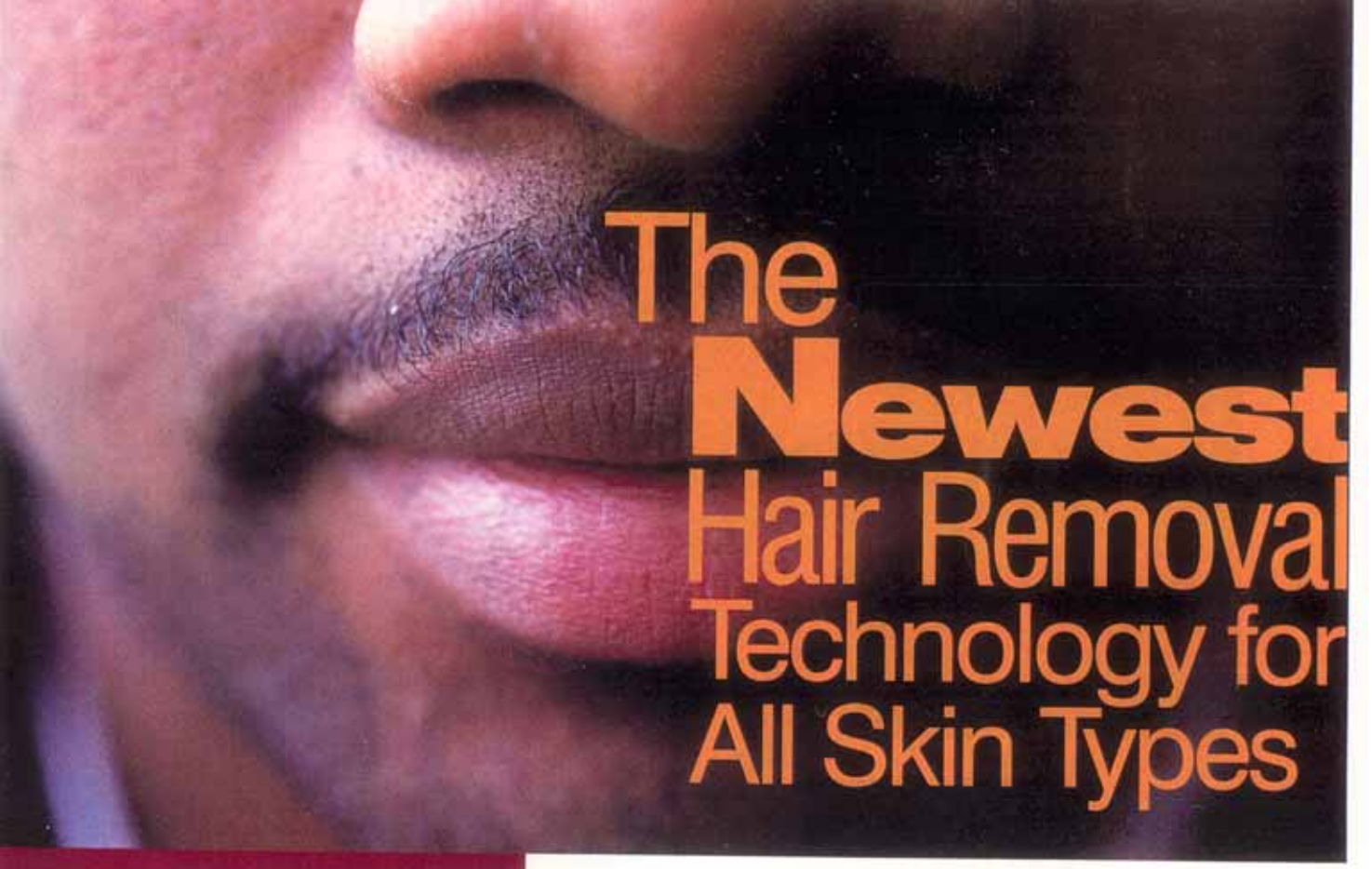

# The Newest Hair Removal Technology for All Skin Types

**Nd:YAG lasers now make it possible for doctors to achieve permanent hair removal on darker skin.**

by David J. Goldberg, MD

Until recently, hair removal procedures belonged to the field of esthetics, which offered temporary and time-consuming options such as waxing and electrolysis. In 1995, the medical field added a simple and permanent treatment to the menu with laser hair removal. But the procedure had its limitations. The treatment was suited only to people with dark hair and light skin. When the same hair removal procedure was applied to darker skin types, the pigment in the skin competed with the pigment in the hair for absorption of the laser light. This caused loss of skin pigmentation as well as blisters and scars. The medical and scientific communities immediately recognized that this procedure was limited to a select population.

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Today, thanks to the speed of laser light, this problem is history. The field of laser cosmetics has developed a new type of laser hair removal technology that is safe for all darker skin types: the Nd:YAG lasers. This new modality has other assets such as: it is smaller and easier to transport from office to office; it comes with better quality cooling devices; and it causes less discomfort and carries lower risk of

post-treatment scarring. In addition, these machines fire faster or have larger spot sizes attached to their hand pieces, both of which lead to quicker procedures with less discomfort.

Nd:YAG lasers can be used for hair removal on all skin types. These systems offer relief to many people who suffer from a medical condition known as PFB (Pseudo-Folliculitis Barbae) or shaving bumps. PFB is a common ailment among people with curly hair and dark skin. Normally, the hair follicle grows straight out after being cut or plucked. But PFB causes the new hair to curl back and reenter the skin, causing inflammation and irritation.

## Laser History

The first skin laser treatment was introduced in 1960. Leon Goldman, MD, the father of laser surgery and medicine, used the Ruby laser to improve the condition of diseased skin.

