Vesna Tlaker, MD graduated from the University of Ljubljana's Faculty of Medicine in 2002. She built her clinical career at the largest Slovenian hospital, University Medical Center Ljubljana, where she completed her specialization in Dermatovenerology cum laude in 2010. Heading the Department of Phototherapy at the Dermatology Clinic Ljubljana for several years, light- and energy-based devices were at the center of her clinical work, which included skin tumors and psoriasis.

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Nd:YAG Treatment of Venous Lake

Dr. Vesna Tlaker

Parameters:

Laser source:	Nd:YAG, 1064 nm
Pulse duration:	30 ms
Fluence:	110 J/cm^2
Frequency:	single shot
Handpiece:	R33
Spotsize:	4 mm

Treatment procedure:

The case shown is a woman in her 30s with a venous lake on her lower lip (Fig. 1). The lesion was relatively small and shallow, with a diameter of 4 mm. After wiping the surface clean to remove any remains of lipgloss, the treatment area was precooled with an ice cube for 5 seconds. A single laser pulse was delivered and the ice cube applied immediately for 5-10 seconds to alleviate the pain and prevent excessive thermal damage. The first laser pulse resulted in moderate shrinkage and greying/dulling of the lesion, which is considered the appropriate reaction (Fig. 2). The patient was discharged with instructions to apply a panthenol-containing ointment (eg. Bepanthen ung.) or petrolatum several times per day until healing. The healing process was uneventful, taking less than a week, and did not require additional office visits. The patient was asked to provide follow-up photos by email after three days (Fig. 3) and fifteen days (Fig. 4).

Practical tips for the procedure:

- Compared to teleangiectases, which are the most frequent vascular lesions to be treated on the face, venous lakes are much bigger targets. The bigger the target, the longer the pulse and the lower the fluence should be used to avoid overtreatment and scarring.
- Spotsize should be matched to the diameter of the lesion. Usually, the 4 or 6 mm spotsize can be used for venous lakes.
- Generally, smaller venous lakes can be safely treated with the above parameters, and the larger ones with 6 mm spot, 90-100 J/cm2, 40-50 ms.
- Before treatment, the depth of the lesion should be assessed. If the lesion is very thick and protruding, it should be compressed with a glass slide during treatment to press some of the blood out (the laser should be fired through the glass slide). With this simple measure, overtreatment and scarring can be prevented.
- Treatment will be successful if the endpoint is reached, i.e. moderate shrinkage and color change of the lesion, as evident in Fig. 1 and Fig. 2. This effect is seen immediately. If the endpoint is not reached, first a second pulse should be applied. If there is still no response, the fluence should be increased by 10 J/cm2 or the pulse length decreased by 10 ms, but never both in one step.
- If necessary, a follow-up treatment should be done in 4-6 weeks.
- In the treatment of venous lakes, contact cooling with an ice cube is more effective than cold air, and also more comfortable for the patients.
- Usually only one treatment session is required, with only one or two pulses delivered.

Fig. 1: Before treatment

Fig. 2: Immediately after treatment

Fig. 3: 3 days after treatment

Fig. 4: 15 days after treatment