

My Cold Laser Protocols

Revised to August 13,2009

The more people we treat in the clinic the more conditions we find responding to the cold laser. The cold laser is so simple to use - don't over complicate it! Our treatments have been modified over the past couple of years as we have used the cold lasers on more people and treated more conditions. When reading this paper keep in mind we all practice in different states or countries with different scope of practice laws and regulations. Please check your own states laws.

The use of a cold laser, also know as a low level laser can be approached several ways. A great approach to treatment is from the point of the nerves and the blood supply to the area involved as well as the area itself. Another approach is from a "site of injury" or more purely an anatomical perspective, like aiming the laser "through the opening between the femur and tibia, from 5 directions, to treat the meniscus, cartilage, ligaments, and even points of arthritis within the knee joint. One could also treat with the cold lasers from an Acupuncture perspective, replacing the needle with a laser. I personally prefer using a combination of acupuncture needles the cold laser and even microcurrent. I have found cold laser to be very effective for treating the nerves, blood system, "site of injury" treatment and from an Acupuncture perspective.

Use a simple method to communicate cold laser treatment plans to a capable assistant, just like with ultrasound, etc. A full-page blank human line drawing is great for that purpose. Most of the time we use the laser wand with five true pulsed cold lasers (three 635nm 5mw Class 3A and two 808nm 150mw Class 3B) set at 10hz. with a 65 second time. That delivers 20 Joules of energy every time you treat. Remember that the cold laser controller beeps at the end of the programmed time and it also pauses when the button is pushed during treatment.

The treatment time could then be written on the line drawing in the locations treated. The CA can program the per point treatment time into the cold laser controller or just watch the timer, pause and restart. Drawing a line under the number (10s, 15s, 30s, 1m, etc) might indicate to leave a little air gap between the laser and the skin, lowering the "dose" for the more sensitive patient.

Laser Dosage is measured in Joules. There are two dosages to consider. One is "Total Body Dose". Two is dosage to a specific joint or body area. The World Association of Laser Therapy states that between 100 and 200 Joules per six hour period is the total body dose we don't want to exceed in order to avoid exacerbating our patient's condition. Skin color and type is an important factor to consider in treatment. Older or very frail or thin skinned patients and also really light skinned sensitive patients could max out at as little as 30% of the stated numbers, while a very dark skinned person could need double the stated treatment, err on the side of caution. The frail and light skinned can experience a form of burn from a powerful laser but so can the darker skinned patient due to the melanin in the skin offering resistance to the lasers penetration causing heat.

Another consideration is medicines that are “photo reactive”, they may cause the patient to “burn” very easily. If the patient has been advised to stay out of the sun because of some medicine I only treat with a 635nm 5mw laser.

I find it easy to determine the amount of laser light required to deliver a total body dose treatment. About 10 minutes (per six to eight hour period) of treatment will be a maximum (200J total body dose) when using the programmable laser with the laser wand which contains five true pulsed lasers (three 635nm 5mw Class 3A and two 808nm 150mw Class 3B).

The five true pulsed lasers (three 635nm 5mw Class 3A and two 808nm 150mw Class 3B) totals 315 mw and puts out about 18.9 joules per minute.

The 635nm 5 mw puts out about 0.3 joules per minute.

The Five 635nm 5mw totals 25mw and puts out about 1.5 joules per minute.

The 650nm 50 mw puts out about 3 joules per minute.

The 808nm 150 mw puts out about 9 joules per minute.

Now that that is all out of the way lets discuss the use of the “laser wand” on general tissues, and some acupuncture points used for different conditions. Remember, the single 808nm 150mw laser, single 650nm 50mw or the single 635nm 5mw laser can also be used in the same ways as we discuss about the multi laser wand. The human line drawing sheet is a good place to document the dose a patient is treated with then it can be included in the patients file. A copy of the WALT Dosage Chart is good to have visible wherever patients are treated. It is available at:

<http://www.walt.nu/images/stories/files/dosage-table-780-860nm.pdf>.

I make it a practice to keep a box of fold top sandwich bags (bought at a dollar store) in each treatment room. I use them to cover any laser tip or wand for sanitary purposes. I usually put the wand or tip against the patients skin to maximize the effect on the tissue plus it makes reflection less of an issue.

