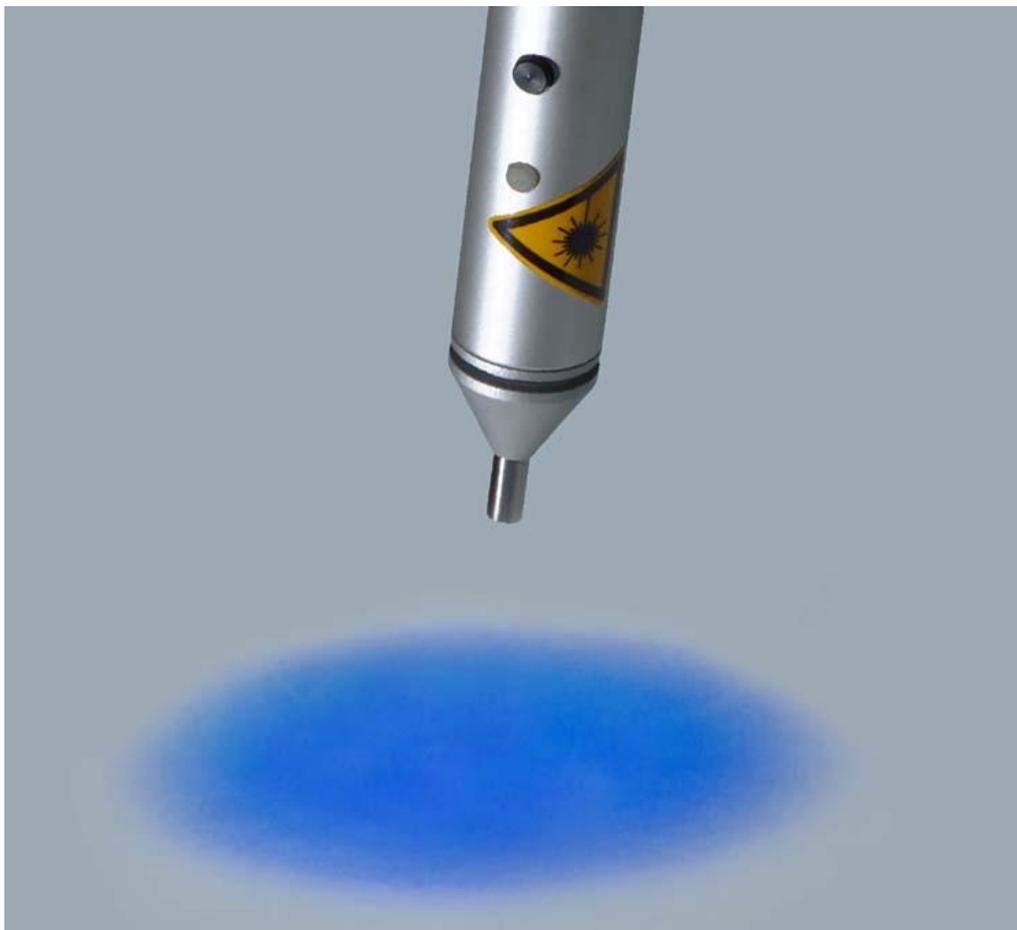


G. Silberbauer:

Applications
of the **BLUE**
Soft – Laser



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Possible Applications of the blue Compact-Laser :

1. Arranged according to its effectivity

The following are basic effects of the therapy laser:

- to avoid obstructions in healing because of germs
- 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 Effect:

- destruction of germs

Short wave blue laser light (405 nm) is used for the direct inactivation of pathogenic germs in vitro, e.g. also the methicillin-resistant Staphylococcus aureus (MRSA).

Irradiation dose:

The effect increases between 2 and 15 J/cm²; above this value it seems to be nearly constant ¹⁾.

At the CL plus 60-405 set the dose control to the highest value (8 J/cm²).

