



Experts Confirm Lutronic as Emerging Leader in Global Medical Aesthetic Industry

By Kevin A. Wilson, Contributing Editor

With the introduction of new technology and recent key global clearances for their modalities, Lutronic Corporation (Ilsan, Korea and Fremont, Calif.) is aggressively positioning itself to make a global impact in aesthetic medicine. Physicians around the world are coming to realize what aesthetic physicians throughout Asia and the Pacific Rim already know, that Lutronic technology is safe, effective, reliable and scientifically supported. What's more, the technology is often useful for all skin types through careful application of protocols.



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"I see Lutronic's worldwide reputation growing. They offer reliable, safe and effective energy-based devices that have applications for all skin types and conditions that are important in every region."

Dermatologist Won-Serk Kim, M.D., Ph.D., assistant professor and chairman of the department of dermatology at Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine (Seoul, Korea), has performed clinical trials with the range of Lutronic technologies. "I see Lutronic's worldwide reputation growing. They offer reliable, safe and effective energy-based devices that have applications for all skin types and conditions that are important in every region."

Another strong believer in Lutronic is J. David Holcomb, M.D., a facial plastic surgeon in Sarasota, Fla., and past president of the *Florida Society of Facial Plastic and Reconstructive Surgery*. "With their recent round of FDA clearances, Lutronic will be a strong player here," he said. "They focus on solid-state devices that are reliable, and their international reputation for safety and efficacy is strong. Lutronic is forward-thinking, innovative and willing to constantly improve."

In Dr. Holcomb's opinion, one way Lutronic stands out among non-U.S. competitors is in the user interfaces. "I am impressed that a foreign company, especially an Asian company, is producing interface schemes that are so intuitive and easy to use for Westerners. That says a lot about Lutronic. Moreover, I have not had a single breakdown since I bought my devices."

Suzanne L. Kilmer, M.D., dermatologist and medical director of the Laser and Skin Surgery Center of Northern California (Sacramento, Calif.), and past president of the *American Society of Laser Medicine and Surgery*, uses several Lutronic devices in her practice. "These platforms are very robust and reliable. Lutronic seems to be making the transition into the U.S. very well and is obviously taking this market seriously, at least as far as my positive experience with them is concerned."

Michael Drosner, M.D., a dermatologist and assistant professor of dermatology and allergy at the Technical University Munich (Germany) has been very satisfied with Lutronic from the start, and has had a similar experience with the reliability of Lutronic devices. "Since my introduction to Lutronic at a congress, I have purchased four of their devices because I am so satisfied with the outcomes,

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safety, reliability and price point, as well as the quality of my relationship with the company."

Franco Lauro, M.D., a plastic surgeon in Bologna, Italy agreed. "In addition to having great devices, while working with Lutronic for the past five years I have found them to be a great partner to the physician and a constant presence when you need them. This is very important for the smooth operation of a medical aesthetic practice."

"Lutronic does not simply copy other technologies," Prof. Drosner elaborated, "they offer devices that are more advanced and easier to use. Lutronic's growing reputation for reliability is especially important in Europe because many Asian medical technologies do not have that reputation in general."

As an example, one of Lutronic's flagship platforms, the SPECTRA system, is a true workhorse and stands strong as one of the most versatile Q-switched laser devices on the market. Based on the 1064 nm Nd:YAG laser, SPECTRA also offers the 532 nm wavelength via frequency doubling, as well as optional 585 nm and 650 nm solid dye laser handpieces, which are pumped by the 532 nm laser. The transition between different modes and handpieces is quick and easy, according to Dr. Kilmer.

"Versatility makes this device stand out. We have the 1064 nm Nd:YAG with the quasi-long pulsed mode (300 μ s), the Q-switched mode (5 ns), and the variety of easy to use handpieces harnessing various wavelengths provide the complete spectrum of tools one might need for successful treatment of tattoos and pigmentation, with the adjustability to make full use of them," Dr. Kilmer explained. "The user interface is intuitive and facilitates adjustment of parameters during treatment. We can treat as aggressively or gently as is required for the situation, using wavelengths the aesthetic medical community is familiar with."

