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## Versatile Energy-Based Solutions Address Skin of Color

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As energy-based aesthetic devices grow increasingly sophisticated and effective for all skin types, practitioners worldwide can choose from solutions that combine several treatment modalities on a single platform. This has become a selling point with physicians who treat a variety of skin types. However, with more choices of systems treating multiple indications, it may be difficult to decide which new technologies are right for a particular practice and its patients. Luckily, one brand in this crowded field has consistently provided faster, safer treatments and better clinical outcomes while continuing to evolve and improve their technology.

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# Darker Skin Types Now Have Expanded Range of Tx Options

By Jeffrey Frentzen, Executive Editor

During this time of rapid development and expansion of aesthetic technologies, finding the right system among the wide variety of options can be daunting for practitioners. Offering clinically validated, cutting edge, energy-based devices designed to treat numerous skin types and conditions, Lutronic Corporation (Goyang-si, Gyeonggi-do, Korea) continues to stand out in this crowded market, with specialists recognizing its devices as among the most reliable in the industry.

Two devices in particular have been engineered to address a variety of dermatologic and aesthetic applications, and were specifically developed to treat a wide-range of skin types including thin-skinned, tan and darker patients. The Dual Mode Q-switched Spectra™ Nd:YAG laser supports four wavelengths: 1064 nm and 532 nm, as well as 585 nm and 650 nm via two additional handpieces. Recently FDA cleared, the Infini™ platform offers Microneedle Fractional Radiofrequency (MFR) using adjustable depth microneedling to deliver controlled electro-thermal energy to the deep dermis.

These devices are clinically proven to employ multiple modalities that target common problems of darker skin types with consistent results. For instance, Spectra 1064 nm treatment regimens fall into one of four categories: Laser Toning, Soft Peel, Spectra Mode and combinations. An example of one such combination is Spectra Peel, which combines Spectra Mode, a quasi-long pulse delivered at 1064 nm that gently heats and mildly exfoliates the outermost layer of the skin, with Soft Peel. Laser Toning is a gentle and effective treatment utilized for certain types of easily irritated pigmented lesions, such as melasma and post-inflammatory hyperpigmentation (PIH), to minimize both adverse reactions and post treatment downtime.

Practitioners worldwide have come to rely on the Spectra, often referring to it as a workhorse system, as expressed by Melanie Palm, M.D., a dermatologist and cosmetic surgeon in Solana Beach, California, U.S. "I have been really happy with this device. I was looking at our schedule recently and seven of our patients were Spectra patients," she noted.

Jagdish Sakhya, M.D., a cosmetic dermatologist in Surat, Gujarat, India, was in need of a Q-switched Nd:YAG laser that, "fulfilled all criteria of an ideal pigmentary laser. It had to be sturdy but compact, versatile, maintenance free and an upgradable device that requires few or no consumables and provides consistent results. The Spectra is all that."

This sentiment was echoed by Omar A. Ibrahimi, M.D., Ph.D., a dermatologist in Stamford, Connecticut, U.S. "I like using the Spectra because of its ease of use. It has a range of spot sizes up to 8 mm and I am able to alter my fluences



Melanie Palm, M.D.  
Dermatologist and Cosmetic Surgeon  
Solana Beach, CA, USA



Jagdish Sakhya, M.D.  
Cosmetic Dermatologist  
Surat, Gujarat, India



Omar A. Ibrahimi, M.D., Ph.D.  
Dermatologist  
Stamford, CT, USA



Jean Luc Levy, M.D.  
Director  
Centre Laser Dermatologique  
Marseille, France



Matteo Tretti Clementoni, M.D.  
Plastic Surgeon  
Milan, Italy



Epidermal nevi before Tx



Epidermal nevi after three Spectra 532 nm treatments

Photos courtesy of B.S. Chandrashekhar, M.D., M.B.B.S., D.M.B.(Skin)



Before Tx



After Laser Toning Tx

Photos courtesy of Mi Ryung Roh, M.D., Ph.D.

on the fly, without needing to recalibrate the handpiece," he shared. "This enables me to quickly fine tune my treatments without sacrificing efficiency."

The unit's top hat beam profile, which provides an even distribution of energy with no hot spots, results in energy being absorbed uniformly into the melanin, Dr. Ibrahimi noted. "The entire treatment zone receives equal amounts of energy delivery, ensuring a consistent and safe application. Additionally, the rapid rep rate of the device allows me to quickly cover large areas, thereby translating to faster sessions," he added.

Spectra can be used on a wide-range of indications, from facial rejuvenation and tattoo removal to the treatment of nevi including congenital melanocytic nevi, acquired bilateral nevus of Ota-like macules, seborrheic keratosis, pigmented scars and enlarged pores. It is ideal for treating melasma, as well, Dr. Ibrahimi reported. "We are just starting to understand the benefits of laser treatment for this very difficult to treat and distressing condition," he shared. "There is a wealth of information showing that repeated low fluence treatments with Spectra enables a dermatologist to control melasma in many patients."

By using Spectra to treat melasma, Dr. Palm has developed a niche for herself. "I am treating a lot of melasma, especially in darker-skinned patients. Being able to use the lower fluence settings slowly over time and with more frequent treatments has given me some spectacular results."

