

Matrix RF Fractional Skin Resurfacing Technology Treats Darker Skin Types

By Bob Kronemyer, Associate Editor



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Practitioners are now able to provide safe and efficacious fractional skin resurfacing treatments to darker skinned patients with the Matrix RF from Syneron, Inc. (Irvine, Calif.). Matrix RF uses only radiofrequency technology to successfully treat Fitzpatrick skin types IV, V and VI.

"Before the availability of the Matrix RF, I needed to be extremely careful when performing any kind of ablative or even semi-ablative treatment in my darker skinned patient population because of the possible complications," said Tess Mauricio, M.D., a board certified dermatologist and founder of Scripps Ranch Dermatology and Cosmetic Center in San Diego, Calif. "The Matrix RF is a non-laser, non-light fractional device. Its energy source is radiofrequency, which effectively delivers a safe amount of heat energy to the treatment site."

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According to Dr. Mauricio, applying optical energy from laser or other light-based devices is often a daunting challenge when treating darker skin. "More optical energy is absorbed by the increased pigment in these darker skin types."

Furthermore, resurfacing lasers can be aggressive at the epidermal level. As epidermal disruption increases, so does the risk of adverse events. Matrix RF causes less epidermal disruption due to the more triangular shaped lesion it produces. At the skin's surface, the ablated zone is narrower, with areas of less affected tissue surrounding it. This affected area widens below the surface

so that the bulk heated area is larger than some other fractional technologies. This bulk heating leads to neocollagenesis at the dermis level (about 400 microns) where it is most desirable for effective skin tightening.

Dr. Mauricio is principal investigator of an ongoing study of the Matrix RF on darker skin – Fitzpatrick V and VI – which comprises Asian, Hispanic, East Indian and African-American patients. Patients are both female and male and range in age from late twenties to late fifties. They are being treated for wrinkles, pore size and pigmentation.

As of mid-February, most patients in this single-center study had completed their second treatment, which was spaced one month after their first session. "So far, the Matrix RF is demonstrating promising results for these darker skin types," Dr. Mauricio reported. "We have not encountered any complications. There have been no cases of post-inflammatory hyperpigmentation, which is probably the most common complication observed in this particular patient population when performing any type of laser skin resurfacing. This finding is really exciting."

Of the three treatment programs offered by the Matrix RF, a majority of study patients were treated either with Program A, which included mild ablation and skin resurfacing that resembled the impact achieved with fractional erbium glass devices, or Program B which was a moderate ablation and skin resurfacing resembling the improvement of fractional Er:YAG devices. "We can control the density of coverage through the tunable SelectPulse," Dr. Mauricio noted. "For fluence, the system offers the ability to deliver up to 25 Joules of energy."

One patient, with deep acne scars was treated with Program C, which



Before Tx



One month after Matrix RF Tx

Photos courtesy of Tess Mauricio, M.D.



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achieved intense ablation and skin resurfacing, resembling improvement typically observed with fractional CO₂ devices. "Program C is also great for treating around the eyes and mouth, where there is deeper wrinkling," Dr. Mauricio added. "The disposable treatment tip, which offers 125 pulses, is a simple, easy way to maintain sterile treatment conditions in these areas, which can be difficult with competitive technologies."

Unlike other fractional devices which require multiple passes, "the Matrix RF is a single pass technique," Dr. Mauricio continued. "A full-face can be completed in approximately 15 to 20 minutes."

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Study results concluded that there is little downtime with the Matrix RF. "Patients are slightly red and swollen immediately after the procedure, but that subsides within a few hours and by the following day patients can wear make-up," Dr. Mauricio said. "For patients who do not wear make-up, there is no need for them to hide out. I have extensive experience with another fractional system but the Matrix RF is unlike any fractional skin resurfacing device I have used in the past."

Study patients are very excited with results after only two treatment sessions Dr. Mauricio reported. "Most of them actually notice improvement, even one to two weeks after their first treatment. Co-workers and family members also mention how much better they look."

Dr. Mauricio recommends a series of five monthly sessions with the Matrix RF, with the possibility of additional sessions for deeper acne scars. "I don't believe you can overdo treatment. The more treatments, the more cumulative improvement," she said. "There is an increase in new collagen formation, skin tightening and overall rejuvenation."

According to John Shieh, M.D., who practices cosmetic medicine in the Los Angeles, Calif. area, "traditionally, we would not treat patients of color (skin types V and VI) with light-based modalities. Even type IV skin has been turned away because of inherent risks."

Dr. Shieh appreciates the ability to fine tune the depth of penetration and the amount of energy used with Matrix RF, "to minimize potential damage to the melanocytes, which are deeper in the dermis. Heat damage at that level is kept to a minimum, yet we can still achieve the desired resurfacing results at the surface. With Matrix RF, we are able to avoid targeting the melanin in the skin since we are no longer dependent on a light energy component to heat the skin."

With light energy the hottest point is at the surface of the skin and as energy penetrates deeper it immediately dissipates and diffuses. Conversely, the electrical energy of the Matrix RF "is more controllable. All the ions of electricity are conserved and controlled," Dr. Shieh explained. The 64 contact points that comprise an array or grid "do not pierce the skin, but merely touch it. Electrical energy is modulated through these 64 pins, based on an alternating positive and negative polarity found in each of them."

Individual settings of the Matrix RF allow for more coagulation or more ablation. Each of the contact points "cause tiny little points of trauma or ablation," Dr. Shieh continued, "and as you penetrate deeper into the tissue, the bulk heating effect expands."

Dr. Shieh has treated textural conditions, fine lines and wrinkles with the Matrix RF. "I've also been treating acne scars on ethnic skin." Specifically, a Hispanic woman in her mid-thirties with skin type IV and severe acne scarring was given three treatments, spaced four to six weeks apart. "We have observed a smoothing of her acne scarring, whereas previously, with a fractional CO₂ system, she did not achieve the desired results. The Matrix RF is definitely a novel approach to fractional ablative treatment."



Before Tx



One month after Matrix RF Tx

Photos courtesy of Tess Mauricio, M.D.