

LASER THERAPY

Frequently Asked Questions

Laser Properties:

Light and luminous energy are generally central to the development and life of any living being; just think of plants and the key role of photons in the photosynthetic process of vegetal matter. Solar energy acts on bodies through the effects caused by the small particles of matter of which photons are composed. The natural light sources available to man have been studied and analyzed through time, leading to the creation and increasingly progressive specialization of artificial sources. The LASER is the latest and most advanced type of light source available to us today. L.A.S.E.R. is the acronym for Light Amplification by Stimulated Emission of Radiation. A Laser event occurs when an energized atom is hit by a photon before returning to the fundamental state and produces a stimulated emission of radiation. A laser emitter is designed in this way: an optical cavity, limited by two mirrors, containing the means for producing radiation. This material can be a gas, a solid or a liquid. Laser light has the following characteristics: it is monochrome - the emitted light waves are issued at the same wave length and energy; brilliance - the emitted light beam is extremely intense and is angularly well collimated; coherence - all emitted photons vibrate at a coherent phase in both space and time; one-way - parallel light beams.

History of Lasers:

The importance of light in the development of biological processes has been known since ancient times, and the sunbathing practices of Ancient Egyptians are the most evident proof of this. The possibility of concentrating light and exploiting it in a more powerful way for different purposes was first sensed at the beginning of the last century, through the theories of Albert Einstein, being applied after the 2nd world war by USA and Soviet physicists. Laser technology applied to the medical field began in the late 70s and early 80s and, from then, it has continuously developed. All this was made possible by the cutting-edge technology applied in this field and through its use in different sectors, from telecommunications to industry. Laser therapy was first appreciated and accepted in Europe and then in Asia. On-going specialization has made it possible to use Laser sources for different medical uses and identified the combined use of modulated Laser lights and continuous Lasers as the best solution for biostimulation. Today, the K-Laser uses a higher power, making for more efficient applications than in the past, and producing the best results.

Types of Laser and there use:

The Klaser a dual Infrared diode laser that is applied directly on the skin. Trigger points or muscle spasms areas are stimulated and an operator must be physically present for this therapy. Acute problems are usually cured with treatments at closely spaced time intervals. Chronic disorders are generally best dealt with by treatments spread further apart. It has been shown that close-in-time treatments are more efficient at the beginning (every two days or every three days for two weeks) and then at increasingly longer intervals (e.g. once a week for several weeks). Experience shows that suspending the treatment temporarily after a certain number of introductory

sessions do not cause any problems. On the contrary, in some cases this can be beneficial.

Laser hazard classification

International standards classify the Laser hazard into 5 classes: 1, 2, 3A, 3B, 4 indicating a growing degree of hazard. The organ most exposed to damage caused by exposure to Laser light is mainly the eye. Proper safety goggles are included with every purchase of a K-Laser for operator and patient.

The advantages of Laser therapy

Laser therapy is not based on the development of heat but on the photochemical and photo biological effects in cells and tissues. It has been observed that if Laser light is administered in correct doses, certain cell functions are stimulated, especially if cells with a

functional deficit are present. The biological action caused by the user of the Laser in therapy produces a series of effects on cells according to increased production of ATP. The cell, with its mitochondrion's stimulated by the Laser, tends to recharge itself with energy, and therefore, if it is damaged due inflammatory, traumatic or degenerative causes, it tends to return to its primary physiological function. A correct application technique of Laser light devices helps activate cell functions, fully re-establish damaged tissues, restoring their functionality after metabolic slow-downs due to immobility, traumas or surgical operations. The most evident beneficial effects are: activation of the microcirculation through increased supply of nutrition, re-equilibrium of the functional balance of disordered areas leading to a more rapid normalization and stimulation of lymphatic circulation. Thousands of studies by many researchers show the biological effects of the Laser when used at a correct energy level. It has, in any event, been established that Laser therapy is neither risky nor invasive, is painless, can be combined with other therapies, and rarely produces side-effects.

Laser therapy: a widespread technique

Considerable scientific documentation is necessary for a new therapy to be accepted by the medical community. Over 25 years of clinical experience, without evidence of any significant side-effects or damage to tissues confirm that the use of Laser therapy no longer gives rise to fears of unknown side-effects. An approach to Laser therapy, in particular applied to the more common pathologies mentioned above is therefore recommended both for doctors attentive to new, efficient solutions and for those seeking to verify its beneficial effects on common pathologies. So Laser therapy points the way to a new frontier for rehabilitative and preventive medicine and is being used as part of the most up-to-date, safe and efficient clinical practice. The wide ranging fields of application of the Laser, from rehabilitation therapy to sports therapy, and through to aesthetic cosmetic therapy, make this a reliable, recommended means under direct control of medical personnel attentive to updating and able to their work well.

Is it true that really innovative therapeutical strategies are being developed in Laser therapy today?

Yes, it is. The synchronization of continuous and modulated Laser emissions with different wavelengths, achieved through the innovative technology, permits to obtain the synergy of the

single effects (anti-edema, anti-inflammatory, antalgic). This allows performing shorter therapies, and achieving extremely better results. Low level therapy under 500mw is outdated technology, and this is why doctors need to be aware that new technology has been developed. Klaser is the frontrunner in this new technology with the first laser to emit a dual Infrared wavelength simultaneous in a continuous mode or a modulated mode.

Does Laser therapy cause any side effect?

Laser therapy does not provoke side effects. In all the clinical trials which can be found in the up-to-date clinical literature no side-effects were ever observed during or after the treatment

How many Laser sessions are necessary?

Usually 10 TO 15 sessions are sufficient.

Are the protective goggles obligatory both for patients and Laser operators?

Yes. The protective devices are needed to protect eyes. Direct exposition to Laser light can cause eye disorders, and damage the retina.

What is the power of Laser therapy devices?

Power of diode Laser devices used in Laser therapy can vary and depends on the modality of emission. Most lasers on the market today in the USA have a power range from 5mw to 500mw Continuous Lasers. The K-laser will emit a power range from 1000mw to 4000mw making this a high power laser.

Some patients tell they feel heat even if they are treated with high power Laser emission. Is Laser therapy based on thermal effects?

The effectiveness of Laser therapy does not depend on thermal effects. The energy is delivered to tissues directly, and not through heat. The heat sensation is an indirect effect, due to the increase in the local circulation of the treated area.

Can't the same therapeutic effects be achieved with a non-coherent light source?

The therapeutic effects are much greater if the emission is coherent. It is necessary to induce the bio-laser radiation at the level of cellular and mitochondria membranes.