This first skin laser was successful due to the ability of the pigment in the skin to absorb the laser light. This principle set the standard for future technology. Years later, laser hair removal machines were developed based on the same mechanics—the ability of the hair pigment to absorb light. The heat generated by the laser was transmitted to the hair roots, which damaged or destroyed the hair's growth center. Fair-skinned clients were the beneficiaries of this new technology. However, those with darker skin pigment were at risk.

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Medical science soon discovered how to overcome this problem. The first antidote was the Ruby E2000 laser. This model cools the outer layer of skin to a temperature of -10 degrees centigrade, counteracting the heat generated by the procedure and thereby preventing blisters. The beauty of this feature is that it does not disrupt the process of hair removal since the cooling temperature does not penetrate the hair deeply enough to offset the laser's intended damage.

The second solution came from the development of the long pulse duration laser. This method takes the zap from the laser and extends its delivery over a longer period of time, thus reducing the impact. It is analagous to a modified light bulb that delivers 100 watts over five seconds instead of one second. This means that the same total wattage is delivered but with less wattage being released per second. This longer pulse duration is a good solution for darker skinned clients. By slowing down the delivery of light, the skin does not heat up as much and therefore does not blister. The SLP1000 laser is still being tested at Harvard as well as by our own Skin Laser & Surgery Specialists of New York & New Jersey.

The third solution came from taking a wavelength that is not absorbed well by the pigment, and using it at highly accelerated levels along with a strong cooling factor. Two of the newest lasers offer this new modification. Their high energy is cooled on the outer skin while penetrating the hair for absorption of light.

Each of these modalities – cooler temperatures, longer delivery, and wavelengths that are not well absorbed – are successful in removing hair from darker skin and creating finer hair re-growth with no skin damage. Laser surgeons will continue to use all of these methods into the future, and probably all three in combination. Or maybe the three modes will be amalgamated into a single technology.

Following are some of the most frequently asked questions about the newest laser hair removal technology for all skin types:

**Q** ***What is the latest breakthrough for laser hair removal?***

**A** Until now, laser technology has only allowed physicians to safely remove hair from light skin. In March 2000, the FDA cleared a new system that uses longer wavelengths of laser energy. In this system, skin pigment is almost transparent to the wavelength, so all of the laser energy gets absorbed into the hair shaft instead of the skin. What this means is that all skin types-including African-American, Latin-American and Asian can now benefit from this remarkable technology for eliminating unwanted hair. This is big news for large sectors of the population.

**Q** ***Are patients satisfied with the results?***

**A** Patients are generally ecstatic. In the past, Latin-American and African-American patients could not benefit from laser esthetic procedures. Now we can remove their unwanted hair and give them smooth, blemish-free results.

There are a number of professions such as the military and the police force that require men to remove facial hair. This can be a problem for men with dark skin who suffer from PFB. Many black men grow facial hair or beards to avoid cuts and infections that are common with PFB. Now, for the first time, we're able to help these patients remove unwanted hair and eliminate the painful PFB problem.

**Q** ***Does PFB also affect women?***

**A** Yes, but in fewer numbers than men. Darker skinned women may develop shaving bumps in the bikini area, underarms, legs and other shaved or waxed areas.

**Q** ***How many people in the United States suffer from PFB?***

**A** According to the National Institutes of Health, more than 12 million African-American men suffer from PFB. An unknown number of women and men of other ethnic backgrounds, including Hispanic and Mediterranean, also suffer from this problem.

**Q** *How many people use lasers each year to remove unwanted hair?*

**A** Thousands of people have used lasers to remove hair and vascular lesions or leg veins. Until now, only people with very light skin have benefited. Now, we have the first laser approved to remove hair from all skin types.

**Q** *How long does the treatment take?*

**A** Typically, the procedure is conducted in a series of treatments lasting 15-20 minutes. The number of procedures ranges from five to eight, and is determined by skin condition and the amount and type of hair.

**Q** *Is the treatment painful?*

**A** No. The active cooling module reduces patient discomfort by minimizing heat exposure into the surrounding tissue before, during, and after exposure.

**Q** *Is laser hair removal permanent?*

**A** In some cases, after multiple treatments, it can be. However, the main benefits are reducing the amount of hair density, thickness and darkness.

**Q** *What about sun exposure?*

**A** Until now, patients treated with lasers for leg veins and hair removal were warned to not go into the sun for several days after the treatment. With the longer wavelength of the newer systems, this is less of a problem. Now patients can walk out of the doctor's office without having to dash for shade.

**Q** *Will insurance cover this laser procedure?*

**A** In rare instances, yes, especially if it is done to treat a medical condition such as PFB. However, in most situations, this is considered a cosmetic procedure.

**Q** *Where are these treatments available?*

**A** These days, laser surgeons are easy to find. The trick is to separate the experienced laser surgeons from those who took a three-day seminar. A little investigation on the part of the patient is always wise. ■

## About The Author

David J. Goldberg, MD, is a Yale and New York University-trained, Board-Certified Dermatologist who is recognized worldwide for his work with skin lasers. In 1999, he was the first recipient of the prestigious Leon Goldman, MD, award, named after the founder of laser surgery and medicine, and has been designated "One of the Top 10 Laser Surgeons in the U.S." by *Self Magazine*. The Skin Laser & Surgery Specialists of New York and New Jersey, directed by Dr. Goldberg, have conducted pioneering FDA research on the newest lasers. Dr. Goldberg is Chairman of the Ethics Committee for the American Society of Dermatologic Surgery, and Chief of Dermatologic Surgery, New Jersey Medical School, Newark, New Jersey.