

# Fat Grafting in Facial Rejuvenation



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## KEYWORDS

- Fat injections • Fat transfer • Autologous fat grafting • Microfat grafting • Facelift • Facial atrophy
- Stem cell facelift • Fat grafting complications

## KEY POINTS

- Fat grafting areas of the face that have atrophied with age can produce a significant and sustained improvement in appearance and improved outcomes in facelift procedures.
- Fat grafting provides for volumetric rejuvenation, which is a new and different means to improve facial appearance, and a new dimension for plastic surgeons to work in.
- In addition, fat grafting may induce an improvement in facial tissue quality through an as-yet undefined stem cell effect.

## THE AGING FACE AND THE NEED FOR FAT GRAFTING

Recognizing the changes that occur as the face ages and appreciating the underlying anatomic problems responsible for them is essential to properly advising patients and planning surgical procedures. In most patients, problems will fall into in 3 general categories:

1. Aging and breakdown of the skin surface
2. Tissue sagging, skin redundancy, and loss of youthful facial contour
3. Facial hollowing and atrophy

Skin care and skin resurfacing procedure address changes in the first category. Traditional lifts of the face, neck, forehead, and eyes address the second.<sup>1–12</sup> Fat grafting allows clinicians to treat atrophy, something they were previously unable to do, and is now acknowledged by plastic surgeons and other physicians engaged in treating the aging face as the most important advance in aesthetic surgery in several decades or more. Properly performed, the addition of fat to areas of the face that have atrophied because of age or disease can produce a significant and sustained

improvement in appearance that is unobtainable by other means. All things being otherwise equal, simultaneous facelift and fat grafting produce a better result than either technique performed alone, and when a facelift is performed in conjunction with fat grafting both loss of contour and facial atrophy can be corrected, and optimal improvement can be obtained (**Fig. 1**).

## VOLUMETRIC REJUVENATION, TISSUE INTEGRATION, AND STEM CELL EFFECT

Fat grafting provides volumetric rejuvenation; a new and different means by which to improve facial appearance, and a new dimension for plastic surgeons to work in. Unlike nonautologous injectables, fat integrates with facial tissues, becomes part of the face, and produces an arguably more natural-appearing, sustained, and long-lasting improvement. In addition, fat grafting may induce an improvement in facial tissue quality through an as-yet not clearly defined stem cell effect, and when performed with a facelift may constitute, for the first time, rejuvenation in the true sense of the word.

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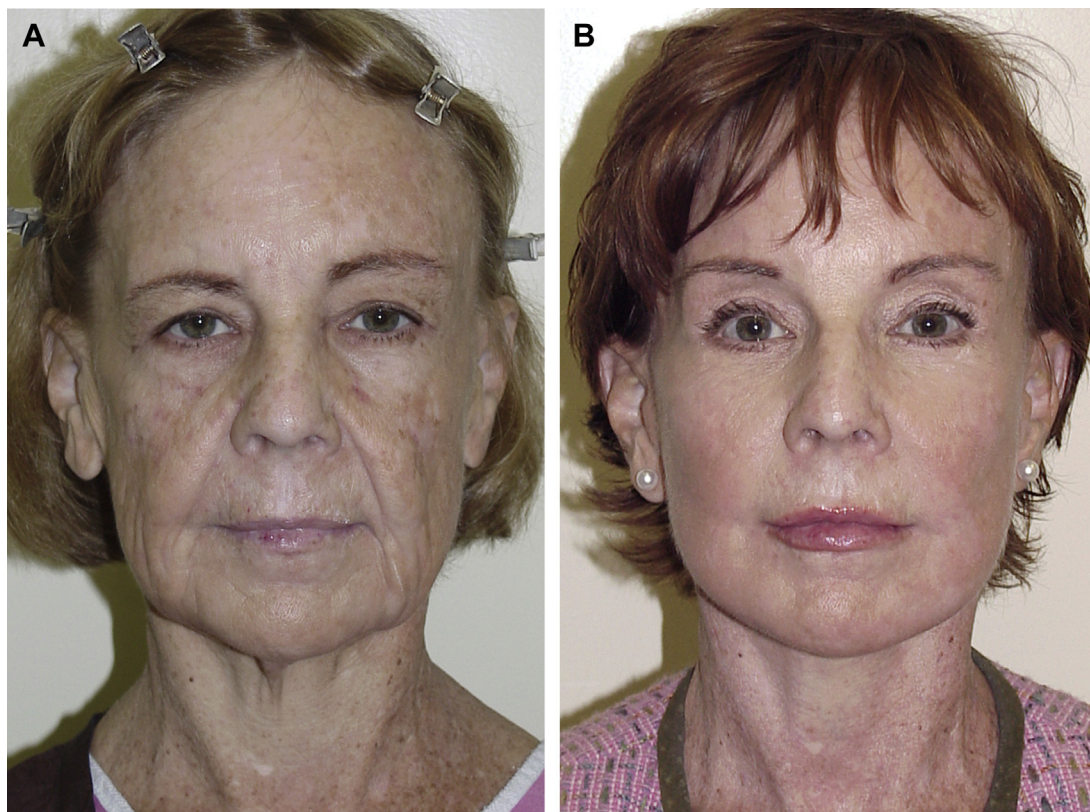
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**Fig. 1.** Simultaneous facelift and fat grafting. All things being otherwise equal, simultaneous facelift and fat grafting produces a better result than either technique performed alone. (A) Patient with tissue ptosis and redundancy, and marked facial atrophy. (B) Same patient seen 14 months after high superficial muscular aponeurotic system (SMAS) facelift, neck lift, closed forehead lift, upper and lower blepharoplasties, and panfacial fat grafting. (note: patient has had hyaluronic acid filler placed in lips). (Courtesy of Marten Clinic of Plastic Surgery. All surgical procedures performed by Timothy J. Marten, MD, FACS, San Francisco, CA.)

### DRAWBACKS OF FAT GRAFTING

Performing fat grafting in conjunction with a facelift has certain disadvantages, including the learning curve associated with any new procedure, an increase in operating room time, increased post operative edema, a longer period of recovery, and uncertainty of graft take. Certain patient misconceptions will also be encountered and will have to be addressed including misguided beliefs that injected fat can migrate or fall, or that fat grafting makes the face look fat.

### WHY NOT JUST GRAFT FAT?

Age-related loss of facial fat rarely exists as an isolated event and thus patients troubled by it are rarely logically or appropriately treated by fat grafting alone. Isolated fat grafting is also of questionable benefit to patients troubled by

significant facial sagging and skin redundancy. Although aggressive filling of the sagging face with fat can produce improved contour and a smoother-appearing skin surface, it generally results in an unusually large, overfilled face that appears both unnatural and unfeminine. Such an overfilled face is difficult to correct in an attractive manner at a later date, and it is both more logical and practical to perform fat grafting in conjunction with formal surgical lifts if needed, or at some time after ptotic tissue has been repositioned and redundant tissue has been removed. Our contemporary concept for facial rejuvenation can thus be summarized as one in which surgical lifts are used to reposition sagging facial tissues and reduce the size of the facial skin envelope, and fat grafting is then used synergistically, but more appropriately and effectively, to restore areas that are truly volume depleted.

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