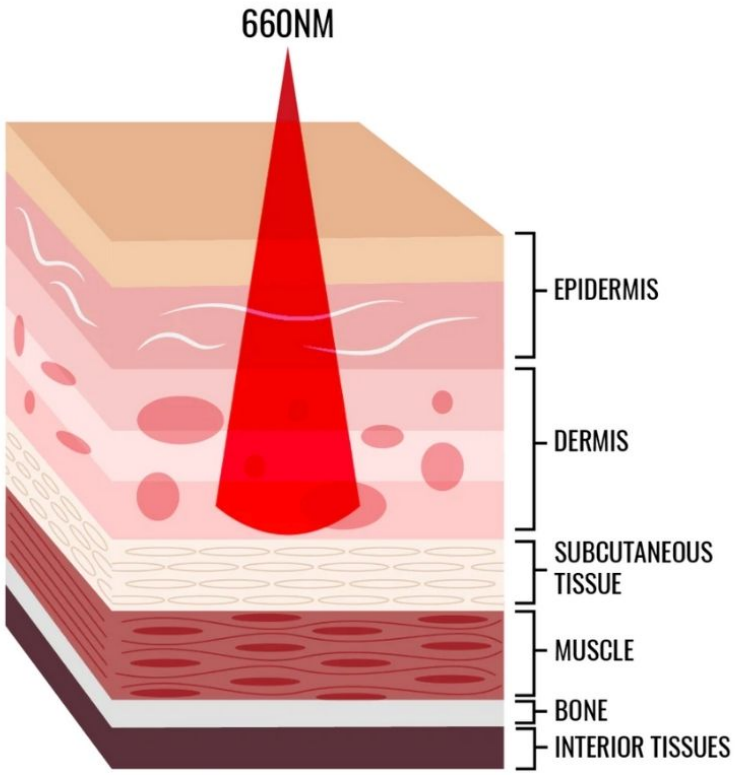
- **REDUCE FINE LINES & WRINKLES**
  In one study, the 630nm wavelength was combined with other beauty treatments such as microneedling to create a statistically significant improvement in photodamage, fine lines and sagging.
- **HAIR REGROWTH**
  Red light therapy containing the 630nm wavelength has been proven to be a safe and effective method of stimulating hair growth in both men and women.
- **THE TREATMENT OF ACNE**
  The 630nm wavelength has also been shown to help reduce inflammation and breakouts.

