

# For Quick Results, Think Nonablative Resurfacing

*New devices help with streamlining in-office resurfacing procedures; sideline use of CO<sub>2</sub> lasers.*

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LOS ANGELES — Non- or minimally ablative facial resurfacing offers patients the results they desire without extended downtime, said several presenters at the annual fall meeting of the American Academy of Facial Plastic and Reconstructive Surgery.

"Most of my patients want nonsurgical treatments with no downtime," said Elizabeth Rostan, M.D., a cosmetic dermatologist in Charlotte, N.C. "In my community, I can't give away a CO<sub>2</sub> laser resurfacing."

Most of Dr. Rostan's fractional resurfacing patients are women who want treatment for photoaging, acne scars, or melasma. "Many of these patients are the ones for whom you might consider intense pulsed light. It would burn off the pigmentary lesions, but it would not give you the same improvement you see in fine wrinkling."



In terms of both efficacy and recovery, fractional resurfacing falls between nonablative and ablative techniques.

"The results we get are better than what we would see with a nonablative technique, but not quite as good as what we would see with an ablative resurfacing," she said. "However, with the fractional resurfacing, patients aren't experiencing the 2 weeks of downtime that they would with a CO<sub>2</sub> laser resurfacing, either."

The device directs its energy along the path of a computer-generated pattern, producing about 2,000 tiny holes (microthermal injury zones) per square centimeter. Because the areas of injury are so tiny, "you are treating about 20% of the skin surface, leaving 80% to renew and heal," Dr. Rostan said.

The laser intensity can be varied for different applications. The 8-J/cm<sup>2</sup> setting penetrates about 300 micrometers, and is good for pigmentary lesions. For acne scars or rhytids, the more intense energy of the 20-J/cm<sup>2</sup> setting is necessary; this level penetrates about 700 micrometers.

Patients require a topical anesthetic, which takes about 1 hour to achieve max-

imum effect. The actual resurfacing procedure lasts about 20 minutes, she said. However, three to five treatments, spaced about a week apart, are usually necessary to achieve the desired result.

Afterward, there is mild erythema and edema. "Patients are usually pink for 2 days, but it can sometimes last as long as 4 days," Dr. Rostan said. "But they can easily cover it with makeup and be back to work the day after the procedure."

Fractional resurfacing is also a good alternative for elderly patients or for those with health issues that might compromise wound healing in an ablative resurfacing, she said. "I've done a healthy 87-year-old, as well as a transplant patient, with no adverse effects."

But she said she would carefully consider patients with scleroderma or rheumatoid problems. "Anyone who you'd have concerns about for laser resurfacing, you would also have to think about for fractional resurfacing."

The in-office erbium laser provides a one-time minimally ablative resurfacing with results similar to a whole course of intense fractional resurfacing, said James Newman, M.D., a facial plastic surgeon from San Mateo, Calif.

"I began using office-based laser treatments in response to patients' wanting a treatment without much downtime or prolonged healing, but who also didn't want to come into the office four or five times to treat a brown spot," he said.

The small erbium lasers are also relatively inexpensive (about \$30,000), which allows the physician to rapidly recoup the investment and offer patients a modestly priced treatment. "For the removal of brown spots from the face or hands, it would be about \$300, and for a perioral regional resurfacing, maybe \$1,000 or less," he said.

The small, portable lasers have lower fluences (about 5-7 J/cm<sup>2</sup>) and smaller spot sizes (about 6 mm) than do their larger counterparts.

"They also have a pulse duration of about 300 milliseconds, and because they are lower powered, they can't go as fast.

**Patients aren't having the 2 weeks of downtime that they would with a CO<sub>2</sub> laser resurfacing.**

DR. ROSTAN

The maximum repetition rate is about 2 Hz," Dr. Newman said.

This makes the in-office erbium laser good for localized or regional (perioral or periorbital) resurfacing, but not appropriate for a full-face procedure, he said.

The main indications for this device are solar lentigines, early elastosis of periorbital skin, sebaceous hyperplasia, scar modification, and epidermal keratosis, Dr. Newman said. Downtime is 4-7 days, "similar to what you would expect with intense fractional resurfacing or a medium-depth chemical peel."

"If they can come in and get it over with in one treatment, and then put up with a week at most of healing, patients will be very happy with this," he said.

The plasma resurfacer gives similar results, without the epidermal sloughing that the erbium laser generates, said Edgar Fincher, M.D., a dermatologic surgeon in Los Angeles.