Many patients present with spinal subluxation/degeneration, I believe that when combined with the adjustment the cold laser helps the subluxation heal faster. I often find myofascial restrictions and/or trigger points as well. You can use the cold laser before or after you adjust but if you’re doing soft tissue work like Graston or A.R.T., laser AFTER you’re done.

GENERAL TX and SPINE TX:

When the complaint is of pain and the other factors have been considered and possibly even referrals made, remember we are possibly talking about some very different conditions here and you may want a condition checked out by a medical doctor, it will relieve you of a significant amount of liability if you aren’t comfortable with what you are presented with.

It is good to begin by treating the lower cervical ganglia that is anterior to the C7 TVP bilaterally for 30 seconds each. Remember to stay away from the thyroid gland here - please! If the problem is joint pain like a knee, shoulder or hip the next spot to treat is that joint, treat it with the amount of energy (in Joules) as shown on the WALT Chart <http://www.walt.nu/images/stories/files/dosage-table-780-860nm.pdf> Depending on the amount of energy already used, you could then do the laser treatment bilaterally just lateral to the spine at the involved spinal level as well as just above and just below (posterior aspect of the body, 3 to 5 vertebral levels in all) do 30 sec on each side of the spine keeping the wand moving slowly. For the acupuncture folks this treatment covers the Hua-To points and the Associated points. This basic treatment is for a primary subluxated area that's being adjusting as well. Then move out to the involved extremity for problem areas like muscle spasm or trigger points and treat them.

BLOOD SUPPLY:

When I first learned about lasers I was taught to treat non-healing fractures when the injury was covered by a cast by treating the nail beds and the arterial blood supply to the limb. Many a non-healing fracture has been healed this way, if the patient is compliant to the treatment plan. The blood supply treatment method is somewhat indirect so the energy is spread over a large area allowing more treatment in that involved area. I find this type treatment actually treats the whole body so it can be great for a wellness care approach. In those cases we might treat the abdominal aorta above and below the naval assuming the patient wasn't so obese that the treatment couldn't make it to the abdominal aorta. In that case, remember those lower and middle cervical ganglia, the carotid arteries are superficial to them and they can both be treated at the same time if you direct your laser wand properly. Remember to stay away from the area where there is or might be fetus!

MUSCLE / TENDON / LIGAMENT / NERVE:

Over time I have changed the way I treat tendonitis/osis/opathy. I only use the 635nm 5mw laser on a tendon problems. I found the 650nm 50mw to be too powerful for some people and I can't reliably predict when a patient will experience an exacerbation of symptoms. Why should I? The 635nm 5mw laser is almost always successful and never hurts a patient. Alternatively, (if all you currently have is the laser with three 635nm 5mw Class 3A and two 808nm 150mw Class 3B laser wand) you can cover the two 808nm lasers and still treat with 2 or 3 of the 635nm 5mw lasers. I believe you will find the 5mw 635 nm single laser tip to be much more convenient.

When dealing with sprains/strains and/or nerve irritation it is advisable to keep the laser moving over the area being treated. Covering the entire involved area slowly in a "spray painting" sort of fashion, while the laser head is against the skin is great. I also rotate the wand within the baggie. Keeping the laser stopped on one spot could possibly begin to over treat a single spot which could decrease its effectiveness. This "spray painting" method is also used for neuropathy and phantom limb pain, just "spray paint" the nerve pathways for 30 sec to 2 minutes

depending on the size of the area. For both neuropathy and phantom limb pain I treat the corresponding auricular points with laser, needles and/or microcurrent. As for trigger points, treatment should be 1-4 joules per trigger point. Use of a single 808nm 150mw to get to the small area would be ideal.

JOINTS:

The WALT Chart <http://www.walt.nu/images/stories/files/dosage-table-780-860nm.pdf> gives specific dosages and the number of points to treat according to the World Association of Laser Therapy. Generally I find I am thinking along the same lines. I treat the involved joint, treat the pathway of the involved nerve(s), treat the involved spinal level and treat the auricular point(s) related to the condition.

ACU-POINTS:

I really don't focus on treating acu-points with the laser like I used to. I primarily use needles or a micro current machine. I am including this for completeness sake knowing that some will prefer treating acu-points with the cold laser.

