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LASER ACUPUNCTURE AND LASER EAR ACUPUNCTURE

The book for practitioners

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- **Fewer side effects**

Laser acupuncture cannot cause bleeding, nerve damage or infection.

In addition, there are advantages of laser acupuncture that can be attributed to the direct effects of photobiomodulation on the stimulated acupuncture point:

- **Regeneration of acupuncture points**

Acupuncture points can also "age" – in the sense that with increasing age, the local tissue condition reduces any influence via the reflex effect. The direct effect of the laser light on the tissue promotes its metabolism and blood circulation, which also benefits the responsiveness of the point in the context of TCM.

- **Strong synergistic effects**

The energetic influences of acupuncture combine very well with the direct effects of photobiomodulation. For example, local points and distant points of acupuncture stimulate reparative processes in direct tissue effects of PBM on bone and cartilage.

In addition, laser acupuncture offers a further therapeutic approach that is not available with classic needle acupuncture: the use of therapeutic frequencies to augment the therapeutic effect. In ear acupuncture in particular, frequency stimulation of ear points is an inherent part of the therapy.

- **Therapeutic augmentation through frequency modulation**

Laser light can be frequently modulated so that the effects of therapeutically effective frequencies can be integrated into the therapy. Certain ear acupuncture techniques based on the use of special field frequencies on the ear (so-called Nogier frequencies), for example, are not possible without a frequency-modulated laser.

- **De-Qi**

The patient does not even have to do without the famous De-Qi sensation with laser acupuncture. De-Qi sensation tells the patient how the Qi works in the body and overcomes blockages. Acupuncture treatment is a living experience. With laser acupuncture, the De Qi sensation builds up slowly as the energy in the tissue increases. With needle acupuncture, this sensation develops more quickly, but also subsides more quickly.

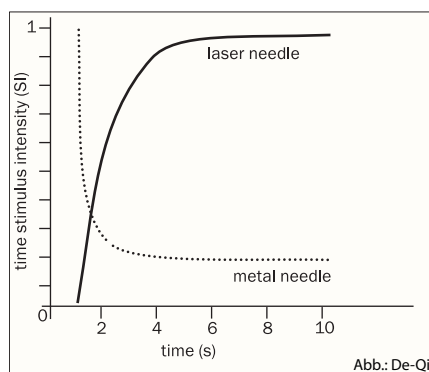


Fig. De Qi

2.2 Dosage, techniques and instructions of use

2.2.1 Dosage

The dose recommendations refer to point stimulation with direct skin contact, i.e. the technique usually used by laser acupuncturists. In this way, there is no loss of dose due to distance from the point, which is difficult to estimate.

The dose is given in J/cm² or in J/point.

1 joule (J) = 1 watt-second (Ws). 1 calorie (cal) required to heat one cubic centimetre of water from 14.50 °C to 15.50 °C corresponds to 4.1855 J.

- Power (W) = Energy (J) : Time (s)
- Energy (J) = power (W) x time (s)

Example: A laser with 100 mW power emits an energy of 100 mJ in 1 second (100 mW x 1s = 100 mJ). In one minute it emits 6 J (100 mW x 60s = 6000 mJ = 6J).

The treatment dose is the total energy emitted in relation to either the irradiated area (J/cm²) or a single (acupuncture) point.

The doses used for laser acupuncture result in the following treatment times. Please note that these also apply to the effective power and not to the output power of the laser pen, which is higher with pulsed lasers and whose dose for point stimulation is therefore usually preset over the treatment time.