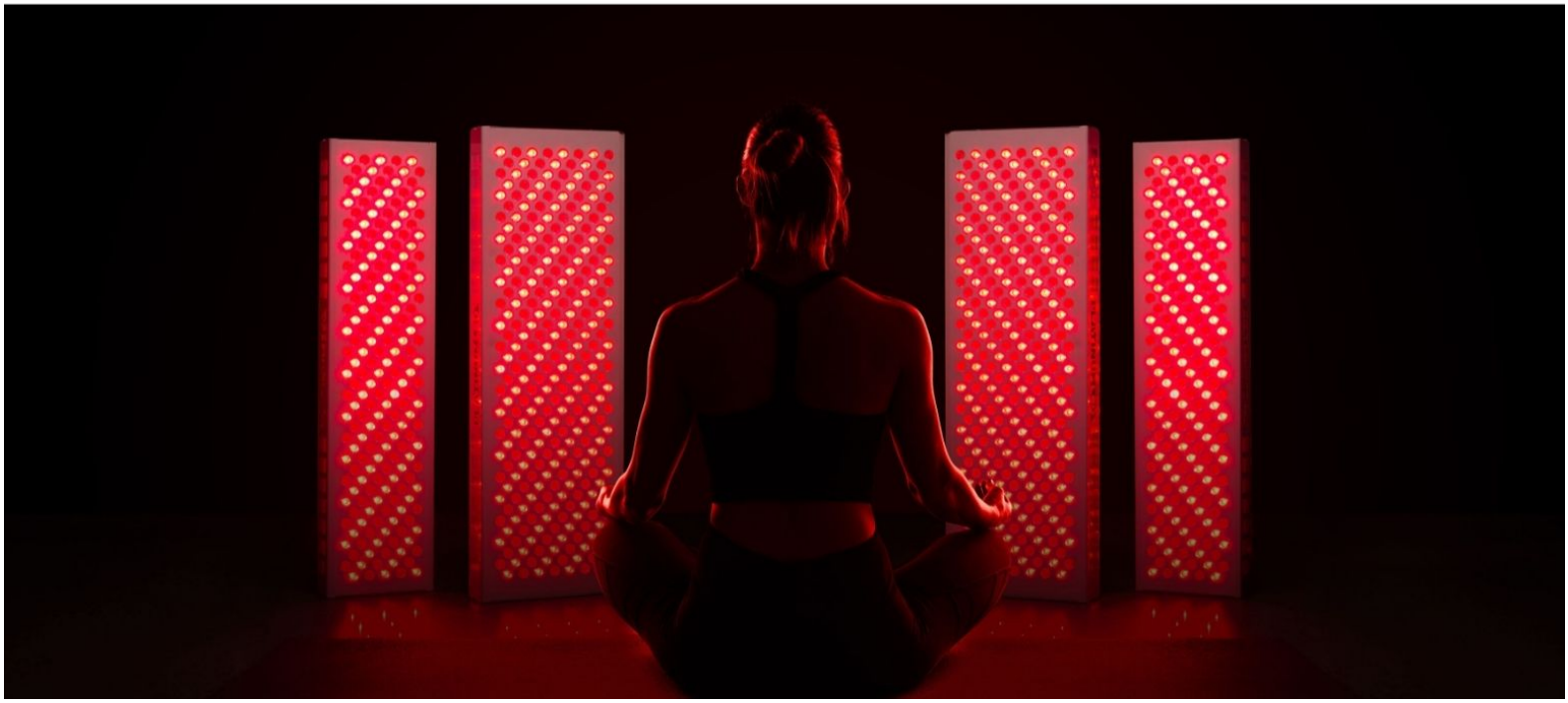


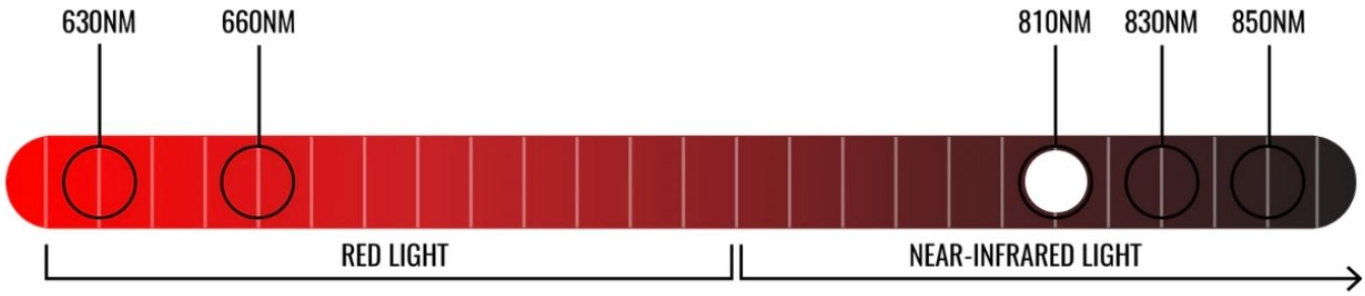
660NM WAVELENGTH

Penetrating just a little deeper than the 630nm wavelength, the 660nm reaches into the entire range of the skin tissue to promote healing and regeneration.

- **Reduced training fatigue:**
  The 660nm wavelength teamed with the 830nm near-infrared wavelength has been proven to delay the development of fatigue in the muscles, and enhance skeletal muscle performance. (Athletes, take note.)
- **Reduced inflammation:**
  In a study investigating the effects of red light therapy on pleurisy, the 660nm wavelength was found to induce an anti-inflammatory effect.
- **Improved bone healing:**
  The 660nm wavelength encourages resorption and formation in the bone cells around the location where repair is needed, without causing any change to the bone structure.
- **Reduced swelling following injury:**
  In one study, the 660 nm wavelength was found to reduce both inflammation and swelling by reducing the number of inflammatory cells which lead to the formation of swelling.
- **Reduced neuropathic pain:**
  A study investigating sciatic nerve pain in rats found that the 660 nm wavelength significantly helped to reduce pain.
- **Accelerated wound healing:**
  The 660 nm wavelength has been proven to increase the formation of new blood vessels and enhance collagen deposition to help in the healing of wounds.



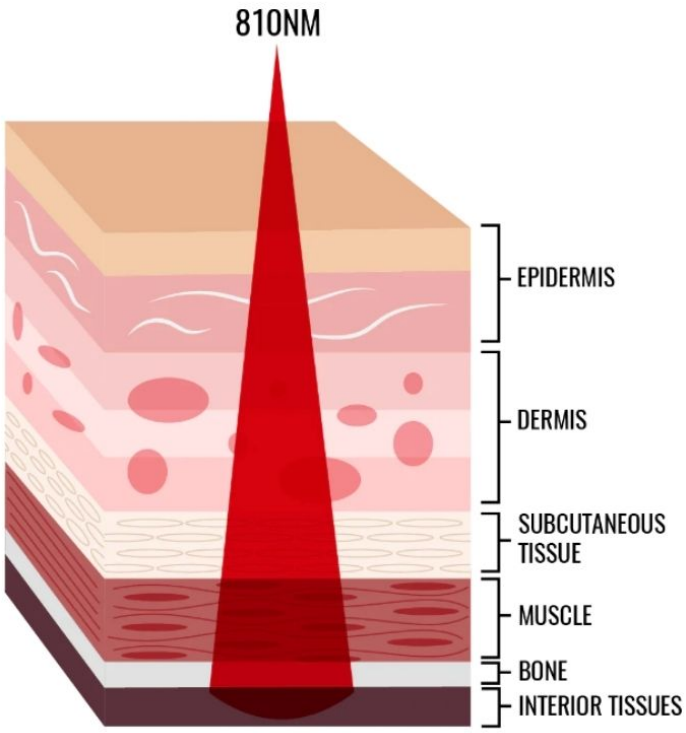




810NM WAVELENGTH

With an ability to extend through the skull into the brain, the 810nm wavelength offers a unique array of neurological benefits. Many forward-thinking scientists are of the belief that light therapy for brain disorders will become a prominent medical treatment in the near future. Expect to reap the following benefits from the 810nm wavelength:

