Enhanced Uptake of 2% Salicylic Acid Following 1440-nm Non-ablative Fractional Diode Laser Treatment

**OBJECTIVE**

- To quantify uptake of topical 2% salicylic acid after pretreatment with a 1440-nm non-ablative fractional diode laser with varying treatment densities

**SYNOPSIS**

- The structure of the stratum corneum can limit uptake and effectiveness of topical medications; however, lasers can disrupt the stratum corneum and tight junctions in the epidermis, allowing for better topical penetration and absorption.
- Non-ablative fractional lasers have less effect on the stratum corneum, can minimize thermal side effects, and can shorten postprocedural downtime compared to ablative lasers.
- The relationship between topical uptake and laser device settings, such as wavelength, peak power, and spot density, must be quantified to optimize treatments.

**METHODS**

- Excised human abdominal skin tissue samples of 500-µm thickness were pretreated with a low-power 1440-nm fractional diode laser (Clear + Brilliant® laser system; Solta Medical, Bothell, WA) using either 80 or 320 microscopic treatment zones (MTZ/cm²), or received no laser pretreatment (Table 1).
- Following laser pretreatment, 2% salicylic acid was applied, and uptake was determined at various time points up to 24 hours after application (Figure 1).

**RESULTS**

- Cumulative permeation of 2% salicylic acid at 24 hours posttreatment was similar for both 1440-nm pretreatments (80 and 320 MTZ/cm²; both 0.01 mg/cm²) and untreated control (0.009 mg/cm²; Figure 2).

**CONCLUSIONS**

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**DISCLOSURES**

- JVW is an investigator for Solta Medical. PMF serves on the advisory board and speaker bureau for Solta Medical.
- AK and CP are employees of and may hold stock or stock options in Solta Medical. RGG is an investigator and advisory board member for Solta Medical.

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