

## **Alone and In Combination with Low Energy Ultrasound and Glycolic Acid Gel Peel”**

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Twelve photoaged female subjects were chosen for this randomized clinical trial with blinded analysis. Split face treatment was performed with both sides receiving identical treatment with a new positive pressure salt abrasion device (Salt-A-Peel™, Med-Aesthetic Solutions, Inc). One side also received treatment with 3 MHz ultrasound. The purpose of the ultrasound was to use low energy and parameters that are known to increase the intercellular spaces via cavitation, thus increasing temporarily passive skin permeability to topical agents. The ultrasound can also function actively to propel topical agents through the stratum corneum. The purpose of the cleanser and microdermabrasion were to remove skin debris and stratum corneum.

Immediately post microdermabrasion there was application of a 30% glycolic acid gel peel (MD Formulations) which was immediately treated with low energy ultrasound using pulsed delivery. A new barrier repair topical product was then applied followed by a zinc oxide based UVA/UVB sunscreen (MD Formulations). Six treatments were performed at weekly intervals and final data collection was one week after the final treatment.

Blinded analysis was performed with expert grader, profilometry, elasticity, TEWL, moisture, colorimeter, digital photography, and other data. Results were still being analyzed as this paper was being written, but preliminary evaluation indicates improvement of skin smoothness, roughness and fine lines and wrinkles with both treatments. Global improvement by digital profilometry appeared to be significantly superior with the combined treatment, but the skin smoothness measurements appeared better with the microdermabrasion alone (possibly due to the “skin polishing effects” of microdermabrasion). Very significant differences in skin elasticity were noted with the combined procedure relative to the microdermabrasion alone, although the device alone also improved elasticity. Previous studies have demonstrated increased permeability after partial removal of the stratum corneum by microdermabrasion alone. Significant transient increases in epidermal water loss, immediately post treatment with the ultrasound, support the concept of transient increased skin permeability after ultrasound, while the return to baseline at the end of

adverse effects were observed, with either treatment. Patient satisfaction rating was very high.