With Spectra, Dr. Palm has obtained improvements in darker-skinned patients that had been previously treated with other approaches, including intense pulsed light (IPL) devices. "The IPL probably produced too much heat and as a result they experienced more permanent post-inflammatory changes in their pigment," she pointed out. "I have also seen relatively nominal peels cause redness, inflammation and subsequent pigment production afterward. I use the Spectra's frequency-doubled 532 nm to peel off some of the lentigines, but also to target the vascular component. I explain to my patient that they will see me more frequently for treatments, but little by little, we are gently removing a bit of the pigment and allowing the body to do some of the work. I feel this is a more reasonable approach to melasma. Additionally, I may combine Spectra with my IPL to treat the rosacea flush. I also use the quasi-long pulsed 1064 nm wavelength to minimize the appearance of pore size and for textural changes."

Similarly, Dr. Sakhya is also using Spectra to treat nevus of Ota, freckles, lentigines, active acne and acne scars (erythematous), open pores and to fix drug eruption pigmentation. "In treating widespread vitiligo, I use it to remove remnant pigmented macules. Also, I treat café-au-lait spots, perioral and periorbital pigmentation, melanocytic nevi, macular amyloidosis and much more," he said.

In Dr. Ibrahimi's experience, if an epidermal nevus is pigmented, then the Spectra can help improve its appearance. "I have had great success in treating various types of pigmented lesions, even birthmarks. I have treated these patients despite their darker Fitzpatrick skin types, and I've been able to treat patients of African heritage safely and effectively."

Dr. Ibrahimi feels the Spectra is also a wonderful, minimal downtime laser for non-ablative rejuvenation. "A patient can walk in at lunch time, have a rejuvenation procedure in my office, and return to work in the afternoon," he shared. "In addition, the Spectra is my go-to laser for tattoo removal. Its four wavelength platform allows me to treat the full spectrum of tattoo colors. In my opinion, it has one of the shortest pulse widths among commercially available Q-switched lasers, thus leading to greater efficacy and faster clearance. My tattoo removal patients have been very pleased with the results, particularly the ones I began treating with my previous Q-switched device, but then switched to the Spectra."

When it comes to tattoo removal, "I like that I can tell my patients with good confidence that I can remove even some of the most difficult colors," said Dr. Palm. "The 585 nm and 650 nm attachments enable this."

While Dr. Sakhya hears the most gratifying results in patients treated for nevus of Ota, lentigines and tattoo removal, other Spectra treatments get high patient approval as well. "All of my patients love the Laser Toning very much," he reported. "They return on a regular basis."

Notably, the Spectra is not Lutronic's only multi-modality, energy-based system that treats darker skin types. Patient and physician needs are also well met by the company's Infini device, a three-dimensional, bi-polar RF-based fractional system that treats the face, neck and body to improve scars and wrinkles, providing long-term skin tightening with minimal downtime. The Infini is available in Europe, the Middle East, Asia, South America and more recently, the U.S. While it is complementary to Spectra's skin and pigment-based treatments, it offers its own unique benefits as well.

Infini's MFR handpiece delivers controlled electrothermal energy to the deep dermis with adjustable depth microneedling, using an array of gold-coated, 200 µm insulated microneedles to induce dermal neocollagenesis and elastogenesis.

High energy is delivered precisely to selected depths, which maximizes volumization and provides skin tightening and rejuvenation without potential thermal damage to the epidermis. This also effectively lowers the risk of PIH in darker skin types. As Dr. Palm expressed, "unlike previous RF bi-polar devices, with Infini you don't have the problem of having to work through the top layer of the epidermis to reach the dermis. On the handpiece you can dial in the depth of the needle, starting with your deepest setting on the first pass, and decreasing energy during subsequent passes as you also reduce the depth. This creates new collagen production in multiple layers. I use the device mainly for 3D volumization and collagen production."

Jean Luc Levy, M.D., director of the Centre Laser Dermatologique in Marseille, France, uses the Infini to treat numerous indications, "mainly the modified microrelief of the skin," he said, "such as imperfections; seborrheic aspect due to



Melasma and PIH before Tx



Melasma and PIH after 20 sessions with Spectra

Photos courtesy of Melanie Palm, M.D.



Tattoo before Tx



Tattoo after eight Spectra treatments

Photos courtesy of Medermis Clinic



Before Tx



After Infini MFR Tx

Photos courtesy of Franco Lauro, M.D.



Acne scars before Tx



Acne scars one month after first  
Infini MFR Tx\*

Photos courtesy of S. S. Savant, M.D.

photodamaged skin; skin microrelief as in fines lines with loss of tension in the upper part of the dermis; and the modified scarring superficial aspect of the skin, such as distensible depressed types of scars including acne, but also surgical and trauma scars\*."

For Matteo Tretti Clementoni, M.D., a plastic surgeon in Milan, Italy, the Infini has allowed him to successfully treat the lower third of the face and neck non-surgically. "These areas have always been difficult to treat," he stated. "I can now offer an effective alternative to surgery that delivers real tightening to this anatomical region. I also use the Infini to treat severe acne scars of the face, frequently in combination with a fractional CO<sub>2</sub> treatment, as well as décolleté rejuvenation\*."

