

Cooking Light

A kinder, gentler skin-resurfacing laser goes for a lower-level burn.

PHOTO BY RICHARD PIERCE

When Plato introduced the concept of suffering for beauty back in 360 BC, he couldn't have imagined how far future generations would take it: We're a culture, after all, that loves the StairMaster burn, chemical peels and (no lack of suffering here) cosmetic surgery. But the no-pain, no-gain principle of looking good finds perhaps its highest iteration with cosmetic lasers—intense light beams whose purpose is to harm skin in order to rejuvenate it, vaporizing aging tissue and prompting new cells to grow.

To date, lasers have come in two very different strengths, akin to double espresso and decaf. Powerful ablative devices burn off the entire top layer of the face, causing extensive wounds that help replace a leathery exterior with smoother skin. They can yield marked improvement, but all the trauma also can mean up to three months of rawness and healing. On the other end of the spectrum are the gentler nonablative lasers, intended to tighten collagen by baking lower levels of the dermis, causing less wounding, less downtime—and significantly less benefit.

But a new laser called Fraxel, a combination ablative-nonablative device just approved by the FDA and arriving in dermatologists' offices this fall, promises to reduce pain without sacrificing gain. Named Fraxel because it causes "fractional," or partial, skin wounding, it has a unique pattern of targeting both the skin's outer and inner layers. It works by burning thousands of microscopic cylinders through the skin's surface and into the underlying dermis; as healthy cells surrounding the tiny burn sites start repairing their damaged neighbors, the dead cells should surface and peel off, the theory goes, and be replaced by new skin.

"You leave most of the skin alone, so you heal much faster," explains dermatologist R. Rox Anderson, who developed the Fraxel prototype at the Wellman Center for Photomedicine at Boston's Massachusetts General Hospital. "We've seen wrinkle and pigment reduction, better skin tone, reduced oiliness, smaller pores and less sweating." The FDA has approved the laser's use for crow's-feet, pigmented spots and skin tightening.

First, doctors numb the face with topical anesthesia, then go over it with the laser, making 2,500 microscopic burns per square centimeter of skin on each pass, for a total of up to one million tiny facial burns per treatment (a series of three to six sessions is recommended). Patients usually look sunburned the next day, after which the skin bronzes and sloughs off.

"An ablative laser has been a home run on deep wrinkles and acne scars while the nonablative lasers have been like first base. I'm hoping Fraxel is like third base," says New York dermatologist Paul Jarrod Frank, who has ordered the \$120,000 machine and is planning to offer four weekly treatments for \$4,000.

Others are more skeptical. "Patients want gorgeous skin without healing," says Manhattan facial surgeon Steven J. Pearlman. Although he rarely uses his ablative laser, he still believes that "to get the best result, you have to cause the most wound and put in the most healing time."

—Dermatologist Roy Geronemus disagrees—his Laser & Skin Surgery Center of New York is home to one of America's first Fraxels. "I don't think the more harm, the larger the healing process and the better the result," he says. In fact, he's also using the new Gentle Waves machine, a light-emitting device that doesn't damage the skin—at all.

Gentle Waves is a semicircular bank of tiny lightbulbs that blinks at patients, who are wearing eye-guards, for 45 seconds; the treatment is about as threatening as wearing a sleeping mask while someone turns a bathroom light on and off. Some doctors say Gentle Waves helps increase collagen. But because it causes no harm to the skin, the industry has met it with more than a little mockery. Frank, for instance, likens it to "sitting in front of a Lite-Brite."

Geronemus, who says Gentle Waves improves skin texture and reduces the effects of sunburn, believes in the yellow light, as does New York dermatologist Bradford Katchen, who uses it at his SoHo office. "Over time, skin tone and texture improves, and redness decreases," Katchen says, "but often you have to have eight once-a-week treatments to notice changes."

No pain, *small* gain may be a counterintuitive idea for dermatology, but that doesn't mean it won't work. NASA already uses light-emitting diodes akin to Gentle Waves. Of course, the space agency wasn't exactly working on humans; it uses LEDs to grow vegetables in outer space. Evidently, the skin on a bell pepper and the skin on your face have something in common. And perhaps someday, one small step for NASA's produce might translate into one giant dermatological step for mankind.

—NATASHA SINGER

A thousand points of light: A newly FDA-approved cosmetic laser called Fraxel creates thousands of microscopic burns in the skin.

