

Let There Be Light

by

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Imagine being treated for pain with light. Of course, it can't be just any light; we're referring to a very select wavelength of light provided by an FDA approved medical laser. At MyoRehab, therapists certified in Low Level Laser Therapy (LLLT) are helping to reduce or eliminate pain every day.



Endre Mester, MD

For over thirty years, light has produced health benefits including relief from pain and inflammation and wound healing. The modern age of photobiology began in 1967 when a Hungarian oncologist named Endre Mester attempted to treat cancer with a new source of coherent light called a laser.

However, Doctor Mester discovered that instead of eliminating cancer, the surgical wounds of his test subjects healed with unprecedented speed. Needless to say, he altered the direction of research, leading him to be known as the "Father of laser therapy". Since Mester's discovery, research has continued around the world demonstrating the effectiveness of LLLT on a variety of painful conditions including:

- Whiplash
- Low back pain
- TMJ pain
- Tendonitis
- Tunnel Syndromes
- Epicondylitis (Tennis Elbow)
- Plantar Fasciitis
- Neurogenic pain
- Discogenic pain
- Shin splints
- Burns
- Bruising
- Ligament damage
- Osteoarthritis
- Wounds/scar tissue
- Herpes outbreaks
- Bursitis
- Myofascial Pain
- Fibromyalgia
- Failed Back Surgery Pain
- Sprains/Strains

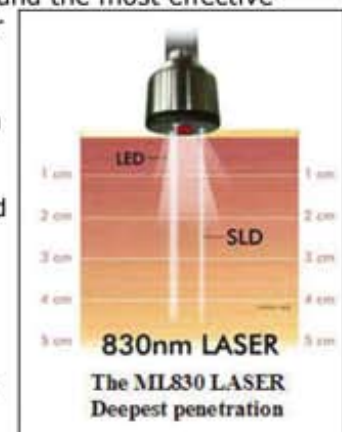
The therapists at MyoRehab have developed treatment protocols now incorporated into a national training program. While giving public talks about laser therapy, many questions arise. In this article, we've addressed the most common of these.

What device are you using? At MyoRehab, the MicroLight 830 is used exclusively.

What kind of light is used? The MicroLight 830 produces Near Infrared, monochromatic, collimated laser light at 830 nanometers. It is invisible to the eye and the most effective wavelength because it can reach deeper into tissue than any other laser. It is at the opposite end of the spectrum of the sun's damaging ultraviolet light. It does not produce heat or sensation.

How can laser light do this? In the early 1900's, Albert Einstein performed experiments generating what he termed the photoelectric effect. Simply put, when light shines upon certain materials, a stream of electrons is emitted. The number and speed of electrons emitted depends on the wavelength of the light applied.

However, electrons are not emitted until the light reaches a threshold frequency, no matter how bright the source. These observations baffled physicists at first; until then light was only thought of as waves. Einstein demonstrated that the photoelectric effect could be explained if individual particles of light (photons) were knocking electrons loose from atoms, producing a proliferation of free electrons.



So, how does this photoelectric effect help with pain, inflammation and wound healing? In the body, the proliferation of free electrons causes numerous beneficial processes to occur with increased speed and greater efficiency. These processes include:

- Stabilization of the cellular membrane
- An increase of ATP (universal cell fuel) production to power cell repair
- Increased beta-endorphins, reducing pain
- Reduced hypersensitivity (down-regulates pain nerves)
- Repairs of nerve damage
- Increased tissue repair through increased phagocytosis (removal of non-viable cells and wound debris), growth factor secretion and collagen synthesis
- Vasodilation increasing oxygen and nutrient transport to damaged cells
- Acceleration of beneficial leukocyte activity enhancing removal of non-viable cellular materials allowing for rapid cell repair
- Increased Prostaglandin synthesis (PG12) providing additional vasodilation and anti-inflammatory action
- Reduction of Interleukin 1, a pro-inflammatory cytokine implicated in rheumatoid arthritis
- Enhanced lymphocyte response
- Increased angiogenesis (increased production of blood capillaries and lymphocyte capillaries)
- Temperature reduction of inflamed tissue
- Enhanced superoxide dismutase levels which contributes to the anti-inflammatory response
- Decreased C-reactive protein, an inflammatory processes marker

At MyoRehab, we have six FDA approved lasers in service and a dedicated treatment room for laser therapy. Our therapists are certified by the American Society of Laser Therapy. Collaboration with physicians and healthcare practitioners around the country keeps MyoRehab in a leadership role in this growing field of Low Level Laser Therapy.

Is it time to shed some light on your pain?
Give us a call.

When it comes to pain, we've seen the light.

