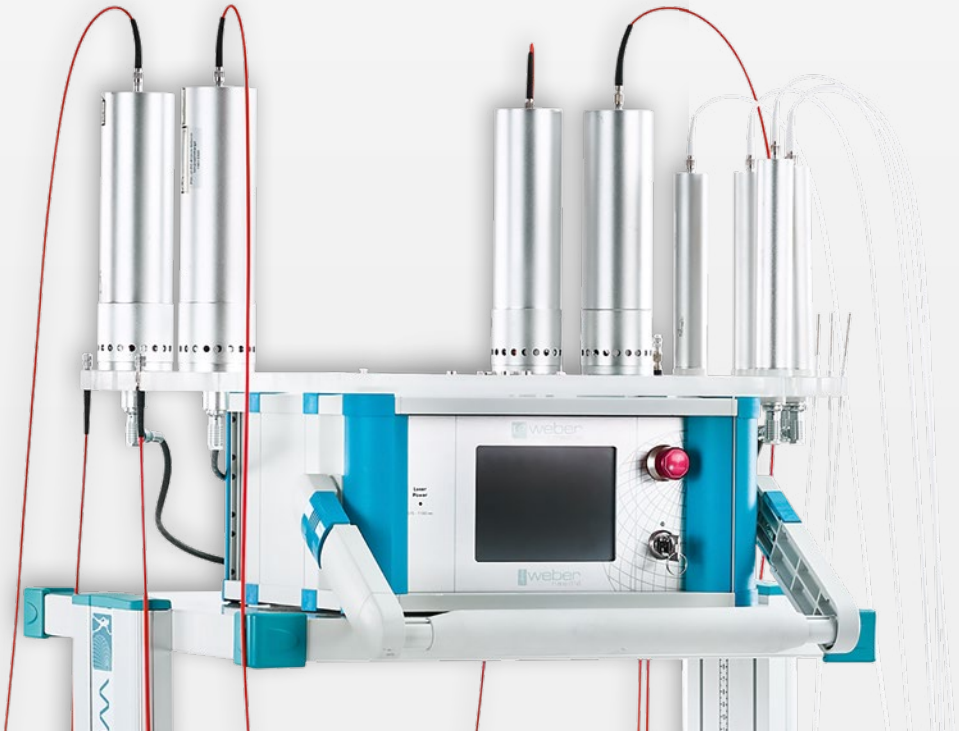
Weberneedle® Endolaser

Low-Level Laser System for
Medical Photobiomodulation



Intravenous. Interstitial. Intraarticular. Photodynamic. Non-invasive.

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Discover the Power of Light!

Proven to be effective & free of side-effects

Hans Michael Weber, M.D.

Company Founder & Pioneer of Low-Level Laser Therapy

Whilst working as a general practitioner with my own practice, I had started to become aware of some of the limitations of conventional medicine and it was this realization that led me to the field of low-level laser therapy.

I quickly recognized the almost limitless potential of this therapeutic approach and so I began to integrate it into my everyday practice. Low-level laser therapy developed into a true passion. I had found my calling!

Driven by the clinical successes I experienced with patients on a daily basis I continued to develop the therapy and in 2005, after years of research and development, I launched the world's first device for invasive laser application onto the market. The Weberneedle® Endolaser was born! Today, Weber Medical has its medical laser systems in more than 2,000 clinics in over 40 countries.

The effectiveness of low-level laser therapy has been proven by numerous peer-reviewed studies. And at Weber Medical we feel we are just getting started, we are learning more every day, optimizing our proprietary protocols and procedures and conducting research on new applications. You too can become a user and help your patients feel better in the long term.

LOW-LEVEL LASER THERAPY IS ONE OF THE MOST EFFECTIVE METHODS TO IMPROVE THE HEALTH AND QUALITY OF LIFE OF YOUR PATIENTS AND YOU WILL BE ABLE TO DO SO WITHOUT SIDE-EFFECTS.

