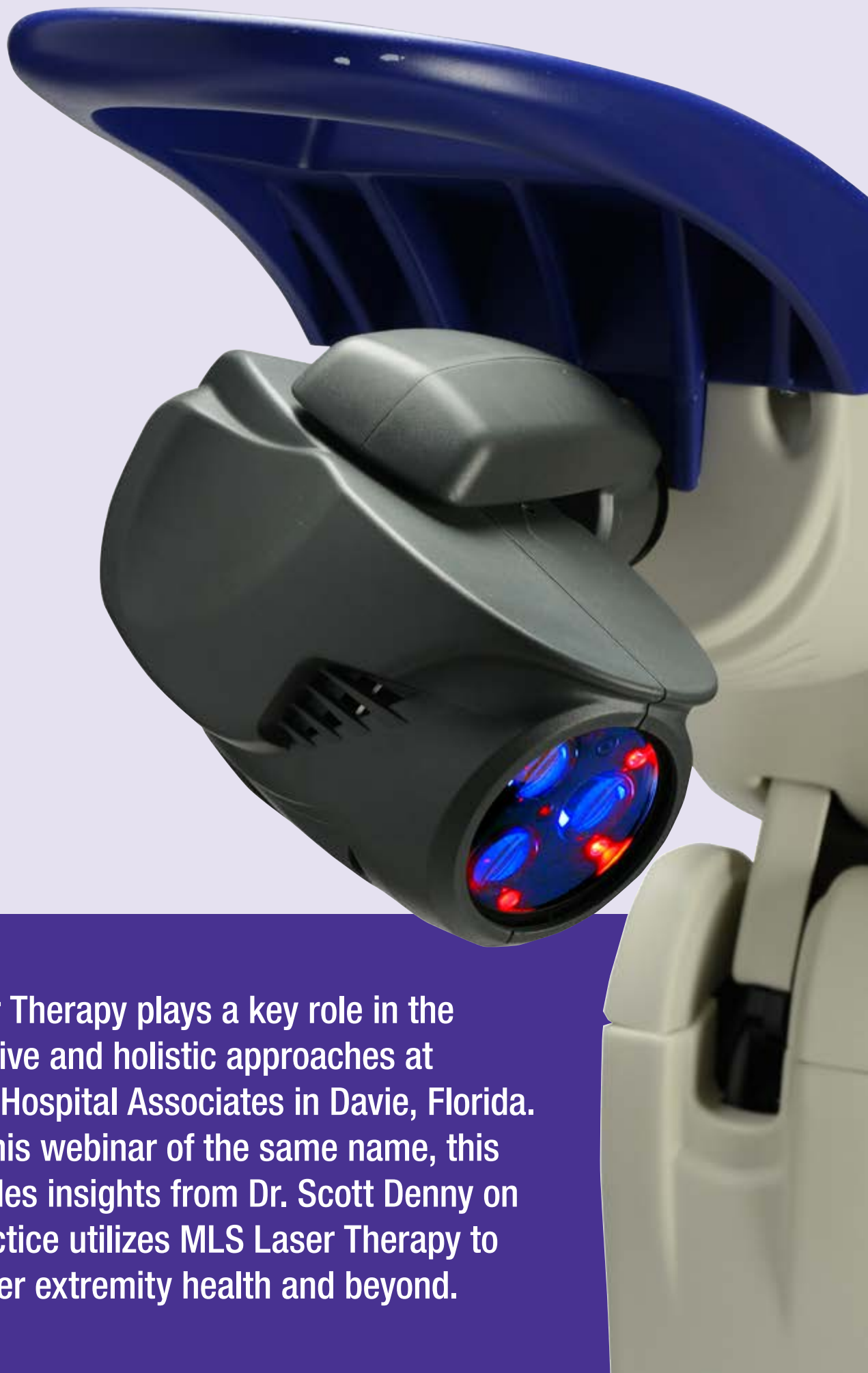




Treating Lower Extremities with MLS[®] Laser Therapy

A Webinar-Inspired ebook

with **Scott Denny** PhD, DC (NY), MS, AP,
DOM, Dipl Ac & NMT, FAAIM, DAAPM



MLS Laser Therapy plays a key role in the comprehensive and holistic approaches at Integrateive Hospital Associates in Davie, Florida. Inspired by his webinar of the same name, this ebook includes insights from Dr. Scott Denny on how his practice utilizes MLS Laser Therapy to improve lower extremity health and beyond.