While Dr. Kilmer uses SPECTRA daily for the removal of tattoos and common pigmentary concerns, she finds the device gentle enough to treat even recalcitrant conditions such as melasma, for which Lutronic has recently introduced new and advanced protocols using SPECTRA. Melasma is difficult to treat for two reasons,



Tattoo before treatment



Tattoo after four SPECTRA treatments — two 1064 nm and two 532 nm

Photos courtesy of Kevin Duplechain, M.D.



Epidermal nevi before treatment



Epidermal nevi after three SPECTRA treatments

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



Melasma before treatment



Melasma after seven SPECTRA Q-switched 1064 nm treatments

Photos courtesy of IH Kim, M.D.



Before treatment



After INFINI treatment

Photos courtesy of Franco Lauro, M.D.

"INFINI has had a tremendously positive effect. It is so well accepted by patients that we've performed more than 500 treatments in only six months."

Dr. Kilmer advised. First, patients with this condition tend to be more susceptible to post-inflammatory hyperpigmentation (PIH). "It requires great care with repeated passes at low fluences (around 1 J/cm²) and rapid pulse duration because we want to target the melanosome with therapeutic energy delivery, but minimize the potential for PIH." The other issue is that melasma is hormonally driven. "How one tackles the problem from that end depends on the individual case. Since there are limits to what we can do with a laser, it's essential to have a flexible device that allows us to maximize what we can do on this end."

At the 2012 *International Master Course on Aging Skin* (IMCAS) Congress in Paris, France, Lutronic unveiled a new handpiece for the INFINI device (INFINI is pending FDA 510k clearance and is not yet for sale in the U.S.). INFINI is a novel, dual mode fractional bi-polar radiofrequency (RF) device featuring two handpieces: microneedle fractional radiofrequency (MFR), which delivers thermal energy to the dermis via an adjustable-depth microneedle array for coagulation and stimulation of neocollagenesis, in addition to neoelectinogenesis; and the new superficial fractional radiofrequency (SFR), which delivers energy superficially for an ablative effect without needle penetration. The result is a multiplane, three-dimensional tightening effect. Treatment is reported to promote long-term tightening and improve the appearance of scars and wrinkles. The device received KFDA clearance in April 2011, with a CE mark following in December.

According to B.S. Chandrashekar, M.D., M.B.B.S., D.H.B. (Skin), chief dermatologist at the CUTIS Academy of Cutaneous Sciences (Bangalore, India), "INFINI's ability to deliver RF energy safely and effectively to the dermis and epidermis sets it apart from other RF devices, including competing microneedle modalities. It is wonderful for atrophic or deep acne scars, facial tightening and even striae. The only drawback is that deeper treatment can be painful. Refinement of protocols to minimize pain during these treatments would be beneficial."

In Dr. Lauro's practice, "INFINI has had a tremendously positive effect. It is so well accepted by patients that we've performed more than 500 treatments in only six months."

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Prof. Kim loves INFINI because there is virtually no epidermal damage, "so we don't worry about PIH, despite the intense dermal heating," he said. "Insulated needles spare the epidermis during MFR for the safe, short-term high-intensity delivery of energy to the selected depth in the dermis. This is a key concern when treating Asian skin."

Wooseok Koh, M.D., a dermatologist and director of JMO Dermatology (Seoul, Korea) gave Lutronic high marks for their understanding of Asian skin. "The company funds rigorous investigation of their technologies and has considerably advanced the science of treating Asian skin," he said. Dr. Koh serves as a primary investigator for clinical trials with ADVANTAGE, Lutronic's first hair removal laser, which recently received a CE mark and was cleared by the FDA in early 2012. The device has been engineered to optimize outcomes and patient comfort via reduced treatment time and more effective energy delivery protocols.

While following Lutronic's evolving tradition of innovation and improvement, ADVANTAGE starts with the tried-and-true long pulse 805 nm diode laser, a technology that aesthetic practitioners are familiar with. "This is a proven and versatile wavelength for hair removal in all skin types," said Dr. Koh. "ADVANTAGE utilizes stacked arrays of high powered semiconductor diodes for optimal energy delivery characteristics. Power output peaks at 2800 Watts."