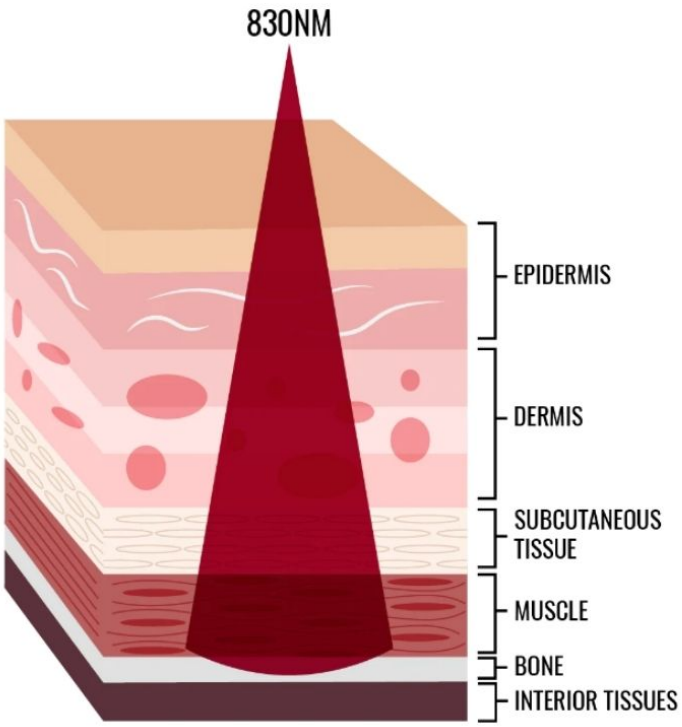
- **Improved healing and recovery:**
  A study of soccer players showed that the 810nm wavelength applied before activity enhanced muscular performance and post-exercise recovery.
- **Accelerated wound healing:**
  810nm wavelengths have been shown to help expedite wound healing, helping the tissue to granulate more rapidly.
- **Improved recovery from stroke in certain patients:**
  One study conducted among stroke patients showed that wavelengths of 810nm provided neuroprotective benefits and improved recovery among sufferers of moderate to severe strokes. Five days after the stroke, there was significant improvement among those who had been treated with the 810nm light therapy, compared to those who hadn't. Ninety days post-stroke, 70% of the treated patients had a successful outcome, compared with only 51% of the control group.
- **Improved recovery from traumatic brain injury:**
  810nm has been proven in animal models to be particularly effective in fostering recovery from traumatic brain injuries, and reducing long-term neurological damage.
- **Improvement in psychiatric disorders:**
  Prescription drugs for psychiatric conditions have long been recognized as having a limited ability to assist individuals suffering from psychiatric conditions. What's more, pharmacotherapeutic medication often carries a host of unwanted side effects, while near-infrared light therapy doesn't. 810nm wavelengths applied to the forehead have been shown to assist patients suffering from major depression and anxiety.
- **Hair growth:**
  Studies have shown the 810nm wavelength can encourage significant hair growth in patients with androgenetic alopecia.



830NM WAVELENGTH

The 830nm wavelength is not as readily absorbed by the body, therefore it is able to penetrate deeper through skin and tissue and into the bone. A greater quantity of photons are delivered into the tissue with the 830nm wavelength. The incorporation of the 830nm wavelength into the BIOMAX delivers the following advantages:

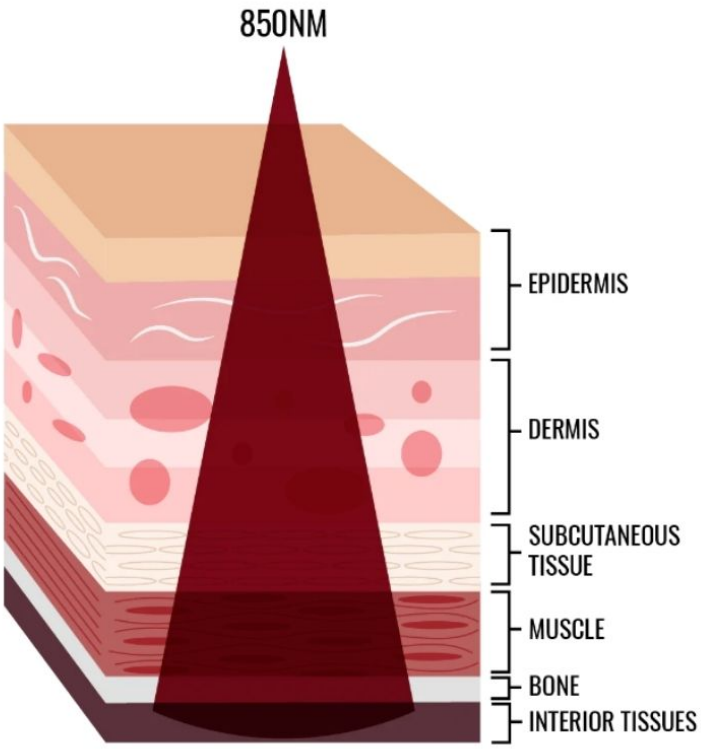
- **Accelerated healing and reduced infection:** Like the 810nm wavelength, 830nm accelerates healing in wounds of different severity and helps to ward off infection.
- **Improved aesthetic outcomes following plastic surgery:** Swift exposure to 830nm wavelengths after aesthetic surgery hastens recovery, reduces downtime and enhances the results of surgery by reducing swelling, infection, bruising and pain, therefore leading to greater patient satisfaction.
- **Increased "feel-good" endorphins:** 830nm wavelengths increases the release of endorphins. Endorphins are peptides which promote feelings of wellness.
- **Improved bone repair and growth:** An animal study demonstrated that 830nm light therapy improved bone repair by stimulating new bone growth.
- **Improvement in psychiatric disorders:** Prescription drugs for psychiatric conditions have long been recognized as having a limited ability to assist individuals suffering from psychiatric conditions. What's more, pharmacotherapeutic medication often carries a host of unwanted side effects, while near-infrared light therapy doesn't. 810nm wavelengths applied to the forehead have been shown to assist patients suffering from major depression and anxiety.
- **Faster return-to-play after injury:** The ability to return-to-play as swiftly as possible after injury or trauma is a key concern for any amateur or professional athlete. 830nm LED light therapy has been proven to significantly and safely reduce the wait time before injured athletes can return to play.



