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Applications of the **Soft – Laser**



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Possible Applications of the red Compact-Laser :

1. Arranged according to its effectivity

The following are basic effects of the therapy laser:

- For enhanced wound-healing and to avoid obstructions in healing
- Pain Treatment
- Acupuncture

All statements about indications and effects are based on scientific works ore are from specialized literature, no responsibility is accepted for the correctness!

1.1. Acceleration of the wound-healing process

Laser Effects:

- Stimulation of natural biological characteristics of the cell.
- Acceleration of the wound-healing process, especially in its initial phase.
- Nicer scars

Successful fields of laser application are disruptions in wound-healing such as ulcers, decubitus, panaris, and gangrene, wound dehiscence (e.g. burst abdomen) as transplants (support of healing in) and bone-implants etc. Exceeding levels of success are achieved at wounds that could heal badly for example in the case of diabetics, haematomas, oedemas and herpes.

In the case of burns an immediate laser-radiation, when possible, helps impressively: The usual processes of the illness changes promptly and a healing is reached without the common formation of vestications, blisters, inflammation, etc.

A further result of laser-radiation is a noticeable reduction in the danger of infection arises, a reduced lymphatic congestion and finally softer formation of scars.

Attention! The use of local antibiotics reduces the effects of the laser!

Irradiation dose:

For treatment of areas or surface treatment 0,5 – 1 J/cm², for deeper processes 1 – 4 J/cm², at the beginning once daily, max. 40 J per session,

Treatment of the trauma

Combination with laser acupuncture possible (good effect e.g. with ulcera cruris with local acupuncture points which stimulate the draining of the lymph)

In the case of small wounds the entire wound is irradiated in a meandering motion. For larger wounds - the wound outline comes first. For hygienic reasons a certain distance of a few mm must be maintained.

Application Frequency: At least 1x daily, initially several times daily as well. After operations irradiate directly post-operative before the dressing.

Calculation of the correct dosage for treatment of areas with the delivered card:

For CL mini 30:

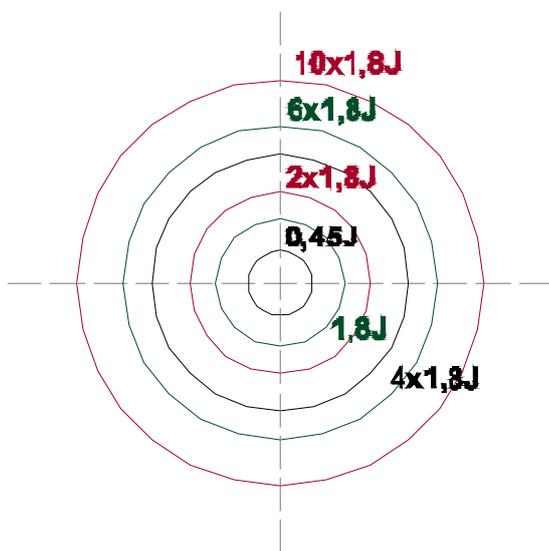
Place the card close to the wound and check which circle has the same area like the wound (e.g. 4x1,8J).

At this circle you find the number how often this dose has to be applied at once (e.g. 4x) and the dose setting of your laser (e.g. 1,8J).

Set your laser to this dose setting. Place the laser tip close to the rim of the wound, press the start button and remain pressing until you hear the permanent warn tone and the laser switches off.

Now release the button and press it again. Repeat this corresponding to the number.

Example for model CL mini 30 – 658:



Area of the wound with $1\text{J}/\text{cm}^2$

Wundbereich bei $1\text{J}/\text{cm}^2$

Compact-Laser
CL mini 30-658

Labor Silberbauer

The card is made for a dose of $1\text{J}/\text{cm}^2$. For higher or lower doses the showed number of how often you have to press the button has to be multiplied or divided proportionate.

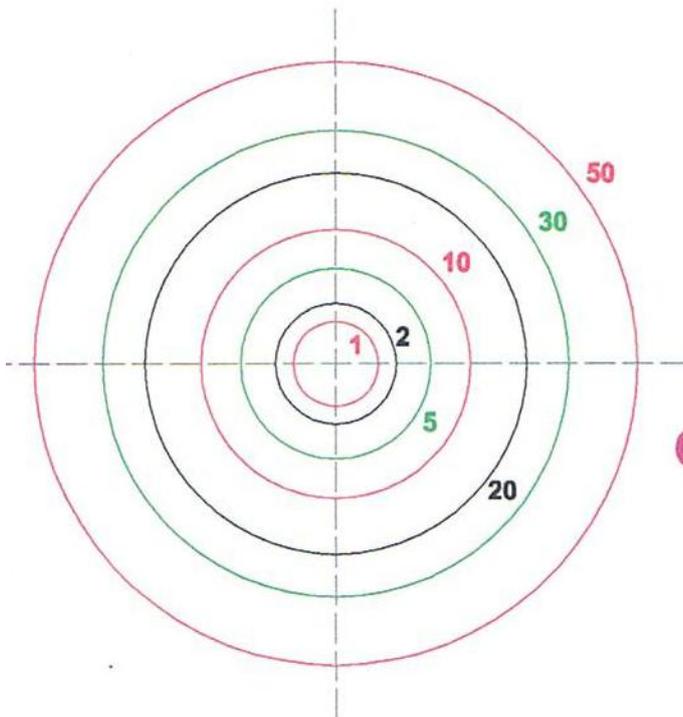
In the literature we find recommended values between 0,54 and $3\text{J}/\text{cm}^2$.

Example for all CL plus models:

Place card close to the wound and seek a circle which has approximately the same size like the wound.

There you find the area in cm^2 . Set this value at your laser.

Example (Size reduced, use the original card for measuring!) :



Area of the wound in cm^2

Wundbereich in cm^2

Compact-Laser CL plus

Labor Silberbauer

1.2. Treating Pain

The pain areas, especially the tender points should be irradiated. If required the laser can be attached as well, usually it is kept a few mm away from the skin surface.

Irradiation Period: A pain in a small area should be irradiated for 1 to 3 minutes, at an extended area it requires a longer period of up to 15 minutes. The doses 3 to 10 J/cm^2 , max. 40 J per session.

Better success can be met at pain-therapy with a combination of irradiating of acupuncture points, pain areas and trigger points (neural therapy). The regular period for therapy can be shortened substantially this way. Doses 1 – 4 J/cm^2 .

1.3. Acupuncture

The Silberbauer therapy laser can also be used instead of or in combination with acupuncture needles. You will get a better success than with acupuncture needles for chronic suffering for e.g. trigeminal neuralgia, ischialgias, migraine, asthma bronchiale (especially children). However during an attack it is better to use needles as this as a first reaction could lead to more intense pain.

ADVANTAGES OF LASER-ACUPUNCTURE:

- no prick-pain, thus enabling radiation for even those points where prickling would have been painful
- huge success with children and sensitive or restless patients
- no danger of infection
- specially useful for points in the area of lesions (e.g. ulcus cruris, eczema)
- special indications (e.g. trigeminus neuralgia)
- search of points in combination with the Silberbauer point-searcher PS 3 possible!

TIME FOR IRRADIATION PER POINT:

For all Silberbauer CL- lasers: 15 to 30 seconds.

The optimal time for irradiation is programmed at all Silberbauer-Compact-Lasers. – You only have to keep pressed the push-button. See chapter "Use of laser" in the Instruction Manual. With models with higher output power use the power-reducing-tip.

KIND OF THERAPY:

The laser-tip can, but does not have to be, set directly onto the skin.

Supposed the acupuncture points are located near to skin changes (festering wounds, scars, haematomas, ulcers and anything more), the laser is advantageous, as not only the points are treated but the skin as itself as well (see "wound healing").