Hans Michael Weber, M.D.

Robert Weber, M.Sc.

Head of International Business Development at Weber Medical

CEO of Weber Medical Systems

Inspired by the scientific and practical work of my father Dr Hans Michael Weber, I have dedicated more than 10 years to the development of effective treatment strategies, particularly in the field of viral, bacterial and parasitic infectious diseases and neurodegenerative diseases. My focus is on laser-based approaches such as low-level laser therapy (LLLT) and photodynamic therapy (PDT), on which I have initiated several research projects.

The treatment successes achieved with the Weberneedle® Endolaser motivated me to develop so-called home-use products, such as the EndoLight® and the WeberBrain®. These products allow our patients to use cutting-edge technologies from the comfort of their home.

In order to increase awareness of medical low-level laser therapy and to reach as many users as possible, I regularly plan and organize conferences on behalf of ISLA (International Society for Medical Laser Applications), at which doctors from around the world present their latest research.

MY VISION IS TO GIVE ALL PEOPLE THE OPPORTUNITY TO TAKE THEIR HEALTH INTO THEIR OWN HANDS.

Robert Weber, M.Sc. International Development & Global Health

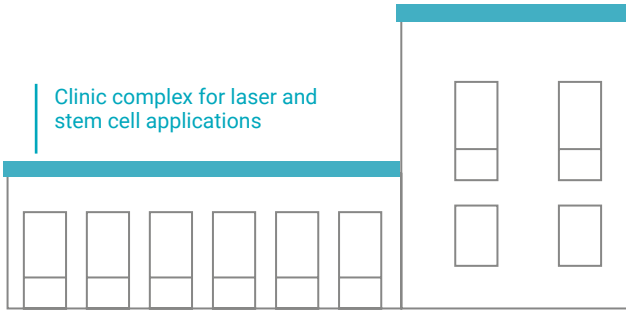
A Second-Generation Family-Run Business

As a family-run company in its second generation, Weber Medical combines research, product development, treatments and sales & support under one roof.

Innovative laser systems, such as the Weberneedle® Endolaser, set new standards in the field of invasive and non-invasive treatment options for regenerative purposes.

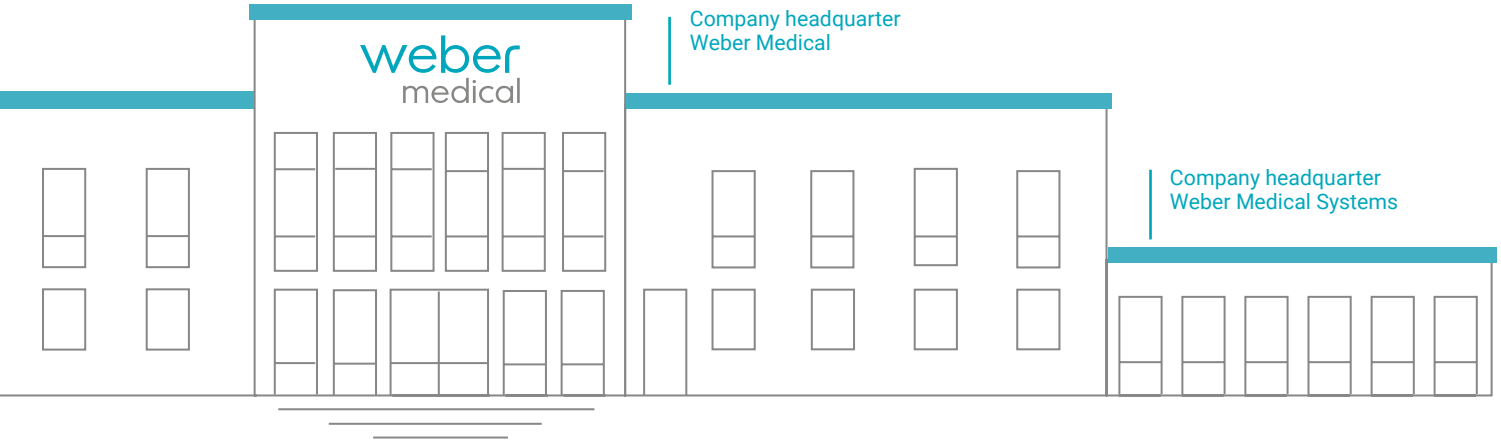
The company now has more than 20 years of experience in low-level laser therapy and can draw on data and testimonials from more than 2,000 practices and clinics around the world.

Final production, sales and technical service for the laser systems are carried out at the company headquarters in Lauenförde, Germany. Dr Weber's clinic is also located in the same building complex, where he incorporates the latest research findings directly into his work with patients.



Since 2003, Weber Medical has stood for outstanding performance in medical laser technology and is recognized worldwide as one of the leading companies in this field.

This is also where ideas for new products for the home-use segment are developed and brought to fruition. These products are distributed worldwide via the partner company Weber Medical Systems.



Mechanisms of Action

In contrast to surgical lasers, which aim to destroy tissue, low-level laser therapy (LLLT) uses low-intensity laser light to intervene in the body's regeneration and regulatory mechanisms.

Specific wavelengths of light are used that can both initiate and inhibit biochemical processes.

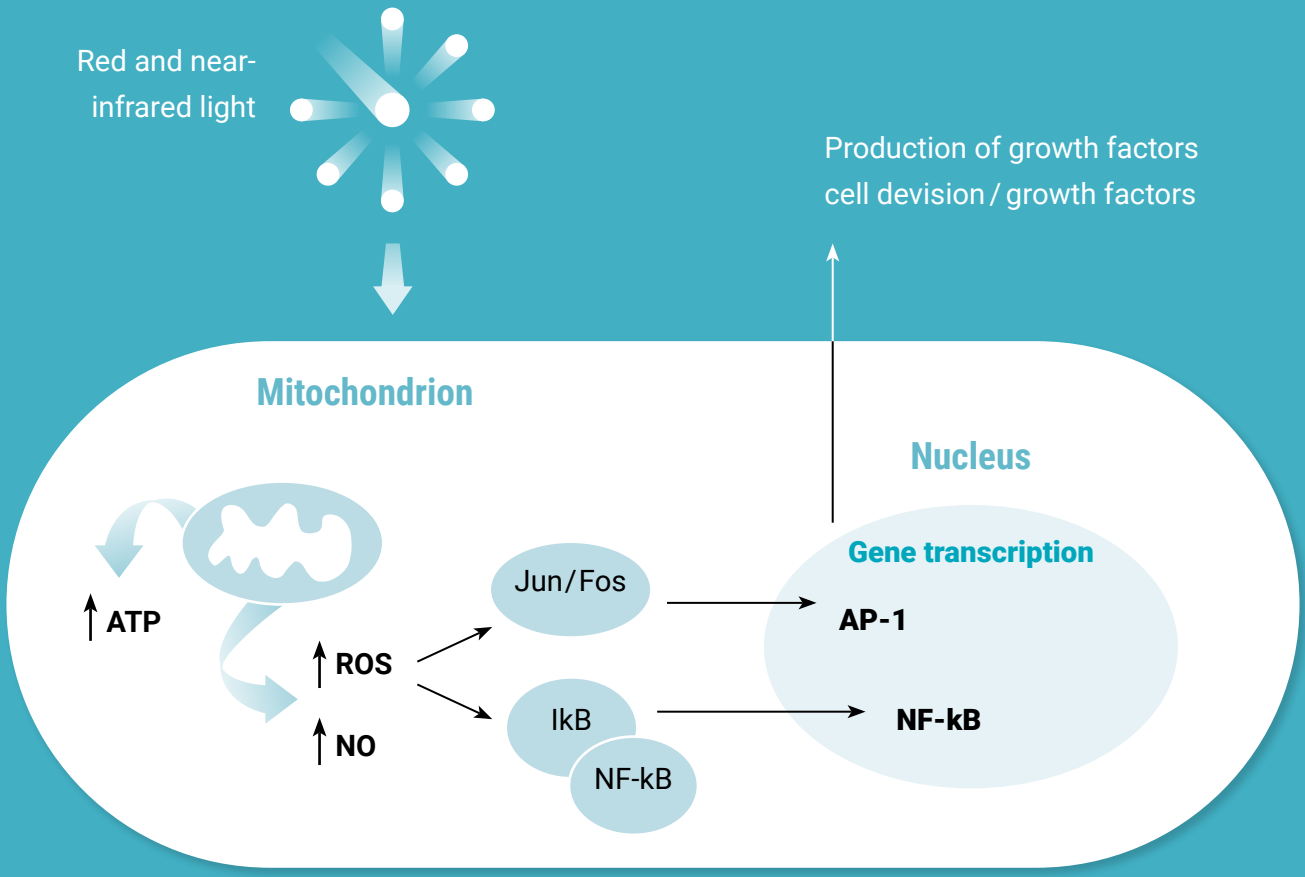
At the cellular level, LLLT works by increasing mitochondrial activity: laser light is absorbed by chromophores in the mitochondria, which leads to increased ATP formation. As an energy supplier, ATP accelerates regeneration and healing, among other things.

