

ADVANTAGES OF A GROOVE PATTERN OF MICRO-FRACTIONAL ABLATION FOR FACIAL SKIN RESURFACING

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Background: A new strategy using a groove pattern of micro-fractional 2940 nm ablation was evaluated for effectiveness in facial skin rejuvenation. Treatment with parallel grooves in a dominant orientation generates a unidirectional injury pattern; rotation of groove orientation in consecutive passes generates either a pattern or a overlaid with an X pattern which may prove advantageous for soft tissue contraction and disruption of the structural memory of wrinkles.

Study: A new optic generating a groove pattern of 5 lines, 6 mm long, spaced 1.35 mm apart, was used with a 2940 nm micro-fractional device (Lux2940) to generate V-shaped ablation grooves of 100 to 300 mm width and from 150 to 500 mm depths. Seventeen subjects received single multipass facial treatments from 25 to 40% coverage with topical anesthesia. Safety, side effects and effectiveness were evaluated throughout follow-up period with blinded scoring at 3 months.

Results: Multipass treatments for dyschromia and for moderate to deep rhytides were found to be optimal for overall improvements including high patient satisfaction. Periorbital and perioral wrinkle grading of 50% or better in 76% and dyschromia reduction of over 25% following a single treatment were observed 100%. Compared to results following fractional vertical column damage, groove pattern treatments resulted in less downtime and side effects with better clinical outcomes for skin tightening, texture and dyschromia. The average Fitzpatrick wrinkle scoring (0–9) changed from 5.2 to 3.0 (difference 2.2 ± 1.8) and dyspigmentation score changed from 4.8 to 2.4 (difference 2.4 ± 0.7).

Conclusion: Groove patterns of micro-fractional ablation were found to enable systematic high coverage and consistent reductions in wrinkles with excellent overall enhancement in the appearance of skin following a single facial treatment. Changing the pattern of fractional injury may provide a better means to reshape the wrinkled structure of photodamaged skin.