The effectiveness of laser-acupuncture is proofed clinically (changes of laboratory results) and because of the measurement of skin-conductance and skin-potential easy to be controlled, e.g. measurement of energy in meridians.

IRRADIATION FREQUENCY:

More frequent than needle-acupuncture: 2 - 3x per week.

COMBINATION THERAPY:

The needle-acupuncture can be combined with laser-irradiation: the pricked areas at the needles can be additionally irradiated; also permanent needles can be irradiated by laser.

2. Arranged according to medical fields:

- **Cosmetic Medicine**
- **Dentistry**
- **Dermatology**
- **Diabetology**
- **Ear, nose and throat field**
- **Geriatrics**
- **Gynaecology**
- **Internal medicine**
- **Neural Therapy**
- **Orthopaedics**
- **Pediatrics**
- **Physiotherapy**
- **Smoking Cessation**
- **Sports medicine**
- **Surgery**
- **Veterinary medicine**
- **Wound Management**

2.1. Cosmetic Medicine

- Surface treatment with Irradiator for Area and hyaluronic acid against wrinkles
- Irradiation of cellulites, acne, herpes, expansion stripes, varicose ulcer

Dosage:

each side of the face 20 minutes with 6 - 8 J,
treatment series with 10 treatments, each a few days apart

- Cosmetic Acupuncture

High Dosage, e.g. 3 J at the ear

2.2. Dentistry

- **For enhanced wound-healing and to avoid obstructions in healing**
as well as to reduce pain after operation
- **reduction of post surgery pain**
- **during passage of anesthesia after a surgery** to support revascularisation
- **to kill pathogenic germs** (see blue lasers)

The laser is applied extraorally. The distance of the laser tip to the surface of the treated area is 1cm - 3cm.

The laser treatment arrests infection in all chronic and acute processes in areas like the mouth, throat, sinus cavities and the nose. Mucous membranes symptoms such as herpes labialis recede and surface more seldom. Use of this therapy is highly recommended after extractions due to its power to arrest infection, as well as styptic and pain relieving properties. Laser treatment also prevents an inflammation of bone caused by postoperative alveolitis in the trigeminus region. Nerve pain also can be influenced effective.

With laser treatment sometimes even local medication such as antibiotics or analgesics can be reduced.

There are sterilisable extensions which can be sterilised specifically customised for dentistry. These can be easily attached to the laser. This enables irradiation in the areas located far behind.



Optic fibre, bent

Most important indications (in alphabetic order), their treatment and therapy time (under collaboration with Dr. Bodo Marady, Vienna):

ALVEOLITIS:

Laser therapy directly after extraction helps to prevent. If alveolitis is very painful, do not hesitate to use 4 - 5J.

ALVEOLUS, DRY:

2 – 3 times with 1 – 1,5 J/cm², ensures quick healing

ANAESTHETICS:

Some patients are difficult to anaesthetise. After treatment with 2 – 3J over the apex, circulation is increased and the anaesthetic will be absorbed more quickly.

If a vessel is hit with the needle, 6 – 8 J (intra- and extraorally) can reduce oedema and pain in addition with the usual treatment (pressure and cooling).

Intraligamental anaesthesia can lead to postoperative pain if the injection is given too rapidly. 3 – 4 J under the papilla reduces or eliminates the pain.

ANASTHESIA, passing:

from parts of the lips after frontal teeth sections: operation area local with 1 – 1,5 J/cm², disappears quickly

APHTS:

local with 0,5 J/cm², healing same as without treatment but immediate pain relief

COMPLAINTS in movement of jaw:
temporary effect only

DECUBITUS (due to dentures):
local or on points with 1 – 1,5 J/cm²

DENTITIO DIFFICILIS:
Conventional treatment is supplemented with local laser therapy over the operculum, buccal and lingual bony wall.

ENDODONTICS:
Pain reaction after over-instrumentation in root canals when treating both vital and non-vital pulp. 2J over the apex eases the symptoms in most cases, administered prophylactically.