Scott Denny

PhD, DC (NY), MS, AP,
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Dr. Scott Denny is a 1984 graduate of and past faculty of New York Chiropractic College. He is a founding member of the Board of Directors of the Laser Pain Management Association, an organization founded to improve techniques and clinical outcomes with the Robotic M6 MLS Therapy Laser.

His practice Integrative Hospital Associates focuses on combining integrative medical treatments with natural medicine, nutritional techniques, and advanced regenerative medicine. They were also the first pain practice in South Florida to specialize in MLS Laser Therapy and have performed thousands of treatments.

Dr. Denny holds a Bachelor of Science degree from Excelsior College, and a Bachelor of Professional Studies and Master Science degree from the Tri-State College of Acupuncture in New York City. He also holds a Ph.D. in Electromedical Science.

He has had the honor of being the past President of the American Academy of Pain Management (AAPM) and has served on numerous AAPM committees. Dr. Denny has also served on the Editorial Advisory Board for the textbook publication *Pain Management: A Practical Guide for Clinicians*.

Extremity Care at the Chiropractic Practice

Extremity care plays a key role in the chiropractic practice.

Misalignments and other issues at the extremity level can cause a cascading effect, impacting the musculoskeletal system and overall patient health.

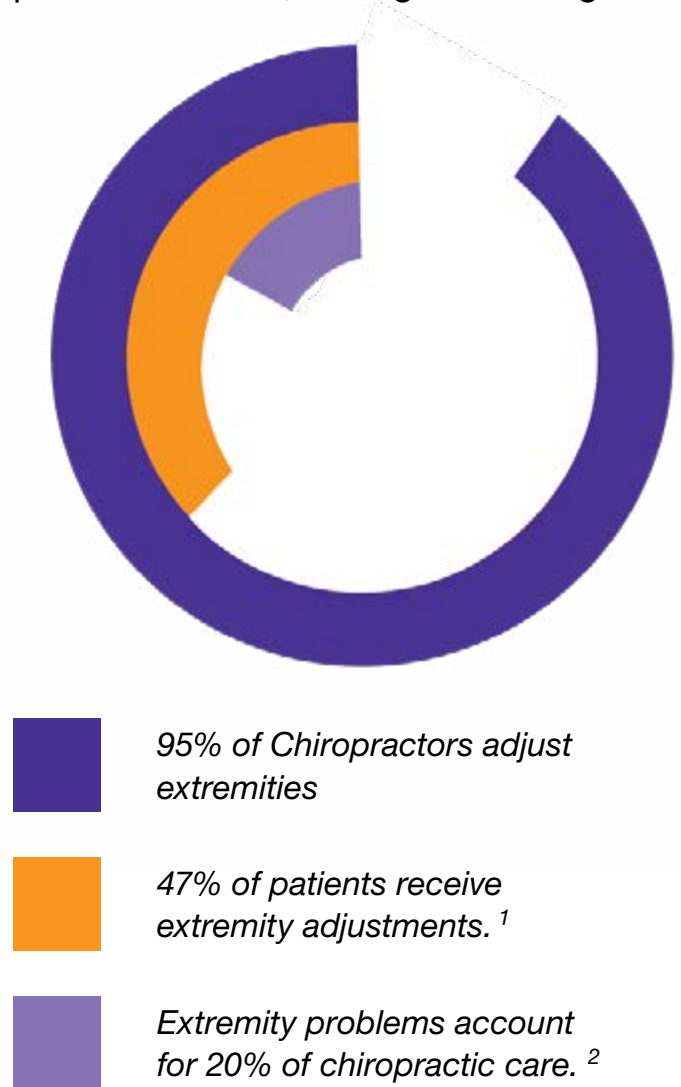
“Most people have this perception that Chiropractors are back doctors. However, obviously, we are far more than that. Having laser therapy, such as the MLS Laser, can really help in that department,” explains Dr. Denny.

As more patients dismiss this misconception, demand for chiropractic extremity care is growing.

Laser therapy offers chiropractors another tool for their arsenal of holistic pain management modalities that elevates care, broadens the scope of their capabilities, and helps them surpass the limitations of traditional chiropractic care.

“Every chiropractic practice should have an MLS Laser because it will completely transform the practice into a completely different type of practice. You will be

able to accommodate a variety of conditions that you would not normally be able to treat with the typical therapy and treatments that we use in a chiropractic office... Combined with your other chiropractic methods, it's a game changer.”



