

Effective Alternative Treatments



Hi, I'm Dr. Kukurin and you are receiving this newsletter as a free gift from me. We spend a lot of time working on this publication. It's the same information patients pay for in my office So I'm sure you will find it valuable and I hope you enjoy it. If you have a topic you'd like to suggest for future newsletters just give me a call at 412.381.4453 ~ Dr. K

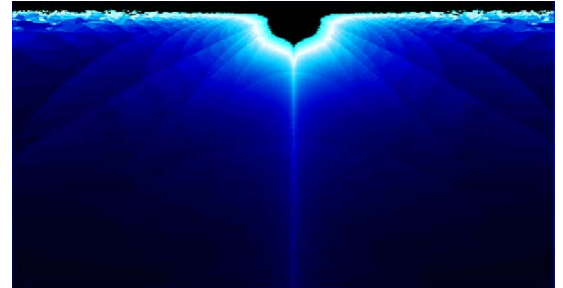
Journal of Rapid Pain Relief

Healing at the speed of light. Lasers in medicine.

The invention of the laser, which stands for **L**ight **A**mplification by **S**timulated **E**mission of **R**adiation, can be dated to 1958 with the publication of the scientific paper, Infrared and Optical Masers, by Arthur L. Schawlow, then a Bell Labs researcher, and Charles H. Townes, a consultant to Bell Labs. That paper, published in Physical Review, the Journal of the American Physical Society, launched a new scientific field and changed forever, industries from communication to medicine. Common light sources, such as a light bulb, emit photons in almost all directions, usually over a wide spectrum of wavelengths. By contrast, a laser generally emits photons in a narrow, well-defined, polarized, coherent beam of near-pure light, consisting of a single wavelength or color. The coherence of light produced by lasers has a wide range of applications. Laser lights are powerful enough to burn through steel or etch solid rock. Properly harnessed the laser light can be used to perform delicate surgical operations such as sealing leaking blood vessels in the back of the human eye. Wavelength appears to be an important factor in the healing properties of laser therapy.



Evidence suggests that a laser wavelength in the range of 635nm to 830nm has the most potent biological healing effects in medical applications. There are over 34 scientific studies that show that low level laser therapy hastens healing of soft tissues and reduces pain 11



Research shows that when the body is exposed to the therapeutic range of laser light, cells that contribute to inflammation are diminished in number, the chemical PGE2, a potent substance associated with tissue inflammation is significantly reduced. This makes laser light therapy equivalent to non-steroidal anti-inflammatory drugs. But unlike these drugs, laser produces its anti-inflammatory effects only in the damaged tissues. This prevents healthy cells and tissue from being damaged, while accelerating the repair of those cells and tissues that have been damaged or injured. Additionally laser therapy can act directly on the nerves that carry pain signals to the brain. Laser suppresses these pain messages.

Advances in laser technology have progressed to a point where laser therapy is practical and affordable. Laser light in the optimal healing wave-length range can be delivered with a desk top unit like the one to the left. Advances in electronics make the use of lasers in chiropractic offices practical. The miniaturization of laser technology allows for laser treatment of arthritis, headaches, CTS, lower back pain and many other painful conditions.

~ Dr. Kukurin

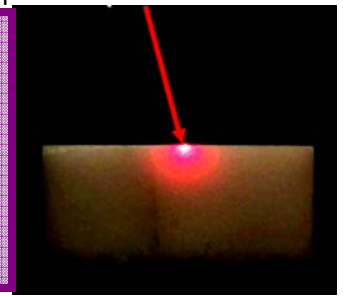
Repairing damaged and injured tissues/ reducing pain



Figure 1, Laser light applied over the skin in a very specific wavelength has been shown to have potent biological effects. This specific form of light can alter nerve function, cause the release of pain suppressing chemicals in the brain and spinal cord, has also shown to promote tissue healing in wounds, accelerates tendon repair, skin damage and even speeds healing of patients after surgery.