As we discuss treatment of a "point" I am talking about using either a 635nm 5mw, 650nm 50mw or 808nm 150mw. When treating acu-points I would usually begin at the spine by treating the general area of the spine where the nerve roots exit that possibly have a relationship to the complaint. In the neck or low back I commonly treat between each spinous process (Du Meridian) for 2-3 levels above and below the level I believe to be the culprit, then I treat the Hua To Points (1/2 tsun out from center and between each spinous) again treat 2-3 levels above and below the offending, subluxated area. Finally I treat any Associated Points on the Bladder meridian that are within a few levels up or down. I treat each level regardless of whether I've seen it in an acupuncture point manual. I learned this concept from a paper Dr. Amaro wrote a long time ago and it works! You want to apply between 0.5 - 2 Joules per acupuncture point. Please note that the 5 laser wand treats all the points near the spine quite nicely.

OTHER ACU-POINTS:

I find LI 4, ST 44, & ST 43 seem to help reduce pain in general. To relax the stressed out, decrease headaches and sometimes even blood pressure I use GV 20, the Four Points located 1 tsun anterior, posterior and lateral to GV 20 on top of the head, HT 7, BL 62, & Auricular - Shen Men, Tranquilizer Point and Muscle Relaxing Point. To increase the energy levels of "lethargic" patients I've had success with CV 6, CV 8, ST 36, & SP 6.

OTHER CONDITIONS:

We see patients with every condition known and as a general rule neuro-musculo-skeletal complaints will respond to the low level laser, some great some may take a while and it can be difficult to keep the patient motivated. Most conditions are treated with a "common sense" approach. For example it makes sense that you would treat a fibromyalgia patient by using the laser on the tender "fibro" points. But if you think about it you will also recognize fibromyalgia as a condition that also requires you to cut the dose down to 30% of normal in the

beginning of treatment so with only 30-60 Joules to “spend” where will you treat and for how long? If the 315mw laser wand is your only laser, you might think about an air gap to decrease the dose, or covering the two 808nm 150mw infrared lasers. You could just count 1 Mississippi, 2 Mississippi in your head and move off the points quickly.

The digital hand held laser controller can be programmed to a fifteen second treatment time so you can treat without counting. Now we can treat all 18 “fibro points” if we wish and still have a little time left for the anterior C7 ganglia before reaching 50 Joules. One could simply use the 635nm 5mw laser and “spray paint” each point for a minute or so. That keeps the dosage down so you see how the patient responds to care and you’re sure not to exacerbate the fibro. Then you can use the wand for the Ant C7 spot.

The above is the basic way I approach any condition. I don’t need a manual a foot thick with pictures and exact cook book like recipes. As a doctor I know things like, the referred pain patterns trigger points and where the trigger points are that refer, treat the trigger point and the referred pain will likely respond. If you can possibly do it (ie: it is legal in your state and you are trained) needle the trigger point – this one needling technique has made me believe that the trigger point injections really aren’t what help the patient, it is the hole the needle makes, it is just my opinion but WOW do I see amazing results with it!!

Neuropathy has another aspect. Obviously you would think of “spray painting” the entire affected limb, right? Now follow the nerves pathway and “spray” it all the way up the limb to the cord level. Then go to the ear and treat the auricular point for the area. If you don’t have one of the optional small laser tip for auricular points you can use an inexpensive micro current type point locator/stimulator for the auricular points.

To summarize: we treated the area of the complaint, the pathway of the involved nerve, the involved cord level and I might include the entire spine protocol here - Du points, Hua To points & Associated points for about 5 levels, involved + 2 above and 2 below. Keep the dose low - don’t over treat.

For something like TMJ dysfunction do whatever you do other than laser then treat the Tempomandibular joint itself, the general jaw muscle area and the temporalis muscle above the ear. Here is an example of a time it is good to have more than just the large multi laser wand because the TMJ is a tiny joint and a small treatment area sometimes calls for a small treatment tool. Apply according to the TMJ on the [WALT Chart](#) but treat the muscles in addition to the TMJ.