According to users, ADVANTAGE's most obvious feature is the variable spot, with handpieces for 10 mm x 10 mm (D1 handpiece) and 10 mm x 30 mm (D3). These larger spot sizes reduce treatment time. Powerful contact cooling with the Compression Chilled Tip improves patient comfort and allows users to employ higher fluences safely, Dr. Koh pointed out. "The ADVANTAGE system was developed to be fast, efficient and effective, with as little discomfort and as few treatments as possible. My staff and I are very pleased with outcomes, and the fact that treatment is customizable. The benefits with ADVANTAGE allow us to compete in the congested laser hair removal market." Dr. Koh also noted that there are no disposables and minimal consumables associated with the platform, which was designed to be expandable.

Pulse duration can be modified with ADVANTAGE, and the repetition rate is high. "This is important because Asians tend to have

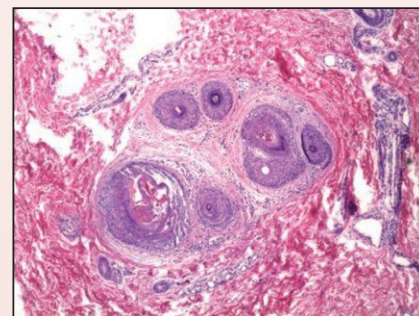


Axilla before treatment



Axilla one month after three ADVANTAGE treatments

Photos courtesy of Wooseok Koh, M.D.



Histological view of outer root sheath damage with mild perifollicular denaturation after ADVANTAGE treatment using the D3 handpiece at 26 J/cm² with 40 ms pulse duration.

Photo courtesy of Wooseok Koh, M.D.

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Before treatment



Two weeks after four HEALITE II treatments

Photos courtesy of Won-Serk Kim, M.D., Ph.D.

thicker hair than Caucasians. One way to optimize energy delivery is to precisely adjust pulse duration depending on hair thickness," Dr. Koh explained. "ADVANTAGE is currently the only system of its kind in which physician users are able to modify the pulse duration and fluence independently. Competing platforms offer fixed pulse durations or fixed combinations of pulse duration and fluence."

"I often choose the D3 handpiece at 24 to 27 J/cm² with 40 ms pulse duration, or at 28 to 30 J/cm² with 45 ms pulse duration," Dr. Koh continued. "With these combinations I see highly effective hair removal after only a few treatments. So far, on the leg and axilla we're seeing approximately 60% clearance of hair after three treatments in ongoing investigations. We'd like to clinically and histologically evaluate treatment protocols using 27 to 30 J/cm² with 40 to 50 ms pulse duration for thick, dense hair."

Another recent offering from Lutronic is the HEALITE II, a low level light therapy (LLLT) system that was developed for a number of indications based on the photobiomodulation of cellular function, offering a number of application-specific wavelengths. Each of the treatment heads contain 1800 new-generation quasi-monochromatic light-emitting diodes (LEDs), powerful beams that are further concentrated by proprietary optical lens array (OLAT) technology. This ensures an even higher photon intensity for LED-LLLT, eliciting clinically useful responses in the target tissue.

In the U.S., the 830 nm head of the HEALITE II has already received FDA 510(k) clearance for use in temporary relief of minor muscle and joint pain, arthritis and muscle spasm; relieving stiffness; promoting the relaxation of muscle tissue and temporarily increasing local blood circulation where applied. Each of these separate applications can be expanded into a variety of useful applications. In Prof. Kim's opinion, HEALITE II, "is a useful adjunct to almost any aesthetic treatment. It is so important now that I couldn't imagine practicing aesthetic medicine without it. It brings benefits to everything from injectables to laser and light-based treatments." Although such indications have not yet received FDA clearance in the U.S., Lutronic is currently working on obtaining these clearances through a variety of clinical evaluations.

"The eCO2 device has one of the best interactive touch screens of any device I've ever seen, incredibly intuitive and innovative. With eCO2 you can adjust spot size, energy, density of microwounds, easily move between static and dynamic modes, and more."

HEALITE II has received CE clearances in Europe for all phototherapeutic indications including wound healing, and national regulatory approvals in other geographical zones. Dr. Lauro relies on this system to enhance recovery, reporting that patient downtime can be reduced consistently by 30% to 40%. "It's unique and has virtually no competition," he stated. "I can use it anywhere but I see the best response on the face and neck."