Effective power of device (mW)	time (min:sec)							
	1 J	2 J	3 J	4 J	5 J	6 J	7 J	8 J
20	00:50	01:40	02:30	03:20	04:10	05:00	05:50	06:40
25	00:40	01:20	02:00	02:40	03:20	04:00	04:40	05:20
30	00:33	01:07	01:40	01:40	02:47	03:20	03:53	04:27
40	00:25	00:50	01:00	01:15	02:05	02:30	02:55	03:20
50	00:20	00:40	01:00	01:20	01:40	02:00	02:20	02:40
60	00:17	00:33	00:50	01:07	01:23	01:40	01:57	02:13
80	00:12	00:25	00:37	00:50	01:03	01:15	01:26	01:40
100		00:20	00:30	00:40	00:50	01:00	01:10	01:20
120		00:17	00:25	00:33	00:42	00:50	00:58	01:06
140		00:14	00:21	00:29	00:36	00:43	00:50	00:57
160		00:12	00:19	00:25	00:31	00:38	00:44	00:50
180		00:11	00:17	00:22	00:28	00:33	00:39	00:45
200			00:15	00:20	00:25	00:30	00:35	00:40

Table: Dosing table

Minimum responder dose MRD

The minimum responder dose (MRD) is the stimulus threshold that must be exceeded in order to stimulate a specific biological tissue.

The MRD varies depending on the target tissue.

Therapists are often too cautious at the beginning and treat with too low a dose so that the effects remain insufficient.

Therapeutic dose window

It is true that acupuncture points can also be overstimulated and that there is therefore an upper dose threshold above which the therapeutic effect deteriorates. The most effective dose lies within a therapeutic dose window. Observation in individual cases always shows whether the dose should be corrected downwards or upwards within the spectrum between the minimum and maximum dose.

The following diagram shows the therapeutic dose window for the photobiological treatment of an open wound or for the open wound bed of a wound. For example, doses between 1 joule/cm² (open wounds) and 4 joules/cm² (deep wounds) are recommended for wound surfaces⁴⁵.

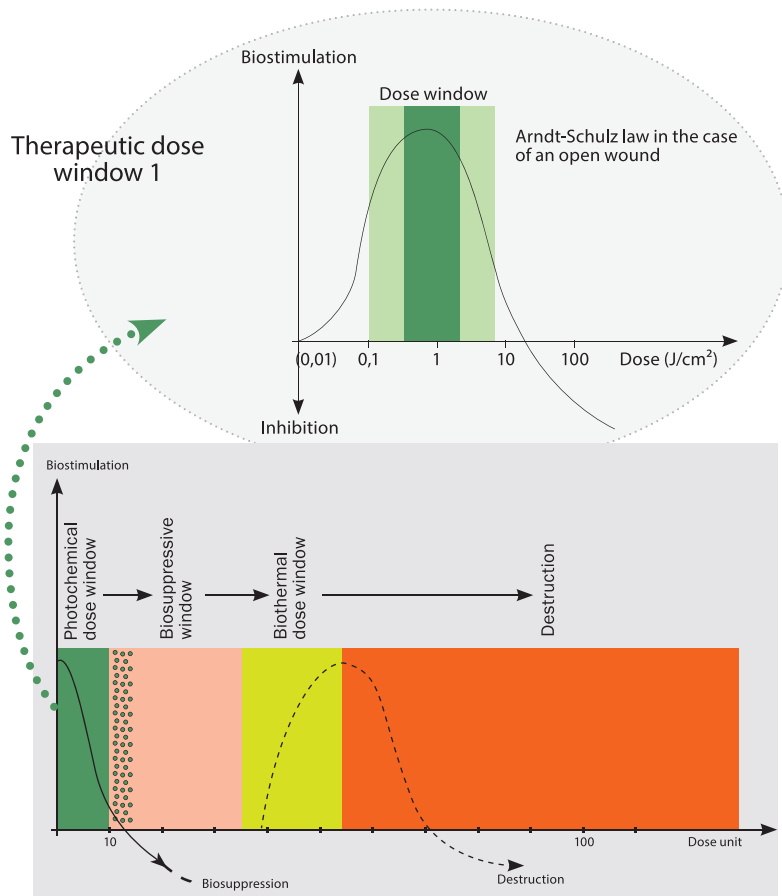


Fig. Therapeutic dose window

Apparently, there is not only an optimal dose, but also a dose that is too high, which results in contrary effects that can have a negative impact on wound healing – such as a further delay. In this case, thermal and inhibitory effects have come into play. Dose windows are not exclusive to photobiomodulation, but are known for almost all medical measures (medication, radiotherapy, etc.). And they apparently also apply to the stimulation of acupuncture points.