Do NOT over treat the base of the skull with the wand. The occipital nerves are very sensitive. I only use the 635nm 5mw on the upper cervical spine and on the scalp. I made a little cover for the multi laser wand so the two 808nm 150mw lasers are not treating, just the three of the 635nm 5mw lasers in the multi laser wand.

One final thought for patients with multiple complaints. Just like in Chiropractic care, treating the primary problem is most likely to offer relief and give the patient relief for a longer period of time. With that said don't overlook what appears to be a secondary condition because sometimes that's really the problem. Be careful not to get caught up in treating so many things you end up over treating one of the more sensitive conditions and making it worse. Remember any laser treatment affects the WHOLE BODY.

As you can tell the [WALT Chart](#) chart offers you a guideline for muscles/tendons as well as specific recommendations for most joints and you have a standardized guide to determine your own treatment plans. As far as maximum doses are concerned the two 808nm 150mw's in the wand are 300 mw total whereas the three 635nm 5mw's lasers total 15 mw. So with the wand you are really treating two of the points with a lot of energy every time you push the button; for this reason, I recommend you mark your wand so you know where the two 808nm near infrared lasers are located without looking at it during operation. You want to aim into the "openings" of the joint, then you can move the laser wand around during treatment so as to continue to aim into joint, while you simultaneously have the patient moving the joint through its ranges of motion the best they can, this allows you to get to all different angles to treat the joints. You can also rotate the wand head while it is still against the skin in the plastic bag if necessary.

With the single 808nm 150mw laser wand you can direct your treatment a little more specifically to the "openings" and that can really make a difference on small joints where you have to get the treatment done with a really low number of Joules. Finally, if you need to decrease the density (mW/cm²) of the treatment you can just use "air". Just like x-rays need more MAS at 72 FFD the laser loses density if it isn't against the skin. Where it says max 100mW/cm² you could lower the density of your laser wand or single 808nm 150mw laser tip by simply holding it where it is just a millimeter or two from touching the skin.

Thank you for reading this far down, your patients will benefit and pay you well!

Sincerely,

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Disclaimer:

You are completely responsible for any treatment you decide to offer, as well as your compliance with your state laws and your treatment decisions for patients. I have no knowledge about the exact building or marketing processes of any cold laser product and I make no representations that I do. I use the cold lasers I bought from <http://ColdLaserTherapy.us> in practice every day and with great results, how you use it is your own responsibility. Obviously everyone in any treatment room must wear laser goggles approved for the wavelength of the laser being used.



Recommended anti-inflammatory dosage for Low Level Laser Therapy

Laser classes 3 or 3 B, 780 - 860nm GaAlAs Lasers. Continuous or pulse output less than 0.5 Watt

Energy dose delivered to the skin over the target tendon or synovia

Diagnoses

Tendinopathies	Points or cm2	Joules 780 - 820nm	Notes
Carpal-tunnel	2-3	12	Minimum 6 Joules per point
Lateral epicondylitis	1-2	4	Maximum 100mW/cm2
Biceps humeri c.l.	1-2	8	
Supraspinatus	2-3	10	Minimum 5 Joules per point
Infraspinatus	2-3	10	Minimum 5 Joules per point
Trochanter major	2-4	10	
Patellartendon	2-3	6	
Tract. Iliotibialis	2-3	3	Maximum 100mW/cm2
Achilles tendon	2-3	8	Maximum 100mW/cm2
Plantar fasciitis	2-3	12	Minimum 6 Joules per point
Arthritis	Points or cm2	Joules	
Finger PIP or MCP	1-2	6	
Wrist	2-4	10	
Humeroradial joint	1-2	4	
Elbow	2-4	10	
Glenohumeral joint	2-4	15	Minimum 6 Joules per point
Acromioclavicular	1-2	4	
Temporomandibular	1-2	6	
Cervical spine	2-4	15	Minimum 6 Joules per point
Lumbar spine	2-4	40	Minimum 8 Joules per point
Hip	2-4	40	Minimum 8 Joules per point
Knee medial	3-6	20	Minimum 5 Joules per point
Ankle	2-4	15	

Daily treatment for 2 weeks or treatment every other day for 3-4 weeks is recommended

Irradiation should cover most of the pathological tissue in the tendon/synovia.