1) Christensen M, Kollasch M. *Job Analysis Of Chiropractic 2005*. Greeley, CO: National Board of Chiropractic Examiners; 2005.

2) Christensen M, Kollasch M, Hyland J. *Practice Analysis Of Chiropractic 2010*. Greeley, CO: National Board of Chiropractic Examiners; 2010.

What is Laser Therapy?

Laser Therapy emits a concentrated beam of light energy into the tissue where it interacts with chromophores that cause different biological effects to promote tissue regeneration, reduce inflammation, and relieve pain.

“This whole process wakes up cells to heal. It will also help to push damaged cells that are not able to recuperate or repair themselves to cellular death so new tissues and new cells can come up behind it. Those chromophores, of course, are unique in the way that they are most sensitive to these wavelengths of light.”

Measured in nanometers, each wavelength of light along the electromagnetic spectrum has unique properties, benefits, and, for therapeutic purposes, tissue penetration abilities. Ordinary light exists between 400nm and 700nm, while therapy lasers typically emit wavelengths of light between 600nm and 1200nm.

This range of wavelengths has been deemed the **“therapeutic window”** because

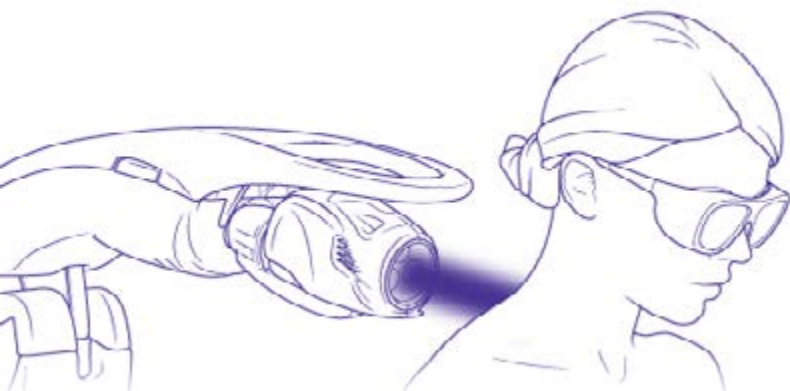
no chromophores have the ability to filter the light emission in this range. This allows all beneficial laser light energy to penetrate into the cells.

Within the cells, photons are absorbed by the mitochondria to stimulate the production of ATP, resulting in a variety of different biological effects, including:

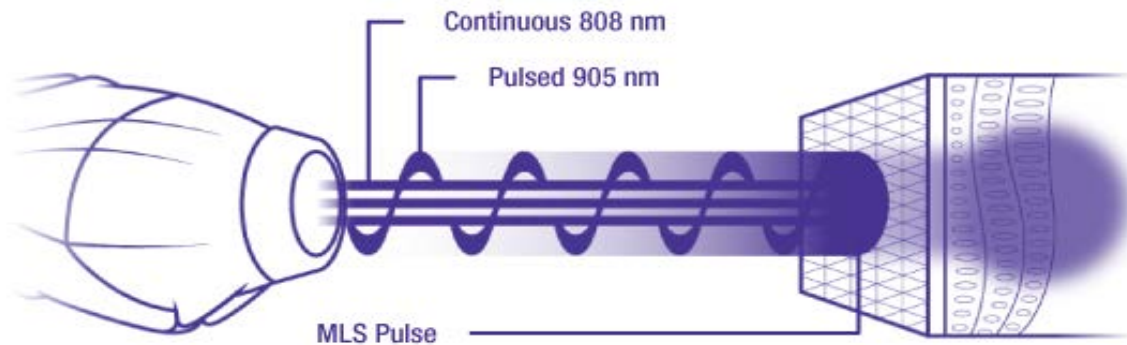
- Promoting tissue regeneration and wound healing by stimulating fibroblast development.
- Reducing inflammation and edema by stimulating blood flow and lymphatic drainage.
- Inducing analgesia by easing nociceptors and stimulating the release of endorphins and enkephalins.

Due to these effects, laser therapy has great potential for helping patients who are suffering from a variety of neuro-musculo-skeletal conditions.

“It’s all about the cell! It’s all about mitochondrial health!” exclaims Dr. Denny. “We all know how important mitochondrial health is. In terms of laser applications for treating pain and wounds and general inflammatory conditions, we all know the benefits of laser therapy. The MLS Laser really excels at this. If I tell you that we use this in the vast majority of patients in our practice, I would tell you that that really is true because there’s so many ways of applying the MLS Laser.”