Minimal irradiation time

Since class 3B point lasers with up to 500 mW have been available on the market, the dose required for point stimulation can be reduced to a few seconds in purely mathematical terms. For a trigger point that is treated with a relatively high dose of 8 J, for example, a therapy time of 16 seconds in cw mode would be sufficient and for a deeper acupuncture point that is treated with 4 J, a therapy time of 8 seconds in cw mode and 16 seconds in frequency mode would be sufficient.

However, experience shows that a minimum treatment time is necessary to give the tissue and the triggered metabolic processes time to convert the stimulative impulse, so that it is not advisable to act according to a technical logic here. According to this logic, you could theoretically "treat" points on the ear in a few seconds, for example, which would not produce any lasting results.

If you work with a laser pen that has a cw mode and also a frequency mode (and therefore contains pre-programmed frequency programs), the time required to administer a recommended dose is doubled. In frequency mode, you will hardly ever find yourself in a situation where you fall short of the minimum treatment time.

If you want to treat with a cw laser, which can work with a maximum of 500 mW, in cw mode, you must select the power in such a way that the minimum treatment time is not undercut. You can easily ensure this by selecting the desired dose and the minimum treatment time – and thus the corresponding power, which the laser software calculates automatically.

Therapy	Body acupuncture	Ear acupuncture	Trigger points	Pain points
Dose spectrum	1 - 4 J	0,25 - 3 J	4 - 8 J	2 - 8 J
Variation	<ul style="list-style-type: none"> • Low dose: Children, superficial spots, pigmented skin • Higher Dose: Adults, deeper spots 	<ul style="list-style-type: none"> • Low dose: Children, points outside the cartilage tissue • Higher Dose: Adults, points on cartilage tissue 	<ul style="list-style-type: none"> • Low dose: Children, pigmented skin • Higher Dose: Adults 	To reduce pain, start with high doses and reduce the dose in subsequent treatments.
Minimal irradiation time	20 sec			

Table: MRD and minimum irradiation time for different point types

Dose regulator

The ideal stimulation intensity lies between the minimum and maximum dose and depends on the individual case. Different patients may require different levels of stimulation for the same condition.

Minimum dose 0,5 – 1 Joule ⊕	Maximum dose 8 Joule ⊕⊕⊕⊕
Acupuncture point <ul style="list-style-type: none"> • Ear • Children • Superficially located 	Acupuncture point <ul style="list-style-type: none"> • Body • Adults • Deep lying
Skin: light-coloured, normally moist, little hair	Skin: dark, pigmented, oily, very hairy
Tissue type <ul style="list-style-type: none"> • Mucous membrane < epidermis • Inflamed skin or open wound 	Tissue type <ul style="list-style-type: none"> • Nerve < muscle < bone • Scarred skin or wound periphery
Initial treatment	Follow-up treatment
Vertical irradiation	Irradiation of curved surfaces (joints)
Pain or irritation of superficial skin areas	Deep-seated pain (up to 10 joules)
Chronic conditions	Acute conditions
Sedation	Toning

Laser acupuncture – Laser pen – Dose and irradiation time

Power Dose	20 mW	50 mW	75 mW	100 mW	200 mW	300 mW	500 mW
0,5 Joule	0:25						
1,0 Joule	0:50	0:20					
2,0 Joule	1:40	0:40	0:27	0:20			
3,0 Joule	2:30	1:00	0:40	0:30			
4,0 Joule	3:20	1:20	0:53	0:40	0:20		
5,0 Joule	4:10	1:40	1:07	0:50	0:25		
6,0 Joule	5:00	2:00	1:20	1:00	0:30		
7,0 Joule	5:50	2:20	1:33	1:10	0:35	0:20	
8,0 Joule	6:40	2:40	1:47	1:20	0:40	0:20	0:20

= Standard range

= toning

= sedating

3.2 The most important frequency series and programs

The acupuncture of TCM body points is traditionally supported with the help of the so-called "Reininger frequency" for the meridians in question or also by the Nogier frequency for the associated body field. The acupuncture of ear points is supported by the field frequency on which the point is located.

