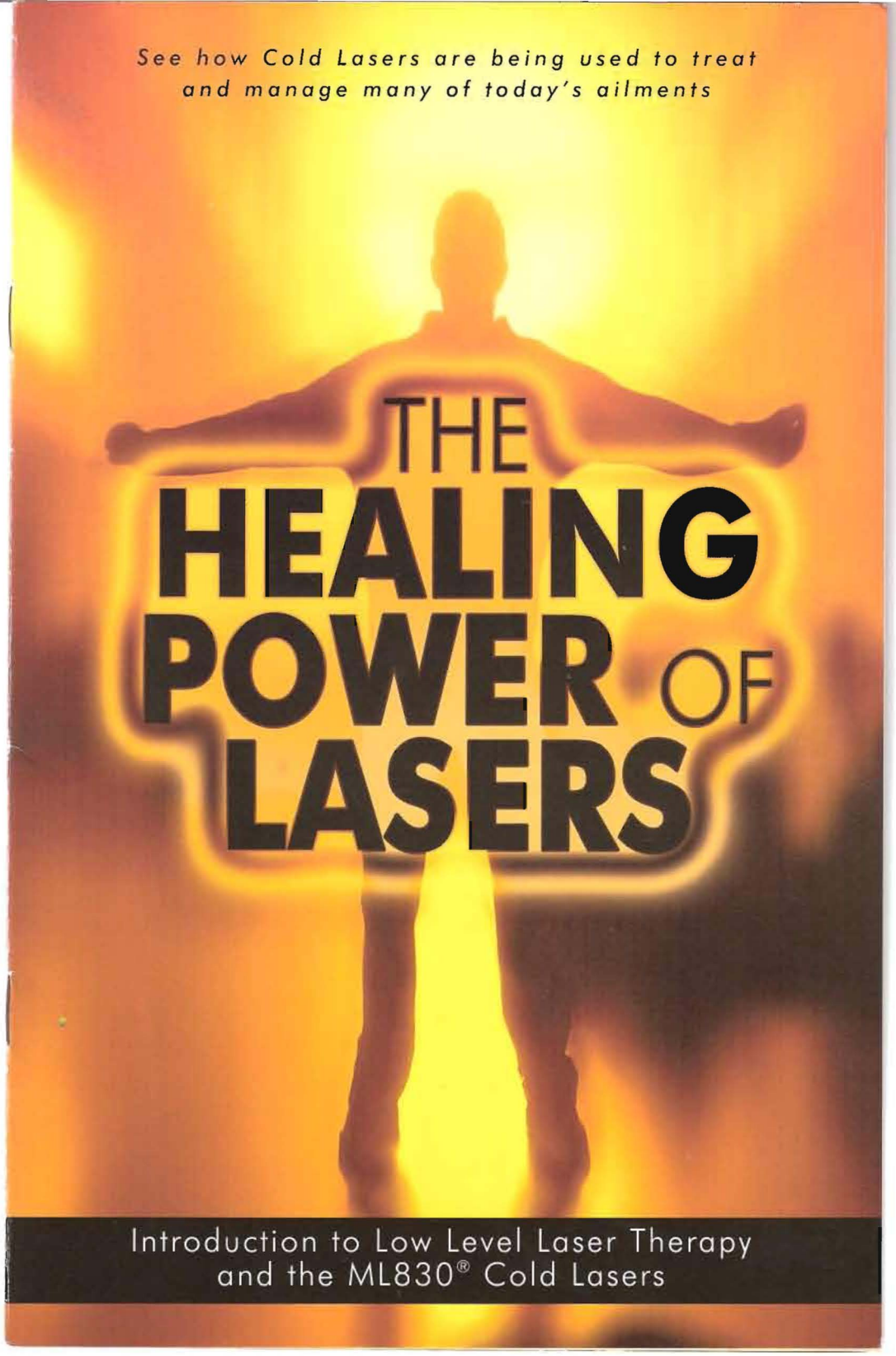
See how Cold Lasers are being used to treat and manage many of today's ailments



THE HEALING POWER OF LASERS

Introduction to Low Level Laser Therapy
and the ML830® Cold Lasers

LLLT

Laser therapy has been successfully used around the world for over 25 years, with no reported long-term or irreversible side effects.

What is LLLT?

LLLT (Low level laser therapy) is a painless, sterile, non-invasive, drug-free treatment which is used to treat a variety of pain syndromes, injuries, wounds, fractures, neurological conditions and pathologies. Laser therapy can be used any time a patient requests or needs a drug-less procedure for the control of pain, when conventional therapies have been ineffective, or when the acceleration of healing from injuries is desired.

