



# MODERN LASER THERAPY

## NEW THERAPEUTIC POSSIBILITIES IN SPORTS MEDICINE

- Anti-inflammatory
- Anti-edematous
- Analgesic
- Increased cell proliferation
- Increase in ATP production
- Increase in blood oxygen saturation
- Improved microcirculation



## LASERNEEDLE THERAPY

The LASERNEEDLE therapy is an innovative medical concept for painless and non-invasive treatments in orthopedics, sports medicine, and rehabilitation. Irradiation with the therapeutic low level laser with high power density technology (HPD) opens up new therapeutic possibilities.

Groundbreaking results are achieved in the treatment of acute and degenerative joint disorders – especially arthrosis and arthritis – as well as tendinopathies and muscle injuries.

LASERNEEDLE treatment has an anti-edematous, anti-inflammatory, analgesic, and cell proliferating effect. The combination of these four main therapeutic effects distinguishes the LASERNEEDLE therapy and sets it apart from any other therapy.

## GENERAL INDICATIONS

- Arthrosis and Arthritis
- Inflammation (tendonitis, bursitis, periostitis)
- Muscle injuries
- Pain and discomfort
- Trauma (sprains, fractures)
- Fractures
- Postoperative treatment / rehabilitation

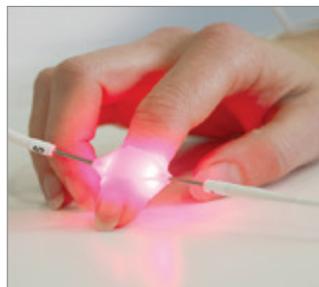
## SPECIFIC INDICATIONS

- Achilles tendinitis and bursitis
- Sprained ankle
- Patellar tendinopathy (jumper's knee)
- Trochanteric pain
- Piriformis syndrome
- Insertional tendinopathy
- Carpal tunnel syndrome (CTS)
- Osteochondrosis
- Impingement syndrome (supraspinatus syndrome)
- Epicondylitis (tennis and golfer's elbow)

## LASERNEEDLE TREATMENT

The LASERNEEDLE technology allows the precisely targeted irradiation of laser light onto the affected tissue. Thereby deeper lying tissue regions can also be reached, where the maximum healing effect can immediately unfold. The affected tissue can be irradiated from several sides simultaneously. This opens new therapeutic possibilities for the effective treatment of joint dysfunctions as well as muscle injuries and tendon disorders.

During the therapy, the doctor or therapist must not be present and can take care of the next patient. Few treatments are already sufficient to relieve pain and improve mobility.



Treatment Heberden's arthritis



Treatment arthrosis of the knee

## BENEFITS FOR THE PATIENT

- Painless
- Non-invasive
- Lasting effects, no side effect
- Suitable for the use with metal implants

## BENEFITS FOR THE PHYSICIAN

- More satisfied patients
- Fast return on investment (ROI)
- Easy operation

For scientific references please consult our website:  
[www.laserneedle.eu](http://www.laserneedle.eu)

precise, non-invasive,

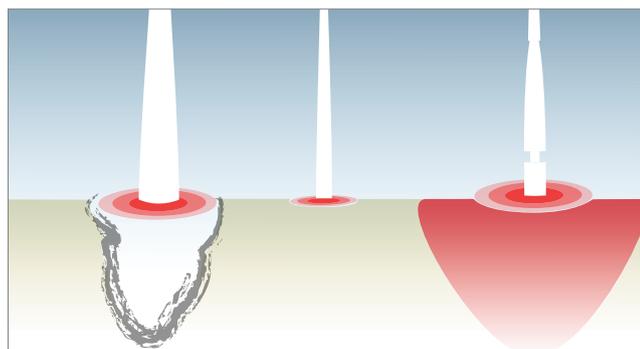


## LASERNEEDLE HPD TECHNOLOGY

*great results - no side effects*

The specific LASERNEEDLE technology allows the direct modulation of biochemical reactions in the cell. Stronger, class 4 lasers pose the risk of burn injuries due to their thermal effect (overheating). Therefore, treatments using a class 4 laser are more difficult to control and subject to several risks. On the other hand, if the power density of a laser is too low, no therapeutic effects are achieved. The desired biological processes in the cell only get stimulated, if the laser performs above a certain luminance (number of photons per irradiated cell).

With it's HPD technology (=High Power Density) LASERNEEDLE crosses the therapeutic threshold of luminance without any thermal effects in the tissue.



**Strong laser:**  
- thermal effects

**Weak laser:**  
- no effect

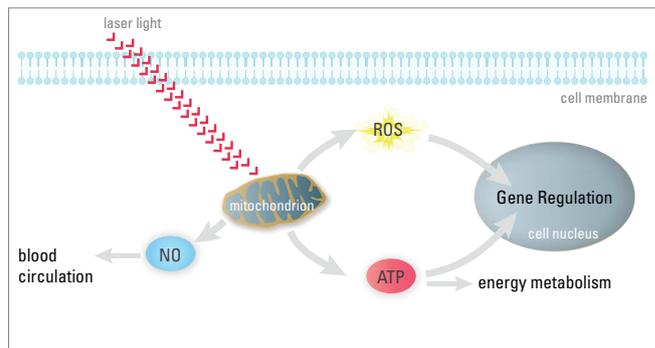
**Laser therapy with HPD technology:**  
- high luminance  
- biostimulation

The laser channels can be attached directly to the patients body for the entire treatment duration without risk of burning or injury. The patient can therefore be left unattended during the treatment.

Its special technology makes LASERNEEDLE significantly more efficient than other class 3B lasers, without any of the risks of a class 4 laser.



## EFFECTS OF RED AND INFRARED LASER LIGHT



- Stimulation of the enzyme cytochrome c oxidase in the mitochondria (increase in ATP production)
- Increase in blood oxygen saturation
- Improved microcirculation
- Growth and proliferation of osteoblasts, chondrocytes, fibroblasts and mast cells

## APPLICATION

The LASERNEEDLE Touch allows various forms of treatment in a single device:

1. Precise irradiation of the affected areas by attaching the laser channel onto the skin (hands free treatment without supervision)
2. Large surface irradiation by bundling the laser channels in the laser shower
  - Bundling of up to nine different laser channels to irradiate larger areas
  - Allows the combination of different wavelengths (colors)

Precise irradiation



Surface irradiation



3. Continuous wave or pulsed mode

# painless, effective.



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