Tendons

Start with energy dose in table, then reduce by 30% when inflammation is under control
(Does not apply for carpal tunnel tenosynovitis)

Therapeutic windows range from typically +/- 50% of given values
Recommended doses are based on ultrasonographic measurements
of depths from skin surface and typical volume of pathological tissue
and estimated optical penetration for the different laser types in caucasians

Disclaimer

The list may be subject to change at any time when more research trials
are being published. World Association of Laser Therapy is not responsible
for the application of laser therapy in patients, which should be
performed at the therapist/doctor's discretion and responsibility

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Cold

Cost Effective

Laser

Therapy Solutions

Therapy

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"Purpose determines - Your result"

My purpose is to help people get out of pain

-As quickly as possible

-As easily as possible

-As inexpensively as possible

-Without drugs or surgery, if possible

Then, to get them more flexible and stronger and help them stay that way.

Cold laser therapy fulfills all of the above better than anything I have ever used in 26 years of practicing rehabilitation medicine, occupational medicine, industrial medicine, family medicine, geriatric medicine, osteopathic medicine and now a laser clinician / laser designer

I am proud to be a laser clinician. It has brought a facet to my practice that I never imagined possible. I am better able to treat so many conditions. I am very thankful to those who developed and taught me this art and science.

As a physician and an individual I enjoy using laser light treatment on patients in pain, then as possible to adjust them, or stretch them and help them regain function and comfort.

I also want to help as many clinicians of all training use this "miracle therapy" in their practices for all those who could benefit from it.

This guide was written by a clinician who uses cold laser in the treatment of adult patients. It is not intended to be complete as it is a work in progress. HealingLasers is a trademark (USA) www.HealingLasers.com

This guide is a practical introduction designed to save you time and money. It is designed to give you a practical "nuts and bolts" approach to starting or improving practicing with a soft-tissue pain and inflammation reducing laser .

Dedicated with gratitude to all who have developed the art, those who so graciously shared and taught me and those whom i hope will learn and practice the art and carry on the flame, the torch and spread the healing.

You can do it if you try. You can do it if you want to. You can use a tool so powerful, so subtle, to help patients, that you will help more than you ever imagined.

Lets face it. Much of health care has become routine, something "breaks" or threatens breaking and after a lot of tests, a lot of waiting and a lot of expense, it either gets "fixed" or medicated. Or so it seems the system helps..

But what about the "tough" cases? The people with severe and/or chronic pain ? The complicated orthopedic, joint or muscle injury, the "failed back surgery, the burned patient, the patient with a leg ulcer, the patient with a decubitus ulcer, swollen foot, frozen shoulder, etc.

They do not fit the "system" and are medicated, told they have to live with "it" and function less and often less until their funds (or insurance benefits) are exhausted and they "Drop out" of the "system", sometimes by death.

How did I get into this? . . Simple:

I got hurt in 2000 .. fell over a box .. herniated two lumbar discs .. spent three months in bed with sciatica .. two years on a cane .. months of multi frequency interferential and then could limp around with my cane in pain enough to get to the computer .. surgery .. fusion with metal stabilization was recommended .. was fearful of dying .. was told I would be using a walker for a year .. I did not have the surgery ..

Why do so few patients get Cold Laser Therapy ?

Except as relative to eye-surgery lasers, most people and health care professionals have never even heard of a medical use for lasers. Fewer have seen how cold laser can ease the pain, the swelling of injuries, trauma, decrease post-op pain and swelling in plastic and other surgeries, minimize scarring and accelerate recovery and healing.

That is why we have to get cold laser into your hands, your clinic, your emergency room, your hospital, your nursing home, your training room, your rehab center, etc.

And sometimes even in selected patients homes...

Cold laser therapy equipment can be obtained very reasonably by obtaining a low-priced units and cost-effectively with a full featured units. Cold lasers can leased, or the payments spread over time. In any case cold laser equipment can treat and benefit many patients at very reasonable cost.

Cold lasers unlike other equipment require essentially no special space, no expendable supplies, (unless operated with consumable batteries) have no time-consuming "set-up" "hook-up" or complicated settings.

Cold laser therapy can be administered, under proper supervision and after beginning training, by almost any person, even the patient themselves.

Learn from this example:

We know of doctors who "lease" cold laser treatment devices to patients to use on themselves, at home, between office visits.

