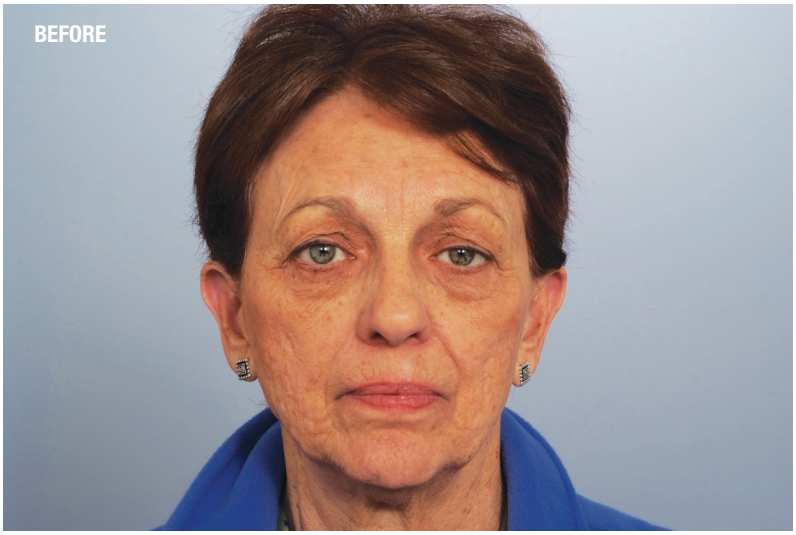
Meet the Ultimate Skin Resurfacing System

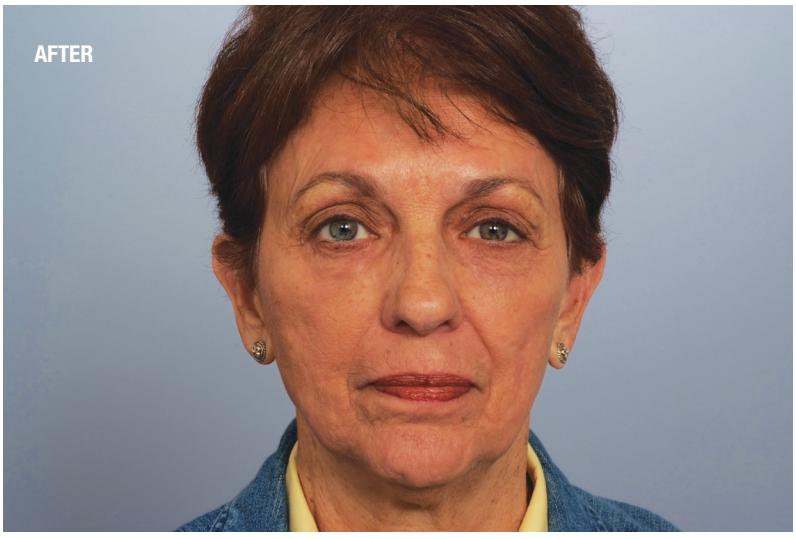
The Cortex combines CO_2 plus Erbium:YAG laser energies

BY WENDY LEWIS

CO_2 lasers have been widely considered the gold standard for skin resurfacing since the 1990s, and they remain so today. But due to the anesthesia, prolonged downtime, and potential risks of fully ablative resurfacing, many patients have opted for less invasive methods of skin renewal. Fractional technology has changed the way energy-based systems are used in clinical practice today, giving both patients and physicians more treatment options with minimal downtime.

The two workhorses of ablative technology are CO_2 and Erbium:YAG. The Sandstone™ Cortex™ from Ellman International is the only skin-resurfacing laser system to include both CO_2 and Erbium:YAG wavelengths in the same console. This innovative device offers fractional CO_2 with an adjustable density for up to 95% coverage plus full-coverage Erbium:YAG. The dual wavelengths allow practitioners to perform resurfacing procedures on a wide range of skin types and for multiple indications. The CO_2 laser penetrates deeply and provides heat to stimulate collagen, while the Erbium:YAG laser helps to soften the texture of the epidermis and remove pigmentation from the superficial layers of the skin. The Cortex is widely recognized as the only laser that offers such flexibility with numerous treatment parameter options.