850NM WAVELENGTH

The 850nm wavelength is the signature PlatinumLED near infra-red wavelength and constitutes 80% of the BIOMAX spectral range. In many cases, the 850nm amplifies the benefits provided by the 810nm and 830nm wavelengths. This wavelength has a range of therapeutic applications such as:

- **Anti-inflammatory benefits:**
  850nm wavelengths can help to reduce joint and muscle pain and diminish general inflammation in the body.
- **Enhanced muscle recovery:**
  A study observed the use of 850nm wavelengths on athletes, and found that usage of the near-infrared light increased muscle mass after training, and decreased inflammation and oxidative stress in muscle biopsies.
- **Healing of wounds in the skin:**
  Lesions in the skin heal faster when exposed to 850nm wavelength light therapy.
- **Reduction of lines, wrinkles, and hyperpigmentation:**
  850nm can support the production of collagen, assisting with plumper, more radiant-looking skin, and a more uniform texture.
- **Orthodontics and tooth alignment:**
  The use of the 850nm wavelength can foster the speedy realignment of teeth for patients undergoing orthodontics.



THE POWER OF FIVE.. AN UNBEATABLE POWER DENSITY!

COMBINE THESE FIVE WAVELENGTHS AND YOU HAVE ONE OF THE MOST POWERFUL AND ADVANCED NEAR INFRARED LED LIGHT THERAPIES AVAILABLE.

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What Can Be Treated with Red Light?

To date, more than 3,000 research studies have been conducted on red light therapy. Although it should not be considered a cure, red light has shown measurable benefits in treating skin disorders like psoriasis and eczema, reducing visible signs of aging, stimulating hair regrowth, relieving joint pain, boosting the immune system, and achieving weight loss. To read about the broad range of uses for red light therapy, and learn about the research, please visit our blog.

Red Light Therapy for Chronic Pain: How Does It Work?

Unlike pain-killing medications, red light therapy doesn't block our perception of pain. Rather, it works at the cellular level to promote optimal cell functioning that results in a healthier, pain-free body.

When treated with red light therapy, you may experience some immediate relief from the soothing warmth emitted by high-output LED devices. You can feel the warmth penetrating your skin and muscles, and this warmth calms your mind and makes you feel physically relaxed. A positive mental attitude helps minimize the perception of pain. Muscle relaxation also sends a signal to the brain that there is no danger, and that the fight or flight response (which often kicks in when you're stressed or hurting) can ease up.

This is important since the parasympathetic nervous system, or the body's "rest and digest" mechanism, is deactivated during times of stress. Since stress can amplify pain, it's important to practice stress management as part of pain management.

As research has shown, the long-term benefits of red light therapy occur at the cellular level. The human body is incredibly responsive to light: that's why we often don't feel awake until the sun's blue wavelengths hit our retinas and why it's hard to fall asleep when we've been staring at our phones for hours after dark. And much like photosynthesis in plants, our bodies get energy from light: specifically red and NIR light.

Because near-infrared wavelengths absorb deeper into the body – and can even penetrate bone – they can treat a huge variety of acute and chronic conditions, without side effects. For example, NIR light:

- Promotes muscle recovery from intense exercise and/or injury;
- Relieves inflammation and pain in joints and muscles;
- Stimulates healthy bone growth;
- Accelerates wound healing;
- Stimulates formation of new capillaries, which enhances blood flow;
- Reduces oxidative stress in the brain and may assist in treating traumatic brain injury (TBI), stroke, and neurodegenerative disorders like Alzheimer's and Parkinson's disease.

Management of Acute and Chronic Pain

Near-infrared light therapy has been consistently shown in clinical trials to be effective for treating sports injuries, overuse injuries, osteoarthritis, chronic low back pain, neuropathic pain, and even broken bones.

How can shining light on a painful area offer relief?

NIR therapy bridges the beneficial effects of light therapy and heat therapy:

- Like red light, NIR light stimulates cellular functioning and cellulite, boosts collagen synthesis, promotes blood and lymph flow, and reduces inflammation.
- Unlike red light, NIR light generates a small amount of heat in the body by exciting water molecules in the cells. Heat has been shown to have pain-relieving effects and to increase connective tissue elasticity, which is likely (at least partially) due to increased blood flow and a temporary mild inflammatory reaction.

It's important to repeat NIR light generates very little heat. NIR light has been used successfully to treat conditions in heat-sensitive body parts, including the eyes and testicles. Light therapy helps relieve muscle and joint pain and has been proven safe and effective.

Return-to-Play After Injury

Most athletes want to resume their sport as soon as possible after injury. This is true whether they're elite athletes whose living depends on active participation, motivated fitness enthusiasts, or "weekend warriors" who exercise for fun and to improve their health and fitness.

A 2016 study published in the professional journal Laser Therapy showed a significant acceleration of return-to-play after two to six sessions using 830nm NIR light on the site of the injury. The average return-to-play of injured athletes (based on a wide range of injuries) treated with irradiation was 9.6 days, compared with 19.23 days in the placebo group. The researchers found that the 830nm waves enhanced blood flow, relaxed muscle spasms, reduced inflammation, and reduced the amount of time the participants felt pain.

Increased Blood Flow

Red light stimulates the formation of capillaries, resulting in increased blood flow to the irradiated (treated) area. This brings nutrients and oxygen to cells, and removes waste materials that could interfere with the healing process. If you have ever seen a dramatic reduction in bruising once you've resumed vigorous exercise, you can see how quickly increased blood flow induces healing. Visible bruising (just below the skin's surface) can be treated using red light, whereas NIR light's deeper absorption makes it ideal for treating deep muscle or bone bruises.

Activation of Stem Cells

Stem cells are the body's amazing master cells. These non-specialized cells are present in an inactive state throughout the body. When they are needed, like in the event of an injury, infection, or cell damage from inflammation, stem cells are transported via the bloodstream to the affected area. There they magically develop into any cell that's needed. One proven use for red and NIR light therapy is activating stem cell production in the bone marrow to support the healing process.

Now that you see how red light therapy can be used to manage the underlying causes of a variety of conditions, let's explore specific applications where it may be beneficial.

