CoolGlide Laser Vascular Treatment Guidelines

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COOLGLIDE LASER VASCULAR TREATMENT GUIDELINES

The following guidelines are based on physician feedback from vascular treatments primarily on patients with Fitzpatrick skin types I–IV. Treatment of patients with Fitzpatrick skin types V and VI should be performed with caution, using lower fluences.

VESSEL TYPE*	SPOT SIZE	FLUENCE	PULSE DURATION	REPETITION RATE
Facial Telangiectasia	3 mm	110 – 160 J/cm²	10 – 30 ms	0.0 Hz
Fine Leg Telangiectasia < 0.5 mm diameter	3 mm 5 mm	130 – 200 J/cm² 110 – 170 J/cm²	10 – 25 ms	0.0 Hz
Spider Leg Veins 0.5 to 1.5 mm	3 mm 5 mm	110 – 160 J/cm² 110 – 150 J/cm²	20 – 40 ms	0.0 Hz
Deeper Reticular Leg Veins 1 to 3.5 mm	7 mm 10 mm	80 – 130 J/cm² 80 – 100 J/cm²	30 – 60 ms	0.0 Hz

* Parameters given are for areas of individual vessels. Additional vascular treatments are discussed in the Clinical Presentations CD included with the laser.

These parameters are provided as a guide only. Observe laser-tissue interaction and clinical endpoints to determine appropriate settings. The laser systems should only be operated by qualified practitioners who have received appropriate training and have thoroughly read the operator manual. Protective eyewear must be worn by all people in the treatment room.

Laser settings can be selected using the following criteria, with the vessel characteristics in mind:

1. Pulse duration selection is based on vessel size. In some instances, if the vessels are not responding as desired, a small decrease in pulse duration may improve the response.

- Shorter pulse durations are best for smaller diameter vessels.
- Longer pulse durations are best for larger diameter vessels.

2. Spot size selection is based on the vessel depth and size. Smaller spot sizes allow for the use of greater fluence with increased safety and patient comfort. Larger spot sizes provide greater penetration for deeper vessels. The preferred starting spot size is the smallest size listed.

- Smaller spot sizes are best for superficial and smaller vessels.
- Larger spot sizes are best for deeper and larger vessels.

3. Fluence selection is based on the vessel color, size and pressure, and the spot size setting. The starting fluence should be at the low end of the range, with adjustments made based on clinical endpoints and epidermal response.

- Lower fluences are required for dark (blue, purple) vessels, larger vessels, vessels under less pressure (such as on the cheeks), and with the use of larger spot sizes.
- Higher fluences may be required for pink vessels, smaller vessels, vessels under more pressure (such as on the legs), and with smaller spot sizes.

4. Repetition Rate should be set to 0.0 Hz (single shot mode) to allow for individual control of each pulse.

Cooling. The treatment of vascular lesions can result in significant heating of the lesion and the possibility of side effects such as blistering and crusting. These effects can be greatly minimized by the use of proper technique and cooling.

⚠ Consult the Operator Manual for additional information, including contraindications and possible adverse effects.

PRE-OPERATIVE CONSIDERATIONS:

- Conduct a patient consultation complete with medical history prior to treatment.
- Remove all make-up from treatment site.
- Clean and shave the treatment site prior to treatment.
- Pre-operative photographs should be taken prior to the initial treatment for future reference.
- Treatment of a test area should be performed and observed for at least 10 minutes prior to the treatment of a large area.
- The treatment of periorbital vessels should only be attempted by experienced vascular laser surgeons. Extreme caution should be used when treating near the eye, taking care to avoid ocular damage from the laser light. Patient eye protection appropriate for the given treatment should be used. The laser beam should always be pointed away from the eye and only applied to the skin outside of the orbital rim. Distance from the orbit can often be increased by pulling the skin away from the eye for treatment.
- The treatment of varicose veins that are bulging out above the normal surface level of the skin should only be performed by experienced vascular laser surgeons and with extreme care. The possibility of epidermal damage due to heating from the treated vessel is increased for these treatments. They should be performed with reduced fluences and special attention to epidermal cooling.
- When treating facial telangiectasia near the mouth, rolled-up gauze can be placed between the lips and teeth to protect the teeth from discomfort.
- Do not treat over areas with tattoos.
- Ice or chilled gel-packs may be applied both pre- and post-op to increase patient comfort and provide increased epidermal protection.

RECOMMENDED TECHNIQUE

- Apply a thin layer of clear gel (such as ultrasound gel) for easy gliding of the handpiece and increased epidermal protection.
- **Pre-cool.** Use the handpiece to pre-cool the area to be treated for at least 1 second. Larger vessels require longer cooling time. This step should be performed for all vessels with the possible exception of fine, pink vessels treated with a 3 mm spot size. In the instance of fine, pink vessels it is possible that pre-cooling could constrict the vessel and reduce the amount of target chromophore for the treatments. If that occurs, and treatments are being performed with a 3 mm spot size, it usually works well to post-cool only.
- **Apply laser pulse**. Glide the handpiece to locate the treatment area and activate laser pulse. For treating larger vessels, or when using larger spot sizes, a single pulse should be applied prior to post-cooling. For small red or pink vessels being treated with a small 3 mm spot size it is usually possible to safely apply 2 or 3 non-overlapping pulses prior to post-cooling. It is best to use the single pulse technique while gaining experience with the procedure.
- **Post-cool.** Glide the handpiece back to provide at least 1 second of post-cooling of the treated area as heat from the vessel is conducted up to the epidermis. Larger vessels require longer cooling time.
- Move the handpiece to the next location and repeat the above procedure.
- Always observe the epidermis during the treatment, watching for signs of damage (epidermal separation or gray coloration). If damage is seen, reduce the fluence.
- The desired clinical endpoint is either constriction or darkening of the vessel for the smaller vessels. If results are not seen at the lower settings, the fluence may be gradually increased (5 to 10 J/cm^2 at a time) while watching for the desired endpoint as well as for epidermal damage. Changes develop more slowly in the larger reticular veins and may not always be evident during an effective treatment session.
- Do not “double pulse” or retreat an area within a single visit.
- If you hear “popping” of the vessel, reduce the fluence or increase the pulse width before proceeding.
- In general, place treatment pulses adjacent to one another so that there is no overlap between pulses. On occasion, an area of the vessel that is greater than the spot size will show impact from the laser (constriction or darkening of the vessel). In that case, move beyond the affected area before applying the next pulse.

POST-OPERATIVE CARE:

- Ice, chilled gel-packs or chilled hydro-gel pads may be applied to increase patient comfort and provide increased epidermal protection.
- The veins may have an urticarial reaction after treatment. This is common and will diminish more quickly with the application of a mild-potency topical corticosteroid.
- Portions of larger vessels will sometimes darken and become stiff and painful for an extended period after a treatment. The dark coagulum can be removed at 1 to 2 weeks following the treatment by nicking the vessel with a needle or blade and applying pressure to force out the coagulum.
- For larger leg veins, some physicians say the use of compression stockings (30-40 mm Hg Pressure) for up to five days after treatment may increase patient comfort and help reduce bruising.
- If crusting occurs, an antibiotic ointment or lubricating cream may be recommended.
- Post-inflammatory hyperpigmentation is a common response (especially with darker skin types) to vascular laser treatments and tends to resolve over time.
- The recommended time interval between treatments is 6 weeks or longer, depending on the rate of clearance following each treatment. Larger reticular vessels can take three months to resolve and should not be re-treated before then.