

## What's New In Lasers For Skin Problems?

Contributed by Dr. Peter Karlsberg

Driven by major recent advances in laser technology, new lasers for skin problems ranging from wrinkles to red spots and from scars to stretch marks are being developed at an unprecedented pace. For example, a whole new generation of lasers for vascular blemishes now exists to treat problems like "broken capillaries" on the face and "spider veins" on legs. Some of these lasers have the potential to clear such lesions without the requisite bruising and "down time" for patients seen with the older systems. A patient may now go back to work the same day with nothing more than a blush on the cheek or nose after some laser procedures.

Other new developments in laser technology originate in the application of well-established laser systems to new problems. A good example of this is the discovery that certain lasers have the ability to safely and effectively improve dark circles under the eyes. Dark eye circles are common and usually due to an inherited predisposition. For many, the ability after laser to forego daily cosmetic cover-ups to hide that "tired eyed" look is a great relief.

Laser treatment of stretch marks is another example of successfully applying an established laser system to a problem which was thought until recently to be largely untreatable. The laser used here is the pulsed dye laser, which was developed years ago to target the hemoglobin in blood vessels in the skin. The high-energy, short duration pulses of yellow light this laser emits have been found to stimulate fibroblasts in the dermis to produce new collagen and elastic tissue, thereby improving both the texture and appearance of stretch marks in many patients.

By this same newly-discovered principle, many scars caused by surgery, trauma, or acne also seem to respond positively to this laser with decreased redness, hardness, and elevation, and greater suppleness. In basic science terms, the laser stimulates a powerful but natural wound remodeling effect within the abnormal tissues. In fact, the pulsed dye laser may fast become the treatment of choice for scars resistant to other measures, especially given its long track record and outstanding safety profile.

On the cutting edge, laser-assisted permanent hair removal is a phenomenon for which no one seems to be willing to wait. Although one company has a proprietary, and very costly, system in place at their own self-proclaimed day spas in the U.S., the long-term effectiveness of their system has yet to be demonstrated to the scientific community. Now, a new laser is entering the fray. It has just been approved by the FDA for pigmented lesion and tattoo removal, but not for hair removal, the original purpose for which it was intended. Data on the long-term effectiveness of this system against unwanted hair growth are currently in development. I am quite optimistic after meeting with researchers and seeing the prototype laser at Harvard University Medical School's Wellman Biomedical Laser Research Institute. But we will know much more in the coming months.

Finally, a brief update on the laser resurfacing procedure for scars and wrinkles. A recent 20/20 segment presented an alarming trend: any physician, regardless of their background or prior training, can take a one day crash course in laser resurfacing and begin performing the procedure in their office. These courses typically devote half of the day to a discussion on marketing, and a half of an hour to patient selection and post-laser wound care. They promote a "cook book" approach to laser resurfacing which can have serious adverse consequences for the patient. Although the procedure is extremely safe and effective in experienced hands, the complication rate nationwide is increasing due to the number of inadequately trained physicians now performing it. If you are considering laser resurfacing, ask your doctor for photographs of their own patients, and inquire about the extent of their training and experience. Never hesitate to seek a second opinion. After all, you have just one face: entrust it only to a qualified physician.

Remember, above all, that lasers are not a cure-all for skin problems. As will always be the case, some skin problems are more safely and effectively treated by other medical or surgical modalities. Only a physician who is thoroughly trained in all aspects of both skin physiology and cutaneous laser medicine can help you to make an informed choice about whether a laser procedure is right for you.