

Laser Stimulators



Characteristics of laser emission

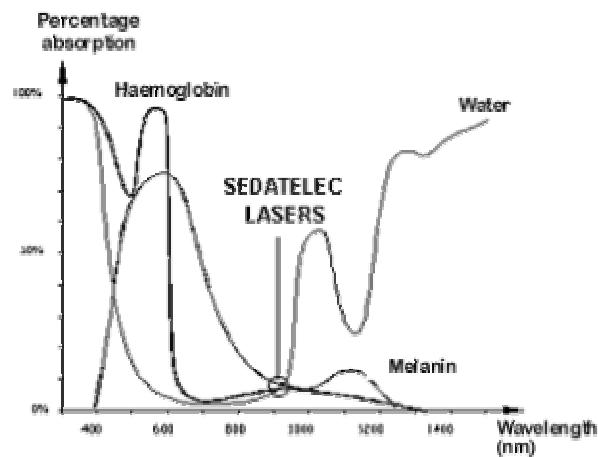
Various types of lasers have been developed for various applications. The lasers used in reflex therapy and local therapy differ from surgical lasers. They are called "**soft lasers**" or "**cold lasers**" as their mean power is of the order of several milliwatts (mW). These types of lasers deliver a low energy and do not induce any thermal effects.

Several important criteria must be taken into account when choosing a laser devices.

1/ Wavelength

The cell is the basic constituent of living tissue. It reacts to external stimuli by means of a large number of specific captors. Laser light is one of these stimuli. It acts on the cell's metabolism and environment. The biological mechanism of action has not been fully elucidated, but the electromagnetic field induced by coherent emission of the photons composing the laser beam appears to have an action on the membrane polarity of the cells. This facilitates intercellular exchanges.

SEDATELEC has chosen to use laser radiation sources emitting at a wavelength of about 900 nm. This wavelength is only slightly reflected by haemoglobin and poorly absorbed by water. The laser beam can therefore irradiate deep tissue layers.

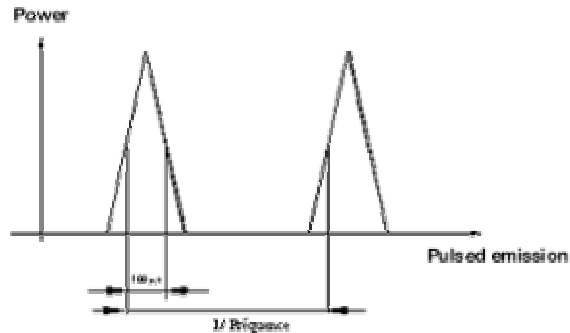


This wavelength ensures an effective action on cutaneous problems and on deeper muscular lesions. It also allows stimulation of trigger points and acupuncture points to a depth of 1 or 2 cm.

2/ Mode of emission and power

Although the wavelength is an important parameter to cross the skin wall and penetrate deep into the cells, the therapeutic effect of laser also varies according to the mode of emission and the power of irradiation.

The laser emission can be **pulsed or continuous**. **SEDATELEC** lasers emit radiation in the form of pulses.



The advantage of the pulsed mode is that it allows the laser beam to penetrate as **far as the deepest cells**, at the peak of the impulse (instantaneous power of about 10,000 mW). These cells therefore receive a very high power for a very short time, the time necessary to reach the cells to be treated.

In every case, the low pulse width avoids any thermdestructive effect. The mean power of emission always remains very low.

3/ Repetition frequency

In addition to providing light energy, the cell is also submitted to laser irradiation with repetition frequencies. The work conducted by Dr Paul NOGIER showed that some frequencies present undeniable effects both for diagnosis and treatment. These frequencies are called "**NOGIER frequencies**".

For this reason, **SEDATELEC** has decided to equip all of its lasers with NOGIER frequencies.

SEDATELEC's objective is therefore to design medical laser devices able to reach the cells that need to be treated. The wavelength chosen ensures good penetration of the tissues without losses due to absorption by the skin surface. The pulsed emission mode and the powers selected ensure that our lasers deliver maximum stimulation and total preservation of the tissues. Finally, NOGIER frequencies can be used to induce a specific effect in a given disease.

Modes of application

In view of their characteristics, **SEDATELEC** lasers can be used for two types of applications:

- Application in reflex therapy
- Application in local therapy

1/ Reflex therapy

Acupuncture therapy does not exclusively consist of application of acupuncture needles. Stimulation of a point can be performed less traumatically, without skin effraction, by using the properties of LASER irradiation.

Laser is one of the best alternatives to needle stimulation, as it is:

powerful: the laser beam is energetic, and the more energetic the beam, the more effective the stimulation of the point (especially as it can penetrate more deeply).

precise: the laser beam is directive. To avoid divergence of the beam, it is recommended to apply the probe directly onto the skin.

rapid: an acupuncture needle is generally left in place for 10 to 20 minutes. Laser stimulation of a point is generally much more rapid, depending on the power of the laser.

completely safe: the laser beam is sterile as it is immaterial. However, the patient must wear protective goggles with some models. Practitioners are also advised to wear goggles.

and painless.

2/ Local therapy

Laser light is known to act on protein synthesis and possesses an anti-inflammatory effect.

During his research, Dr Paul NOGIER tested various combinations of frequencies and found that some combinations had a potentiation effect. More particularly, he demonstrated 3 very useful actions in local treatment.

Analgesic action:

e.g.: dental abscess, localized pain, etc.

Tissue regeneration action:

e.g.: acceleration of healing, treatment of ulcers, etc.

Muscle relaxant action:

e.g.: muscle pain, trismus, tennis-elbow, etc.

The efficacy of the frequency programmes of the lasers manufactured by **SEDATELEC** for more than 15 years has now been fully recognized.