



Veterinarian indications

Each single cell plays its own role and needs to function properly. The organism can benefit from laser light in multiple ways and for many different indications, like:

- Injuries of different cause
 - Herpes
 - Haematoma
 - Udder inflammation
 - Wounds after surgery
 - Swellings
 - Fractures, broken wings
 - Wounds
 - Acromastium, mastitis
 - Injuries at tendons, ligaments, muscles
 - Contusions, strains
 - Decubitus
 - Tackered or sutured wounds
 - Disorders caused by lumbar disk herniation
 - Laminitis caused by improper microcirculation
 - Arthrosis
 - Umbilical hernia
 - Neuralgia
- Toothache, gingivitis
 - Back pain
 - Burns
 - Bursitis
 - Founder
 - Hip complaint
 - Seroma
 - Vasculitis
 - Dental pain, dentitio difficilis



Animals tolerate the laser treatment very well. It is harmless and free of pain. Because of its effectiveness and many benefits, laser therapy has won worldwide recognition. A lot of application fields have been discovered over several centuries of scientific work. Besides the direct beam application, trigger point and laser acupuncture is possible. Small animals as well as large animals and birds can be treated with the laser light. More information and clinical studies can be found on our web pages: MedSolution.de and MedSolution-vet.de.



Dr. Armin Kamp & Marita Stegmann GbR
 Oeschlestr. 77
 78315 Radolfzell, Germany
 + 49 (0)7732 - 97 94 94
 Info@MedSolution.de
www.MedSolution.de / www.MedSolution-vet.de



Since 1995 MedSolution develops, manufactures and sells laser-phototherapy devices worldwide. All devices carry the CE sign and are manufactured under the controlled conditions. For the customer, this translates into:

- Controlled quality
 - Controlled processes
 - Controlled service
 - Development & manufacturing in one location
-
- Customer tailored products possible
 - OEM manufacturing available



فرین دارو
 بهرو تشخیص آزمون

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Laser phototherapy Powerful light in veterinary medicine

- injuries • wounds • inflammations • pain



LASER THERAPY - GENERAL INFORMATION

History

In the past several years, some excellent experimental work has been performed and medical treatments with laser-phototherapy have passed through its infancy, leaving controversy behind. In the past 40 years, leading scientists and medical doctors all over the world published over 4.000 clinical studies on the laser-phototherapy. The overall results stated, that low intensity laser radiation, acts directly on the molecular level of the organism, a process which is called biostimulation / biomodulation.

Biostimulation or biomodulation

This effect is mainly based on an improved ATP-synthesis (ATP = Adenosine-Tri-Phosphate). ATP is known as the power storage of our cells and it is built in the mitochondria - energy generating organelles in the cells. This energy is necessary for a proper functioning of each cell and its metabolism. If there is a lack of ATP, a reduced regeneration process takes place, wound healing disturbances can occur and the regeneration is suppressed.

Wound healing

Soft but high energy laser light stimulates the mitochondria of the cells to produce more ATP. It is known now, that cells with a low ATP level can be energetically recovered by laser light. Wound healing is a complex and energy consuming process. Cellular debris and toxins have to be removed, bacteria and potential infections need to be defended, new tissue must be build and stabilized.

Laser light provides the required energy by stimulating the ATP-synthesis, especially as it is normally reduced due to the damage or impaired capillary perfusion in tissue and organs. Especially animals suffering from wound healing disturbances, acute injuries, pain and polyneuropathia benefit from the laser light.

Pain therapy

In addition to its role in wound healing, ATP also plays an important role in pain reduction. It influences the sodium-potassium pump, which is crucial to the normal functioning of the cellular membrane and its action potential. 40-60% of the ATP is consumed by the ion pump in order to maintain optimal cellular conditions. A shortage of ATP leads to a dysfunction of the sodium-potassium pump mechanism. Consequently there is an impact on the membrane potential, leading to cellular imbalances and pain stimulus transfer. The soft laser light increases the ATP production, which helps to normalize the activity of the sodium-potassium pump and to restore the function of the membrane potential, thus alleviating pain.

Inflammations

Inflammations are influenced by the laser light as some agents like prostaglandines and prostacyclines as well as the PGE2 are influenced. By this effect the inflammations calms down quicker.

PALMLASER & PALMLASER PROFESSIONAL



	PalmLaser	PalmLaser professional
Wavelength 1 red	650 nm	650 nm
Power 1 red	20 mW	20 mW
Wavelength 2 IR	785 nm	808 nm
Power 2 IR	80 mW	180 mW
Total output power	100 mW	200 mW
Akkumulatoren	Lithium-Polymere, no memory effect	
Dimensions	250 mm x 60 mm	
Weight	approx. 150 g	

PalmLaser & PalmLaser professional

Laser devices from MedSolution are part of the latest laser generation. Powerful red and infrared laser light produce very impressive results. Optimal power is strong enough for maximum efficacy and short treatment times, but soft enough not to cause any tissue injuries. The laser light has also its effect when applied on animals with fur. Long fur can be divided with the fingers a little bit.

PalmLaser and PalmLaser professional are **class 1 laser devices**. The benefits of a class 1 device are:

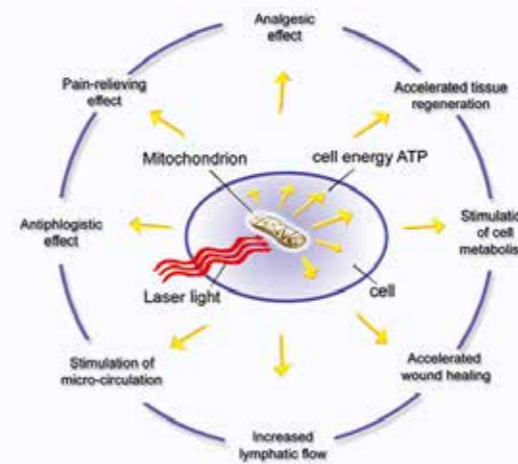
- The therapist doesn't need to wear a protection goggle, the animal is safe.
- Any other safety precautions are not prescribed.
- A special education as „laser safety representative“ is not necessary.

All devices are safe in operation and application. The treatment is done under direct skin/fur contact, as long as there is no open wound. The specially designed treatment head allows the treatment of large areas effectively within a short time.

Laser light with specific wavelengths in red and infrared spectrum as it is emitted by PalmLaser and PalmLaser professional, take effect both - on the surface as well as in deeper tissue layers, up to approx. 6 cm.



Made in Germany



Simple operation:

1. Switch device on
2. Adjust time
3. Start laser
4. Apply laser slowly over the treatment area

The ideal treatment parameters are described in detail in the attached manuals.

PalmLaser is battery driven (rechargeable batteries) and thereby mobile. As a modern therapy device, PalmLaser can be used outside the practice. An optional practical hygiene-pack can be offered.



Laser therapy - advantages

Laser photo-therapy offers some strong benefits for the therapist and the animal:

- **no known side effects**
- safe, simple and painless therapy
- complementary or alternative treatment method
- harmless
- easy to operate and apply
- economic
- well tolerated by the animals