

[IMAGE]

Show Me the Light: The Healing Power of Laser Therapy

By Dr. Phil Harrington

They are in supermarket scanners and compact disc players, and can shoot down satellites. They can measure the distance from the Earth to the moon within a millimeter and repair your vision with just one treatment. They can cut steel, produce three-dimensional images and transmit telephone messages around the world. What are they? *Lasers*. Theorized by Albert Einstein in 1917 and invented in 1960, lasers have proven to be a versatile high-tech solution to many of life's problems. Today, more and more people are learning that therapeutic doses of laser light can also relieve pain and expedite healing for a wide range of health complaints.

An increasing number of doctors nationwide are offering laser therapy to their patients. With its increasing popularity and use, that means more and more people are probably wondering about lasers in general and some important specifics, including how they work, how safe they are and what it feels like to get treated. To answer these questions and more, we interviewed Dr. Phil Harrington, a chiropractor who also has a degree in physics.

What is laser therapy?

Laser therapy is the application of low levels of laser light to areas of the body that have been injured or damaged. Contrasted with high-powered lasers used in health care that cut tissue, such as surgical or hair-removal lasers, therapy lasers produce beneficial photochemical and photobiological interactions that can help relieve pain and repair injured/damaged tissue.

What is the history of laser therapy?

pulsing in laser therapy - Copyright © Stock Photo / Register Mark The use of light as a healing modality has been recorded as early as 4,000 years ago in ancient Egypt. Albert Einstein wrote a theory about lasers in 1917, and the laser was invented in 1960. Laser light is special because it is monochromatic (one color), coherent (all waves are in phase with each other), and can be collimated (held to a small spot size at a great distance). Dr. Endre Mester was the first to observe the positive effects of laser when hair grew more quickly on shaved mice that were exposed to low levels of laser light.

How long have lasers been used by health care providers?

Therapy lasers have been used in Europe since Dr. Mester's discovery in 1967. The U.S. Food and Drug Administration (FDA) gave market clearance to the first therapy laser in 2002. Since then, progressive chiropractors, osteopaths, medical doctors and other have been offering laser therapy to their patients in increasing numbers.

How do lasers work?

The photons of laser light penetrate through your skin and are absorbed by special components in your body's cells called *chromophores*. Just as photosynthesis creates energy for plants, the absorption of the photons by your cells causes increased production of cellular energy. In areas of injury or damage, this means there is more energy available to improve the rate and quality of healing. This is called *biostimulation*.

Because of its biostimulatory nature, laser therapy has the potential to help any scenario whereby the body's cells are not working to their optimum potential. Studies on tissue cultures reveal a wide range of beneficial physiological effects, including increased levels of endorphins, prostaglandins and other beneficial components; reduced levels of harmful compounds including C-reactive protein and interleukin-1; pain modulation through a variety of mechanisms; and increased rate and quality of tissue healing.

OK, but what does that all mean in English?

For patients, that means relief from acute and chronic pain, reduced inflammation and muscle spasms, improved range of motion and restored function. Patients suffering from headaches, neck pain, carpal tunnel, low back pain, sports injuries, post-surgical pain and more have been helped with laser therapy.

How long does it take to work?

Some patients notice improvement after the very first treatment session; with others it may take a few treatments. The effect of laser therapy is cumulative, meaning that each successive treatment builds on previous ones. The main benefit to patients, as reported by laser therapy practitioners across the country, is that chiropractic care plans that include laser therapy produce faster and better quality clinical outcomes.

What does it feel like to get a treatment?

With very low-powered therapy lasers, you feel nothing at all. Higher-powered (Class IV) therapy lasers produce a mild, soothing, warm feeling. You may notice a tingling sensation in the treatment area as blood vessels dilate, or that muscle spasms are reducing in strength and duration. Laser therapy is a painless treatment.

How do you know it not causing cancer or other tissue damage?

There are two ways that laser light can damage tissue; if it is very concentrated (high power density) or if the photons are very high energy. Therapy lasers use power densities that are far below the levels that cause tissue damage. Ultraviolet light has very high-energy photons capable of ionizing molecules, but therapy lasers use visible and near-infrared light, which only cause molecular vibrations. You could argue that therapy laser light is safer than sunlight.

Are there any side effects?

Some patients may experience soreness in the area of treatment, as toxins are released and blood flow is restored. World experts on laser therapy have commented that therapeutic lasers have no undesirable side effects in the hands of a reasonably qualified therapist. Laser therapy is safe, painless and inexpensive compared to alternatives.

How do I prepare for a laser therapy treatment?

Since laser light does not pass through clothing, laser therapy must be delivered directly to the skin. Wear clothing that can easily reveal the treatment area or you may need to change into a gown at your chiropractor's office.

How can I get more information?

Ask your doctor! A steadily growing number of health care practitioners are offering laser therapy to their patients. If your doctor does not offer laser therapy and believes it could help your condition, they should be able to refer you to a doctor who does.

Laser Therapy for Neck Pain: Good News

A recent review of studies, results of which were published in the medical journal *Lancet*, concludes that low-level laser therapy is immediately effective (as little as one treatment visit) for acute neck pain and effective up to 22 weeks following multiple treatments for chronic neck pain. The study reviewed 16 previous studies and found laser therapy to be effective overall, with results comparing "favorably with other widely used therapies, and especially with pharmacological [drug] interventions, for which evidence is sparse and side-effects are common."

That's good news considering that neck pain is one of the most common and disabling conditions, accounting for substantial lost workdays, diminished productivity, and use of over-the-counter medications. Talk to your doctor for more information.

Dr. Phil Harrington is a certified medical laser safety officer and serves on the subcommittee reviewing the ANSI Standards for Safe Use of Lasers in Health Care Facilities. He is a 1996 Palmer graduate and also holds a bachelor's degree in physics. He is the medical director, clinical manager and laser safety officer for Summus Medical Laser (www.summuslaser.com).

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