



## Treatment of Scars Combining Er:YAG and Nd:YAG using the SP Dynamis Laser

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### Introduction:

Scars are caused by an alteration of the normal configuration of the skin, secondary to different processes such as traumatic injuries, surgical wounds and burns. Available treatments to date show limited effectiveness regardless of the modality used. We present a highly effective treatment modality using a combination of Er:YAG and Nd:YAG lasers available with the SP Dynamis laser system. No skin preparation is required. The procedure was performed with infiltrative lidocaine anesthesia and consisted of 4 steps. The use of antibiotic prophylaxis and antivirals is not necessary.

Laser	SP Dynamis - Er:YAG (2940 nm) and Nd:YAG (1064 nm)			
	Step 1	Step 2	Step 3	Step 4
Laser source	Nd:YAG	Nd:YAG	Er:YAG	Er:YAG
Pulse duration	0.6 ms	1.6 ms	/	/
Pulse mode	FRAC3	FRAC3	MSP	XLP
Fluence	60-80 J/cm <sup>2</sup>	10-15 J/cm <sup>2</sup>	4 J/cm <sup>2</sup>	44 J/cm <sup>2</sup>
Frequency	1 Hz	6 Hz	3-4 Hz	5 Hz
Handpiece	R33-T	R33-T	R11	FS01
Spot size	4 mm	4 mm	3 mm	/
Passes	2	3	2	5
Tx interval	1-4 sessions every 4 weeks			
Cooling	Yes			



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## CLINICAL CASE:

The first step uses short FRAC3 Nd:YAG pulses (0.6 ms) with an R33-T handpiece and a 4 mm spot size to achieve a modulation in inflammation and treat the scar's vascular component. The applied fluence depends on the patient's phototype – 80 J/cm<sup>2</sup> for phototypes II & III, 70 J/cm<sup>2</sup> for phototype IV, and 60 J/cm<sup>2</sup> for phototype V. Two passes are applied on the affected area with a homogeneous, non-stacking technique following the orientation of the scar.

The second step uses short FRAC3 Nd:YAG pulses (1.6 ms) with an R33-T handpiece and a 4 mm spot size to achieve skin tightening, inducing new collagen and triggering heat shock proteins for specific chaperones. The applied fluence is 10-15 J/cm<sup>2</sup>. Multiple passes are applied over the affected area and the immediately adjacent skin using a homogeneous application in non-stacking modality, with either a horizontal, vertical or crisscross pattern, always moving the handpiece until 42°C is achieved, repeating the process 3 times.

In the third step, a single pass over every hypertrophic scar is applied until mild pinpoint bleeding is achieved in order to polish the shoulders of the scars and provide a homogeneous appearance of the scarred area.

The last step uses fractional handpiece. Five passes over the scar area were applied to achieve a restructuring of the extracellular matrix of the scar and a rearrangement of the collagen fibers, with perpendicular and diagonal emission using no overlapping.

After the procedure, erythema, edema, and pain should be expected for at least 7 days. Epithelialization cream and cooling should be started immediately after the treatment, three times per day for 7 days. Photoprotection should be restarted the day after the procedure. Sessions vary depending on the type and size of the scar, generally ranging from 1 to 4 sessions spaced every 4 weeks, achieving improved results with the addition of incremental treatment sessions. The end result pictures that follow show multiple cases.



Case 2: Before



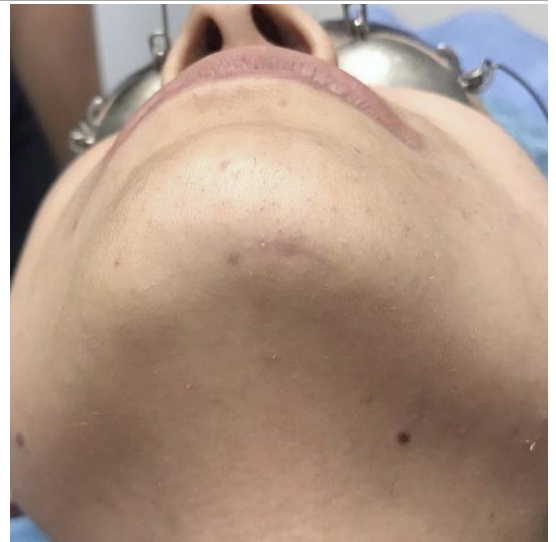
After last session



Case 3: Before



After last session



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