3.2.1 The Nogier frequencies

The Nogier frequencies originate from auriculotherapy. P. Nogier discovered that clearly distinguishable areas of the ear each have their own frequency signature. The fields correspond to the different areas of the body, so that they are not only found in the areas of representation on the ear, but also on the body.

Frequency	Nogier A	Nogier B	Nogier C	Nogier D	Nogier E	Nogier F	Nogier G
Zone/Field	Below the tragus	Concha	Scapha	Tragus	Helix (posterior part)	Antitragus posterior part of the lobule	Lobulus (Anterior part)
Structures	Without distinct assignment	Inner organs	Musculoskeletal system	CNS commissures	Spinal cord	Subcortex	Cortex

Table: Nogier zones at the ear

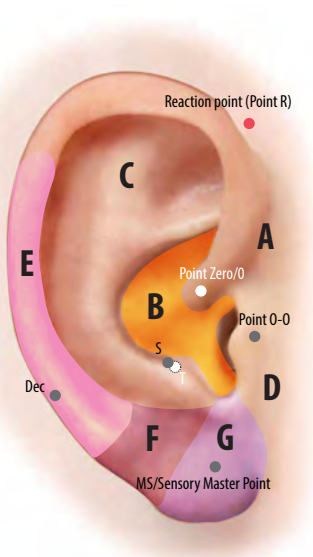


Fig. Nogier zones at the ear

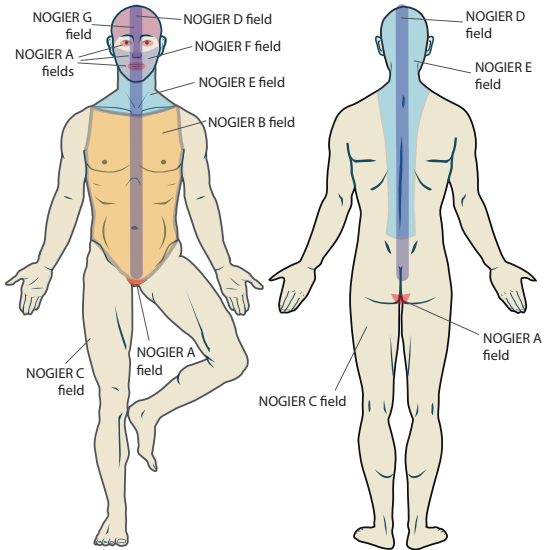


Fig. Nogier zones at the body

In ear acupuncture, the point stimulation is supported with the frequency of the ear field on which the point is located, e.g. the point of the thalamus is supported with the frequency Nogier F. In body acupuncture, the point stimulation is supported with the frequency of

1.1.2 Muscles

Therapy protocol for the musculature				
Method	Laser acupuncture		Auriculotherapy	
Dose range	2-5 J		0,5-3 J	
Local points and zones	Local points		Representation area of the affected muscle	
Systemic points and zones	GB 34	Master point Muscles	Point S	Influence point Field C
	LIV 03	Muscle tension	Thalamus	Pain point
	LI 04	Pain	Shen Men	Distancing point
	ST36	Stabilisation		
	SP 04	Cardinal point		
	GV20	Relaxation		
	SI 03	Muscle relaxation		
	Possible additional therapy: Vagus therapy			
Frequencies	• Frequency of the respective meridian		Local points	Nogier C
	• Nogier B, Nogier C		Point S	Nogier F
			Thalamus	Nogier F
			Shen Men	Nogier C
	Further frequencies: SOL 2 + SOL 5, PURR-Sweep			
Number of treatments	Acute	1-4 treatments	Acute	1-4 treatments
	Chronic	2-3x/week as long as required	Chronic	Regularly
Indications	Muscle tension, muscle trauma, myositis, myasthenia			
Notes	The systemic points are selected on the basis of the symptoms. Not all systemic points are treated.		Substance disorders of muscle tissue are treated via the front of the ear, motor disorders (associated muscle tension) via the back of the ear.	

