

Addressing acne scars with cosmetic resurfacing: Treatment options and results.

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Introduction

Acne is one of the most common dermatological conditions, affecting nearly 85% of adolescents and a significant percentage of adults. While active acne may subside with time or treatment, the scars it leaves behind can persist and severely impact self-esteem [1].

Fortunately, cosmetic resurfacing techniques have evolved significantly and now offer highly effective solutions for improving the texture and appearance of acne-scarred skin. This article explores the types of acne scars, available resurfacing treatments, and clinical results associated with each option [2].

Acne scars are the result of inflammation within the dermis caused by acne lesions. As the skin attempts to repair itself, it may produce too much or too little collagen, leading to textural changes. There are several types of acne scars: Indented scars that sit below the surrounding skin [3].

Not true scars, but discoloration left after acne heals. Choosing the right treatment depends on scar type, skin tone, and individual preferences. Chemical peels involve applying a chemical solution to exfoliate the top layers of skin, promoting regeneration. Salicylic acid, glycolic acid, and trichloroacetic acid (TCA) peels are commonly used for superficial atrophic scars and PIH. TCA CROSS (Chemical Reconstruction of Skin Scars), a focal technique, is particularly effective for ice pick scars [4].

Affordable, quick recovery, suitable for darker skin tones with proper care. Multiple sessions needed; less effective for deeper scars. Microneedling involves the use of fine needles to create micro-injuries in the skin, stimulating collagen and elastin production. Over time, skin texture improves and scars soften [5].

Fractional lasers create microthermal treatment zones that stimulate collagen remodeling while preserving surrounding tissue for faster healing. Ablative (CO₂, Er:YAG) lasers remove skin layers, while non-ablative (1550 nm erbium glass) lasers heat tissue without ablation [6].

Effective for rolling and boxcar scars; significant improvement after 2–3 sessions. Downtime varies; risk of post-inflammatory hyperpigmentation in darker skin types. Dermabrasion involves mechanically exfoliating the outer skin layers using

a rotating instrument. It's mainly used for superficial scars [7].

Microdermabrasion is a milder variant with limited efficacy on deep acne scars. Benefits: Cost-effective for mild scars. Less effective than lasers or microneedling for deeper scars. This is a minor surgical procedure where a needle is inserted under the skin to break fibrotic strands pulling the scar downward. It's especially effective for rolling scars [8].

Immediate lifting effect; often combined with fillers or lasers. Bruising, swelling, and potential temporary lumpiness. When combined with microneedling or laser, PRP can enhance healing and boost collagen formation, leading to better outcomes for acne scars [9].

Accelerates healing; improves texture and tone. Variable results; may require more sessions. The effectiveness of resurfacing procedures depends on scar type, depth, and the chosen method. Studies show: 31–62% improvement in atrophic scars after 4 sessions. Up to 75% improvement in rolling and boxcar scars after 3 sessions. Notable reduction in ice pick scar depth with minimal downtime [10].

Conclusion

Cosmetic resurfacing offers transformative potential for individuals struggling with acne scars. From chemical peels to advanced laser systems, a variety of safe and effective options exist. A personalized treatment plan often combining multiple techniques can significantly improve skin texture, tone, and confidence. As technology and techniques continue to evolve, outcomes will only improve, offering hope to millions worldwide.

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Received: 03-Apr-2025, Manuscript No. AADRSC-25-163880; Editor assigned: 04-Apr-2025, PreQC No. AADRSC-25-163880(PQ); Reviewed: 17-Apr-2025, QC No. AADRSC-25-163880; Revised: 22-Apr-2025, Manuscript No. AADRSC-25-163880(R); Published: 28-Apr-2025, DOI:10.35841/aadrsc-9.2.265

Citation: Handerson G. Addressing acne scars with cosmetic resurfacing: Treatment options and results. *Dermatol Res Skin Care.* 2025; 9(2):265

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Citation: Handerson G. Addressing acne scars with cosmetic resurfacing: Treatment options and results. *Dermatol Res Skin Care.* 2025; 9(2):265