In addition, the use of laser light in the bloodstream increases the synthesis of nitric oxide (NO) and reactive oxygen species (ROS).

At tissue level, this favors effects that promote blood circulation and reduce pain and inflammation.

The immune and neuromodulator NO also stimulates the production of stem cells and growth factors and thus contributes to improved tissue repair and wound healing.

Low-level laser therapy has been proven to be effective, has no side-effects, is minimally to non-invasive and is well tolerated by patients.



Cell signaling pathways induced by low-level laser therapy

Source: photobiology.info/Hamblin.html

The Weberneedle® Endolaser

Innovative. Versatile. Flexible. Customizable.

Until now, the challenge in laser therapy has been to allow a high enough laser power to penetrate deep layers of tissue. Lasers applied from the outside, which are widely available on the market, already experience a more than 70 per cent reduction in power in the skin, meaning that barely any measurable energy reaches the depths of the tissue.

What makes the Weberneedle® Endolaser so special is that it can also be used invasively and therefore unhindered for the treatment of joints, nerves and tumors. This is done using an optical fiber (Weberneedle® Lasercath) and a cannula of up to 12 cm long.

This technique achieves significantly better therapeutic results than an external application. Even lasers with short wavelengths, such as green, blue or yellow, which are normally absorbed in the upper layer of the skin, can achieve their cellular effects in deep tissue and thus contribute directly to pain and inflammation relief.

This approach is particularly important for photodynamic therapy: thanks to the Weberneedle® Endolaser, light-sensitive active substances, so-called photosensitizers, can be activated deep inside the body to destroy malignant tissue and kill viruses, bacteria, parasites and fungi.

Intraarticular laser therapy for knee osteoarthritis

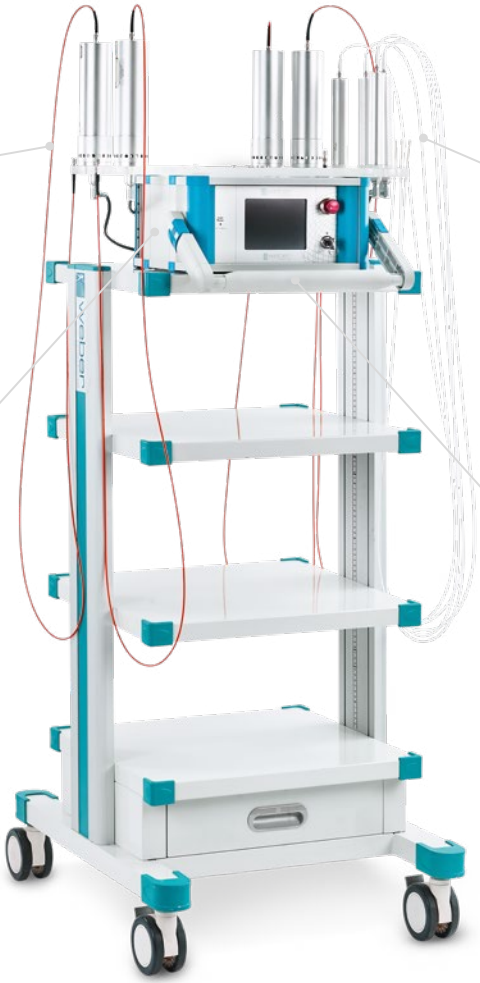
Precision & Performance for Highest Demands