Research-Validated Pain Management for Specific Conditions

This section covers results specific to conditions that have been studied by researchers. While evidence of therapeutic benefits is growing, more research is needed to thoroughly examine the effects of red light on other conditions. To date, the relatively small body of peer-reviewed research shows red light therapy to have great promise for long-term use.

Low Back Pain

An estimated 80% of the U.S. population has at some point suffered from low back pain. Most often this results from some type of injury, but because of the sedentary nature of many people's lives, recurring or chronic back pain is becoming more common. Low back issues can also lead to knee pain as sufferers try to adjust their body mechanics to alleviate discomfort in the lumbar area.

One study by Canadian researchers focused on infrared therapy for low back pain. They found that near-infrared light (over 800nm) and infrared light (up to 1200nm) resulted in reduced chronic low back pain.

Reduced Inflammation

Red light reduces inflammation by stimulating cellular repair and regeneration. A relaxed inflammatory response can accelerate healing. While acute inflammation is a necessary part of the healing process (without it, wounds or cuts would not heal), chronic inflammation and dysfunctional inflammation cause delays in healing.

Acute inflammation is what you recognize as swelling, heat, discomfort, and redness at the site of the injury. This inflammation subsides as the injury heals. Chronic inflammation, however, can lead to autoimmune disorders in which the body is attacked by its own immune system.

NIR light is especially beneficial in reducing chronic inflammation. It absorbs deeper into the body's tissues than red light to positively affect the organs, large muscles, and innermost connective tissue.

Increased Cellular Energy Production

Stimulating mitochondrial functioning leads to greater energy production. Energized cells can perform specialized functions at peak levels, and successfully replicate and perform repairs to the body as intended. When cells are at their healthiest, this leads to accelerated healing of injured or inflamed areas. Red light can stimulate cellular energy in the skin and subcutaneous (just beneath the skin) areas. NIR light is beneficial for stimulating cells deeper within the body.

Increased Collagen Production

Collagen is a protein that gives skin its structure, and it is also present in muscle and connective tissue. During the healing process after an injury, separated tissue is "stitched" together using a latticework that is formed primarily with collagen.

Red light therapy has been used for many years to stimulate collagen production for treating signs of aging, as well as various chronic skin disorders, but it may also be effective in repairing injury to internal tissues. Even a broken pelvis can be rejoined with a collagen-dense fibrous structure rather than new bone.

Scar Pain

Scars that form on joints can often be painful, and result in limited mobility. Softening scars and stimulating the growth of normal skin tissue can help ease pain over time, as well as improve the scar's appearance. A 2010 clinical trial involved three patients who had scars from acne or surgery. After treatment with NIR light therapy for 30 days, they showed significant improvements.

WEIGHT/FAT LOSS

Red light therapy is best known for its effectiveness with pain relief, as well as treating chronic skin conditions, scars, skin damage from aging, and accelerating muscle recovery after injuries. Clinical research has also shown that red light therapy can lead to weight loss. In fact, it is becoming increasingly popular as a body contouring treatment.

Of course, a healthy lifestyle is the best way to lose excess fat and maintain a healthy weight. But with red light therapy, you can benefit from the emotional boost of achieving fast results, which will improve your mindset and motivate you to stick with your weight loss program.

And even better, red light therapy supports your body at the cellular level. So, in addition to using red light to lose fat, it also treats many causes of excess weight.

In this article, we'll explore red light therapy for weight loss: what it does, how it works, and how it can help you lose body fat and achieve your ideal weight.

How Does Red Light Therapy Work for Weight Loss?

Also known as photobiomodulation or low-level light therapy (LLLT), the term "red light therapy" refers to both red and near-infrared (NIR) wavelengths. Research has overwhelmingly shown that the most beneficial wavelengths fall between 650 nanometers (nm) to 850nm, a range that's known as the "therapeutic window."

Within this window, red light ranges from 620–700nm and NIR light ranges from 810–850nm.

These particular red and NIR wavelengths have been widely studied and are proven to have dozens of therapeutic benefits on the human body. In this article you'll find a great deal of information about the benefits of red and NIR light therapy.

Red light therapy uses light-emitting diode (LED) bulbs to bathe the body in light waves in both the red and NIR spectrum. The most effective red light devices are powerful panels that are fitted with LED bulbs precisely calibrated to specific red and NIR wavelengths.

Once light photons from these LED bulbs interact with the body's cells, they spark a chain of positive biological effects.

Increased Cellular Metabolism

In the same way that you don't perform at your best when you're sleep-deprived, hungry, or jet-lagged, your cells don't perform at their best when they're depleted.

Red and NIR light stimulates cellular energy. As red and NIR photons are absorbed by chromophores in the mitochondria (cellular energy centers), this stimulates the production of adenosine triphosphate (ATP), which is the primary fuel of all the body's cells.

Increased cellular energy leads to healthier cells and better cellular performance. Not only will your organs function better, but you'll also have more energy. Many people have reported feeling more energized and ready to take on the day; in terms of weight loss, this could mean added energy to hit the gym or go for a brisk walk.

Fat Cell Reduction

The ability of red light to cause fat cells to "leak" could be one of the most exciting findings in red light research.

Studies have revealed that red light triggers the formation of small openings (or pores) in fat cells, which release fatty acids known as lipids. A study led by Harvard researchers found that just four minutes of exposure to red light therapy at 635nm caused 80 percent of lipids to be released from fat cells, and by six minutes, almost all of the fat had been released.

theorize that red light causes temporary pores to form in fat cells, which is what allows lipids to leak out. Red light also appears to stimulate adipocyte apoptosis, which is the natural death of fat cells. As a fat cell dies, it releases lipids stored within the cell into the body, where the lipids are naturally expelled.