CO_2 and Erbium:YAG, 2 months post treatment.

CO_2 FRACTIONAL CAPABILITIES

With the Cortex System, physicians can select multiple settings, including size, shape, density and duration, to tailor the treatment to each patient for optimal dermal penetration, healing and post-treatment results. Clinical indications that can be treated include rhytides, fine lines, acne scars, photo damage, textural irregularities and pigmented lesions.

SOLID-STATE ERBIUM FOR SUPERFICIAL RESURFACING

The Erbium:YAG modality allows for finer control of the energy and precise superficial tissue ablation. Clinical indications that can be addressed include photo damage, mild to moderate rhytides, uneven pigmentation and seborrheic keratosis. By combining a proprietary fluence level with an extra-long pulse width, the Erbium precisely ablates the epidermis without exposing the underlying dermis. The gentler nature of the Erbium wavelength allows the physician to treat highly sensitive areas on the neck, dorsal hands, perioral and periorbital areas without the need for anesthesia.

FACIAL RENEWAL PARADIGM

According to New York City facial plastic surgeon Sam Rizk, MD, FACS, "I prefer the Cortex laser due to its efficient combination of fractionated CO_2 and Erbium. In most patients, I use the fractionated CO_2 first with one or two passes, and then I do an Erbium pass as a buffer, which serves the dual purpose of removing the grid residue of the CO_2 and helps to deliver a smoother result. It is like going through a car wash where you have different brushes, with finer brushes used toward the end of the wash to add a finishing touch."

Speed and manageable downtime are among the key advantages of the Cortex. "The treatment takes 30 minutes or less. Patients look good within 7 to 10 days, and they can use makeup in a week," Rizk says. He also uses the Cortex laser at the same time as a face and neck lift to add the benefits of skin resurfacing to his surgical results. "I almost always use the Cortex with a facelift or under the eyes with a transconjunctival blepharoplasty. I also like it for dealing with sun damage, fine skin wrinkles and enlarged pores. I rarely do it as a stand-alone procedure except in the cases of severe acne scarring. In the acne patients I have used it on, there was a noticeable improvement with only a few passes," Rizk says.

Facial plastic surgeon Paul J. Carniol, MD, FACS, who practices in Summit, NJ, has extensive experience with fractional resurfacing using the Cortex System. "I find that the fractionated lasers use a grid pattern of laser spots, which I refer to as 'micro spots.' The micro spots produced by the Cortex System are smaller than some other systems, about 150 microns, providing some major advantages.

"When treating a patient, we use a topical anesthetic cream which contains 6% lidocaine and 6% tetracaine, and during the procedure, a chiller to blow cool air. We believe that it is most important to keep the patient comfortable," he says. "We apply the topical anesthesia for 20 to 30 minutes prior to the procedure. With this combination, patients don't need sedation or local anesthesia injections. We only treat the face and upper neck, and only apply the topical anesthetic to the limited areas we are treating."

All in all, "it becomes a very pleasant procedure. Patients are very comfortable, so it is not a traumatic experience," he says.

Another advantage of the smaller Cortex micro spots, according to Carniol, is the relatively quick and easy recovery for patients. "Within a week, they are pretty much healed. After the procedure they only have some pinkness, minimal swelling, without a lot of discomfort. Usually, Tylenol® is adequate. For these

PHOTOS COURTESY OF HARRISON PUTNAM, MD

CO_2 and Erbium:YAG, 2 months post treatment.

reasons, there is a high acceptance rate by patients."

Carniol has expanded his uses for the Cortex System. "Another advantage is that you can use just fractional CO_2 or just Erbium for dyschromia and lentigines," he says. "When I complete the fractional laser treatment, I often go back with the Erbium laser for the lentigines, rather than treat the whole face."