EXTRACTIONS:
before and after the extraction with 1 J/cm²; faster coagulation, better quality of coagula in the alveolus in case of problematic coagulation, minimum post surgery pain or sometimes no pain at all.
After using elevators during extraction neighbouring teeth become sensitive; 1 – 2 J over the apex reduces this discomfort.
After removing impacted wisdom teeth: 2 – 3 J directly on the maxillary joint!

GINGIVITIS:
local or on points with 1 – 1,5 J/cm²

HERPES LABIALIS:
local with 1 – 1,5 J/cm², after radiation of the affected area in case of first symptoms such as itching, tension, there are mostly no blisters

HYPEREMIA of pulps:
twice daily with 1 – 1,5 J/cm²

HYPERSENSITIVE DENTINE:
painful neck often responds well to laser treatment. Laser therapy is superior for cases with more profound pulpitis which do not respond well to recent desensitive agents. Treat the tooth neck until the patient feels a distinct improvement (check with the air syringe). Dosis and number of sessions needed depend of seriousness of the hypersensitivity.

IMPLANTOLOGY:
reduces postoperative swelling and pain and shortens the healing period.

INFECTIONS, all types:
local 1 J/cm²

INFLAMMATIONS, all types:
local 1 J/cm²

IRRITATIONS:
local with 1 – 1,5 J/cm²

NECROSIS:
local with 1 – 1,5 J/cm²

NERVE PAIN, NERVE RUPTURE:

local with 1 – 1,5 J/cm²

“OVER-INSTRUMENTATION”:

e.g. after Root canal treatment or grinding 2 J/cm²

ORTHODONTICS:

After insertion of any orthodontic apparatus, a few days of noticeable pain follow in the area subjected to stress. Lasers used directly after treatment delay the onset of pain and reduces its intensity.

Laser therapy will also increase the speed of tooth movement and the bone remodelling!
Use 1 J per tooth.

PAINFUL INJURIES:

treatment of the point with 1 – 1,5 J/cm²

PARODONTOPATHY:

only supportive therapy for necessary local therapy – pain relief, fast recovery from bleeding, tightening of teeth and gums

PERIAPICAL OSTITIS:

apex region with 1 – 1,5 J/cm²

PHOTODYNAMIC THERAPY (with methylene blue):

2 – 4 J/cm²

POST SURGERY COMPLAINTS:

just before and after the surgery and on the day afterwards with 1 – 1,5 J/cm², mostly 2 – 3 hours after the first radiation to get full effect

PULPITIS:

laser treatment is useful only in the beginning stage, with 1 – 1,5 J/cm²

REVASCULARISATION:

supporting function: local with 1 – 1,5 J/cm²

SCARS:

individual radiation with 1,5 – 2 J/cm²

STOMATITIS:

local with 1 – 1,5 J/cm² or on points with each 0,5 J

TMJ IRRITATIONS:

temporary effect only

Frequency of application:

1 x daily in case of acute complaints,

for good results in the beginning even more than once daily, if possible, immediately after operations,

in case of chronic ailments 2 – 3 times per week treatment is recommended.

2.3. Dermatology

The laser should be used:

for enhanced wound healing and to avoid obstructions in healing

after all types of post surgery conditions;

to avoid repulsion reactions

after skin transplantation;

to reduce post surgery pain;

for inflammatory dermatoses

like psoriasis vulgaris, lichen ruber planus, etc.,

for allergic dermatoses

like eczema vulgare, atopic eczema, seborrheic eczema, stasis eczema, neurodermatitis disseminata, contact eczema, urticaria, angioedem etc.,

for disturbances of tallow glands and sweat glands

like acne, hyperhidrosis etc.,

for bacterielle dermatoses (staphylococcus infection, streptococcus infection, spirochaete infection, erythrasma)

like impetigo, ekthyma, folliculitis, furuncle, carbuncle, erysipel, erythema chronicum migrans, erythrasma etc.,

