



AMERICAN SOCIETY OF
PLASTIC SURGEONS®

Lasers Deemed Highly Effective Treatment for Excessive Scars

Plastic and Reconstructive Surgery Assembles Evidence on Laser Therapy for Scar Prevention and Treatment

Arlington Heights, Ill. (November 27, 2013) – Current laser therapy approaches are effective for treating excessive scars resulting from abnormal wound healing, concludes a special topic paper in the December issue of [Plastic and Reconstructive Surgery®](#), the official medical journal of the [American Society of Plastic Surgeons \(ASPS\)](#).

The review by Dr. Qingfeng Li and colleagues of Shanghai Ninth People's Hospital in Shanghai, China, provides strong support for laser treatment of hypertrophic scars—but less so for another type of abnormal scars called keloids. The authors highlight the need for further research in this and other key areas, including the benefits of different types of lasers and the results of laser treatment for scarring in patients with darker skin.

Seventy Percent Success Rates with Laser Treatment for Excessive Scars...

Dr. Li and coauthors identified and analyzed previous studies of laser treatment for abnormal scarring. They found 28 well-designed clinical trials using various medical lasers for two types of excessive scarring: hypertrophic scarring and keloids. Both are abnormal tissue responses that lead to raised and thickened areas of scarring, resulting in cosmetic and sometimes functional problems.

Hypertrophic scars are limited to the initially injured area. Keloids—which are more common in dark-skinned individuals—can spread beyond the area of the initial wound. Most of the studies evaluated the effects of laser therapy for hypertrophic scarring; just three reports focused exclusively on keloids.

Data from more than 900 patients showed high success rates with laser treatment: about 70 percent for both hypertrophic scarring and keloids. Based on studies targeting scars that were less than one month old, laser therapy had a similar success rate in prevention of excessive scarring.

The responses appeared best with two specific lasers: the 585/595 nm pulsed-dye laser (PDL) and the 532 nm laser. (The figures in nanometers [nm] indicate the wavelength of the laser light used.) About two-thirds of the studies reviewed examined the 585/595 nm PDL; just three studies evaluated the 532 nm laser.

Some studies provided data on objective responses to laser treatment, reporting improvements on standard rating scales and measures of scar height and redness. Data from the PDL studies suggested that the best interval for repeated laser treatments was five to six weeks; PDL treatment appeared most effective in patients with fairer skin types.

More Research Needed on Darker Skin, Different Laser Types

Plastic surgeons are the main surgical specialists involved in the treatment of excessive scarring. Several different treatment approaches are used, but there is little guidance from evidence-based research. Modern lasers used for treatment of excessive scarring are "nonablative": they work by coagulating deep tissues. Compared to older lasers, which worked by destroying abnormal scar tissue at the skin surface, modern nonablative lasers provide more consistent results with a lower risk that excessive scarring will return.

Dr. Li and colleagues hope their review will provide plastic surgeons with a useful update on the evidence for laser therapy for excessive scarring. The results strongly support the effectiveness of the 585/595 nm PDL in patients with lighter skin types. The researchers emphasize the need for further studies of laser treatment in dark-skinned patients, who are more prone to complications of laser therapy. They also highlight the need for better evidence on the effectiveness of lasers for treating keloids.

[Plastic and Reconstructive Surgery®](#) is published by Lippincott Williams & Wilkins, part of [Wolters Kluwer Health](#).

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