Several doctors rents to own cost laser components (for \$ 40 a week or so for 30 weeks) from a laser component supplier (see the bottom of page 10).

The doctor then leases the laser components out to patients for \$ 40 a week.

For the first 30 weeks it is break even. When 30 weeks are up and the doctor gets to keep the entire patient leasing fee and he provides great benefits to the patient.

What is the cost ?

Commercial units in 2006 cost about \$4000 To \$6000 to \$16000 USD, with extremely high power (we are questioning why we would need such power) units costing more.

Cold laser components can be ordered from manufacturers and consultants, which vary in price and features. As of this writing (November 2006) one company sells a complete set of components for \$1400 or so USD.

Portable and desktop cold lasers are available. When purchasing a portable unit look for one that comes with rechargeable batteries and a carry case to protect the equipment when it is not in use.

Does cold laser therapy work?

Yes and there is over twenty years of experience and data and research from all over the world to support this.

How does it work?

Biostimulation = more oxygen = more circulation= more healing potential = laser light exposure at certain wavelengths near 635nm stimulate cellular mitochondria (the energy generators) of our cells, to produce more ATP.

More ATP = more energy = more healing

Hemoglobin, our red blood cell pigment absorbs light best at about 650nm wavelength and the most effective "biostimulation" wavelength has been found to be 632-635nm for human tissue.

Is cold laser therapy safe?

Other than foolishly staring into the laser light aperture opening (definitely not recommended) cold laser is considered insignificant risk, essentially safe by FDA classification, following extensive multi-year reviews.

We do advise caution with pregnant women, anywhere near the abdomen and uterus region and small children, near the face, due to avoiding eye exposure, may be a child's ability to cooperate question. I would not hesitate and have treated a burn-type abrasion area on a child's foot and leg, with excellent results.

Of course with any wall-powered devices electrical safety around water must be observed. Most laser treatment heads are electrically isolated and operate at low DC voltages of 3.2 volts DC current (similar to the power of 3 flashlight batteries).

What do I tell my patients?

I tell patients laser is a transfer of energy through light.

And we hope to "activate" the area we are treating with more resultant (for the moment) energy and circulation. Most patients are content to know laser is a transfer of energy through light.

How I treat my patients:

Shine the cold laser light back and forth about 1-3 inches from the skin while they go through range of motion, for 2- 4 minutes per area for 635nm / 5 mw (red visible) laser then for about 30-60 seconds per point with an 808nm/150mw laser (near invisible red light)

Often if there is swelling and accumulated lactic acid, the patient will feel a gentle, pleasing warmth in the area and this is a very positive sign. I call it "laser sensitive tissue" and the more the swelling the more "laser sensitive" the patient appears to be.

If they are very tight or on a lot of narcotics, they often do not feel the same as other patients and it will take more sessions to help them.

Often they are better right then, sometimes a few treatments are necessary before patients feel any relief.

Maintenance therapy is variable and could be once or twice a week.

Other therapy can co-exist if desired.

Cold laser treatment pre and post stretching and pre and post adjustments (mobilization) will give better results .

What I use cold laser for:

I have used the 635nm red laser on burns, wounds, scars, paresthesias, post herpetic (shingles) pain, gum inflammation, post dental extraction, TMJ pain, skin conditions, athletic training and recovery, with gratifying results.

Can cold lasers be used to help people stop smoking or loose weight?

Cold laser is also used in smoking cessation and weight loss programs by those who learn this multifaceted treatment. I feel this has to be part of a multi disciplinary treatment plan. Laser cannot do it all with these problems, but skilled practitioners are making strides in carefully selected and motivated patients. Educational material is available on use. Many IRB's or Clinical Trials are studying the effect of cold laser therapy as part of stop smoking programs.

How complicated are treatment protocols?

My laser knowledge has increased over the last few years and still there is much to learn.

There are two common strategies to using cold laser therapy.

Some clinicians treat by time and patient response as I do and the clinician who calculates joules of energy delivered per point and applies this each time.

I use time and patient response with the 635/5mw and 808nm/150mw cold lasers.

Laser is stimulating to the tissue and the term photo biostimulation is used especially with the 635nm laser as hemoglobin peak absorbs light at 632 nm (very close to 635nm). This may explain the results we see with the 635nm laser .