While targeted fat loss (body contouring) has historically been considered difficult, the research into how red light causes fat cells to release their contents and die more quickly is very exciting. It is a promising finding for anyone wanting to lose belly fat or improve the appearance of other areas where fat reduction is desired. of body text

Increased Muscle Mass

It may seem counterintuitive to focus on building muscle in the legs to burn belly fat. It's important to know, however, that muscle burns calories: each pound of muscle can burn 50 calories a day at rest. So, building mass in large muscle groups is one of the most effective ways to boost your metabolism to burn more fat.

This does not mean you have to "bulk up;" everyone's body is different. Just focus on firming up your body, and your body's "engine" – aka, your metabolism – will burn hotter, making body contouring easier and helping you keep the weight off.

A 2016 study co-authored by Michael Hamblin, one of the world's premier researchers into red light therapy, found that athletes who were exposed to red light before and after exercise had faster muscle recovery and increased muscle growth. The researchers found that NIR light and a combination of red/NIR light therapy can increase muscle mass, as well as decrease inflammation and oxidative stress in muscle.

Thyroid Regulation

Hypothyroidism, or low-functioning thyroid, has been linked to excess weight gain. One study with this finding was conducted in 2012 by a team of researchers from Brazil. The study showed that red light therapy can reduce the autoimmune activity in the thyroid, which helps restore its normal functions in regulating the metabolism. Normal thyroid functioning can also increase your overall energy, making it easier to stick to a fitness routine.

Reduced Insulin Resistance

Near-infrared light therapy combined with exercise has been proven to reduce insulin resistance and body fat, and enhance the physical exercise effects in obese women undergoing weight loss treatment. This was the finding of a 2015 study by Brazilian researchers on metabolic flexibility, or the body's ability to adjust fuel (fat) burning in response to exercise.

In the study, 64 obese women participated in a 20-week program that combined exercise (three weekly aerobic and weight training sessions) with red light therapy. The researchers measured insulin as well as fat loss and found that adding red light therapy to an exercise regimen reduced insulin resistance and reduced fat mass. The study also found that physical training along with red light therapy was more effective in boosting metabolism than physical training alone.

Appetite Suppression

Red light can affect hunger levels by controlling appetite-regulating hormones known as leptin and ghrelin. Leptin is a hormone produced by fat cells; when you're carrying excess fat, more leptin is produced, decreasing your appetite. Its counterpart, ghrelin, is a hormone that increases appetite.

Researchers conducting a 2012 study on the effects of light on leptin and ghrelin levels found that changes in day length often result in fluctuations in body weight since the circadian clock affects leptin and ghrelin levels. This is also evident in sleep-deprived adults (the subjects of the study).

Sleep-deprived adults experience lower than normal leptin levels and higher than normal ghrelin levels, which makes them feel hungry more often. The study also found that red light therapy reduced ghrelin levels from 28 percent to 19 percent.

Improved Sleep

Sleep deprivation has been associated with many health issues, including weight gain. One cause of insomnia is chronic stress, which amplifies weight gain by stimulating cortisol production and disrupting how the nervous system regulates metabolism (leptin and ghrelin levels).

A 2021 study by the China Institute of Sport Science found that elite female basketball players who received red light therapy before bed experienced better sleep through increased melatonin production – and; better sleep directly affected their endurance performance. Read more about using red light therapy to help with insomnia in this article.

Rheumatoid Arthritis

Rheumatoid arthritis affects an estimated 31 million people in the United States. It is an autoimmune disease that attacks healthy joints, causing joint pain, inflammation, and reduced mobility. Rheumatoid arthritis primarily affects the fingers, wrists, small foot joints, and toes.

One study found that using red light therapy reduced joint pain by 70% in rheumatoid arthritis sufferers compared with the placebo group. Patients also saw significant increases in palm flexibility and a reduction in morning stiffness.

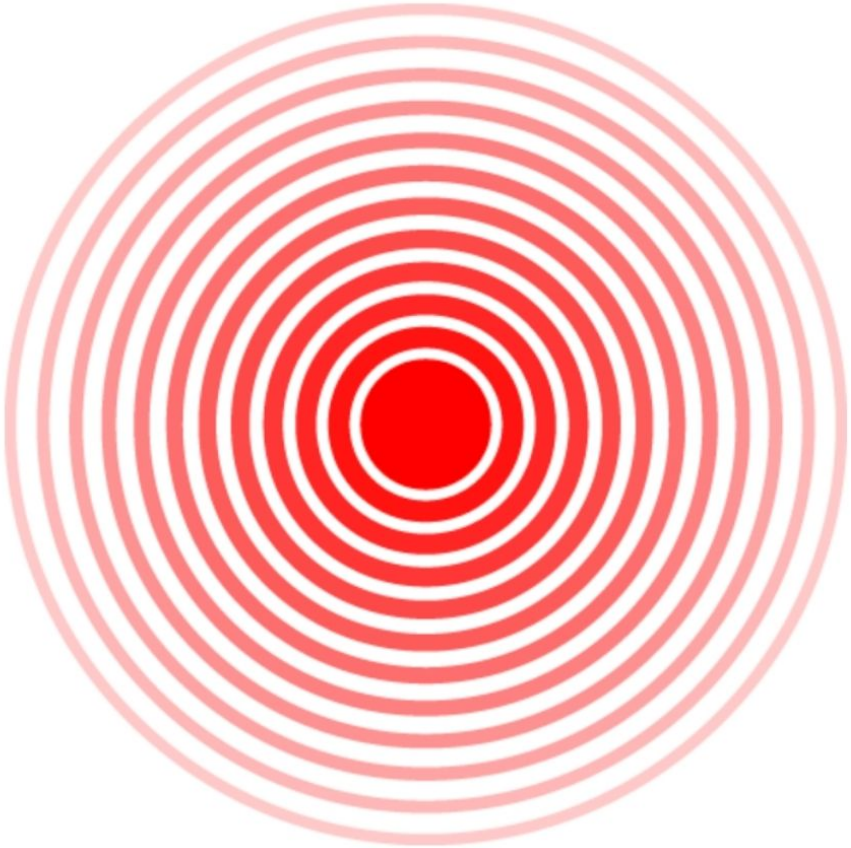
Osteoarthritis

Red Light Therapy Osteoporosis: According to the CDC, more than 32.5 million people in the United States suffer from osteoarthritis. This degenerative condition, which is often called the “wear and tear disorder,” is caused by damage or breakdown of joint cartilage between bones. It primarily affects the fingers, thumbs, hips, knees, toes, and spine, and can be very painful.