for dermatomycoses

like tinea, candidamycosis, onychomycosis, chron. paronychie etc.,

for virale dermatoses

like herpes simplex, herpes zoster, herpes labialis (radiation at the first symptoms: no blisters are then formed! Recidives are seldom formed), verrucae vulgares, verrucae filiformes, verrucae plantares, verrucae planae juveniles, condylomata acuminata, etc.,

for lesions of dermal tissue

like ulcus cruris venosum / arteriosum, diabetic neuropathic pressure ulcer, decubitus, rhagades, callositas, hyperkeratosis follicularis senilis, hyperkeratosis traumatica marginis calcis, clavus, cornu cutaneum, etc.,

in case of burns:

the therapy should be given as fast as possible – further reactions show visible changes such as remarkable reduction on pain, the healing takes place without any blister formation or secondary infection; a reasonably aesthetic treatment of scarring can be expected!

in case of diffuse abscesses, acne florescences, phlegmons,

e.g. in case of recurrent hollow hand phlegmons, postoperative irradiation after all surgical procedures to obtain more beautiful keloids and to avoid possible complications,

for passive anesthesia after surgery

to support revascularization.

Dose:

Treatment on the affected area with 2 to max. 5 J/cm², for good results in the beginning once daily, if possible.

Treatment of wounds and affected areas.

You may use a combination of body acupuncture or ear acupuncture with Laser, with 15 seconds per point.

Eventual use of segment therapy (for rash)

2.4 Diabetology

- Peripheral circulatory disorders
- Local inflammations
- Poorly healing wounds
- Diabetic gangrene
- Antibacterial PDT
- Stump treatment after amputation

Dose: 1 - 2 J/cm²

2.5. Ear, nose and throat Area

Some typical areas of application are:

- Irradiation of **tonsils** and **palatine arches** because of sore throats, resulting in quick relief from pain
- **Chronic tonsillitis**: three treatment sessions can be given over a period of 9 days, significant increase of immunoglobulin A in saliva followed by increase of IgA serum level after 4 weeks, clinical improvement
- **After tonsillectomia**
- Irradiation of **draining lymphatic paths** in throat area
- **Glossitis superficialis phlegmonosa** : local treatment in addition to treatment of causing problem
- **Stomatitis simplex, aphthosa, allergica, mycotica, ulcerosa**
- **Mucosal lesions, herpes labialis, aphtas**
- Direct irradiation of **parasinuses**. The laser light penetrates thin bones, whereby an ENT specialist has a highly-active therapy-medium without any inconvenient side-effects at his disposal. Thus the discharges of the frontal sinuses open themselves during the irradiation, which is pleasant for the patient
- Acupuncture as prevention and therapy for **rhinitis acuta**
- Irradiation of **eardrum** for inflamed ears
- Irradiation of inflammation of the **external auditory meatus**
- **Otitis media**
- **Tinnitus**: treatment partly through meatus, partly behind the ear
Important: hold the laser tip in contact to the bone!
- Acupuncture at **neuralgias**
- **Rhagades**: 1-2 J/cm², try 2-3 times per week, 5-10 times
- **Herpes simplex**: daily 1 – 1,5 J/cm²

Irradiation Period: According to size of affected area for e.g. 1 J (for small areas) up to 12 J.

Application Frequency: when possible 1x daily and initially several times daily perhaps. After operations immediately post-operative before the wound is dressed.

For this form of therapy the extension for ENT and dentistry is sometimes helpful, the Optic fibre, bent, which can be sterilized:



These are easily put on the laser-point, whereby the position, which should be irradiated, can be reached very well with the punctiform laser beam.

2.6 Geriatrics

- Patients with chronic degenerative diseases, circulatory disorders
- Decubital ulcers
- Improvement of quality of life without negative side effects, due to reduction of pain, improvement of mobility
- Application successful even in otherwise therapy-resistant cases

Local irradiation plus laser acupuncture is particularly effective!

