

# Harper's asers: The Future of Cosmetic Surgery These high-tech light and energy devices can now do everything from smoothing wrinkles and

cellulite to reducing acne and sagging skin—all with little pain and outstanding results. Will scalpels soon become a thing of the past? Victoria Kirby investigates

Photographs by Donna Trope

adine keeps Father Time at bay thanks to a diligent decade-long antiaging routine that includes regular rounds of Botox and collagen

injections. But when the striking 56-yearold Manhattanite wanted to eradicate years of sun damage on her neck and chest, she turned to Fraxel, an FDAapproved resurfacing laser that uses heat to prompt collagen production and even out skin tone over the course of one to three months. "After four painless treatments, the lines between my breasts are gone, and my skin is smoother and more even-looking. It's a dramatic change."

Nadine isn't the only one enamored of the striking results that these zaps of light and energy can provide. Cosmetic lasers have evolved to become one of the hottest modalities in the quest for smooth, younger-looking skin. "They not only treat existing problems, but they can also help prevent the onset or advancement of certain conditions, such as wrinkles, sagging skin, and cellulite," says Tina Alster, M.D. (202-785-8855), director of the Washington Institute of Dermatologic Laser Surgery in Washington, D.C.

# HOW DO LASERS ACTUALLY WORK?

Though the word lasers commonly refers to all cosmetic machines that use light energy and/or radio-frequency energy, there are three main categories of devices: lasers, intense pulsed light (known as IPL), and radio frequency. Lasers generate a concentrated, single beam of light; IPL produces short, quick flashes of a number of light wavelengths; and radio frequency uses a form of electromagnetic energy. Some work by delivering heat to make microinjuries to tissue or to tighten it, prompting collagen and elastin production (which helps improve wrinkled, sagging, or uneven skin). Other lasers direct heat to break up pigment (which removes sunspots, broken blood vessels, or unwanted hair).

Ablative vs. nonablative: In general, each system is either ablative, which means it both removes the top layer of skin and stimulates cell activity in the dermis (the inner layer of skin), or nonablative, which targets just the dermis, leaving the skin's surface unharmed and intact. Ablative systems are used less frequently and are recommended for use only on the face. They usually require just one treatment and can provide as much as 90 percent improvement, but because they remove the top layer of skin, there is some pain and up to two weeks of recovery time. Typically only lasers can be ablative. The majority of today's machines are nonablative, which generally cause little or no pain and have little or no downtime or side effects, save a few days of mild redness and swelling. However, they often require multiple treatments, sometimes over the course of several months. IPL and radio-frequency devices are designed to be nonablative, along with a number of lasers.

# CHOOSING THE RIGHT TREATMENT

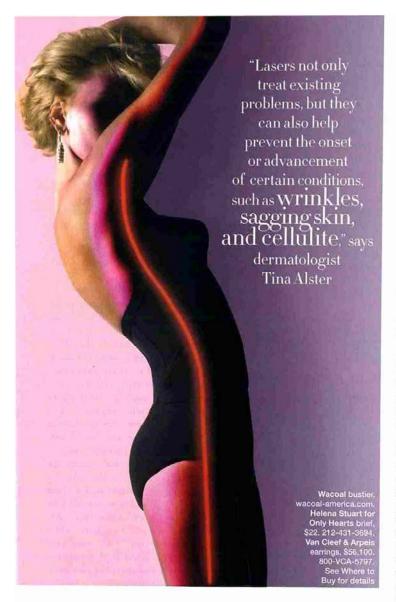
"No one laser can treat every problem," says Mitchel P. Goldman, M.D. (858-459-6868), dermatologist and medical director of La Jolla Spa MD in La Jolla, California. "There are more than 50 cosmetic lasers available in the United States, and each system costs, on average, around \$60,000. So if a doctor can afford to buy only one or two systems, he or she may try to sell it for every type of problem," Goldman explains. Which means you could end up spending a lot of money on a treatment that may not be effective. To avoid this, visit the website for the American Academy of Dermatology (aad.org), which allows you to search for board-certified doctors by location and specialty. Call to ask how many laser machines the doctor owns (she should have several) and if she is experienced in laser treatments for your specific condition. "You want someone who uses these systems on a daily basis, not as a side practice," says Kathleen Gilmore, M.D., corporate medical director and VP of American Laser Centers (americanlaser .com). And keep in mind that a laser is a medical device, so it should always be administered in a doctor's office, never by a salon or spa aesthetician.

We consulted some of the top laser experts to find the most effective FDAapproved treatments to handle your biggest concerns.