One study of elderly patients found that red and NIR light treatment achieved remarkable results in reducing osteoarthritis knee pain. In total, 50 patients self-administered light therapy to both sides of the knee in two 15-minute sessions every day for 10 days. Of the 50, 15 used red light, 18 use near-infrared, and 17 used a placebo treatment. Both of the non-placebo groups showed a 50% reduction in pain over the control.

Neuropathic Pain

Neuropathic pain is chronic pain that results from damage to the nervous system. Although its exact prevalence is not known, it is estimated to have a prevalence ranging between 3% and 17% of the U.S. population. Neuropathic pain can be severe enough to lead to loss of mobility and a diminished quality of life.

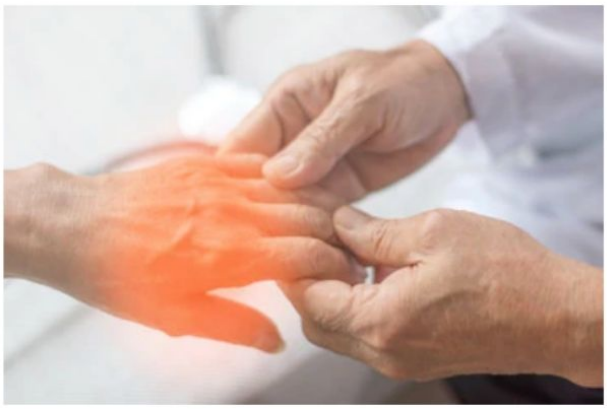


Sciatica is one example of a neuropathic pain condition. It refers to pain that radiates along the path of the sciatic nerve, which branches from the lower back through the hips and buttocks and down the legs. Often due to chronic constriction injury (compression of the sciatic nerve), sciatica causes inflammation, numbness, loss of strength in one or both legs, and sharp stabbing or dull pain.

A 2014 study by a team of researchers from Iran focused on sciatic pain in rats. The researchers found that both the 660nm (red light) and 980nm (infrared) wavelengths were quite effective at reducing pain.

Because near-infrared wavelengths absorb deeper into the body – and can even penetrate bone – they can treat a huge variety of acute and chronic conditions, without side effects. For example, NIR light:

- Promotes muscle recovery from intense exercise and/or injury;
- Relieves inflammation and pain in joints and muscles;
- Stimulates healthy bone growth;
- Accelerates wound healing;
- Stimulates formation of new capillaries, which enhances blood flow;
- Reduces oxidative stress in the brain and may assist in treating traumatic brain injury (TBI), stroke, and neurodegenerative disorders like Alzheimer's and Parkinson's disease.



The Keys to Successfully Treating Peripheral Neuropathy With Light Therapy

Light therapy, specifically red light therapy (including red/NIR wavelengths) shows promise in treating peripheral neuropathy in the feet, hands, and other parts of the body.

Red light therapy uses several mechanisms to treat this debilitating condition:

- Reducing chronic inflammation which may contribute to oxidative stress in nerve cells;
- Managing pain due to peripheral nerve damage;
- Stimulating the production of Schwann cells and fibroblasts, which can lead to healthy nerve regeneration;
- Increasing cellular energy production, which allows cells to function at their best and successfully repair and replicate.

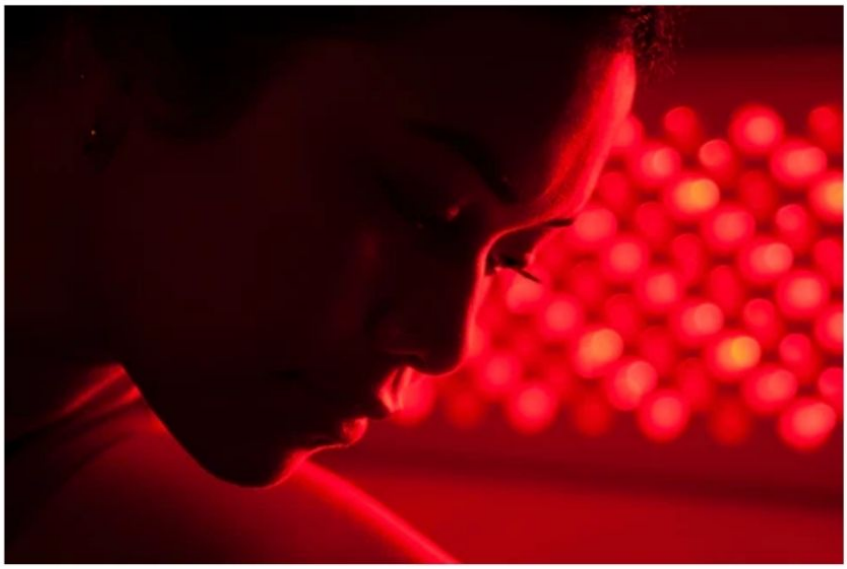
While it should not be considered a cure for neuropathy, red light therapy can be used in conjunction with conventional treatments to ease symptoms and potentially restore peripheral nervous system health.