The Multiwave Locked System®



Based on over 3 decades of research, the Multiwave Locked System (MLS®) is a unique type of Class IV therapy laser that synchronizes infrared wavelengths for optimal effectiveness.

The **Continuous 808nm** wavelength decreases inflammation by stimulating blood flow and lymphatic drainage, inducing the reabsorption of fluid buildup, and interacting with the synthesis and degradation of inflammation mediators.

“Lots of times, you can see this when patients have swelling or redness. You can actually see it very quickly after treatment.”

The **Pulsed 905nm** emission affects the transmission of pain at the level of superficial nociceptors and on the afferent nervous fibers. This results in an increase of the cell and nervous fiber’s stimulation threshold and therefore a reduced sensation of pain.

“Commonly, patients will get off of the treatment table and say ‘Wow! I have less pain!’ and that’s very important. They will sometimes feel that analgesic effect immediately.”

By synchronizing these emissions, MLS Laser Therapy induces an immediate analgesic effect while providing a strong anti-inflammatory action. The MLS emission takes advantage of each wavelength’s unique benefits that, when synchronized, reinforce each other to achieve results greater than the sum of its parts.

“It has this harmonious synchronization which is unique to the MLS Laser. This system is different from most of the other laser systems that I’ve seen that are out there and that’s why it has become the main laser that we use in our practice.”

Indications for Use

- Muscular and skeletal system trauma, including sprains and strains.
- Degenerative illnesses of articular or neuromuscular origin.
- Inflammatory conditions, including those affecting the elderly.
- Oedema due to circulatory stasis, reduced lymphatic drainage or trauma.
- Post-surgical swelling, superficial lesions, and other painful conditions of various origins.

[Download the MLS Laser Therapy Indications Checklist](#)

Biological Effects

Primary Biological Effects

Photochemical effects include the direct transfer of energy to the biological sublayers resulting in:

- Enzymatic activation
 - Increase in ATP production
 - Modulation of cellular metabolism
 - Effect on pain perception threshold
-

Photothermal refers to the conversion of radiation into thermal energy which occurs through the inelastic encounter between excited molecules following the absorption of photons.

- Increased circulation
 - Increased supply of oxygen and nutrients
-

Photomechanical effects include the absorption of energy involves the formation of mechanical waves.

- Production of an extracellular matrix important in tissue repair and regeneration
- Acceleration of lymphatic peristalsis
- Re-absorption of edemas
- Reactivation of microcirculation

Secondary Biological Effects

Analgesic, anti-inflammatory, and anti-edema effects:

- Blocking pain stimulus conduction
 - Increasing endorphin synthesis
 - Increasing the caliber and modulation of lymphatic and capillary vessel permeability
 - Increasing blood flow to “wash out” algogenic substances and pro-inflammatory molecules
-

Biostimulating effects:

- Increase in the supply of nutrients, oxygen, and fibroblasts to the cells
 - Cellular function activation, proliferation, and differentiation.
 - Increase of matrix protein synthesis
-

In tissues, a modulation of inflammatory processes has been examined, along with the induction of lymphatic, vascular regeneration, the stimulation of endothelial function, and decreased formation of scar tissue.



Laser Therapy for Lower Extremities

Feet & Ankles

Stabilizing the feet is an integral part of chiropractic care and lower extremity health. Foot health has the potential to affect the health of the knees, hips, and lower back.

“Plantar fasciitis is a very painful condition. Most patients will report that they have extreme pain when they get out of bed in the morning, when it’s typically the worst. Using the anti-inflammatory lower laser setting with the MLS is highly effective. I’ve had a lot of success with plantar fasciitis. As well as Achilles tendonitis.”

Common Indications

- Plantar Dasciitis
- Achilles Tendonitis
- Peripheral Neuropathy

[Download the MLS Laser Therapy Indications Checklist](#)

Neuropathy

Laser therapy’s ability to reduce inflammation associated with nerve pain is a key consideration. Nerve inflammation plays an important role in the development and progression of neuropathy. ¹

Clinical studies observing the effects of laser therapy on nerves have also revealed that laser therapy can improve regeneration of peripheral nerves, increase nerve function, improve capacity for myelin production, and promote axonal growth. ^{1, 2}

“Laser therapy is fantastic for peripheral neuropathy because of the analgesic effect, the enhancement of circulation, the ability to provide that photoenergy in order to get those nerve to reconnect to one another. It is one of my main treatments that I use for neuropathy in my practice.”

