Innovative Treatment Options for Numerous Conditions

Patient Information on Medical Low-Level-Laser Therapy

Clinic Stamp:
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Pioneer of Modernen Laser Therpay

Dr. Weber has been working as a doctor in Germany for more than 20 years. Today he manages three medical centers for general and internal medicine, pain therapy, naturopathy (acupuncture) and photodynamic tumor therapy.

Besides his medical degrees, Dr. Weber holds a diploma in biochemistry, which made a decisive contribution to the research and development of the new laser technology. As president of the International Society for Medical Laser Applications (ISLA) and co-editor of several international medical journals, his focus is on research and publication of the new methods. For this purpose, Dr. Weber collaborates with numerous international institutions and universities.

The patented „Weberneedle” technology which was developed by Dr. Weber himself allows us to apply highly focused and efficient lasers of different wavelengths for the benefit of our patients’ health.
Overview

Dear patients,
As one of the first clinics worldwide, we are offering a new therapeutic approach: The highly innovative Low-Level-Laser Therapy. This brochure aims to provide an overview of its various fields of application. Please do not hesitate to contact our clinic team should you have questions!

About Low-Level-Laser Therapy (LLLT)
The therapy concept of LLLT has been developed in Germany and is based on the usage of soft lasers. Unlike surgical lasers that destroy tissue and cells, soft lasers supply our body with energy to trigger numerous regenerative processes.

Medical laser therapy applies blue, green, yellow, red and infrared lasers. Each colour develops different effects which are evoked by the stimulation of specific cellular components, such as growth factors or cells of our immune system. These effects have been proven by a large number of clinical studies.

Areas of application
(For details, please refer to the following pages)

What we offer:

- Local Laser Therapy (non-invasive)
- Laserneedle Acupuncture
- Transcranial Laser Therapy
- Dermatological Therapy
- Cosmetic Laser Therapy
- Interstitial Laser Therapy
- Intra-articular Laser Therapy
- Platelet-Rich-Plasma (PRP) and Laser Therapy
- Intravenous Laser Therapy
- Photodynamic Tumor Therapy
Local Laser Therapy (non-invasive) and Laserneedle Acupuncture

External Laser Therapy applies up to twelve so-called laserneedles simultaneously. They are not inserted into the skin, but only attached externally. These needle-like laser ends have the ability to achieve a high energy density that can penetrate directly into the body to stimulate pain areas and develop healing mechanisms.

Medical laser therapy applies blue, green, yellow, red and infrared lasers. The tissue absorbs the colours resp. wavelengths to different degrees, and thus each colour has a different penetration depth.

This facilitates even the irradiation of deep tissue.

Laserneedles can also be used for traditional acupuncture. The procedure is pain-free and opens up the possibility to stimulate twelve acupuncture points at the same time.

In addition, patients benefit from the healing effects of high-energy light particles.

This pain-free and non-invasive method achieves excellent treatment results by verifiable tissue irritation.

Areas of application:
- Pain Therapy
- Rehabilitation
- Acupuncture: All indications of traditional acupuncture, such as spine syndromes, arthritis, slipped disc, rheumatic diseases, tendinitis, trigeminal neuralgia, depressions, MS, gastro-intestinal diseases, allergies, asthma, hypertension, diabetes
Transcranial Laser Therapy

Transcranial laser therapy stimulates various neurological processes which makes it an innovative and promising new treatment option for the post-treatment of strokes, the treatment of Parkinson’s, Alzheimer’s, cerebral sclerosis, migraine, vertigo, tinnitus and other degenerative cerebral disorders.

Effects:
- Reduction of the infarct region and improved circulation
- Activation of neuronal growth
- Improvement of neurological skills and cognitive deficits
- Positive effects on inflammatory processes in the brain
- Reparative effects concerning neuronal functions

Dermatological Laser Therapy

In Dermatology laser therapy is well established to treat various kinds of eczemas, neurodermatitis, psoriasis, chronic wounds, acne vulgaris, herpes, hyperkeratosis, warts, gingivitis and other skin diseases. Skin cancer and its pre-stages can also be treated very successfully.

Due to their anti-bacterial and anti-inflammatory effects, blue lasers are highly effective.

Therapy results can be improved by using special photosensitive creams, such as 5-ALA or green tea lotions.
Interstitial Laser Therapy

In order to bring even more laser light into low-lying tissue layers, a new technique, the percutaneous interstitial laser therapy, was developed. By using a sterile catheter it reaches penetration depths of up to 12 cm.

Compared to external laser therapy, this technique has significantly improved therapeutic results.

Also green, yellow and blue lasers, which are normally absorbed already in the surface of the skin can be applied into deep tissue where they develop their anti-inflammatory effects.

Areas of application:
- Chronic spinal disorders
- Herniated discs
- Scar pain after disc surgery
- Spinal stenosis
- Nerve lesions
- Tendonitis and strains
Intra-articular Laser Therapy

Intra-articular laser therapy is used primarily in the treatment of damaged joints by application of the newly developed catheter technology. It allows direct irradiation of dysfunctional tissue (e.g. nerves, cartilages, bones).

While red lasers are mainly used for regeneration in chronic joint pain, blue light is particularly effective in the treatment of acute inflammation.

To optimize effects, the treatment may also be combined very successfully with other injection therapies (e.g. Platelet-rich plasma: see next page).

Areas of application:
- Knee joint arthrosis
- Hip arthrosis
- Chronic shoulder syndrome
- Ankle arthrosis
Laser Therapy in Combination with Platelet Rich Plasma (PRP)

Platelet or thrombocyte-rich plasma (PRP) can be obtained from the patient's own blood very easily. After blood sampling with special tubes (8-30 ml), PRP is prepared by centrifugation and is injected into damaged tissue.

