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## Q-Switched Laser for Treatment of Freckles

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### Parameters:

Laser system:	StarWalker MaQX			
Laser source:	Nd:YAG, 1064 nm			
	1st step	2nd step	3rd step	4th step
Pulse duration:	FRAC3, 0.6 ms	FRAC3, 0.6 ms	MaQX-1	MaQX-1
Handpiece:	R28	R28	R28	R28
Fluence:	10 J/cm <sup>2</sup>	30 J/cm <sup>2</sup>	1.6 J/cm <sup>2</sup>	5 J/cm <sup>2</sup>
Spot size:	7 mm	4 mm	8 mm	4 mm
Frequency:	2 Hz	2 Hz	6 Hz	1 Hz
Passes:	2	2	2	2 - 4 shots on each freckle

### Treatment procedure:

The 23 year old patient presented to the clinic with the chief complaint of freckles on her face for as long as she could remember. She had always tried to cover it up with make-up. She was of a mixed Thai and German origin and her skin type was assessed as Fitzpatrick III-IV. She has no known allergies or regular medications except for oral contraception. The patient was informed that the freckles could return, especially because she loves outdoor activities and is exposed to the sun frequently.

The therapy consisted of 4 steps as stated in the parameters table. A brushing technique was used for the first three steps. There was minimal-to-no overlapping and no clinically observed endpoint. Slight skin lightening could be seen during the third step, which was again performed with a brushing technique. In the fourth step only the freckles were lasered with 2 to 4 shots, i.e. spot hunting. The endpoint was slight darkening of the freckle. Two treatments with a 6-week interval produced satisfying results for the patient.

The patient was instructed to use daily skin cleansing night and day, multi-B complex serum and moisturizer. Sun protection with a zinc-based sunblock was also prescribed. Using Vitamin A, hydroquinone or any similar topical cream to slow down the production of skin pigments was also highly suggested, but the patient didn't comply. She was worried her skin would be more sensitive to sunlight as she is outdoors a lot.



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Baseline and 6 weeks after the second treatment