Laser light is unique in its ability to penetrate the body. The illustration below demonstrates how a laser light beamed into a solid object can penetrate deep below the surface. Below is a picture of solid marble. You can see how the laser penetrates the surface of this slab of stone. In the human body, specific wavelength lasers can penetrate the skin and soft tissues creating healthful biological activity in the nerves, muscles, connective tissues and blood vessels. Properly applied, laser light therapy can promote healing and tissue repair. 11

Red light therapy has been used to accelerate healing since the time of Hippocrates



Laser therapy appears to be an effective treatment for myofascial pain. Reducing pain and inflammation in muscle and healing damaged soft tissues. In a study of 60 patients with chronic neck pain, comparing laser with placebo laser, the patients receiving the actual treatment were significantly improved compared to the sham laser group. The dose of laser therapy also seems to be important, studies show that repeated low dose application of laser therapy creates a cumulative effect. With repeated small doses promoting ligament healing faster and more effectively than 1 or 2 larger doses at higher intensity.

Because of lasers ability to heal damaged muscles and block pain messages ascending to the brain from painful muscles, laser may be an ideal alternative to massage therapy. Unlike massage therapy, Laser appears to actually heal damaged tissues and takes a few minutes as opposed to hours of massage. Laser therapy appears to be particularly effective in relieving neck pain. Laser treatment can eliminate trigger points in muscles, reduce the pain from arthritis in the neck, and relieve migraine and/or tension headaches. If you or someone you know wants to find out how laser therapy can help you with pain, call our office today to schedule a consultation.

~ Dr. George Kukurin

References

1. In vivo Study of the Inflammatory Modulating Effects of Low Level Laser Therapy on iNOS Expression Using Bioluminescence **Imaging.Photochem Photobiol.** 2005 Feb 1
2. Effect of low intensity helium-neon (He-Ne) laser irradiation on diabetic wound healing dynamics. **Photomed Laser Surg.** 2005 Apr;23(2):187-90.
3. Retrospective study of adjunctive diode laser therapy for pain attenuation in 662 patients: detailed analysis by questionnaire. **Photomed Laser Surg.** 2005 Feb;23(1):60-5.
4. Antinociceptive effect of Er:YAG laser irradiation in the orofacial formalin test. **Brain Res.** 2005 Jan 25;1032(1-2):149-53.
5. Laser acupuncture: past, present, and future. **Lasers Med Sci.** 2004;19(2):69.
6. Dose and wavelength of laser light have influence on the repair of cutaneous wounds. **J Clin Laser Med Surg.** 2004 Feb;22(1):19-25.
7. Comparison of single and multiple applications of GaAlAs laser on rat medial collateral ligament repair. **Lasers Surg Med.** 2004;34(3):285-9.
8. Nociceptive scores and endorphin-containing cells reduced by low-level laser therapy (LLLT) in inflamed paws of Wistar rat. **Photomed Laser Surg.** 2005 Feb;23(1):32-5.
9. A clinical study on serum prostaglandin E2 with low-level laser therapy. **Photomed Laser Surg.** 2004 Dec;22(6):537-9.
10. Efficacy of 904 nm gallium arsenide low level laser therapy in the management of chronic myofascial pain in the neck: a double-blind and randomize-controlled trial. **Lasers Surg Med.** 2004;35(3):229-35.
11. The efficacy of low-power lasers in tissue repair and pain control: a meta-analysis study. **Photomed Laser Surg.** 2004 Aug;22(4):323-9.

12. Low level laser therapy with trigger points technique: a clinical study on 243 patients. **J Clin Laser Med Surg.** 1996 Aug;14(4):163-7
13. The clinical efficacy of low-power laser therapy on pain and function in cervical osteoarthritis. **Clin Rheumatol.** 2001;20(3):181-4
14. Systematic review of the literature of low-level laser therapy (LLLT) in the management of neck pain. **Lasers Surg Med.** 2005 Jul;37(1):46-52.
15. Non-pharmacological approaches to chronic headaches: transcutaneous electrical nerve stimulation, lasertherapy and acupuncture in transformed migraine treatment. **Neurol Sci.** 2003 May;24 Suppl 2:S138-42.
16. The effects of laser acupuncture on chronic tension headache--a randomised controlled trial. **Acupunct Med.** 2005 Mar;23(1):13-8.

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