Easy application

By simply changing the fiber optic (here: orange cable for invasive therapies), you can switch between the wavelengths.

Medical approval

Protection class: 1
Laser class: 3B



Combining high power and energy density

The needle-like configuration of the white fiber ends enables a high penetration depth of light into the tissue, even in non-invasive applications.

Compact dimensions

60.5 x 30 x 16.4 cm
(WxDxH)

Dimensions without laser modules

Weight: 7.5 kg

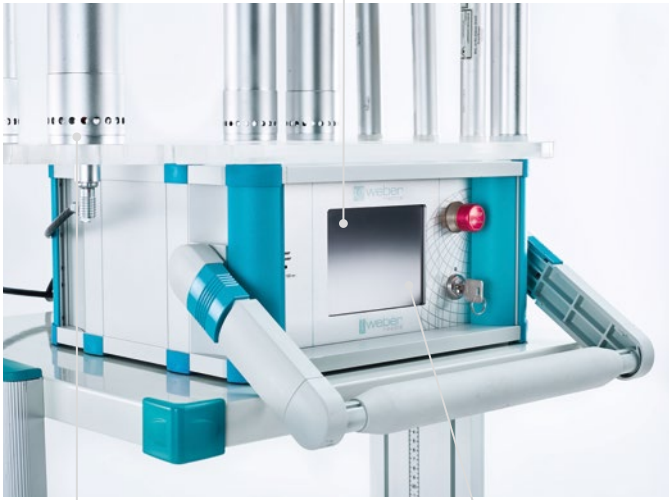
QUALITY MADE IN GERMANY

Modular and flexible

The lasers are not built into the device, but attached externally, so that the system can be individually configured and upgraded at any time to meet current requirements.

Large scope for adjustment

Clinicians are able to freely input intensity, frequency and duration.



Versatile

The Weberneedle® Endolaser offers space for a total of 16 laser modules with different wavelengths, or colors, so that a wide range of applications can be realized.

Intuitive

User-friendly operation via touchscreen

Complete color spectrum

The following wavelengths are available in various outputs:

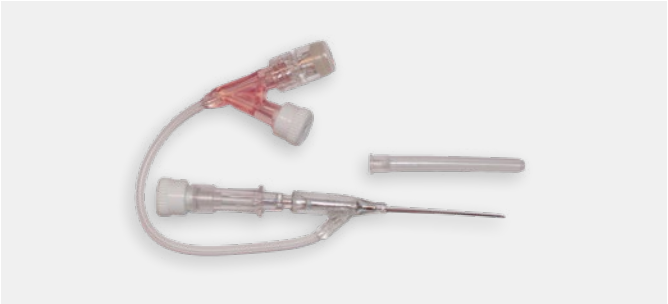
Ultraviolet	Blue	Green	Yellow	Red	Infrared
370 nm	405/447 nm	532 nm	589 nm	635/658 nm	810 nm

Accessories

These and other disposables are available directly from Weber Medical.
A complete overview can be found in our product catalog.

