



Microneedling for Cicatricial Alopecias

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What is microneedling?

Microneedling is a minimally invasive cosmetic procedure used to treat many dermatologic conditions. It involves the use of a skin roller containing small needles that creates minor injury in the outermost layer of the skin, resulting in redness. The skin responds to this injury by increasing collagen and elastin production. The size of the needles can range anywhere from 1 millimeter to a few millimeters in length and therefore, penetrate the skin to a greater or lesser depth. Hyperpigmentation, or darkening of the skin, is common after cosmetic procedures, especially in patients with darker skin tones. Fortunately, microneedling does not cause pigment changes because its mechanism of action does not involve the delivery of heat, like cosmetic lasers.

Microneedling became popular in the 1990s due to its ability to treat acne scars and burn scars. Recent data on the use of microneedling for male or female pattern hair loss has shown positive results. Studies show that microneedling improves blood flow to the scalp, induces growth of stem cells, and recruits growth factors. Furthermore, it can improve the absorption of other hair loss drugs like, minoxidil, topical steroids, and platelet-rich plasma.

Scarring alopecia

Scarring alopecias compromise a group of hair loss conditions that cause destruction of the hair follicle. Hair follicle growth occurs almost exclusively in utero, or before birth. New follicle growth does not occur in adults unless there is injury to the skin. Consequently, any hair follicle that is destroyed in scarring alopecias will never regrow hair. Some types of scarring alopecia include lichen planopilaris, frontal fibrosing alopecia, and central centrifugal cicatricial alopecia. Preliminary studies show that microneedling, in combination with platelet-rich plasma or topical steroids, may be a promising treatment for preventing further hair loss.

Clinical Trials

Currently, there is a clinical trial at Yale University exploring the use of tattoo machine microneedling in patients with scarring alopecia (central centrifugal cicatricial alopecia and frontal fibrosing alopecia). Participants will undergo up to six microneedling sessions over the course of six months and photographs will be taken at each session. Hopefully, the results of this trial will shed more light on the use of microneedling in scarring alopecia.

Who can perform this procedure for you?

It is recommended that microneedling be done by licensed professionals, such as a board-certified dermatologist. In-office treatments generally use sharper needles compared to rollers sold in stores.

Consequently, patients may see results faster if they receive care from a licensed professional. Some of the downsides to performing this procedure at home include:

- Not knowing the right size needles to use
- Not using the roller properly
- Not knowing how long to use the roller on your scalp
- Not knowing how much pressure to apply
- Not applying it to the correct area
- Infection if the roller is not cleaned properly

What can you expect during this procedure?

Microneedling is a fast procedure that takes 15–30 minutes depending on how large the application area is. First, a local anesthetic is applied to the region to improve patients' comfort. Then, the roller is passed several times over the affected area creating minor trauma. After the procedure, a soothing serum may be applied to alleviate inflammation and/or discomfort. Minimal bleeding can occur. Pain or swelling is not expected, and patients' hair can be washed the next day. It is important to use sunscreen after the procedure because the skin may be more sensitive to the sun.

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