Prof. Kim has found that the blood flow enhancement from the deep-penetrating 830 nm beam makes HEALITE II ideal for treating inflammatory disorders. He has conducted successful trials in both animal models of induced inflammation and human patients with a wide-range of inflammatory diseases and conditions. "The device's ergonomic design and intuitive interface make it very user-friendly," he noted. He especially likes that it can be used in patients of all ages and all skin types.

Farhan Taghizadeh, M.D., a facial plastic surgeon in Albuquerque, N.M., is a strong proponent of eCO2, the fractional CO₂ platform from Lutronic. "Lutronic has a history of remarkable manufacturing and design," he began, "and eCO2 is an excellent example of this. It's been around for several years but still stands apart from the competing devices we've tried. The device uses Controlled Chaos Technology with a unique and powerful scanner that creates fractional wounding in a pseudo-random pattern to reduce heat build-up and discomfort.

In Dr. Taghizadeh's opinion, eCO2's excellence starts with the interface. "This device has one of the best interactive touch screens of any device I've ever seen, incredibly intuitive and innovative. With eCO2 you can adjust spot size, energy, density of microwounds, easily move between static and dynamic modes, and more. There's nothing like it." Dynamic mode allows the user to mitigate discomfort by simply slowing the rate at which microwounds are delivered, while the handpiece tip is moved smoothly across the target tissue, without having to adjust the basic treatment parameters themselves. This also allows for a "free-hand" energy delivery, which many physicians feel provides better control.

Dr. Taghizadeh explained that the emergence of novel modalities has yet to threaten the supremacy of fractional CO₂, making



Keloid scars before treatment



Keloid scars after eCO2 treatment

Photos courtesy of Hernando Harker, M.D.



Before treatment



After eCO2 treatment

Photos courtesy of Farhan Taghizadeh, M.D.



Before treatment



Two years after ACCUSCULPT AccuLift procedure to mid-face, lower face and submentum

Photos courtesy of J. David Holcomb, M.D.

"The value I see in Lutronic extends beyond the mere relationship to their significant investment in clinical research. They eagerly gather user feedback and upgrade their devices and protocols in accordance with their findings. I find them to be unparalleled in this regard."

eCO₂ a device that one can build their laser practice around. "Fractional CO₂ sells two to one over other ancillary procedures we offer with face-lifts," he explained. "I feel fractional CO₂ remains the top platform for general tightening and improving tone and texture, especially in older patients. New technologies have not yet surpassed this modality, and eCO₂ is a best-in-class device. We get CO₂ laser power with natural-looking improvement. You can use it successfully with just about any subcutaneous facial modality, including RF or ultrasound devices."

An expert in Lutronic's ACCUSCULPT platform for treating unwanted facial fat and creating additional skin tightening, Dr. Holcomb has published several peer-reviewed articles on the technology. "The fat-specific 1444 nm laser is perfect for the face because it allows precise targeting of both small and large pockets of adiposity in the jowls, mid-face, nasolabial fold, or under the chin. It stands alone for those without too much skin laxity, but I also use it in conjunction with almost every face-lift I perform because it allows for precision contouring of the lower face and submentum that is superior to traditional techniques. I believe this will improve the duration of the result."

Dr. Holcomb uses eCO₂ in conjunction with ACCUSCULPT to provide further tightening and enhance the overall outcome. "This is easy for a skilled physician to do as long as they are careful about how much energy they deliver superficially after ACCUSCULPT treatment." Dr. Holcomb believes this device has promise on the body as well. "I'd like to see Lutronic develop protocols for the body or for cellulite," he added.

With a long standing relationship with Lutronic, Prof. Kim hopes to see their well-deserved reputation expand globally. "The value I see in them extends beyond the mere relationship to their significant investment in clinical research. They eagerly gather user feedback and upgrade their devices and protocols in accordance with their findings. I find them to be unparalleled in this regard; they never fail to stimulate and then satisfy my scientific curiosity." ■

Note: Lutronic products or the use of these products is covered by one or more U.S. and foreign patents or patent applications pending.