[Download the
MLS Laser Therapy
Diabetic Peripheral
Neuropathy
Protocol Sheet](#)

1) Huang YY, Sharma SK, Carroll J, Hamblin MR. Biphasic dose response in low level light therapy - an update. Dose Response. 2011;9(4):602-618. doi:10.2203/dose-response.11-009.

2) Falaki F, Nejat AH, Dalirsani Z. The Effect of Low-level Laser Therapy on Trigeminal Neuralgia: A Review of Literature. J Dent Res Dent Clin Dent Prospects. 2014;8(1):1-5. doi:10.5681/joddd.2014.001

Knees

In September of 2021, the American Academy of Orthopedic Surgeons (AAOS) added laser therapy to their guidelines for osteoarthritis of the knee joint, citing that it improves pain and function for patients.

Common Indications

- Bursitis
- Osteoarthritis

[Read the AAOS's Comments on Laser Treatment](#)

“There are tremendous benefits using MLS Laser for patients that have chronic knee arthritis. I can't even tell you how many patients I've treated with knee arthritis to help not only manage their pain and mobility but to help keep the surgeon away or prolong—sometimes indefinitely—the need for that surgical intervention if the arthritis is really very bad, and it provides a very significant improvement to their quality of life.”

Following these updated guidelines, experts expect tremendous growth in laser therapy as more physicians and patients recognize its benefits.

Hips

Pain surrounding the hip area, including the upper thigh and outer buttock, often result from issues with the muscles and other soft tissues surrounding the hip joint.

With a penetration depth of 4 to 5 centimeters, the MLS Therapy Laser is ideal for stimulating biological effects deep within the hip joint to address these issues.

Common Indications

- Sciatica
- Sacroiliitis
- Hip Osteoarthritis
- Trochanteric Bursitis

[Download the MLS Laser Therapy Indications Checklist](#)

“We have a lot of patients that come in with sciatica. We not only treat the area where the nerve is being irritated at the spinal level, but we will treat along the course of that nerve down into the extremity. Please don't overlook that. It really can impact the results if you treat in more than one area.”

Patients

MLS Laser Therapy can help chiropractors meet patient demands for noninvasive and noninvasive pain relief while accelerating recovery time.

“*Boy, patients really want that faster recovery. You know how patients are. They want it yesterday! And, obviously, we want to get our patients feeling better as quickly as possible. Adding an MLS Laser changes things in terms of how patients heal. We’ve all commonly seen how patients respond to treatment, to adjustments, to standard typical therapies: stretching and exercise and so on. They have relief but the symptoms often times quickly return. Adding the MLS Laser will have that tissue healing, regenerative effect—I can’t overstress that—that regenerative effect on those tissues so that the patients experience not only a temporary relief, but they have some long lasting relief.*”

In addition to elevating chiropractic care for lower extremities, laser therapy can help chiropractors tap into new patient groups by expanding the number of conditions that they are able to address.

“*I can’t leave things out like shingles. Shingles is an awful condition, and the laser is very effective at not only destroying the virus, but also producing a very rapid healing of the painful rash and, in my opinion, helps prevent postherpetic neuralgia. I have patients who have had breast augmentations, c-sections, and so on. We apply laser therapy for things such as those to help them heal faster. We do have lots of patients that have conditions related to a variety of things including orthopedic problems. It’s very effective for these as well. It goes without saying that musculoskeletal, degenerative conditions seem to respond very, very well to this therapy in general.*”



Cutting Edge Laser Technologies is focused on providing non-pharmacological and non-invasive solutions for pain management, wound healing, post-surgical recovery, and tissue regeneration. The Cutting Edge mission is to assist health care professionals improve quality of patient care while strengthening their bottom line.

With over 20 years of experience, Cutting Edge is the leader in designing and selling products that address the unique challenges associated with each profession we serve. We've achieved this leadership position by providing patented, clinically validated, best-in-class therapeutic technologies, world-class customer support, and an unparalleled practice integration program.

To learn more about MLS Laser Therapy from Cutting Edge Laser Technologies, visit celasers.com.

Watch the webinar that inspired this eBook on the [Cutting Edge Knowledge Center](#).

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