Can Red Light Therapy Help with Acne?

In the past, sun exposure was recommended as a natural treatment of acne vulgaris. And, it works for about 70% of people. Once technology allowed us to isolate specific wavelengths of light, UV wavelengths became the preferred light therapy for both mild to moderate acne and severe acne.

But we now know that UV light can cause photoaging, so it must be used with extreme caution (UV treatment of acne is performed by some dermatologists).

Red and near infrared light therapy isolates the therapeutic red and near infrared wavelengths that can be a significant ally in the treatment of mild to moderate acne and even severe acne. This natural acne treatment has proven effective in improving overall skin health with no side effects.



This natural light treatment is best known for its anti-aging properties; but light therapy works exceptionally well as a treatment for chronic skin conditions including psoriasis, rosacea, eczema, and acne vulgaris.

When combined with dietary changes, good hygiene, and doctor-prescribed topical or oral treatments, regular red light therapy treatment will support the body in clearing up acne lesions, reducing the appearance of acne scarring, and restoring healthy skin.

Red Light Therapy Increases Collagen Production

Both red and NIR light are well known for increasing collagen production. If you've developed scarring due to severe acne, you know how embarrassing it can be. With regular red light therapy acne treatments you'll be able to clear up your skin and support the growth of normal skin that will eventually replace acne scars.

Increasing collagen synthesis helps to support normal skin growth that follows as scar tissue naturally sloughs off. This is why red light therapy is so widely used as a skin rejuvenation therapy for people who desire firmer and more youthful skin.

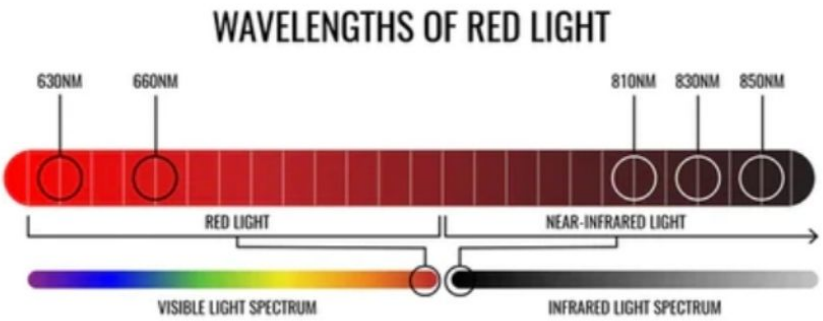
Red Light Therapy Increases Circulation

Another way to support the treatment of acne is to increase circulation. Red light therapy boosts the production of endothelial cells — the cells that make up the walls of lymph and blood capillaries near the skin's surface. Red light also increases vessel diameter to promote circulation, which brings oxygen to the skin and removes toxins and waste that can contribute to infections.

How Red Light Therapy Treats Acne

Red light therapy uses a powerful device fitted with precisely calibrated light-emitting diodes (LEDs) to shine specific visible light wavelengths (red and NIR) onto bare skin. This natural light treatment is painless, non-invasive, and free of side effects, which makes it a great alternative for acne sufferers who have had allergic reactions to topical or oral acne medications.

As red and near-infrared wavelengths of light absorb into the skin, the light photons interact with light-sensitive chromophores in each cell. This interaction sparks a chain reaction of benefits that can help clear up chronic skin disorders.



Red wavelengths (630-660nm) are most often used for treating surface conditions of the skin (like acne). But red light is only part of the picture.

Longer NIR wavelengths (810-850nm) penetrate deep into the tissues beneath the skin to support the body's natural healing mechanisms.

These two wavelength groups are most potent when used together, since they address both the symptoms and causes of acne in all of the layers of skin and below the skin.

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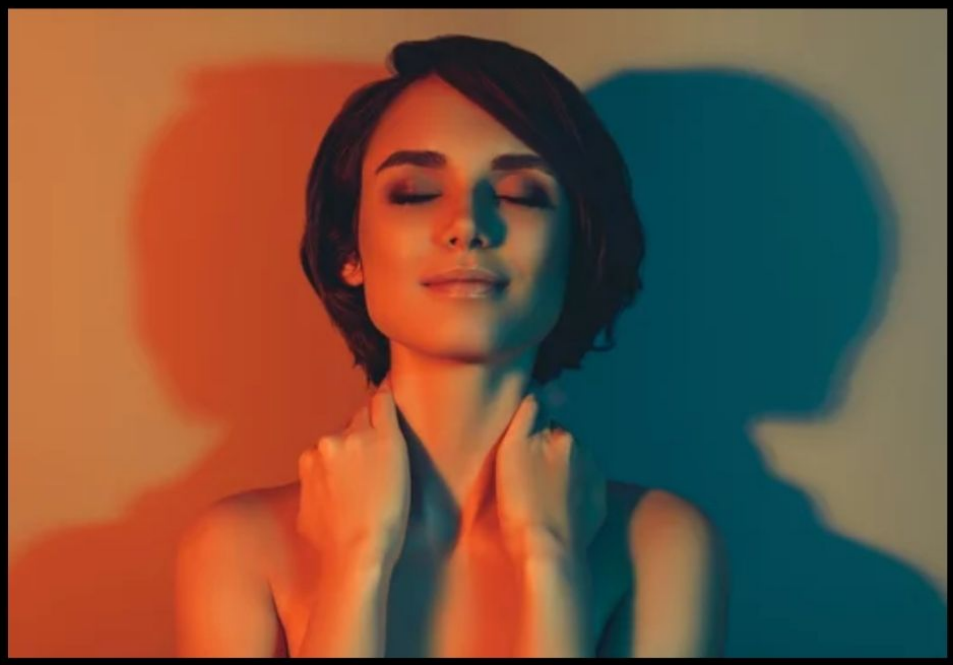

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