#### REDUCE WRINKLES

"The best solutions require some downtime," claims Goldman. The CO, and erbium:YAG lasers are ablative and the most effective for eliminating wrinkles. For deep furrows and lines, a CO, is recommended: It vaporizes the top layer of skin while stimulating new collagen. Because it's the most intense of the ablative lasers, it's administered after the patient is given topical or general anesthesia. The skin will be red, irritated, and swollen for one to two weeks afterward and may remain somewhat red for up to six months. For less severe wrinkling, an erbium:YAG may be advised. This laser treatment is generally less invasive than the CO,, so the recovery time is as short as three to five days, with some redness possible for up to three or four months. Both CO, and erbium:YAG offer a 70 to 90 percent reduction in wrinkles, usually in only one session. Cost: CO, is \$5000 to \$8000 (not including anesthesia); erbium: YAG is \$2000 to \$5000.

For those who want results without the major downtime, Fraxel and Portrait are top choices. "They're an intermediate approach between ablative and nonablative systems," explains Neil Sadick, M.D. (212-772-7242), a Park Avenue dermatologist and cosmetic surgeon. In addition to penetrating deep into the dermis, Fraxel removes old epidermal cells like an ablative laser but does so selectively, a fraction at a time over the course of several treatments. "With Fraxel, you get significant results with much less downtime-mainly redness and maybe some mild peeling for about three days posttreatment," says Alster. Portrait is good for deeper wrinkles and uses nitrogen plasma energy, which delivers intense heat to both the dermis and epidermis and causes skin to be red and slightly raw for about five days. Each Fraxel session takes one to two hours; Portrait takes just 15 minutes per session. Cost: Fraxel is \$700 to \$2000 per session, and three to five monthly treatments are advised; Portrait is \$1000 to \$2000 per session with up to three recommended. Annual



maintenance sessions may be done for continued improvement.

At home: Stave off wrinkles and treat existing ones with Prevage (\$150), which contains idebenone to repair damaged skin cells. To plump and soften mature skin, try L'Oréal Paris Age Perfect Pro-Calcium Cream (\$24.99) with calcium to pull in moisture and to thicken and firm skin.

## TIGHTEN AND LIFT SAGGING SKIN

This is one of the newer yet increasingly popular areas for laser treatments. Titan and Thermage are the two nonablative devices designed to firm mildly sagging skin on the face and body by heating the dermis to stimulate collagen and elastin. Thermage uses radio-frequency energy to deliver heat to the dermis. Though earlier use of this system was often painful and sometimes caused dimpling and unevenness of skin (because the laser went too deep and damaged the underlying layer of fat), the technology has improved and doctors have now learned how to control the heat to minimize pain and complications. Titan uses infrared light, which is almost painless and carries no risk with the exception of some mild blistering, but it can't go

as deep as Thermage's radio frequency. In some doctors' opinion, it delivers less significant results. "The problem with these systems is you can't predict who will respond to them," explains Alster, noting that only one-third of patients get profound results (80 to 90 percent improvement). Upkeep sessions may be required to maintain results. The cost: Titan is \$700 to \$2500 per session; Thermage is \$1000 to \$1500. One to three treatments are usually recommended with either system. New to the scene is Aluma; it uses radio-frequency energy and delivers results comparable to those of Titan and Thermage, but because it is able to cover a broader section of skin per zap, it takes as little as five minutes to treat the entire face, according to Goldman. (Thermage and Titan take about an hour to do the same thing.) The cost: \$250 to \$400 per weekly session for six weeks total.

At home: Boost slack skin with Olay Total Effects Night Firming Cream (\$19.99). Its vitamin-rich complex improves elasticity, while wheat protein moisturizes and fills in lines.

#### **GET RID OF SUNSPOTS**

IPL treatments remain the gold standard for eliminating brown spots, but the alexandrite and Q-switched ruby lasers are frequently coming into play. All these systems work by heating up the melanin to destroy it. The spots turn a bit darker and flake off in about a week. Each treatment is basically painless (the zaps feel like a rubber band snapping against your skin). IPL costs \$400 to \$1000 per treatment, and up to four treatments are needed. Alexandrite and Q-switched ruby are also recommended to cover larger areas of sunspots. Alexandrite is \$400 to \$600 and just one session may be needed, while Q-switched ruby requires one or two sessions at \$250 to \$750 each.

At home: Dab Lumedia age-spot solution (\$95), a concentrated blend of three powerful melanin-reducing agents, onto brown spots and freckles to see dramatic fading within weeks.