He adds: "One thing that is really important if you are going to treat any pigmented lesions with a laser is to check that they are really lentigines and not atypical melanocytic lesions. If you are not sure what it is, take a 2 mm punch biopsy before you treat. I do a biopsy for anything of question at the time of consultation prior to the procedure, so if I am treating a lentigine, I know what it is."

Like Rizk, Carniol does all Cortex treatments himself. He believes that a resurfacing laser should not be delegated to non-physicians. "I wear magnifiers when I do the treatment because I want to see how it is affecting the skin at a magnifying level to minimize potential complications."

UNPARALLELED VERSATILITY

According to oculoplastic surgeon Michael Ehrlich, MD, who practices in Danbury, Conn, "The Cortex features three different modalities: incisional CO_2, fractional CO_2, as well as Erbium:YAG resurfacing, which provide the opportunity to truly customize each treatment. I can address deeper rhytides with fractional CO_2 and also utilize the Erbium:YAG handpiece for more superficial rhytides with less overall thermal spread. This allows faster recovery for the patients, reduced chance of pigmentary complications and is a space-saver in my office.

"The incisional CO_2 features a superpulse mode that varies the duty-cycle while maintaining a continuous wave. While performing transconjunctival laser blepharoplasty, I can decrease the amount of energy that enters the orbit while maintaining a bloodless surgical field. Less energy means less postoperative edema and an easier recovery," he says.

Most of Ehrlich's patients seek periorbital rejuvenation, which makes the Cortex an ideal fit for his practice. "I have found that two passes with the fractionated CO_2 at 22 watts, pulse duration of 2 ms and density of 35%, followed by a single Erbium:YAG pass at 600 mJ, achieves excellent and consistent results. This treatment algorithm takes less than 10 minutes," he says.

Because of its versatility, the Cortex is emerging as the efficient laser of choice for both periorbital and full facial renewal. According to Ehrlich, "My preferred technique is to use a laser for both a surgical procedure and skin resurfacing. I can use the same laser for a 35 year old with early superficial rhytides and for a 65 year old who needs surgical intervention and multiple types of resurfacing treatments. I don't need 12 different lasers taking up space in the office."

A proponent of the Pellevé® Wrinkle Reduction System from Ellman, Heidi Worth, MD, who practices in Frisco, Colo, was looking to bring in a CO_2 system for patients with deeper wrinkles around their mouth and eyes. "I wanted to offer my patients a deeper treatment with the wound response that occurs within the skin with CO_2. The dual heads (both Erbium and CO_2) and the pricing of the Cortex System were very compelling. So far, I have found it intuitively easy to operate. Patients are very comfortable post procedure, and the recovery is pretty easy, which is a big plus," she says.

The deciding factor for Worth was the dual wavelengths. "For people who want that precise depth micro laser peel, it's great to have that option to offer them. The Erbium is so precise, and it is almost painless," she says. "We offer it as a stand-alone treatment and tell patients

that they will have 3 days of downtime, depending on the depth."

Ideally, she says, "We do three treatments spaced 1 month apart, but they will get some improvement with each treatment. We also use it for younger people with acne scars. For diffuse rolling acne scars, atrophic scars, this offers great improvement. I typically do two treatments with fractional CO_2. The ease of use with the Cortex is wonderful, and it has been very simple to learn," she says.

She also uses the Cortex System for 40 to 60 year old patients who have deeper wrinkles and want the best results they can get with the least amount of time out of their lives. According to Worth, "There are none of the CO_2 complications of prolonged downtime and the risks of hypo and hyperpigmentation line of demarcation are eliminated. For people with deeper wrinkles and severe acne scars, they may need more sessions. Or I will frequently do a deeper treatment and then, for some extra brightness with little downtime and pigment improvement, I do the Erbium micro laser peel."

The skin improvements may also continue for several months as the laser stimulates the patient's own collagen remodeling. As Carniol says, "Fractional lasers have been shown to stimulate collagen and there is a histochemical effect that improves the skin. In 3 to 6 months, they look better than they look at 3 weeks."

