**Patient preparation**

Falling on the patient’s body, laser radiation can be reflected, diffused, absorbed or further transmitted. The therapeutic effect is triggered by absorbed light. To minimise radiation energy losses, the laser head should always be positioned right-angled to the treatment site. In addition, the skin must be exposed as much as possible. If you can part the animal’s fur or in the animal which does not have its coat, site shaving is not necessary. If it is not possible to meet these conditions, the treatment site should be shaved.

**Method selection depending on the applicator's distance from the patient's body**

- **contact method** - the laser probe is in a direct contact with the patient's body
- **contactless method** - the laser probe is several millimetres away from the patient's body. It is used when touching the treatment site is inadvisable (open wounds, bedsores, burns, frostbites, skin changes not covered by fur).

**Technique selection depending on how the laser probe is introduced:**

- **stable technique** - it is used for irradiating smaller body surfaces (such as trigger, motoric and acupuncture points)
- **labile technique** - it is used for irradiating larger body areas. A laser (point or cluster) probe is introduced manually by the therapist.
Therapeutic session
A series of therapeutic procedures includes from 7 to 20 therapeutic sessions. The procedures are performed every day or every other day. In acute and subacute conditions, the procedures are recommended every day; in chronic conditions, the procedure can be done three times a week.

Rules of laser therapy dosage
Wavelength
660 nm is a wave length which falls within the red band of electromagnetic radiation. To a larger extent, light of this length is absorbed into superficial tissues (it penetrates to a depth of about 20 mm).

Infrared length waves (808 nm) are used in infrared probes. Infrared laser is used to irradiate deeper tissues (a penetration depth of up to 70 mm).

Dosage
A dose is defined as energy density; it is the amount of energy irradiated per unit area (J/cm²).

Setting the radiation dose, the following rule should be applied: acute conditions require lower intensities and chronic conditions require higher intensities. Generally, the following division can be made:

- acute condition: 0,1 – 3 J/cm²
- subacute condition: 3 – 6 J/cm²
- chronic condition: 6 – 12 J/cm²

Frequency
Generally, it is assumed that lower frequencies (< 20 Hz) are to be used in acute conditions and higher frequencies (3,000–5000 Hz) in chronic conditions.

Power
The procedure power is closely correlated with the procedure time: the higher the power, the shorter the procedure.

Laser therapy precautions
Impact of laser radiation could be dangerous for eyes thus during its emission all the persons staying in the procedure room including veterinary patients should have eyes protected. Also the room where the laser procedure is performed should have special warning signs.

Fig. 3. Protective goggles used in laser therapy treatment.

Article is based on: "Laser therapy in veterinary medicine – methodological guide"

Full version of the methodological guide contains complete information about laser therapy in veterinary medicine, methodology, procedures, and basic properties of laser radiation. The guide includes a comprehensive description of the 10 most common disease entities including description of how to perform laser treatments in the course of treatment.