

How does Cold Laser Work?

Research from Harvard and Massachusetts General Hospital at their Wellman Center for Photomedicine indicates that laser light can stimulate ATP, nitric oxide production and has other biologic effects. This has a natural anti-inflammatory effect.

Laser can also work like acupuncture (but without needles) to stimulate the acupuncture meridians. There is evidence to suggest that this stimulates the parasympathetic nerves which can directly produce decreased inflammation.

Low level laser can also increase blood flow, energy production and myriad other cellular functions.

This is an excellent paper reviewing how cold laser works:

MOJ Orthop Rheumatol. 2015; 2(5): 00068. The Use of Low Level Laser Therapy (LLLT) For Musculoskeletal Pain. Howard B Cotler, Roberta T Chow, Michael R Hamblin, and James Carroll
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4743666/>



**Illinois Sportsmedicine
&
Orthopaedic Centers
Chadwick Prodromos,
MD**

Website: www.ismoc.net
Questions? - Email
orthopaedics@ismoc.net

*Illinois
Sportsmedicine and
Orthopaedic Center*



Cold Laser

1714 Milwaukee
Ave.
Glenview, IL 60025

Phone: 847-699-6810
Fax: 847-699-6545
Website: www.ISMOC.net

What is Cold Laser?

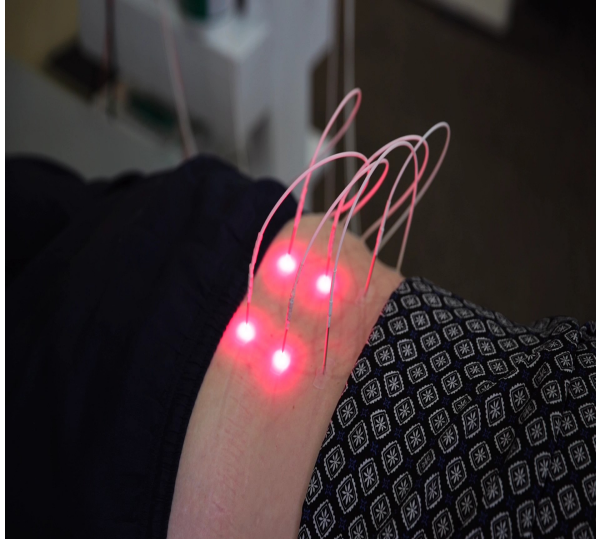
Also called Low Level Laser or photobiomodulation, this laser is not really cold, but instead it is of lower power than the kind of laser that can heat or cut. Cutting lasers have about 5 watts of power but our cold laser is only 100 milliwatts – below the intensity where heat is produced. This is more powerful than some cold lasers, but research has shown that this is the ideal strength to optimize results. This is called a 3b laser, with power from 5-500 mW. Some clinics use class 4 lasers, which we avoid because of their potential to burn. Some use 3a (less than 5mW), but we feel these are underpowered relative to our laser. The laser used by our office is made by Weber, one of the leaders in the field. Treatment is performed by attaching 4 small pads with lasers to the skin so that the lasers are pointed directly downward against the skin. The treatment lasts for 20 minutes of continuous light. There is no pain, no heat and no side effects from the treatment. During the treatment, patients describe that they can feel the effects of the laser.

Types of Laser Light

Typically Red & Infra-Red wavelengths are used. We are one of the few centers to also have available Blue & Yellow lasers. Emerging research has shown improved efficacy for some wavelengths in specific problems. Intravenous laser treatment also shows promise in decreasing generalized inflammation.

Treatment

Also called Low Level Laser or photobiomodulation, this laser is not really cold, but instead it is of lower power than the kind of laser that can heat or cut. Cutting lasers have about 5 watts of power but our cold laser is only 100 milliwatts – below the intensity where heat is produced. This is more powerful than some cold lasers, but research has shown that this is the ideal strength to optimize results. This is called a 3b laser, with power from 5-500 mW. Some clinics use class 4 lasers, which we avoid because of their potential to burn. Some use 3a (less than 5mW), but we feel these are



Results

Results from the treatment are usually seen shortly after the treatment is completed. Research has shown that the laser treatment can decrease pain, improve joint range of motion and improve nerve function.

Uses for Cold Laser

Back and Neck Pain

Cold laser is especially useful for back pain with roughly 80% of patients obtaining relief.

Muscular Pain

Cold laser is usually effective for chronic muscle pain and tightness.

Joint Pain

Surface pads are not usually effective for arthritis in large joint (e.g. knee, shoulder), but a study at our center recently presented at a prestigious national meeting has shown that needle probes into the joint combined with PRP (Platelet Rich Plasma) are often effective for joint arthritis when other treatments have failed.

Headaches

Cold laser relieves headache pain in most patients. We see headaches in conjunction with neck pain and also TMJ pain.

TMJ

We have found cold laser to provide some relief to most of our TMJ patients, probably relieving masseter muscle spasm without the need for injections.