Plastic Surgery Associates of Northern Virginia, McLean, Virginia 22102, USA.

BACKGROUND: Microdermabrasion has become a popular method of skin rejuvenation for treating dyschromia, fine wrinkles, and mild scarring. OBJECTIVE: To analyze the onset and extent of the dermatologic changes associated with microdermabrasion. METHODS: Ten volunteers, ages 31-62 years, underwent a series of six aluminum oxide microdermabrasion facial treatments 7-10 days apart. Skin biopsy specimens were obtained prior to the study, after three treatments, and after six treatments. RESULTS: Compared to the controls, the treated areas demonstrated the following histologic changes: thickening of the epidermis and dermis, flattening of the rete pegs, vascular ectasia and perivascular inflammation, and hyalinization of the papillary dermis with newly deposited collagen and elastic fibers. CONCLUSION: This study suggests that microdermabrasion produces clinical improvement by a mechanism resembling a reparative process at the dermal and epidermal levels.