Around the world, laser therapy is rapidly becoming a medical therapy that can heal wounds and fractures up to 60% faster and also reduce the cost of treatment for many conditions. In the U.K., LLLT has become the treatment of choice for soft tissue "whiplash" injuries and for the treatment of painful post-herpetic neuralgia (shingles pain).

How Does Laser Light Heal?

Healing with the use of light is not new. Light therapy was reported to be effective for many conditions by Hippocrates. With the development of the laser and its special properties, using light as a treatment has gained more popularity. This is because we can now use specific wavelengths of light and give accurately measured doses of energy directly to the appropriate treatment site, which was not possible with other light sources.

Low level lasers supply energy to the body in the form of non-thermal photons of light. Light is transmitted through the skin's layers (the dermis, epidermis and the subcutaneous tissue or tissue fat under the skin) at all wavelengths in the visible range. However, light waves in the near infrared ranges penetrate the deepest of all light waves in the visible spectrum. When low level laser light waves penetrate deeply into the skin, they optimize the immune responses of our blood. This has both anti-inflammatory and immunostimulate effects. It is a scientific fact that light transmitted to the blood in this way has positive effects throughout the whole body, supplying vital oxygen and energy to every cell.

What to Expect During a Laser Therapy Treatment Session

For most people, laser therapy is quite passive. There are no pulsating shocks felt, as in forms of electronic stimulation, nor heat used as with ultrasounds. The most noticeable sensation is the touch of the probe head of the laser, as it comes in contact with the skin.

Some patients (3-5% of those undergoing light therapy) have reported a slight tingling or tapping in a nerve or along a nerve pathway. Some have noted that they are able to sense a slight feeling of warmth. But for the most part, the treatment, which may last from 2 to 20 minutes, is not noticed at all.

Following (and even during) a laser therapy session, approximately 75-80% of patients being treated can notice an immediate improvement in their condition. This will depend primarily on the type of condition and the length of time the condition has been present.

Generally, the more chronic or severe the condition, the longer it takes to respond. The majority of conditions

treated will take anywhere from 4-5 or 10-18 treatments. Once again, the number of treatments depends upon the severity of the condition and its duration. If your condition does not change immediately, it may take 3-4 sessions before a dramatic or marked change is perceived.

Difference between Lasers, LED & SLD light devices

Some manufacturers produce devices with super luminous diodes (SLD) or light emitting diodes (LED). Monochromatic non-coherent light can be helpful for superficial wound healing, however, numerous studies have shown that lasers are far more effective due to their unique properties and penetration depth. Many super luminous & light emitting diode products are usually very low powered (typically 5mW-15mW), and much of this energy is scattered, therefore requiring longer treatment times.

See the chart below to see how typical light penetrates the skin. LED's will normally penetrate less then 1cm. SLD's are more powerful and can penetrate about 2.5 cm. But Lasers at 830nm can penetrate 5 cm. Far more effective then SLD's or LED's.

The Physiological Effects of LLLT

- Biostimulation, including improved metabolism & increased cell metabolism
- Improved blood circulation and vasodilatation
- Analgesic effect
- Anti-inflammatory and Anti-edematous effects
- Stimulation of wound healing

Benefits of LLLT to Users

- ☑ Relieves acute and chronic pains
- ☑ Increases the speed, quality and tensile strength of tissue repair
- ☑ Increases blood supply
- ☑ Stimulates the immune system
- ☑ Stimulates nerve function
- ☑ Develops collagen and muscle tissue
- ☑ Helps generate new and healthy cells and tissue
- ☑ Promotes faster wound healing and clot formation
- ☑ Reduces inflammation

LLLT & CTS

Applications of LLLT

According to published Medical Reports, many acute and chronic conditions may be improved or eliminated with laser use; including:

- Acupuncture Points
- Arthralgia/Arthritis
- Back Pain
- Bursitis
- Carpal Tunnel Syndrome
- Chondromalacia Patellae
- Fibromyalgia
- Heel Spurs/Plantar Fascitis
- Migraine Headaches
- Neck Pain/Whiplash
- Nerve Root Pain
- Post-Operative Pain
- Repetitive Stress
- Injuries
- TMJ Pain/Dysfunction
- Tendonitis
- Tennis Elbow
- Neuralgia
- Trigger Points
- Sprains/Strains
- Swelling
- Wound Healing

Carpal Tunnel Syndrome (CTS) and LLLT

Carpal Tunnel Syndrome (CTS) is a problem that affects the wrist and hand. If you have CTS, tingling and numbness can make even simple tasks hard to do. However, CTS can be treated, and your symptoms can be controlled. Reading this will help you better understand how Low Level Lasers can help you.