The longer I treat with cold laser, the less I am concerned with delivering " a full dose of joules".

I often see fine results with even short doses of laser ... laser activates tissue ... period, in my observation ... tissue does not "time" the laser and only respond when the coffee cup is to the brim, so to speak ...

At 635/5m it would be hard to "overdo" treatment and even short 30 second periods of exposure seem to make a difference in my patients per point. I do limit the 808nm to 30 to 60 seconds per point and recommend the laser light be kept in near constant motion over the area.

I am not trying to "penetrate" the patient or bore a light hole in them, so I have little use for elaborate "protocols" for treatment of this and that condition . If I wanted to "penetrate" the patient with rays, I would x-ray them.

I am a therapist who wishes to activate and mobilize the tissues, to help balance the muscles of the body

Treatment of pain

Cold laser has been used primarily in musculoskeletal pain, muscles, joints, strains, inflammation for many years. Many articles from all over the world can be found at www.laser.nu . Treatment time is generally 2-5 minutes per region affected.

Continuous wave and pulsed lasers have been used. It is clinically seen that that the effectiveness of pulsed lasers exceeds constant lasers.

Newer uses of cold laser have been in the field of wound and burn therapy, post-operative pain and swelling reduction from plastic surgery and other surgical procedures, veterinary medicine, dentistry (TMJ, gum pain and healing post-extractions), athletic balancing and performance enhancement. The world literature covers other uses as well.

Can cold laser heal, reduce inflammation, re-grow hair, treat impotence, enhance athletic performance, affect many forms of chronic disease ?

There are written reports of all of these, but we do not know enough at this time to comment on all aspects of this.

Could cold laser results reported be our collective imagination, our desire to "do something"?

No, too many people get better with cold laser for too many years for this to be invalid.

How to use and how to code services:

Cold Laser works best with active ROM (range of motion) and is done with the patient moving the affected area through this range of motion as much as possible, within limits of area and pain present. The coding and billing of these active physical therapy services is done under active physical therapy CPT codes.

We suggest that the documentation (clinical treatment notes) for these services include the following notation : "above services done with accompanying photo stimulation".

This is done so you will know when you look back on your notes you have done cold laser therapy in this particular case.

Active PT codes we have seen used:

97112 Neuromuscular reeducation (approx 28.60 mac) (approx 35)		
97140 Myofascial release	28.35 mac	35
97530 Therapeutic exercise	29.00 mac	35

(Representative charges and Medicare in a region allowable charges for illustration example only this is NOT legal advice):

A cold laser therapy session where all of the above is done and allowed to be billed could be \$35 + \$35 + \$35 or \$105 total. depending on your area and practice.

How to help patients:

This is a complex topic but cold laser can be used to promote initial flexibility and can be used pre and post exercise or pre and post cmt, omt or stretching or joint mobilization. It can be used post strain or inflammation.

The goal of most therapy is to teach, implement and restore range of motion, strength and function.

Cold Laser can be used to promote comfort and healing .

We introduce cold laser as a tool in our treatment programs and not a cure-all. We tell patients they will function better to the extent they get more flexible and stronger and that cold laser can help get painful muscles and joints less swollen, that built up lactic acid may be "pumped out" faster with cold laser therapy, that increased oxygen and blood supply may be seen with cold laser therapy, (more circulation-more oxygen-more healing) and we are going to give cold laser a try for a few sessions. We explain that they may feel better during that session, or later, or may need 2-3 sessions to see if they do benefit from cold laser.

Therapy can be done daily or less often if the case dictates this.

Common treatment protocols:

The laser wand is held at a distance of 2 to 4 inches from the skin and is slowly swept back and forth through the surface of the part and often extended to the entire dermatome, or meridian, often orthopedic injuries are evaluated and treatment extended to "a joint above and a joint below", the injury. Treatment time is 2-4 minutes per area.

Other practice tips...another goal of cold laser can be to achieve a better balanced ROM with flexibility and a balanced flexible strong athlete.

We also put patients with injury issues into z-coil (www.zcoil.com) highly spring assisted shoes. We also can introduce you to this company.

