

Cosmetic resurfacing for acne scars: Effective treatments and long-term results.

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Received: 03-Sep-2025, Manuscript No. AADRSC-25-167967; Editor assigned: 04-Sep-2025, PreQC No. AADRSC-25-167967(PQ); Reviewed: 17-Sep-2025, QC No. AADRSC-25-167967; Revised: 22-Sep-2025, Manuscript No. AADRSC-25-167967(R); Published: 27-Sep-2025, DOI: 10.35841/aadrsc-9.3.269

Introduction

Acne is a common dermatological condition that can leave lasting impressions on the skin long after the active breakouts have resolved. For many individuals, acne scars are a persistent cosmetic and psychological concern. These scars can vary in depth, texture, and type, including icepick, boxcar, rolling, and hypertrophic scars. Cosmetic resurfacing has emerged as a leading strategy to improve the appearance of acne scars by smoothing the skin, promoting collagen remodeling, and enhancing overall skin tone. This article explores the most effective cosmetic resurfacing treatments for acne scars and their long-term outcomes.[1].

Acne scars develop as a result of inflammation and damage to the skin during the healing process of acne lesions. The skin's attempt to repair itself can lead to either a loss of tissue (atrophic scars) or excess tissue formation (hypertrophic scars and keloids). Atrophic scars—commonly seen on the face—are the main focus of cosmetic resurfacing treatments. The severity and type of scarring depend on several factors, including genetics, duration of acne, improper lesion handling (e.g., picking), and individual healing responses. While cosmetic resurfacing is effective, it is not without risks. Common side effects include redness, swelling, peeling, and temporary pigment changes. More aggressive treatments like ablative lasers may pose a higher risk of infection, scarring, and prolonged downtime. Patients with darker skin tones may be more susceptible to post-inflammatory hyperpigmentation, and therefore non-ablative lasers or RF treatments are often preferred. A comprehensive consultation with a board-certified dermatologist is crucial to assess the scar type, skin type, and medical history before selecting the most appropriate treatment.[2].

Cosmetic resurfacing involves the targeted removal or remodeling of the skin's top layers to reduce the appearance of scars and encourage the growth of new, smoother skin. By promoting collagen production and cellular turnover, these treatments aim to improve the texture and evenness of scarred skin. These lasers remove the outer layers of damaged skin and heat the underlying dermis, stimulating collagen regeneration. They are highly effective for deep atrophic scars but involve downtime and a longer recovery period.[3].

Fractional lasers create microscopic zones of controlled injury, allowing for faster healing and improved collagen remodeling. Fractional CO₂ lasers are particularly effective in reducing acne scar depth and improving skin texture. Chemical peels involve applying a solution (e.g., glycolic acid, salicylic acid, trichloroacetic acid) that exfoliates the outer skin layers and stimulates regeneration. Medium to deep peels are suitable for treating shallow scars and hyperpigmentation. Patient satisfaction is generally high, especially when expectations are properly managed. Combination treatments—such as microneedling plus PRP or fractional laser plus subcision—often yield better results than single modalities. However, it may take multiple sessions for optimal results, depending on the severity and type of scarring. [4].

Microneedling uses fine needles to create micro-injuries in the skin, triggering a healing response and increased collagen production. When combined with platelet-rich plasma (PRP) or radiofrequency (RF), it shows enhanced efficacy for atrophic acne scars. RF treatments deliver heat energy deep into the dermis to stimulate collagen without damaging the surface. RF microneedling combines the benefits of both microneedling and thermal stimulation, offering excellent results with lower

risk of pigment changes. Clinical studies have shown that cosmetic resurfacing treatments can produce significant, long-term improvement in acne scars. Fractional laser resurfacing and microneedling, in particular, have demonstrated sustained results for up to 12 months or longer post-treatment [10]. Collagen remodeling continues for several months after procedures, meaning results may improve over time[5].

Conclusion

Cosmetic resurfacing offers hope and visible improvement for individuals suffering from acne scarring. With advancements in technology and combination therapies, patients now have access to safer, more effective treatments that can significantly enhance their skin's appearance and self-confidence. While results vary based on individual factors and treatment protocols, a personalized approach guided by a medical professional ensures the best long-term outcomes. Acne scars no longer have to be permanent reminders of past skin problems—resurfacing

technologies are paving the way to smoother, healthier-looking skin.

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