



# Advanced 3D Photographic Analysis of Radiofrequency Microneedling Treatments on the Face

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## BACKGROUND

- Radiofrequency (RF) and microneedling treatments are popular modalities for various indications. Recently devices have begun to use a combination of microneedles with RF energy to allow RF to penetrate the skin and increase treatment efficacy.
- This study utilizes an advanced photography analysis method by building 3D models of the face to assess the efficacy of RF microneedling treatments for a variety of facial indications, including facial rejuvenation and wrinkles.

## METHODS

- 32 subjects received treatment with the RF microneedling device for facial revitalization, for facial revitalization, jawline and abdominal laxity, signs of advanced aging and blemishes.
  - A subset of subjects had their faces scanned with a camera system which built a 3D model of the face to be analyzed.
- Subjects received up to 5 treatments and returned for 1 and 3 month follow up visits.
- Photographic review with the camera system and subject satisfaction were evaluated.

## RESULTS

- Due to the COVID-19 pandemic, only 12 subjects returned for their follow up visits, while the remaining had analysis done for their most recent time points. Nearly half of the subjects who returned for their final follow up were delayed up to 6 months.
- 100% of the subjects who returned for follow-up and completed a satisfaction survey responded that they were either extremely satisfied, satisfied, or slightly satisfied
- Photographic review showed up to 15.9% improvement in wrinkles (Figure 1 and 2) and 15.1% improvement in skin with significant improvement also seen in facial redness and general revitalization.

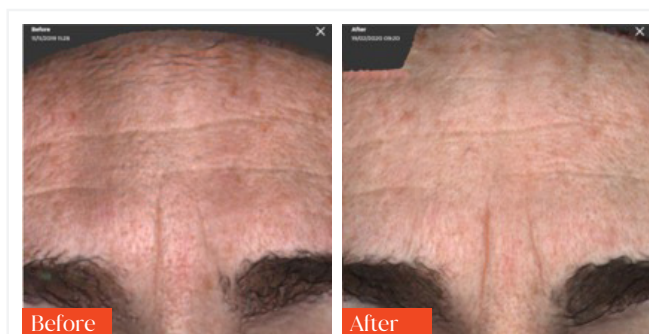


Figure 1. Reduction in total area and average depth of forehead wrinkles.

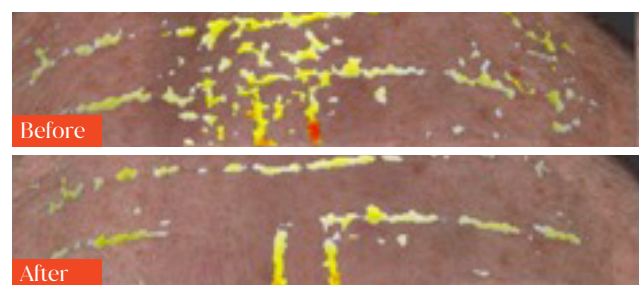


Figure 2. Overview of wrinkle analysis performed by 3D system.



Figure 3. Overview of Skin Roughness measurements performed on Female subject; Fitzpatrick Skin Type III.



Figure 4. Overview of Redness measurements performed on Female subject; Fitzpatrick Skin Type II.

## CONCLUSION

- Use of the radiofrequency microneedling device showed significant improvement in a variety of indications, including facial wrinkles, redness, and general revitalization. These findings were successfully quantified by analysis of 3D facial models.

