

Case Study for Treatment of Moderate to Severe Wrinkles with Non-Ablative and Ablative Fractional Handpieces in a Single Combined Procedure

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Profile

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Introduction:

Forty-eight year-old woman with Fitzpatrick Skin Type III presented with photodamage, severe elastosis and rhytides.

Discussion:

To minimize the side effects and associated downtime of aggressive fractional ablative-only treatment without compromising treatment results, the patient was first treated with the StarLux® 500 fractional non-ablative handpieces followed by treatment with the Lux2940™ fractional ablative handpiece.

Treatment with StarLux® 500 System:

Face cleansed with chlorhexidine gluconate (Chlorascrub™). Anesthetic cream (Pliaglis™) applied to entire face one hour prior to treatment. Anesthetic cream removed with 4 x 4 gauze pad. Entire face thoroughly cleansed with (Chlorascrub™). Zimmer® Chiller and saline-soaked compresses were applied during treatment to minimize subject discomfort.

Step 1: Non-ablative treatments were performed on periorbital and perioral wrinkle target regions with the Lux1540™ (10 mm tip), and to the rest of the face using the Lux1440™ (15 mm tip).

a. Lux1540™ Settings with the 10 mm tip:

Outside eye orbit treated using the Lux1540™ with 2 passes at 62 mJ/mb and 10 ms.
Mouth and cheeks treated using the Lux1540™ with 2 passes at 70 mJ/mb and 15 ms.
Each pass was done with 50% overlap in both directions (horizontally and vertically).

b. Lux1440™ Settings with the 15 mm tip:

Inner eye orbit treated using the Lux1440™ with 2 passes at 10 mJ/mb and 7 ms.
Mouth and cheeks treated using the Lux1440™ with 2 passes at 8 mJ/mb and 5 ms.
Forehead treated using the Lux1440™ with 1 pass at 8 mJ/mb and 5 ms.
Each pass was done with 50% overlap horizontally and vertically.

Note: The 15 mm tip with the Lux1540™ at 12 to 15 mJ/mb can be used alternatively to the Lux1440™ to provide similar results.

Step 2: Ablative treatments were performed on periorbital and perioral wrinkle target regions and the rest of the face using the Lux2940™ with the Groove™ Optic.

a. Lux2940™ Settings with the Groove™ Optic:

Inner eye orbit treated using the Lux2940™ with 4 passes at 5.5 mJ/mb and 0.25 ms (5.5-0-0).
Outside eye orbit and around the mouth treated using the Lux2940™ with 2 passes of double-stacked pulses at 5.5 mJ/mb and 0.25 ms (5.5-0-0). Forehead and cheeks treated using the Lux2940™ with 2 passes at 5.5 mJ/mb and 0.25 ms (5.5-0-0). Nose treated using the Lux2940™ with 4 passes at 5.5 mJ/mb and 0.25 ms (5.5-0-0). Except for the above noted double-stacking, each pass was done without overlap between pulses. The orientation of the grooves for the 2nd pass was rotated 90 degrees relative to the first, yielding a crosshatch  pattern. (Refer to StarLux® 500 Operator's Manual)

Post-treatment care was conducted as indicated in Appendix E of the StarLux® 500 Operators Manual — the latest version of which is available under **My Palomar - Product Support - Manuals on the Palomar Web Site** (<http://www.palomarmedical.com>).

Conclusion:

Treatment was successful and well tolerated by this patient, who had severe photodamage and aged skin. Typical side effects of trace to mild bleeding, oozing, edema and erythema resolved uneventfully. The patient stated she was able to return to work 4 days post-treatment which is remarkable given the aggressiveness of the treatment protocol. As a result of photocoagulation, textural changes and skin tightening were observed in the patient's cheeks. Her periorbital, perioral and cheek rhytides were significantly improved.

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Physician Quote: “There are a number of benefits to the combination non-ablative and ablative treatment procedure. Due to the inclusion of the non-ablative component, I can reduce the amount of ablative damage I deliver which preserves more of the patient’s top layer of skin and reduces the downtime and improves the patient’s post-treatment experience compared to fractional-ablative-only procedures. Another advantage of this novel technique is the ability of the practitioner to individually tailor the amount of coagulation and ablation to a patient’s specific needs. For instance, this patient’s deep periorbital wrinkles prior to treatment benefitted from the inclusion of double-stacked passes using the Groove optic with the Lux2940™ as well as two passes with the Lux1540™ using the 10 mm tip. Since this patient was treated as part of our range-finding study, we were still in the beginning stages of optimizing our treatment procedure. While most patients are adequately treated with the 15 mm tip (using either of the non-ablative handpieces), this patient’s elastosis and overall photodamage was so severe on her cheeks and chin, the treatment shown in Table 1 using the 10 mm tip on her entire face was appropriate.

This patient was very pleased with her result, as are the vast majority of patients I treat with this procedure. Some of the feedback I hear from my patients is that people tell them they look younger and that their skin has a healthy new glow.”

Table 1. Combination treatment parameters for moderate to severe wrinkles using the StarLux® 500 System.

Non-Ablative Treatment Settings					
Handpiece/Tip	Energy (mJ/mb)	Pulse Width (ms)	# of Passes	# of Stacked Pulses	% Overlap
1440 nm, 10 mm tip OR	70	7	2	None	50% overlap horizontally and 10% vertically
1540 nm, 10 mm tip	70	15	2-3	None	50% overlap horizontally and 50% vertically
Ablative Treatment Settings*					
Handpiece/Optic	Energy (mJ/mb)	Pulse Width (ms)	# of Passes	# of Stacked Pulses	% Overlap
2940 nm, Groove optic OR	5.5-0-0	0.25	2 (‡‡ pattern)	Double-stacked pulses over wrinkle areas with no stacking inside bony orbit and remaining facial areas	None
2940 nm, Blue optic	9-0-0	0.25	2-3	None	50% overlap horizontally and 50% vertically

*For deep upper lip wrinkles on lighter skin types, consider using the Blue optic at 9-3-7, 2 passes, 50% overlap in both directions.

Patient Quote: “My complexion looks better, the texture is smoother and the skin tone is more even. I also feel I have less overall wrinkles. Friends have commented that my skin looks brighter.”

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RESULTS

Pre-Treatment:



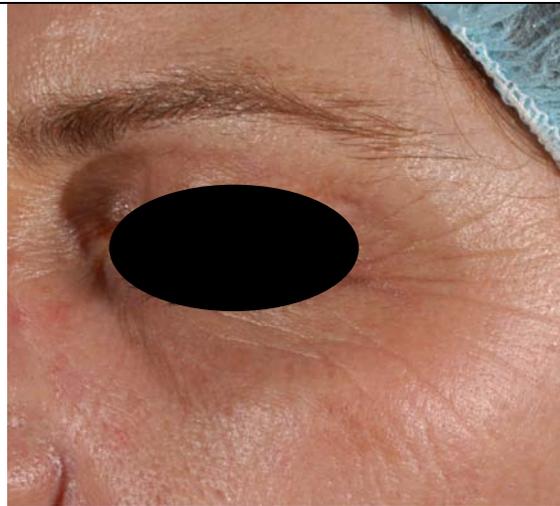
1 Month Post-Treatment:



Pre-Treatment:



1 Month Post-Treatment:



HEALING TIMECOURSE

Pre-Treatment:



Immediately Post-Treatment:



4 Days Post-Treatment:



1 Week Post-Treatment:



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2 Weeks Post-Treatment:



1 Month Post-Treatment:

