

Photonic Stimulation

Our Photonic Stimulator is an alternative pain therapy for patients experiencing chronic pain, headaches, bursitis, tendonitis, and muscle spasms. It was introduced to our practice in 2000 when only a handful of U.S. Chiropractors were using this new pain device. The Photonic Stimulator is an approved non-invasive therapy approved by the F.D.A. The Photonic Stimulator directs a beam of invisible infrared light onto an area of the body which a patient is experiencing pain. How it works: Directing a beam of photons on traumatized nerves, major nerve plexuses and acupuncture or trigger points, usually re-quilibrates their electrical potential, Once the function of the nerves is restored and in communication with other parts of the body they begin firing normally, blood circulation will return to the affected area, bringing oxygen and nutrients and removing waste. Pain and numbness will disappear, as the body will naturally heal itself. The light assists healing because it "resets the electrical potential for nerve flow" and increases circulation. It relaxes muscle spasms and soreness seems to leave. Many times only three treatments are needed. Speeds healing and eases pain.

Frequently Asked Questions about Photonic Stimulation

PHOTONIC STIMULATION THERAPY

Q: Can photonic stimulation harm?

A: Photon therapy is not dangerous. It does not emit any ionization radiation. Photonic therapy is the application of a safe, noninvasive painless beam of light to activate or produce particular physiological results based on applied neurophysiological principles. The photon therapy is actually a band of diffused light, not a laser.

Q: What is the benefit to the body?

A: Photon act to increase circulation. It can help nerves heal as well as provide localized pain relief and localized muscle relaxation. Photon therapy is targeted to special areas and there is no all-over-the-body effects.

Sometimes people report feeling more relaxed and this is related to the restoration of the parasympathetic nervous system.

Q: What types of problems can be helped?

A: Conditions treated with photonic stimulation have included diabetic

neuritis, peripheral neuropathy, reflexive sympathetic dystrophy, complex regional pain syndrome. myofascial pain disorders such as trigger points, myositis, fibromyalgia and other areas of pain management including post-up spinal surgeries, tendonitis joint and soft tissue sprains and strains This can include whiplash work and sports injuries.

Q: What does it feel like when applied?

A: There is no feeling of sensation while the photonic stimulation is being administered. The unit has a small fan used to cool the emitter. People sometimes feel the vibration of that motor. The heat lamp when turned on evokes the sensation of warmth. This is not used in most cases. However. there are no feelings of electrical impulses or shocking sensations.

Q: How does photonic simulator therapy work?

A: Decreased blood flow through an injury site can result in slow healing. This stimulator emits infrared nonvisible photons that harmlessly penetrate the skin and soft tissues promoting blood flow. The result is that injuries heal faster and will feel better more quickly.

Photonic therapy is a natural therapy promoting the body's own immune responses, its own methods of controlling pain and its own healing abilities. There are no needles and no drugs. It is the use of monochromatic light. They stimulate electro-sensitive spots on the skin, including those usually called acupuncture points.

Q: How many treatments are needed?

A: Each patient and diagnosis require different treatment applications. However. the general rule is 3-4 sessions with documented sustained improvement If this is not accomplished then the treatment should be terminated.

PHOTONIC STIMULATION

- ***Faster healing***

Accelerates fibroblast development in damaged tissue as well as stimulating bone and cartilage regeneration.

- ***Anti-Inflammatory Action***

Reduces swelling and accelerates healing times of soft tissue injuries.

- ***Increased Vascular Activity***

Results in an increase of microcirculation of lymphatics and small blood vessels in injured tissue.

- ***Stimulates Nerve Function***

Accelerates the regeneration of damaged nerves.

- ***Safe***

The Food and Drug Administration (FDA) considers photonic stimulation to be a "non-significant risk" technology.

- ***Fast***

Typical photonic stimulation can be accomplished in less than 10 minutes.