Non-Operative Treatment

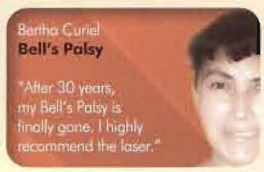
One of the most fascinating and used healing advances is the ML830™ low-level laser. On Feb. 11, 2002, the U.S. Food and Drug Administration cleared the ML830™ Cold Laser to be used in the non-surgical treatment and management of CTS.

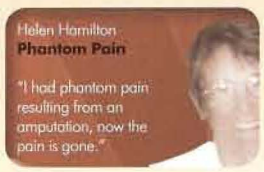
The Microlight 830 conducted double blind studies with General Motors and Baylor College of Medicine [and by the Woodlands and Clymer Healing Research Centers] as part of the clinical trials working with CTS.

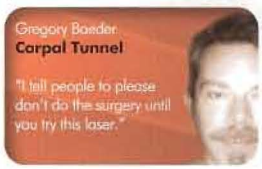
What Are The Symptoms of CTS?

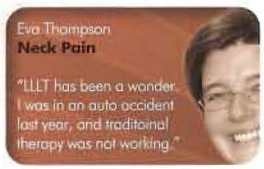
- Numbness, tingling, or burning sensations in the thumb & fingers, particularly the index & middle fingers, which are affected by the median nerve
- Pain in the hands or wrists
- Loss of dexterity or gripping strength
- Difficulty performing routine tasks with the hands such as holding a cup, vacuuming, washing up, or even driving; some people have difficulty holding a newspaper or a telephone
- Swelling of the hand, which often increases at night
- Pain in the arm and shoulder

CTS sufferers are now free to seek relief from hand and wrist pain through a new non-invasive form of therapy before resorting to surgery.









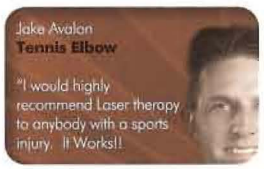
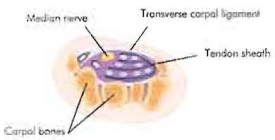
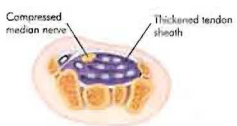


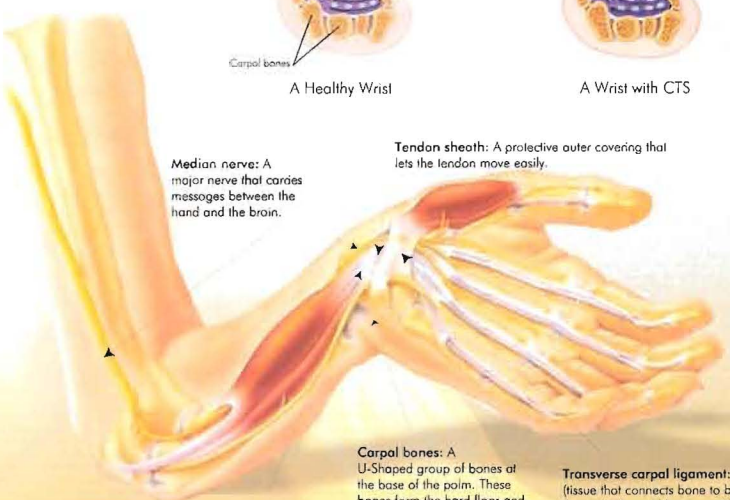
Illustration of Carpal Tunnel Syndrome



A Healthy Wrist



A Wrist with CTS



Median nerve: A major nerve that carries messages between the hand and the brain.

Tendon sheath: A protective outer covering that lets the tendon move easily.

Carpal bones: A U-Shaped group of bones at the base of the palm. These bones form the hard floor and sides of the carpal tunnel.

Transverse carpal ligament: A tough ligament (tissue that connects bone to bone) that lies across the arch of carpal bones and forms the roof of the carpal tunnel.

Flexor tendons: These tendons (fibrous tissues that connect muscle to bone) slide back and forth as the fingers move.

FDA Cleared ML830® Cold Laser

The ML830® Laser & its family of products treat Carpal Tunnel Syndrome, Arthritis, Muscle & Joint Pain, Stiffness & more!

- Deep penetration of approx. 5cm
- Reduce Inflammation
- Improve Nerve Conduction
- World's First FDA-Cleared 3-B Laser
- 2 Double-Blind Studies
- Used In America For Over 16 Years
- Patented Technology
- Non-Invasive Technology

"The FDA cleared ML830® Laser is the most clinically effective laser available today, far superior in performance then 635nm"
Dr. Chadwick Smith, M.D., Professor of Orthopedics, U.S.C.

"The ML830® has solid scientific research proving its efficiency. I am excited to offer an effective alternative to surgery for my CTS patients,"
Dr. Luis Rios, Jr., M.D.