Dose: 1 to 4 J/cm²

2.7. Gynaecology

As well in **obstetrics** as in **surgery** the laser can be applied successfully:

- for preparing the parturition (in combination with ear-acupuncture)
- irradiation of operation wounds during the parturition (perineotomy) effects analgesia of the patient already during the first days after the birth
- generally for enhanced wound-healing and to avoid obstructions in healing
- reduction of pain after operations
- during passage of anesthesia after a surgery to support revascularisation and reinnervation
- irradiation of mucosa diseases (herpes genitalis, etc.)
- Milk jam / Mastitis (Laser acupuncture)
- Nipple irritation, rhagades
- for inflammations (Vulvitis, Herpes genitalis)
- Caesarean section and after operations, see surgery

Irradiation dose:

For treatment of areas or surface treatment 0,5 – 1 J/cm², for deeper processes 1 – 4 J/cm², at the beginning once daily, max. 40 J per session. See also page 2!

After operations directly post-operative before the wound is dressed.

Possibly combination with acupuncture and ear acupuncture by laser, initially every alternate day, later in extended intervals up to once a week.

Acupuncture in switch position Acup. respectively 15 sec.

2.8. Internal medicine

With respect to internal medicine an **old patient** is a broad application base for the laser. Towards

- **The improvement of mobility by combating pain in the locomotors system** just as
- **The improvement of mobility in joints** with the use of strong red-light-laser is successful.

Similarly other local complaints like dents in the dentures or to rheumatic circumstances up to skin diseases can be influenced positively by local irradiation. The laser-acupuncture can be applied additionally, since it is often the only medium for the improvement of quality of life.

Other important areas of application of the laser-irradiation are:

- Decubitalulcera,
- Diabetic skin-alterations
- Pains in joints
- Disruption in skin circulation.

Irradiation dose:

Treatment of trauma wounds with 0,5 to 1 J/cm²,
 in case of deeper processes 1 to 4 J/cm²,
 for good results in the beginning once daily, if possible.
 Acupuncture in switch position Acup. respectively 15 sec.

2.9. Neural Therapy

- Scar removal (start with 0,5J up to 2 J, with old scars up to 4J)
- Setting energy depots instead of wheals (4 J/point)
- Short-term switching off of interference foci for testing purposes
- Interference field therapy (often)

2.10. Orthopaedics

Use lasers with high power and eventually combined with laser puncture at the acupuncture point, pain area and trigger point.

The most important areas of application are for:

- **Complaints of joints**
- **Neuralgias (ischialgias, lumbago)**
- **Shoulder-arm-syndrome**
- **Post-operative irradiations** see surgery

Irradiation dose:

Depending from the size of the affected area and the depth and position of the malfunction, for treatment of areas or surface treatment 0,5 – 1 J/cm², for deeper processes 1 – 4 J/cm², max. 40 J per session.

Application Frequency: At least 1x daily and several times daily initially as well. After operations immediately post-operative before the wound is dressed.

2.11. Pediatrics

The laser can be used

- **for enhanced wound healing and**
- **to avoid obstructions in healing**
after injuries, burns and all kinds of post surgery conditions;
- **to reduce pain after trauma injuries and**
for enhanced wound healing and to avoid obstructions in healing of
fractures (for fast callus formation), bruises, muscle pulls, sprains, haematoma,
abrasions (for improved resistance);
- **to reduce pain;**

- **in case of burns:**

the therapy should be given as fast as possible – further reactions show visible changes such as remarkable reduction on pain. The healing takes place without any blister formation or secondary infection, a reasonably aesthetic treatment of scarring can be expected!

- **also recommended in case of**

herpes labialis (radiation at the first symptoms: no blisters are then formed! Recidives are seldom formed)

rash and infections e.g. diaper rash, navel inflammation, abscesses, phlegmones, acne, otitis, sinusitis, tonsillitis, angina, painful teeth;

- **laser acupuncture**

is highly recommended for children to avoid the fear for needles, special cases for considerations e.g. asthma.