For larger areas the therapy time will be long, see table below:

Dose (J/cm ²): ►	0,5	1	2	3	4	5	6	8
1 cm ²	8s	17s	33s	50s	1m:7s	1m:23s	1m:40s	2m:13s
2 cm ²	17s	33s	1m:7s	1m:40s	2m:13s	2m:47s	3m:20s	4m:27s
3 cm ²	25s	50s	1m:40s	2m:30s	3m:20s	4m:10s	5min	6m:40s
5 cm ²	42s	1m:23s	2m:47s	4m:10s	5m:33s	6:57s	8m:20s	11m:7s
8 cm ²	1m:7s	2m:13s	4m:27s	6m:40s	8m:53s	11m:7s	13m:20s	17:47s
12 cm ²	1m:40s	3m:20s	6m:40s	10min	13m:20s	16m:40s	20min	26m:40s
20 cm ²	2m:47s	5m:33s	11m:7s	16m:40s	22m:13s	27m:47s	33m:20s	44m:27s
30 cm ²	4m:10s	8m:20s	16m:40s	25min	33m:20s	41m:40s	50 min	66m:40s
50 cm ²	6m:57s	13m:53s	27m:47s	41m:40s	55m:33s	1h:9m:27s	1h:23m:20s	1h:51m:7s

It is recommended to use the tripod for therapy times above several minutes.

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

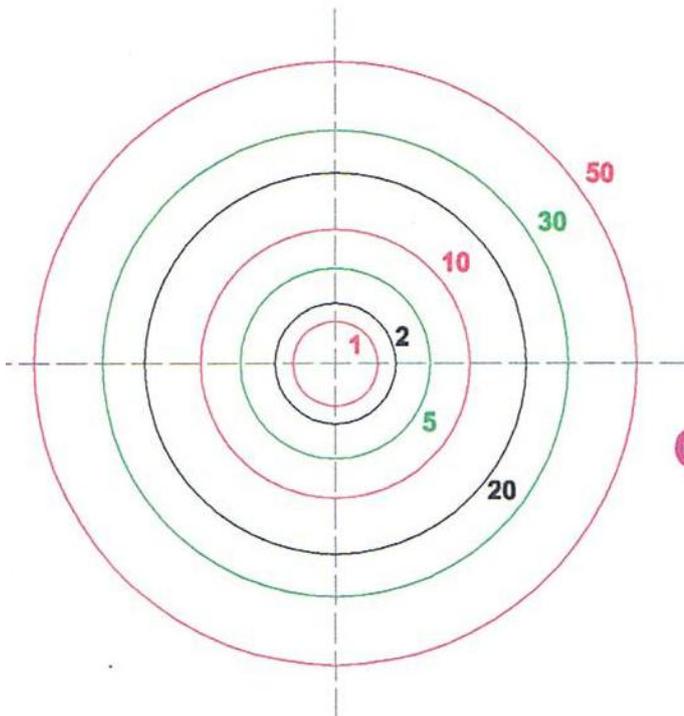
¹ Enwemeka et al.: Visible 405 nm SLD light photo-destroys methicillin-resistant Staphylococcus aureus (MRSA) in vitro. [Lasers Surg Med.](#) 2008 Dec;40(10):734-7.

Estimation of the area with the card (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 cm². Set this value at your laser.

Example:



Area of the wound in cm²

Wundbereich in cm²

Compact-Laser CL plus

Labor Silberbauer

1.2. Acupuncture

Also the Silberbauer Compact Lasers can 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: for children: 5 seconds, for adults: 15 seconds (programmed, choose it with the left knob).

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 subjects:

Apart from general medicine the following subject areas encompass the use of the blue therapy laser CL plus 60-405:

- **Surgery**
- **Gynaecology**
- **Dentistry**
- **Ear, nose and throat field**
- **Dermatology**
- **Veterinary medicine**

For some applications the extension for ENT and dentistry is sometimes helpful, the Light Tube, 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.

3. Contraindications for Laser treatment

See also the chapter Contraindications in the Instruction for use!

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 skin 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.