### CLEAR UP ACNE

The experts agree that Levulan photodynamic therapy is the best way to banish chronic breakouts. It combines laser ➤

therapy with a topical solution called Levulan, which is applied to the skin about an hour before the treatment. "The solution penetrates the oil glands and makes them light-sensitive, so when a pulsed-dye laser is activated, the chemical reaction destroys bacteria and shrinks the oil glands so they produce less oil," explains Bruce E. Katz, M.D. (212-688-5882), a dermatologist and director of the Juva Skin & Laser Center in New York City. The solution reacts best with pulsed-dye and blue-light lasers. Each session is painless, but the skin will be red with some swelling and peeling for a few days afterward. You must avoid sun exposure for 24 hours after each treatment, and you must apply SPF 30 sunscreen with broad-spectrum protection to the affected areas daily for the entire course of treatment. Up to six sessions spaced two to four weeks apart are needed at \$500 to \$1000 per treatment. Results are said to be long-term, though some patients may need to repeat the course. To treat acne scarring, three to five Fraxel sessions can give dramatic improvement.

At home: Get skin back in the clear with La Roche-Posay Biomedic 21-Day Intensive Acne Treatment (\$160), which contains LHA (lipohydroxy acid) to turn over dead skin cells and unclog blocked pores.

# ELIMINATE BROKEN BLOOD VESSELS

One of the most popular choices for dissolving those stubborn little broken capillaries is IPL. "This is what IPL was invented to treat," says Goldman, who recommends one or two monthly treatments at \$250 to \$500 per session. It heats up and destroys the veins, which are then absorbed into your body. IPL can also reduce the redness that often surrounds clusters of broken blood vessels. KTP and pulsed-dye lasers (such as the Vbeam), both nonablative, are also great for removing broken blood vessels because they specifically target red pigment. Two or three sessions are usually needed at \$250 to \$750 each.

At home: You can't remove blood vessels yourself, but you can easily tone down the redness. Apply Dr. Brandt Laser in a

Bottle Laser Relief (\$85), a lightweight lotion packed with anti-inflammatories like green and white tea to instantly calm and soothe skin. Works well as a hydrating, nonsteroidal treatment for those suffering from low-grade rosacea, too.

# SMOOTH AWAY CELLULITE

The two systems that are FDA-approved specifically for the reduction of cellulite are TriActive and VelaSmooth. Both devices work by reducing the size of the swollen fat cells that contribute to bumpy skin and flushing out excess fluids while simultaneously massaging the skin to

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help even out its appearance. TriActive uses infrared laser light, while Vela-Smooth uses both laser light and radiofrequency energy, so it reaches deeper into the skin. VelaSmooth also provides more intense mechanical massage (though some say that makes it rather uncomfortable). Both systems have been shown to reduce cellulite by around 40 percent after a full course of treatment, which is typically for 12 to 16 sessions, once or twice a week with regular upkeep thereafter (once or twice a month for Tri-Active, once every one to three months for VelaSmooth). Cost: TriActive is \$80 to \$150 per session; VelaSmooth is \$200 to \$400 per session. On the horizon are ultrasound technologies that will heat fat so that it becomes more moldable, making it easier to even out skin and flush

At home: Twice-daily application of Clarins Body Shaping Cream (\$57) will help

to temporarily smooth the appearance of cellulite. This luxuriously rich cream contains caffeine, a natural diuretic, to help alleviate puffiness, as well as potent skin firmers to instantly tighten your trouble spots.

# REMOVE UNWANTED HAIR ON FACE & BODY

Laser hair reduction has a reputation for not being effective because, until recently, most systems worked by targeting and destroying dark pigment, so they were suited only for those with dark hair and light skin. Newer machines bypass the skin's surface, so the light or energy travels only to the hair follicle, making it safe for a wider range of skin tones, but doctors argue that there is still nothing that effectively removes light hair. The diode and alexandrite lasers are said to work on the greatest variety of skin tones. "But the best solution combines light energy with radio frequency," says Gilmore, who recommends the Comet (diode and radio-frequency) and Aurora (IPL and radio-frequency) systems. The laser light heats and weakens the hair follicle, and then the radio-frequency energy destroys it. For those with dark hair and dark skin, Nd:YAG lasers are popular because they travel past the skin's surface layer, where dark-skin melanin resides. Most hairreduction systems offer 80 percent less hair after a full course of treatment, according to Goldman (except for IPL, which gets about 60 percent reduction). Results may last from six months to several years, and three to six sessions are recommended, typically once every four to 14 weeks, depending on the system. Prices vary greatly depending on the area being treated: An underarm could be \$50 per session, whereas an entire back may cost as much as \$1000 per treatment.

At home: If you prefer to wax or shave, keep ingrown hairs at bay with Completely Bare Bikini Bump Blaster (\$32 for jar of 60 pads). Each pad contains glycolic and salicylic acid to clear away the dead skin cells that can clog pores.