Weberneedle® Lasercath with Butterfly or 22G cannula for intravenous therapies

Weberneedle® interstitial needles in a set with matching light guide for interstitial/intraarticular applications



Weberneedle® Y-cannula for simultaneous application of intravenous laser blood irradiation and IVs

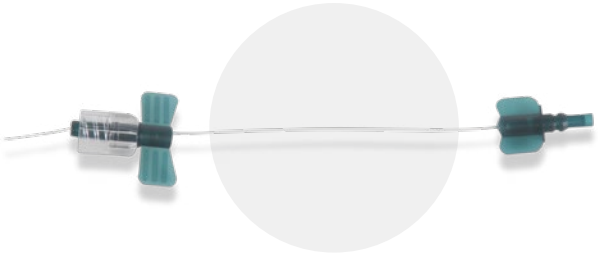
Weberneedle® self-adhesive Lasertubes for fixing the Weberneedle® optical fibers to the skin for non-invasive therapies

Application

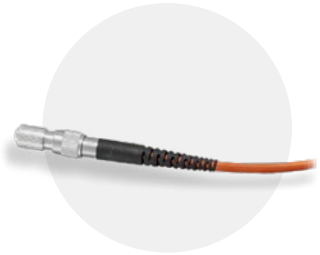
Weber Medical has developed special sterile fiber optic light guides (Weberneedle® Lasercath) and associated puncture needles for invasive therapy procedures, which are connected directly to the fiber of the laser module using a Luer-Lock connection.

Very simple: Invasive laser treatment in three steps

1. Place cannula or butterfly



2. Insert light guide



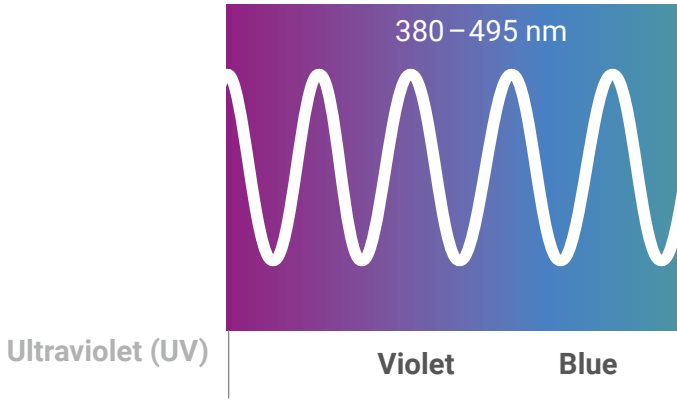
3. Couple laser light via the fiber optic cable

The diameter of the light guide is so small that it can be pushed completely through the cannula. The light beam generated in the laser module can therefore be applied directly in the depth of the tissue or in the bloodstream.

Always a Wavelength Ahead

The Weberneedle® Endolaser covers the entire electromagnetic spectrum from ultraviolet to infrared. The light-sensitive receptors in the body's cells use the different wavelengths of light for a variety of health-promoting processes.

We will be happy to discuss with you during a consultation which laser modules are best suited to your practice.



Ultraviolet (370 nm)

- Inhibits bacteria, viruses, parasites and fungi

Blue (405 / 447 nm)

- Antibacterial and anti-inflammatory
- Improves microcirculation
- Increases (mental) performance and stamina
- Anti-ageing through the release of bound nitric oxide