Using the Infini, it is possible to perform full-face and neck treatment in less than 15 minutes, Dr. Clementoni advised. "By varying energy, pulse duration, depth of needle penetration and the number of passes, it is possible to customize the treatment for every skin type and patient. Finally, we have a device and treatment that really allows us to obtain good results on the lower third of the face and the neck\*."

In Dr. Clementoni's experience, performing multi-pass treatments on patients can achieve a higher production of new collagen. "For instance, a 67-year-old female patient asked me to rejuvenate her neck. She didn't want to hear the term surgery despite the fact she was a good candidate for an aggressive face and neck lift. She had very thin skin without any elastic properties. We did four Infini treatments on her neck, increasing the penetration depth of the needles in subsequent sessions, as well as increasing the energy and pulse duration. She obtained progressively improved collagen production with really impressive skin tightening\*."

The Infini can be used on patients with thin, sensitive, dark or even tanned skin, as well as those who are prone to PIH. Dr. Clementoni explained that the operator can vary the amount of energy and pulse duration at any time. "Energy is emitted only at the tip of the needles, which ensures the tissue damage is restricted to the desired depth and bypasses the surface altogether," he noted.

"Rather than emitting energy that affects the skin from the outside inwards, the tissue damage, contraction of the collagen fibers and production of new collagen begins at the chosen depth of the dermis," Dr. Clementoni continued. "The epidermal layer will present with very little inflammation and the risk of complications is much lower compared to other non-RF procedures. The operator maintains the freedom to choose where, the amount of, and how to create tissue damage. This allows physicians to customize the treatment and obtain a definitive tightening of tissues."

When treating areas such as the forehead and malar regions, which have thin skin with underlying bone, the proper depth, energy and pulse duration must be carefully calculated, along with less depth of microneedling, Dr. Levy specified. "Although malar regions can be the worst with respect to PIH, there were no side effects in our pilot study with the Infini," he reported.

\*Infini is FDA cleared for wrinkle reduction only. Other indications vary by region.

While thinner skin requires less penetration, "the darker the skin, the higher the penetration needed in order to work as far away as possible from the superficial melanocytes," Dr. Clementoni explained. "The amount of energy emitted during each shot determines the tissue damage, while the pulse duration of the same shot determines the dimension of the tissue damage. On thin-skinned patients or on anatomical regions with thin skin, we have to reduce the energy and the pulse duration, but this doesn't mean we are producing less effect. The percentage of tissue damage always remains high."

Choosing the Infini over other RF-based systems goes beyond the high quality of its aesthetic results, said Dr. Levy. "First, there are the ergonomic aspects with its very easy-to-use handpiece. Then there is the power of the intratissular RF and the small, but real mechanical shock when the needles enter the tissue. The microneedles deliver the dose at the right depth using non-selective thermal heating, as with RF in general. The depth is adjustable from 0.5 mm to 3.5 mm."

Dr. Sakhya uses Infini in combination with the Spectra. "We are using Spectra with Infini for non-ablative tissue tightening," he stated. "As we are dealing with Fitzpatrick III and IV skin types, the traditional use of fractional CO<sub>2</sub> is associated with many complications. Infini is a big improvement. It is the only device that causes mechanical, as well as thermal stimulation of fibroblasts. Also, downtime with Infini is no more than 48 hours."

In addition to skin tightening, Dr. Sakhya emphasized other indications that can be treated using both platforms to enhance results. "We use the Infini to treat atrophic and hypertrophic acne scars, seborrhea, active acne, large pores, traumatic scars and photo-aged skin\*," he shared. "Conversely, we are treating pigmented scars, melanocytic nevi, nevus of Ota and other resistant conditions with the Q-switched Nd:YAG. The benefits are transepidermal extrusion of pigment, as well as enhancement of transepidermal absorption of diverse creams that create inflammation, leading to faster lymphatic clearance."

Patient satisfaction with Infini treatments has been high, according to Dr. Palm. "The Infini is a huge advance," she noted, "in that we can now offer some of these tanned and darker-skinned patients something that works well when they have traditionally been turned away by other treatment modalities, such as fractionated laser resurfacing or deep peels."

In Dr. Sakhya's opinion, the combined effectiveness, technology advances and ease of use offered by both the Spectra and Infini have been a win-win for the practitioner. "Safety and efficacy are the top decision making criteria for dermatologists, along with the all-important patient perspective," he stated. "This is what led me to use these devices."

Efficacy, safety, versatility and reliability, combined with a focus on hard to treat darker skin types, have made these two systems stand out from the competition. This dedication to science and technological improvements is just one reason physicians around the globe have chosen Lutronic devices. ■

\*Infini is FDA cleared for wrinkle reduction only. Other indications vary by region.



Skin laxity before Tx



Skin laxity after Infini Tx

Photos courtesy of Devrim Gursoy, M.D.



Wrinkles before Tx



Wrinkles after Infini Tx

Photos courtesy of Franco Lauro, M.D.