"The laser treatment speeds up cell repair & stimulates the immune, lymphatic, & vascular systems."
Paul Silbert, M.D., chief of Neurology at Jersey Shore University Medical Center

"We had a client who suffered Carpal Tunnel for 14 years. She was seriously debilitated. After two treatments, she had full range of motion and was sleeping through the night again."
Doug Johnson, ATC, Sports and Industrial Rehab

The FDA Cleared ML830® POWERS PATRIOTS' SUPER BOWL VICTORY

The New England Patriots won Super Bowl XXXVIII with some help from a little-known form of laser technology that could change the way athletic injuries and chronic pain are treated. In the week preceding the Super Bowl, Boston based registered nurse Ellen Spicuzza treated more than 10 Patriot players with cold laser therapy for tendon and muscle injuries.

"A couple of days prior to the Super Bowl weekend, I treated [Patriot wide receiver] David Givens, who had a locked-up hamstring," Ellen Spicuzza said. She rotated the pen-like laser over the "belly" of his hamstring muscle for about five minutes, she said, "The laser released it."

THE ML830® COLD LASER

The ML830® Laser was designed by a team of doctors and leading medical engineers to harness the therapeutic application of advanced low energy laser technology. .The ML830® is a handheld, non-invasive, low energy, therapeutic laser. The ML830® produces infrared (invisible) laser light at the 830nm (nanometer) wavelength and is classified by the FDA as a Class IIIB medical device.

In cooperation with General Motors and several other clinical investigators throughout the United States, it was proved that the ML830® is an effective tool in the battle of pain.

HOW DOES THE ML830® WORK?

ML830® Laser is a non-thermal laser capable of penetrating deep into tissue. Once delivered, the light energy promotes the process of photobiostimulation. In human tissue the resulting photochemical reaction produces an increase in the cellular metabolism rate that expedites cell repair and the stimulation of the immune, lymphatic and vascular systems. The net result, observed in clinical trials to date, is the apparent reduction in pain, inflammation, edema and an overall reduction in healing time.

WHY 830nm?

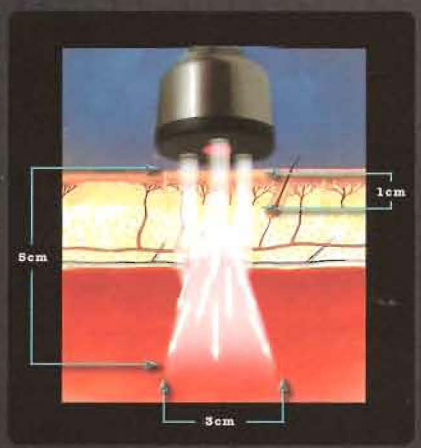
The ML830® has a wavelength of 830nm (GaAlAs). A nanometer is a unit of length equal to one billionth of a meter. At 830nm the ML830® has a pene-tration capacity of approximately 5cm with a 3cm lateral spread. This is more then double the penetration that a 632nm (HeNe) laser can provide (approx. 1cm). With such greater penetration, many more tendons, ligaments and muscle tissues are within the ML830®'s reach.

It is not an accident that the Microlight Corporation of America chose & patented the 830nm technology for its ML830®. There are 30+ years of clinical studies that proved the 830nm range is the optimal wave-length.

In Japan, where laser therapy is considered a preferred medical practice, Dr. Noriko Mochizuki et al published a clinical study on the effect lasers had on ATP (Adenosine Triphosphate). The scientists found that tissue levels of ATP were significantly increased when the target area was irradiated with 830nm wavelength laser light. The study further stated that this beneficial increase in ATP production was not the result of temperature modification, but rather a direct response to the effect of laser light photons. This study also showed that while 830nm wavelength laser light stimulated ATP increases, laser light at 632nm showed no effect.

SUMMARY

In our experience the ML830®, which has been affectionately called "the world's most expensive flashlight," has a multitude of uses. Perhaps the most appealing single factor about this unit is the possibility that it may help conditions where all previous therapies have failed. We are certain you can readily see how such an attribute would endear this unit to any dedicated practitioner.



The ML830® is a GaAlA Laser that has wavelength of 830 nm with a power output of 90 mw. At this wavelength and power the ML830® Laser has a penetration of approximately 5 cm with a 3 cm lateral spread.

DESCRIPTION	MODEL 830 LASER
Laser Type	GaAlAs
Wavelength	830nm
Regulatory Class	IIIb
Power	3 x 30 mW continuous
Laser Energy delivered per	wave
Treatment Cycle	3 x 1 Joule
Beam Configuration	33 seconds
Laser Dimensions	1 x 3 mm
Laser Weight	2.1 cm diameter x 21
Total Laser Energy	cm long
Deliverable	300 gm
from Fully Charged Battery	More than 100 Joules