



## Treatment of Striae

### Are There Effective Treatments?

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#### KEYWORDS

- Striae • Striae rubra • Striae alba • Striae distensae • Microneedling • Pulsed dye laser
- Nonablative fractionated lasers • Ablative fractionated lasers

#### KEY POINTS

- Striae are a common type of atrophic scar that has proven difficult to treat.
- Topical treatments have been studied but have the lowest efficacy for change.
- Light-based and laser-based treatments have a good treatment efficacy for striae rubrae, but mostly improve texture in striae alba.
- Radiofrequency treatments for striae also are helpful, with texture being the most noted improvement.
- A complete resolution of striae is rare. Combination treatments, laser-assisted drug delivery, and other modalities are likely the future treatment of striae.



Video content accompanies this article at [www.advancesincosmeticsurgery.com](http://www.advancesincosmeticsurgery.com).

### INTRODUCTION

Striae distensae, or stretch marks, are common atrophic scars that can be symptomatic and cosmetically concerning [1]. The development of striae has been associated with pregnancy, growth spurts, obesity, rapid weight gain or loss, rapid muscle growth, breast augmentation, diabetes mellitus, long-term systemic or topical steroid use, prolonged adrenocorticotrophic hormone therapy, Marfan syndrome, and Cushing syndrome [2,3]. Striae rubra are the early form of striae that are characteristically pink, and striae alba are the end stage of striae with atrophic white scars [4,5].

### Surgical Technique

The surgical technique varies depending on the device used, which is explained in greater detail with each device.

### Preoperative Planning

Most devices used for the treatment of striae have minimal to no down time and require nominal preoperative planning. Avoidance of sun exposure is key before treatment, and postoperatively varies per procedure performed. Avoidance of treatment in pregnancy also is recommended.

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### Preparation and Patient Positioning

Before the procedure, it is recommended to gently cleanse the treatment area and dry the skin. The patient should be positioned in a way that allows for the physician to have proper access to the treatment zone while allowing patient comfort. Topical anesthesia with varying percentages of lidocaine can be applied 30 to 60 minutes before the procedure to minimize pain, and is classically used for all modalities discussed in this article other than when vascular lasers are used for the treatment of striae rubra. In addition, cool air devices may be added during the procedure to minimize treatment pain.

### Immediate Postprocedural Care

If gels or fluids are applied for the procedure, these are removed with saline-soaked gauze. A bland dimethicone or petrolatum-based ointment is used after ablative procedures and is applied immediately after postprocedure for several times a day for a minimum of 1 week after the procedure. If a nonablative laser or device is used, a bland moisturizer is typically applied immediately postprocedure, and used several times daily for several days after the procedure. Sun avoidance is recommended, along with a daily broad-spectrum mineral-based sunscreen. Daily cleansing of the treatment area with soap and water also is recommended.

### Rehabilitation and Recovery

The recovery time for each device is different and can range from 1 to 4 weeks. Vascular lasers may leave ecchymoses that can last 1 to 2 weeks, whereas nonablative and ablative devices may leave erythema that can last 1 to 4 weeks depending on the body area treated and the energy and density used. Ablative devices would require additional recovery time, whereas nonablative devices would require less.

### Potential Complications, Risks, Benefits, and Limits

Complications with the nonablative, ablative, and microneedle radiofrequency (RF) devices can include infection, hyperpigmentation, hypopigmentation, erythema, edema, burns, and crusting. The risk of these complications varies with each device and increases with more aggressive settings. The more aggressive the settings or the darker the skin type, prolonged postoperative erythema can increase the risk of post-inflammatory hyperpigmentation. If too much ecchymoses is induced with a vascular laser, hemosiderin deposition and staining may occur. Lasers have a

limitation in their settings based on skin type, whereas RF devices do not. The benefits most often outweigh the risks providing patients expectations of improvement of their striae.

### Management

Multiple treatments are often needed with any of the modalities. Treatment intervals vary on the device used and are discussed in further detail later in this article. A 3-month to 6-month follow-up after the last treatment is ideal to assess an improved treatment outcome, as most modalities rely on neocollagenesis. Texture is the most common improvement noted. A complete resolution of the striae is rare.

Please see Tables 1 and 2 for summaries of the clinical research in the treatment of striae.

### TREATMENT OF STRIAE

Multiple treatment modalities for striae have been published with mixed outcomes. The best results have been noted with striae rubra [4]. Both the increased vascularity and the atrophic aspect of the scar need to be addressed to obtain a cosmetically pleasing result (Fig. 1) [6].

### TOPICAL TREATMENT OF STRIAE

Topical treatments have been studied to prevent striae distensae with minimal success. Osman and colleagues [7] (n = 210) examined the prevention of striae alba and found no improvement with the use of topical cocoa butter. However, Timur Taşhan and Kafkaslı [8] (n = 47) found a 20% decrease in the risk of developing striae with the combination of massage and topical bitter almond oil.

Minor improvements were found with topical treatments for striae rubra. Kang [9] (n = 22) found an 80% improvement of striae rubra with 0.1% tretinoin cream daily for 6 months. Draelos and colleagues [10] (n = 10) found an overall improvement of the appearance, texture, color, and softness of striae rubrae with daily 3-month applications of onion extract cream with *Centella asiatica* and hyaluronic acid (Mederma stretch mark therapy; Merz, Raleigh, NC).

Mixed results have been seen with the topical treatment of striae rubra and alba. Rangel and colleagues [11] (n = 20) found a 20% decrease in striae length after a daily 3-month application of 0.1% tretinoin cream. Elson [12] (n = 20) found 75% of subjects had significant improvement of their striae rubra and alba with a daily 3-month application of 0.1%

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