Platelets contain a high amount of tissue-regenerating growth factors and cytokines. They stimulate cell reproduction, angiogenesis and the formation of connective tissue.

The PRP injection can be combined very successfully with laser therapy, taking advantage of the regenerative effects of the laser irradiation and thus obtaining even better treatment results. Due to its analgesic, anti-inflammatory and wound-healing effects, this treatment can improve various conditions.

**Areas of application:**
- Orthopedics (arthrosis, bone regeneration)
- Sports Medicine (tendinopathy, fractures, wound healing)
- Aesthetic Medicine (skin rejuvenation, scar treatment, hair loss)

PRP and Laser for Skin Rejuvenation

Especially in the field of Aesthetic Medicine, PRP therapy is becoming ever more popular. It is also known under terms such as Dracula Therapy or Vampire Facelift. PRP treatments stimulate the skin not only superficially, but also in depth.

While fillers such as Botox or hyaluronic acid are very limited in efficiency and degrade after only three months, PRP injections are a gentle method to increase volume. They are free of side effects as only autogenous cells are used as filler.

The results are long-lasting and natural. Subsequent treatment with laser light enhances the regenerative effect so that the results are even more remarkable.

The volume increase improves facial contours. The skin looks rejuvenated and revitalized.
Intravenous Laser Therapy

Intravenous Laser Therapy enables the application of laser light directly into the bloodstream by using a special catheter technology. The laser light stimulates circulating blood cells and stem cells. Various laboratory tests and clinical data show that the irradiation of blood cells can trigger a number of positive effects. The technology already exists since more than 30 years. It was officially approved in Germany in 2005. Today, numerous international private practices and clinics use intravenous laser therapy. Also universities have recognized the potential of this therapy method and made it the focus of their research.

- **Red:** Energizing effects (increased ATP production), strengthens the immune system, increases cell activity, regenerates damaged tissue structures and improves circulation.
- **Green:** Increases oxygen uptake, reduces pain caused by inflammation and swelling.
- **Blue:** Improves microcirculation by NO release, strong anti-inflammatory and anti-bacterial effects, accelerates wound healing, supports pain relief, activates telomerase and biogenesis of mitochondria with maximum anti-aging effects.
- **Yellow:** Antidepressant effects by enhancement of vitamin D and serotonin production, effective against chronic (viral) infections, strong anti-bacterial effects, positive influence on endocrine-system and metabolism.

**Areas of application:**
- Internal diseases (diabetes mellitus, chronic liver and kidney diseases)
- Metabolic disorders
- Cardiovascular diseases
- Chronic pain
- Fibromyalgia and rheumatism
- Allergies
- Macular degeneration
- Tinnitus
- Multiple sclerosis
- Depression and burn-out
- Lyme disease
- General performance increase (in sports)
Systemic and Interstitial PDT

The light-sensitive substance (photosensitizer) is administered by infusion and activated through systemic (intravenous) laser therapy. After about 2-3 hours, the photosensitizer binds selectively to the tumor. The laser can now irradiate and destroy the diseased tissue locally (interstitially, endoscopically or with special catheter technique). The photosensitizers (Indocyaningreen, Chlorin E6, Curcumin and Hypericin) are highly specific and natural. Side effects are therefore relatively low.

Treatment Examples

Interstitial PDT  
Pancreatic cancer

Interstitial PDT  
Mediastinal metastases

Interstitial PDT with blue and yellow laser  
Breast tumor

Interstitial PDT  
Tumor in the floor of the mouth

Endoscopic PDT  
Tumor in the esophagus, rectum or intestinal

Special catheter technique  
Prostate or bladder tumor
Photodynamic Tumor Therapy (PDT)

Photodynamic Therapy (PDT) is one of the most interesting and promising therapeutic approaches in the treatment of various tumor diseases. The method is based on the stimulation of a light-sensitive substance (photosensitizer). It is either applied to the skin in the form of a cream, given into the bloodstream by infusion and/or is injected locally into the tumor. The photosensitizing agent binds to any kind of tumor cells that are present in the body. After excitation with (laser) light, these are destroyed by formation of active oxygen radicals.

An essential advantage over traditional chemotherapy is that the immune system is not weakened, but strengthened by the positive effects of intravenous laser therapy. In addition, secondary immunization effects appear (PDT-immunization).

Photodynamic Therapy may also be combined very effectively with low-dose chemotherapy. There are even chemotherapeutics on the market that can be stimulated by laser therapy. Compared to standard chemotherapy, the side effects are significantly lower.

External PDT for the treatment of skin cancer

For the treatment of basal cell carcinoma or keratosis a special cream with light-sensitive substances (e.g. 5-ALA) is applied locally to the affected skin area. The subsequent laser irradiation destroys tumor cells selectively.
Anti-microbial Photodynamic Therapy

Anti-microbial Photodynamic Therapy (aPDT) aims to kill bacterial, viral and parasitic pathogens. The procedure is very similar to the one used in Photodynamic Tumor Therapy. Instead of tumor tissue, photosensitizers bind to pathogens.

Riboflavin, Hypercin and Curcumin are used as photosensitizer (orally or by infusion). They are “activated” by local or systemic laser therapy to fight the pathogens either locally or in the bloodstream.

In principle, all bacterial, viral or parasitic diseases can be treated by means of PDT. The great advantage of the therapy is that it even kills multidrug-resistant pathogens.

Indications:
- Viral diseases (hepatitis, HIV, herpes, etc.)
- Bacterial infections
- Multiresistant staphylococci
- Parasitic diseases
- Lyme disease

Riboflavin and Curcumin are stimulated with blue light, while Hypercin, which is derived from St. John’s wort, reacts to yellow light.