Dose:

treatment on the affected area with 0,5 to max. 4 J/cm², for good results in the beginning once daily, if possible.

treatment of wounds and affected areas,

you may use a combination of body acupuncture or ear acupuncture with Laser, with 15 seconds per point.

eventual use of segment therapy (for rash)

2.12. Physiotherapy

Use lasers with high power and combined with laser puncture at the acupuncture point, pain area and trigger point.

For the patient's mobility in cases of locate ons, fractures, strains, as tendonitis the laser irradiation can be applied in sense of physical medicine.

Irradiation Period: According to size of area to be treated, see page 2!

Application Frequency: When possible 1x daily initially, later after longer periods till 1 x weekly.

2.13. Smoking Cessation

- Special courses for certified weaning at different institutes
- Acupuncture on many points with relatively high dose
- Laser with 60 mW



2.14. Sports medicine

Use lasers with high power , eventually combined with laser puncture at the acupuncture point, pain area and trigger point.

Sports Medicine has 2 areas of application:

- The treatment of **acute sports-injuries** and
- The treatment of complaints of **over-trained athletes**.

According to *Tunér/Hode* there is a rule that sport injuries takes a little more than half the ordinary healing time if the healing process is stimulated by laser therapy!

Treatment should not be interrupted just because pain is gone. It is only the first sign of recovery. No training too early!

So we use the laser – additionally to your usual treatment:

- **To reduce trauma – related pain, to accelerate healing process and to avoid obstructions in healing**
 in case of post surgery wounds, injuries, fractures (for fast **callus formation**), bruises, joint problems, muscle pulls, torn muscle, sprains, haematoma, abrasions (for improved resistance), blisters;
- **To improve the performance and stamina**
 using laser acupuncture;
- **To reduce pain after too much training**
 and after competitions; muscle soreness and periostitis react very favorably to laser therapy. Therapy should be started as soon as possible after competition;
- **Recommended for joint and muscle affections**
- **Also for strain injuries**
 Typical work related injuries for people in the medical profession are tennis elbow and neck and low back pain. Treat tender points in the order they arose;
- **For tendinitis / epicondilitis, plantar fasciitis**
 Also as a preventive treatment for recurrent problems;
- **For nerve rupture**
- **After all kinds of surgery**
 to reduce pain and accellerate wound healing

After laser therapy a more aesthetic scarring can be expected!

Treatment of wounds and affected areas with 0,5 to max. 4 J/cm², for good results in the beginning once daily, if possible.

You may possibly use it together with body acupuncture or ear acupuncture with laser, 15 seconds per point, in case of PL – Laser with a power reducing tip.

Acute injuries can actually receive higher doses than chronic cases without side effects.

If there are a number of injured places, the patient should be treated according to Ohshiro's "proximal priority principle". This means that the proximal injury is treated first, the distal last. If the distal injury is treated first, lymph accumulation increases because the proximal injury prevents drainage. The result would be increased pain.

2.15. Surgery

The laser can be used

- **for enhanced wound healing and to avoid obstructions in healing**
as well as to reduce pain after traumatic injuries
- **for improvement of callus formation**
- **to reduce post surgery pain**
- **in case of**
decubital ulcers,
abscesses, phlegmones, especially in case of recidives
- **in case of burns:**
the therapy should be given as fast as possible – further reactions show visible changes such as remarkable reduction on pain, the healing very often takes place without any blister formation or secondary infection, a more aesthetic scarring can be expected!
- **to improve adhesive healing of transplants:**
prevention of immune reactions
- **for all types of post surgery conditions**
for better results in aesthetic scarring and to reduce eventual complications: improves the immunity of wounds against secondary infections, fewer medicaments are required
- **during passage of anesthesia after a surgery**
to support revascularisation and reinervation: Improvement of healing of severed nerves (acceleration of growth of nerves, pronounced directive dependences of growth of healing-clubs in distal direction)
- **it reduces post-operative stay of patient at hospital**

The **combination** of local laser-irradiation with irradiation of acupuncture points over the operative area additionally with homoeopathic medication for wound-healing like Traumeel brings tremendous success.

