

In odontology, LLLT produces some special effects in addition to the effects mentioned overleaf. Brief treatments are generally provided, immediate/rapid effects are seen, as the problems involved are most often limited. LLLT is used for:

- Increased healing in connection with dental surgery and extractions.
- Reduced post-operative pain and swelling after endodonthy, dental surgery, extractions, etc.
- Dental pains that are due to hypersensitive dentine or pulpal hyperaemia.
- Less pain (and bleeding) in connection with the intervention itself.
- TMJ pains/problems.
- Neuralgiaform facial pains.



MediLaser with battery and dental applicator



LaserLight

Laser technology



MediLaser – a GaAlAs Semiconductor laser – in a Danish design made from high quality materials.

The advantages of the therapeutic **MediLaser** are:

- ▶ Very portable and easy to use in the dental clinic
- ▶ Handheld battery operated unit
- ▶ An FDA cleared, powerful and effective 3B laser
- ▶ Cordless and independent of a basic unit
- ▶ Rest comfortable in your hand (well balanced)

What is LLLT?

LLLT is a type of therapy in which laser light with energy quantities of 1 – 16 J is applied point by point to skin or mucous membranes, from which it spreads to the underlying structures. The energy is distributed on such a large area (typically 0.5 cm²) that it cannot be felt, i.e. there is no direct thermal effect.

What are the effects of LLLT?

LLLT has been demonstrated to have a wide range of effects at cellular level, which are too extensive to describe here. Reference is made to the bibliography.

This guide will focus on the derived clinical effects that may, to advantage, be used in practice.

How is treatment provided?

Treatment is provided point by point, always with firm contact between the tip and the skin/mucous membrane. The only exception is in treatment of open sores (e.g. herpes sores). The direct contact reduces energy loss by reflection. Press the tip firmly into the skin if the treatment is to penetrate deeply, e.g. down to deep lying muscles.

How is the energy dosed and how much treatment is to be provided?

Use the table as a guideline: a low dose stimulates healing, a high dose inhibits inflammation. For analgesic therapy, treatment is to be aimed at the so-called trigger points, i.e. the region is palpated and points that are clearly tender/sore on light/moderate pressure are treated. It is not necessary to treat all the points in an area to achieve a significant clinical effect.

Joints:

Provide treatment at the joint line at a moderate to high dose (6-8 J). Small joints are treated at two points per joint, and large joints are treated at 4-6 points per joint.

Sores:

Treat sores with 1 J for each cm of the sore. However, herpes sores are typically treated with 2 J for a typical small lip sore, but no more than this dose.

Teeth:

The most important point of treatment for a given tooth is at the apex of each tooth root. Aim at the apex or just below it. Hold the tip firmly against the mucous membrane without pressing on the mucous membrane. Remember to treat each tooth root and where the bone is thinnest. Dosage: Typically 4-8 J at the apex. In the event of exposed dentine, treatment may also be applied directly on the dentine (4-8 J). For illumination of tooth surface, a water-based gel is recommended as the preferred means of contact between tip and tooth.

Total dose:

Do not apply more than maximum approx. 100 J per treatment (corresponding to 4-5 minutes' effective treatment time) even if the patient has several problems (e.g. osteoarthritis in several joints, myalgia in large muscle groups, etc.), as the increased blood circulation may produce a reaction to the therapy in the form of agitation, a sense of heat, fatigue and possibly increased pain. Commence, for example, with a max. total dose of 50-75 J on initial treatment before increasing the dose to 100 J.

Clinical effect	Dose	Effect (latency period)	Effect (duration)
Analgesic	Low to moderate, 2-4 J	Immediate/minutes	hours/days
Muscle	Moderate, 4-6 J	Immediate/minutes	hours/days
Healing promoting	Low, 1-2 J	hours/days	days/weeks
Increased blood circulation	Low to moderate, 2-4 J	Immediate/minutes	hours/days
Anti-inflammatory	High, 8-16 J	hours/days	days/weeks