- ***Non-pharmacological***

- ***No hidden side effects***

- ***Non-invasive***

Unlike acupuncture or injections. skin is not physically penetrated.

- ***Economical***

Photonic treatments often cost less than other therapy and offer greater benefits

MECHANISM OF ACTION:

The mechanism of action of infrared light photonic stimulation has been determined by the work of many scientists throughout the world. There are hundreds of published research articles on the topic (a complete list of articles is available upon request). Most of the research has been conducted in Europe where it originated.

The effects are photochemical (not thermal). Bundles of light energy (photons) enter the tissue and are absorbed within the cell (in the mitochondria and at the cell membrane). The light energy is converted to chemical energy within the cell. Cell membrane permeability is altered and physiological changes occur through an enzyme cascade.

These physiological changes affect microphages, fibroblasts, endothelial cells, mast cells and nerve conduction rates. After treatment there is a measurable increase in enzymes and neurotransmitters, such as serotonin, that proves photonic stimulation has had physiologic effect. Also, measurable changes in blood flow occur.

Our device uses light in the infrared spectrum that has been shown to have the greatest depth of issue penetration. The cumulative effect of the light energy upon the tissue is to increase microcirculation, speed healing and give pain relief. It is important to note that this form of laser light does not heat or damage the tissue nor does it induce tremor or bacterial growth.

Soft tissue disorders account for many of the painful conditions in which patients come to therapy. Muscle, tendons, ligaments, fascia and periosteum are soft tissues that are often injured by trauma and/or the aging process. Tendon and ligaments are composed of collagen fibers which penetrate the periosteum as Sharpey's fibers. These fibers at the periosteum are vulnerable to repetitive stress and sudden tears from acute trauma.

The inflammatory response involves noxious chemicals such as bradykinins, prostaglandins, histamine, substance P and serotonin which irritate free nerve endings, causing pain. Part of the inflammatory reaction and pain response results in splinting, muscle and vasospasm which trap the irritating inflammatory substances in the tissue, resulting in delayed healing and prolonged pain.

Photonic stimulation breaks the painful inflammatory cycle by dilating small blood and lymphatic vessels.

This increase in circulation removes the irritating inflammatory products and results in accelerated healing and pain relief. The fibroblasts, immune system and nervous system are also stimulated by photonic stimulation to increase activity - thereby repairing damaged tissues sooner.

Important studies: Numerous tests show that the increase in circulation and reduction in pain associated with the use of the photonic stimulation unit is the result of all increase in the release of nitric oxide directly under the transmitter.

These tests are further supported by published scientific articles that show that light can increase circulation through the release of nitric oxide.

The photodissociation of nitric oxide (NO), either directly from the endothelial cells or from the hemoglobin within the red blood cell, may be responsible for these beneficial effects. Over 40 years ago Furchgott (Furchgott et al., JPET 113:22, 1955), demonstrated the ability of photo energy to induce vasorelaxation. Furchgott, Ignarro, and Murad were awarded the Nobel prize in medicine and physiology in 2000 for their work in identifying NO as the molecule responsible for regulating blood pressure.

Effects of Photonic Stimulation on Wound Healing

1. Acceleration of resolution of inflammation
2. Increase in growth factor release from macrophages, following temporary increase in membrane permeability to calcium ions
3. Enhanced synthesis of ATP
4. Increase in mast cell number and degranulation following injury
5. Increase in proliferation of keratinocytes, fibroblasts, and endotheliocytes
6. Increase in angiogenesis
7. Increase in collagen synthesis

Effects of Photonic Stimulation on Pain Relief

1. At appropriate energy densities and treatment parameters, can alter the pain threshold
2. Photonic stimulation has the potential to significantly alter the neurochemistry of the central and peripheral nervous systems. This suggests that there may be a neuropharmacological substrate for laser-mediate analgesia.
3. Photonic stimulation can alter electrically evoked potentials, in terms of latency (or velocity) and amplitude.

* Research studies on request.