Irradiation dose:

Treatment of trauma wounds with 0,5 to 1 J/cm²,
in case of deeper processes 1 to 4 J/cm²,
for good results in the beginning once daily, if possible.
Acupuncture in switch position Acup. respectively 15 sec.

- Surface treatment with Irradiator for Area and hyaluronic acid against wrinkles
- Irradiation of cellulites, acne, herpes, expansion stripes, varicose ulcer

Dosage:

each side of the face 20 minutes with 6 - 8 J,
treatment series with 10 treatments, each a few days apart

- Cosmetic Acupuncture
High Dosage, e.g. 3 J at the Ear

2.16. Veterinary medicine

Use following laser model:

for small animals: **Compact - Laser CL mini** with 20 or 30 mW,
 for big animals: **Compact - Laser CL plus** with at least 60 mW.

Applications:

- **For enhanced wound healing and to avoid obstructions in healing**
 as well as to reduce pain after trauma injuries;
- **In case of**
 post surgery wounds, joint injuries,
 fractures (for fast **callus formation**),
 bruises, muscle pulls, sprains, haematoma,
 abrasions (for improved resistance),
 teats injuries, brake injuries,
 tendovaginitis;
- **Also recommended for**
 abscesses, phlegmones,
 sinusitis, rhinitis, otitis,
 Infections of gums,
 rash, oedema, and infections of all kinds,
 salt paw, decubital wounds,
 anal infections, chronic infection between the toes,
 burns, impending slipped disc (1st and 2nd degree)
- **Miscellaneous**
 Laser acupuncture (body as well as ear), segment treatment possible,
 therapy for scars and affected areas
- **Veterinary – sports medicine** see also "Sports medicine"! (Racehorse etc.)

Irradiation dose:

- Treatment on the affected area with 0,5 to max. 4 J/cm², for good results in the beginning once daily, if possible.
- Treatment of wounds and affected areas,
- You may use a combination of body acupuncture or ear acupuncture with Laser, 15 seconds per point, in case of PL – Laser with a power reducing tip.

2.17. Wound Management

- Significantly faster wound healing
- Fewer secondary infections
- ⇨ Better quality of life for the patient (also psychologically)
- For stubborn wounds "Antibacterial Photodynamic Therapy" (PDT)
- Saving of dressing material
- ⇨ Cost reduction

3. Contraindications for Laser treatment

The laser treatment has a low risk only. Different authors have controversial positions because the laser is especially successful in applications where you from forensic reasons might have concerns. However, if no sufficient tests are available, some contraindications should be observed:

- **Direct irradiation of the open eye, it is essential to avoid!**
- In the area of open fontanelles or open skullcaps, as well as growth gaps in childhood and adolescence should not be irradiated.
- During pregnancy the penetration of the abdominal area is to avoid. Attention! Some acupuncture points can trigger labour (Bl31, Bl32, Bl60, Bl67, Di4, Di5, Gbl21, Gbl34, LG20, MP6)
- Endocrine organs may not be treated!
- At epileptics the sculp region may not be treated.
- In the literature there are notes at the one side that tumors and maligne scin diseases should not be treated, at the other side tumor pains and damages due to radiation are a successful field of application. In the veterinary medicine there are good results after laser penetration of tumors because the lymphatic jam and the pain goes back.
- In case of higher photosensibility it is not allowed to penetrate (for all kinds of dermatoses which react with formation of erythems or vesicles to small doses of light).
- Pacemakers cannot come out of normal function by penetration with the cw-laser, so they are no kontraindication.

● Too long therapy time do not give better results, but also no harmful side effects. Excepted are penetrations in the sculp region (more minutes), which can cause headache, and daily penetration with high doses which can cause that pain comes again.