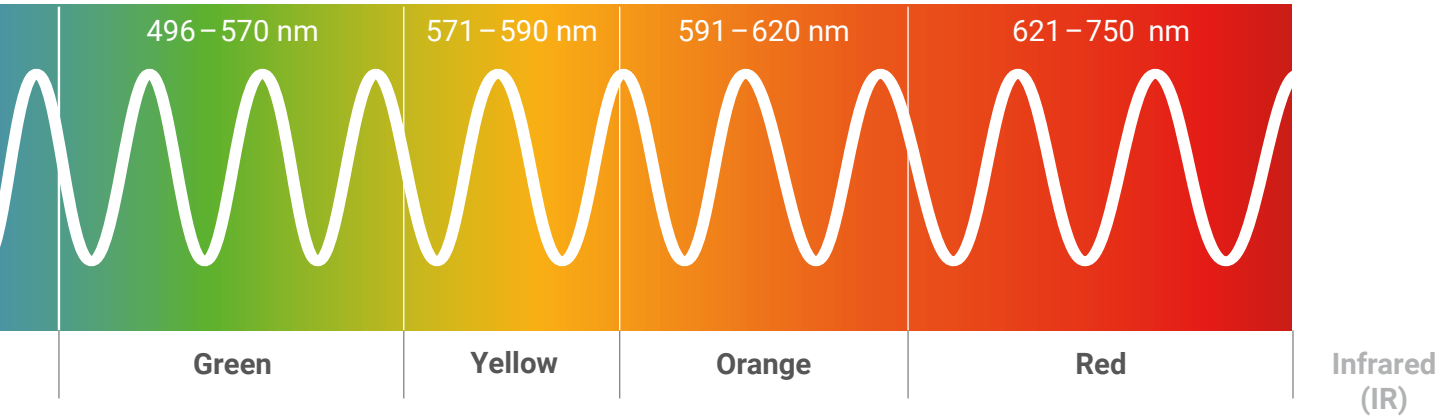
Green (532 nm)

- Improves cell function and elasticity by binding to hemoglobin
- Increases oxygen uptake and availability

Infrared (810 nm)

- Activation of stem cells
- Deepest tissue penetration (5 – 7 cm)
- Ideal for non-invasive applications & acupuncture

Visible light spectrum



Yellow (589 nm)

- Detoxifying and antidepressant
- Stimulates the serotonin and vitamin D metabolism

Red (635 / 658 nm)

- Increases energy and cell activity
- Stimulates the immune system
- Improves the (flow) properties of the blood

One device – Many applications

1 | INTRAVENOUS
Blood irradiation / Photodynamic therapy (PDT)

2 | INTERSTITIAL / INTRAARTICULAR
Irradiation of joints and dysfunctional tissue / PDT

3 | PHOTODYNAMIC
Treatment of tumors and infectious diseases

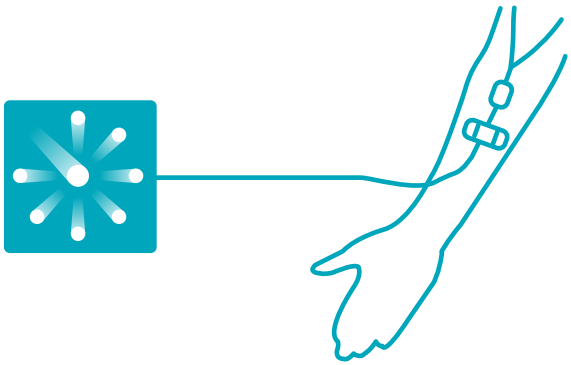
4 | NON-INVASIVE
External irradiation of different tissue layers /
Transcranial applications / Laser acupuncture / PDT

Areas of Application

How to use the Weberneedle® Endolaser in practice

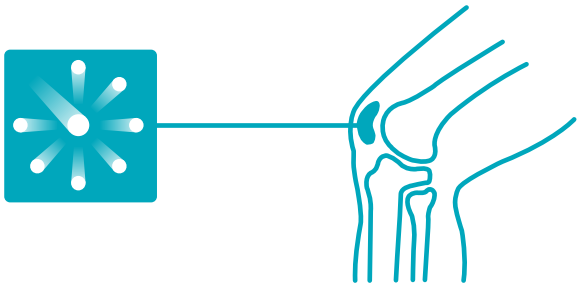
1 | Intravenous

- **Metabolic diseases**
  (e.g. diabetes, liver or kidney disease)
- **Cardiovascular disorders**
  (e.g. hypertension and circulatory disorders)
- **(Chronic) pain disorders**
  (e.g. fibromyalgia or rheumatism)
- **Sports medicine**
  (e.g. to improve performance or for muscle injuries)
- **Mental illnesses**
  (e.g. chronic fatigue syndrome, burn-out, depression)
- **Neurological diseases**
  (e.g. multiple sclerosis, polyneuropathies)
- **Immunostimulation**
- **Prevention and anti-ageing**