These devices feature a nitrogen canister that pumps the gas into a handpiece, where a radiofrequency generator heats it and delivers it through a nozzle to the skin surface. They can deliver energy ranging from 1 to 4 J/cm<sup>2</sup> and can be used in single or multipass mode.

Like a CO<sub>2</sub> or erbium laser, the plasma resurfacer causes an immediate zone of thermal damage, with heat dissipation into the deeper tissues, stimulating fibroblast action.

The difference with the plasma resurfacer, Dr. Fincher said, is that the lower fluences preserve the epidermis until

reepithelialization is complete. "It does not vaporize the epidermis, which accelerates wound healing. About 4 days later, you have reepithelialization and necrotic keratinocytes moving up and beginning to slough." By day 10, histology shows a fully reformed stratified epidermis and increased number of active fibroblasts generating collagen, he said.

These devices have received Food and Drug Administration approval for use in single-pass, low-energy repeat treatments and single-pass, high-energy treatment of facial rhytids, and for the treatment of superficial skin lesions.

Dr. Fincher has used a plasma resurfacer for about 2 years, with no incidence of scarring or hypopigmentation. He has seen some transient hyperpigmentation, however, and two patients have had prolonged (4-6 weeks) erythema.

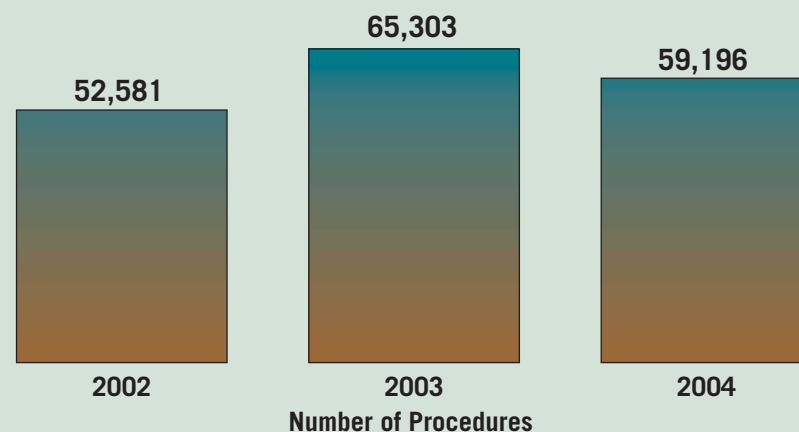
"We tell people that, pretty reliably, they will be back to normal in 10 days," he said.

A full-face treatment can be done in about 15 minutes. Patients who are being treated for dyschromia or photodamage will probably require two or three treatments about 1 month apart. These low-energy treatments are usually performed with a topical anesthetic, although nerve blocks may be necessary for some patients. The high-energy treatments necessary for treating acne scars usually require local anesthetic or IV sedation.

"We still have a CO<sub>2</sub> laser and use it occasionally, but this has replaced it as our workhorse resurfacing device," Dr. Fincher said. ■

## DATA WATCH

### Laser Skin Resurfacing Up by 13% Since 2002



Note: Data are estimated from physicians certified by boards recognized by the American Board of Medical Specialties.  
Source: American Society of Plastic Surgeons

KEVIN FOLEY, RESEARCH

## New Navel Remodeling Technique Effectively Contours 'Outies'

ATLANTA — A novel surgical technique for aesthetic remodeling of the navel is proving safe and effective, Betssy C. Hazoury, M.D., reported at the joint annual meeting of the American Society for Dermatologic Surgery and the American College of Mohs Micrographic Surgery and Cutaneous Oncology.

In 42 patients aged 15-40 years, the simple technique—which involves relocation of the umbilical fundus at the lower level of fascia—resulted in aesthetic improvement of congenital or acquired umbilical deformities in all pa-

tients, high overall patient satisfaction, and only one complication, said Dr. Hazoury, a dermatologic surgeon in private practice in Santo Domingo, Dominican Republic.

Of all the patients, 20% said they were satisfied with the outcome, and 80% said they were very satisfied. One patient experienced a deep broken suture and required an additional procedure, but no other complications, such as hematoma, infection, or dehiscence occurred, she said.

The ambulatory technique involves a semicircular incision of the skin of the navel, suture fixation to the deep

fascia, and posterior cerclage of the skin. It is associated with only minor discomfort and is appropriate for patients with deformities resulting from aging, pregnancy, or weight gain, as well as for those with congenital deformities, Dr. Hazoury noted. Most patients seeking this procedure have a protruding umbilicus and desire "omphaloplasty" for a deeper-looking belly button, she said, noting that umbilical hernia must be ruled out in patients with protrusions.

—Sharon Worcester