Ehrlich takes a slightly different approach. "In my hands, the Cortex System is most useful for 50 to 65 year old patients who have upper and lower dermatochalasis and have moderate dyschromia and rhytides but aren't ready for a facelift," he says. "In these patients I perform an upper laser blepharoplasty, lower laser transconjunctival blepharoplasty and full-face dual-mode CO_2 and Erbium:YAG resurfacing. With the Cortex, I can perform all of these procedures with a single unit."

POSTPROCEDURE PEARLS

As with any energy-based resurfacing treatment, it does not end when the patient leaves the office. Patient education on good postprocedure care and maintenance will go a long way to minimize complications and achieve the best possible long-term results.

"Diligent attention to aftercare is important. We put patients on a strict protocol of sun avoidance for 4 weeks with daily use of a broad-spectrum SPF 30," Rizk says. "It is beneficial to be on a good skin care regimen to enhance the results."

Worth uses a light petrolatum cream post procedure, such as EltaMD® Intense Moisturizer, and has patients use it for several days until most of their peeling is complete and the skin is not so tight. She also recommends Avene® Thermal Spring Water Spray to reduce the heat in the skin. Vinegar water soaks are another option. "We allow patients to go back to using their own moisturizer at about day 4 or 5 to encourage peeling," she says. "In daylight, they should be using a sunscreen with SPF 40-50, and we recommend Neova® Ti-Silc or EltaMD. They have to wait until the peeling is done, and then they can use mineral makeup over a heavier moisturizer."

Carniol's postprocedure program consists of applying Aquaphor® immediately and for 3 to 5 days for some areas of the face that need it. "If the area is healed, they don't need to use Aquaphor on that area. Wherever it is pink or there are microcrusts, they should use it."

Carniol also insists upon good sun protection. "They must use UVA protection to prevent dyschromia. I tell patients that before you get in your car in the morning, put on your SPF. Micronized zinc is preferable because if you put it on correctly, it goes on clear, and you can see through it," he says. "They can use foundation on top, and it will lie on the skin very evenly. The way they put it on is the way it stays."

Within 1 week, Carniol lets his patients use mineral makeup, but they are restricted from using normal foundation until they are completely healed. "For the average patient, if we do it on a Wednesday or Thursday, they can be back to work on Monday or Tuesday. If they have plans for the weekend, we do it on a Monday," he says.

According to Ehrlich, the novice physician should keep a close eye on the postoperative course. "I place all full-face resurfacing patients on 500 mg of Acyclovir twice a day, and ask them to call if they develop a cold sore," he says. "I prefer the protocol I learned in fellowship with Julie Woodward, MD." The patient cleans her face every 3 hours with a paper towel dipped into a mixture containing a teaspoon of household white vinegar in a cup of water. "This is followed by a thin application of Aquaphor generally until postop day 5, when I switch to a micronized zinc-based sunscreen," he says. "This regimen is inexpensive and easy for the patient to perform."

DOCTOR AND PATIENT SATISFACTION

The Cortex combines the two most popular wavelengths for skin resurfacing: CO_2 and Erbium:YAG. The CO_2 laser can be used for deep resurfacing while the Erbium:YAG laser can be used for superficial treatment, which offers greater versatility for the physician.

Having no consumable costs positions Cortex as a smart choice for practitioners. An added benefit that makes the Cortex System particularly attractive is that it is affordably priced, which allows physicians the ability to realize their return on investment in a short period of time.

Finally, nothing beats happy patients who see a noticeable improvement and sing your praises to their friends and family. "Patients are happy because their skin is smoother, it contracts so there is tightening, rhytides are diminished and dyschromia is lessened. They appreciate that they are going to look in the mirror and their skin looks better," Carniol says.

KEY BENEFITS OF THE CORTEX LASER

- Quick and efficient treatment (15 to 30 minutes)
- Dual platform of CO_2 and Erbium:YAG
- Large treatment area (18 x 18 cm)
- Small spot size (150 microns)
- Versatility
- Cost-effective equipment
- Minimal downtime
- High patient satisfaction
- Results continue to improve for 3 to 6 months

FOR MORE INFO, VISIT WWW.ELLMAN.COM

ellman® INTERNATIONAL, INC.