2 | Interstitial / Intraarticular

- **Interstitial pain therapy in the area of tissue** (e.g. chronic back pain, herniated discs or nerve and ligament injuries)
- **Intraarticular pain therapy in the area of joints** (e.g. for arthritis / arthrosis)
- **Increase the effectiveness of stem cells, platelet-rich plasma (PRP) and hyaluronic acid**



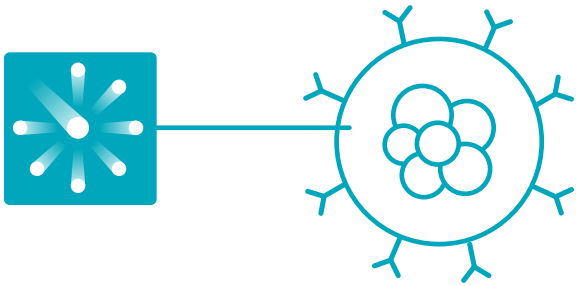
3 | Photodynamic Therapy for Tumors and Infectious Diseases

In photodynamic therapy (PDT), a light-sensitive substance (the so-called photosensitizer) is infused into the bloodstream, injected locally or applied in the form of a cream.

The photosensitizer accumulates on pathologically altered tissue. This is then specifically irradiated with light of the appropriate wavelength, which leads to the formation of active oxygen radicals that destroy the altered tissue. The surrounding healthy cells will remain undamaged.

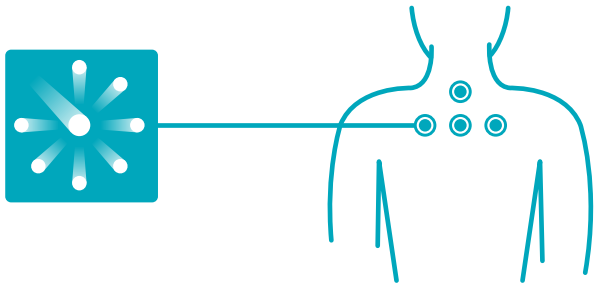
We use the following photosensitizers:
Riboflavin, hypericin, chlorin E6, indocyanine green, curcumin and 5-ALA.

- **Photodynamic tumor therapy**
  (all types of tumors, with / without metastases)
- **Antimicrobial photodynamic therapy**
  (for bacterial, viral, parasitic and fungal diseases, e.g. hepatitis, malaria, Lyme disease or acne)



4 | Non-invasive

- **Local pain therapy**
  (e.g. for rheumatic complaints, musculoskeletal diseases and tendinopathy)
- **Neurological and psychological diseases**
  (e.g. Alzheimer's, Parkinson's, stroke, craniocerebral brain trauma, depression and migraine)
- **Dermatology and cosmetics**
  (e.g. neurodermatitis, acne, psoriasis, basal cell carcinoma and actinic keratosis)
- **Dental medicine**
  (e.g. for periodontitis and in postoperative treatment)
- **Ophthalmology**
  (e.g. macular degeneration)



ISLA – Research, Network and Education

The “International Society for Medical Laser Applications” (ISLA) is the scientific partner of Weber Medical. The society organizes an annual conference in Germany, Asia and the USA, as well as several international one-day seminars with lectures by the world's most renowned laser experts.

ISLA also participates in current research projects and provides an information platform for interested parties.

ISLA | International Society for Medical Laser Applications

For further information please visit: isla-laser.org

Customized Advice

We look forward to helping you find your ideal equipment, tailored to your individual needs and treatment goals.

If you are interested, we will be happy to make you a leasing offer (not available in all countries).

You can reach us personally Monday – Friday from 8:00 to 5:00 (CET) via our

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