Back school instruction is done on all back injured patients and evaluation for orthotics is done. We feel the injured patient needs to walk on a "level base"

If a cane is needed we use often a sherlock alpine adjustable "walking stick", (www.cascadedesigns.com) which can be used at a 45 degree angle instead of the 90 degree angle a cane requires. Be aware the sherwood has a metal point for ice walking, enclosed in the tip, so airline travel (security checkpoints) may be a worry. Check it in baggage .

"Money" is the by-product of services rendered... (k.p.)

What have you learned form this brief guide ?

Hopefully we have exposed you to possibilities of you using this discovery of natures healing light and transfer and activation of healing energy through light, in your practice as a tool and as extension of your capabilities held in hour hand.

We are always monitoring and re-evaluating the patient while active cold laser is being given, we are teaching care and talking to the patient and asking them.

Cold Laser is not passive therapy "lay on the table and we will place hot packs on your back" therapy ("shake and bake" when ems is added to hot packs) and should not be done by drone uncaring assistants.

This is physics, this is an advanced chance of a lifelong system of movement and healing and deserves the best treatment administrator you can provide. And this is often you....this is you...

We are here to be and we will prosper, if we are a beacon, if we show patients the best that can be done or achieved, either as a result or a goal to work toward.

Do not waste precious time of yourself or patients lives with therapies of "busy-work" that they could do at home or at a gym (room full of equipment?) .

Assess well, document well, plan well, communicate well, get them in often enough, get them moving, get them flexible, get them stronger and well.

Get started and

Shine your light

Sincerely,

Barry Ungerleider, D.O.

Board Certified Family Practice and Geriatric Physician
Laser Clinician
Austin, Texas

Please E-Mail with your questions or for help in obtaining an economical cold laser unit at Barry@Laser-Therapy.us

P.S. Time is money. Results count. Cold laser therapy saves one and produces the other.

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Disclosure: We are a supplier of cold laser components and other cold laser components and can help you obtain cost-effective cold laser components for your use in your own practice.



Recommended anti-inflammatory dosage for Low Level Laser Therapy

Laser classes 3 or 3 B, 780 - 860nm GaAlAs Lasers. Continuous or pulse output less than 0.5 Watt

Energy dose delivered to the skin over the target tendon or synovia

Diagnoses

Tendinopathies	Points or cm2	Joules 780 - 820nm	Notes
Carpal-tunnel	2-3	12	Minimum 6 Joules per point
Lateral epicondylitis	1-2	4	Maximum 100mW/cm2
Biceps humeri c.l.	1-2	8	
Supraspinatus	2-3	10	Minimum 5 Joules per point
Infraspinatus	2-3	10	Minimum 5 Joules per point
Trochanter major	2-4	10	
Patellartendon	2-3	6	
Tract. Iliotibialis	2-3	3	Maximum 100mW/cm2
Achilles tendon	2-3	8	Maximum 100mW/cm2
Plantar fasciitis	2-3	12	Minimum 6 Joules per point
Arthritis	Points or cm2	Joules	
Finger PIP or MCP	1-2	6	
Wrist	2-4	10	
Humeroradial joint	1-2	4	
Elbow	2-4	10	
Glenohumeral joint	2-4	15	Minimum 6 Joules per point
Acromioclavicular	1-2	4	
Temporomandibular	1-2	6	
Cervical spine	2-4	15	Minimum 6 Joules per point
Lumbar spine	2-4	40	Minimum 8 Joules per point
Hip	2-4	40	Minimum 8 Joules per point
Knee medial	3-6	20	Minimum 5 Joules per point
Ankle	2-4	15	

Daily treatment for 2 weeks or treatment every other day for 3-4 weeks is recommended

Irradiation should cover most of the pathological tissue in the tendon/synovia.

Tendons

Start with energy dose in table, then reduce by 30% when inflammation is under control
(Does not apply for carpal tunnel tenosynovitis)

Therapeutic windows range from typically +/- 50% of given values
Recommended doses are based on ultrasonographic measurements
of depths from skin surface and typical volume of pathological tissue
and estimated optical penetration for the different laser types in caucasians

Disclaimer

The list may be subject to change at any time when more research trials are being published. World Association of Laser Therapy is not responsible for the application of laser therapy in patients, which should be performed at the therapist/doctor's discretion and responsibility

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