Neck tension		
Method	Laser acupuncture	Auriculotherapy
Local points/zones	Local points at the neck	Representation area of the muscles of the cervical spine both frontal and retroauricular

Muscle tension in the calf		
Method	Laser acupuncture	Auriculotherapy
Local points/zones	Local points of the calf below the knee joint	Representation area of the calf muscles both frontal and retroauricular

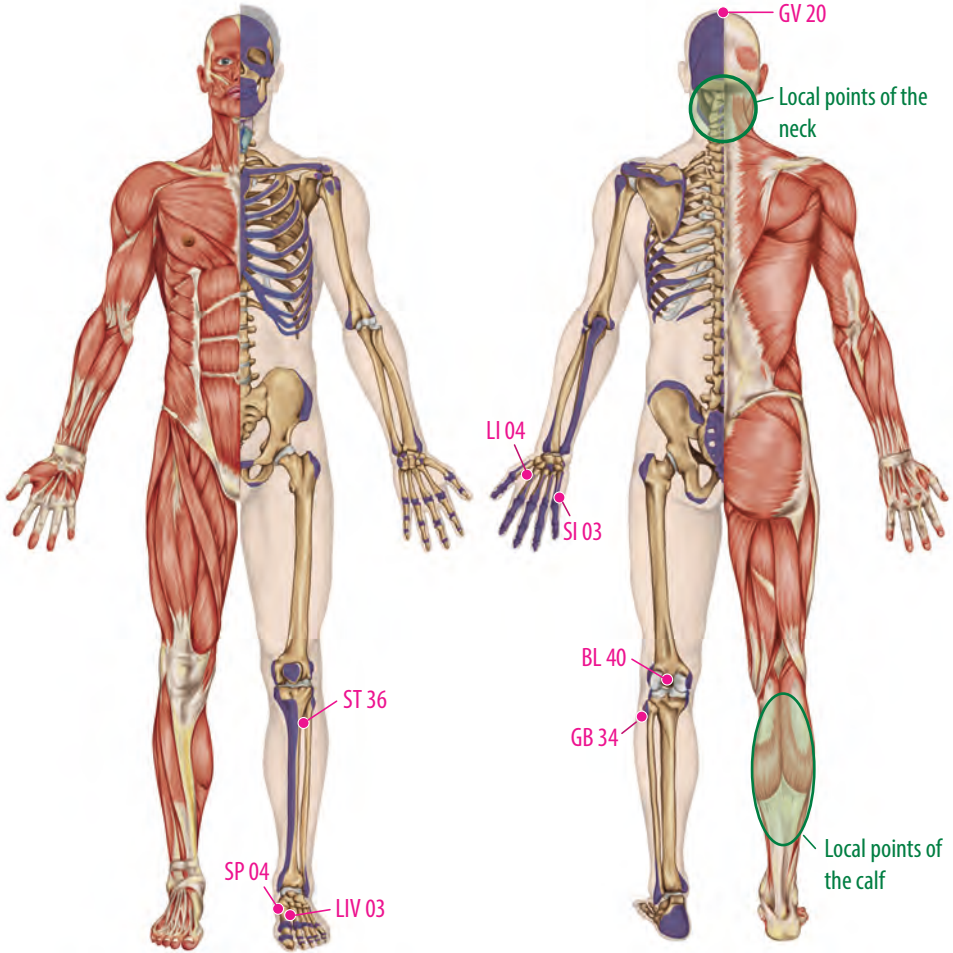


Fig. Musculoskeletal system - muscles

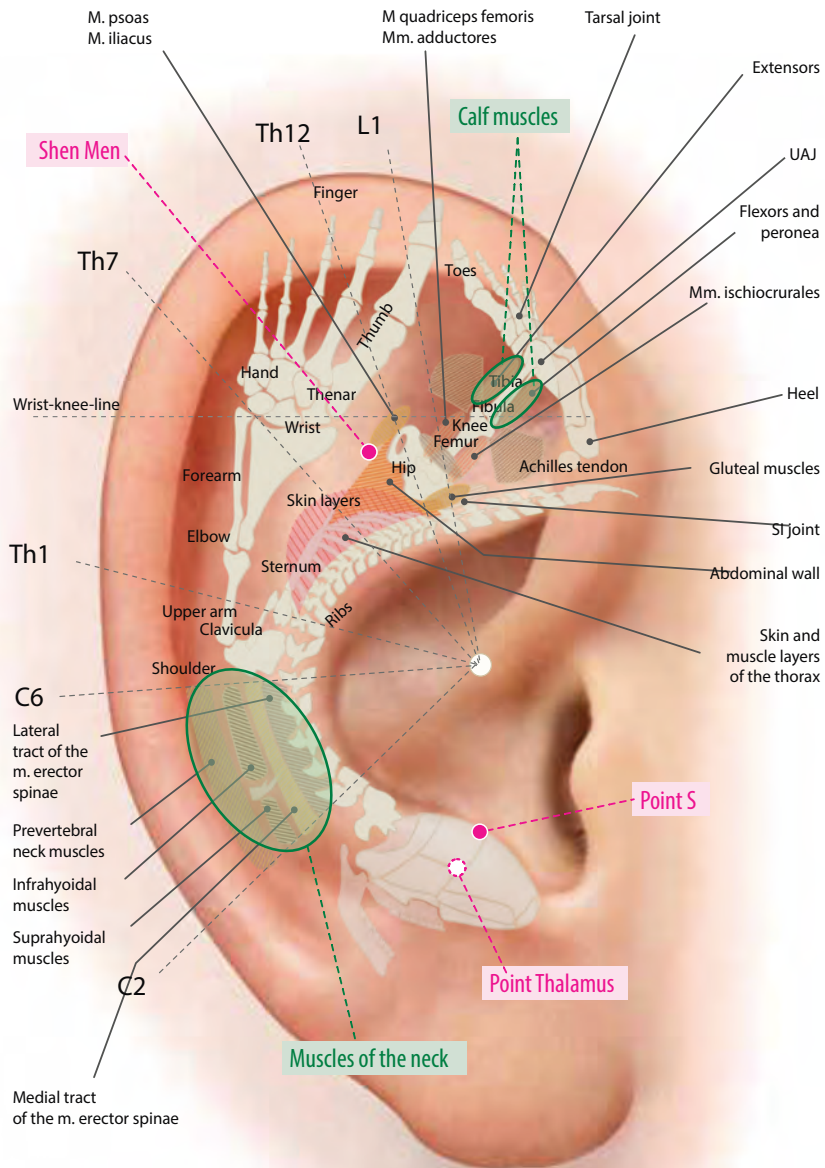


Fig. Musculoskeletal system – muscles

In diesem neuen Buch zur Laserakupunktur stellen wir Ihnen die Forschung zur Laserakupunktur und erstmalig übergreifende Behandlungsprotokolle und Grundprotokolle für die Körper- und Ohrakupunktur vor. Sie finden in diesem Buch Basisprotokolle

- für den Bewegungsapparat
- für das Nervensystem
- für das Herz-Kreislaufsystem
- für das Atmungssystem
- für das Verdauungssystem
- für das Harnsystem
- für das Fortpflanzungssystem
- für das endokrine System
- für die Augen
- für die Hals-, Nasen- und Ohrenheilkunde
- für den Zahnapparat

sowie Grundprotokolle zu den Themen Konstitution, Mikrobiom, Vagus, Detox, cranio-sakrales Kontinuum und psychische Harmonisierung.

Das Buch ist sowohl für Anfänger als auch für Fortgeschrittene der Akupunktur und Ohrakupunktur von Wert.