

## 35 Brow and Forehead: Fat Grafting to the Brow, Temples, and Forehead

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### Abstract

A modern paradigm shift in facial rejuvenation focuses on volume restoration in addition to facial recontouring. The concept of facial volume restoration has long been advocated, and ultimately accepted into common practice with our improved understanding of facial aging. Forehead and eyebrow revolumization is often neglected during facial fat grafting. The purpose of this chapter is to describe the technique for volume restoration of these areas.

**Keywords:** Fat grafting, forehead, eyebrow, temporal hollowing, facial revolumization

### Key Points

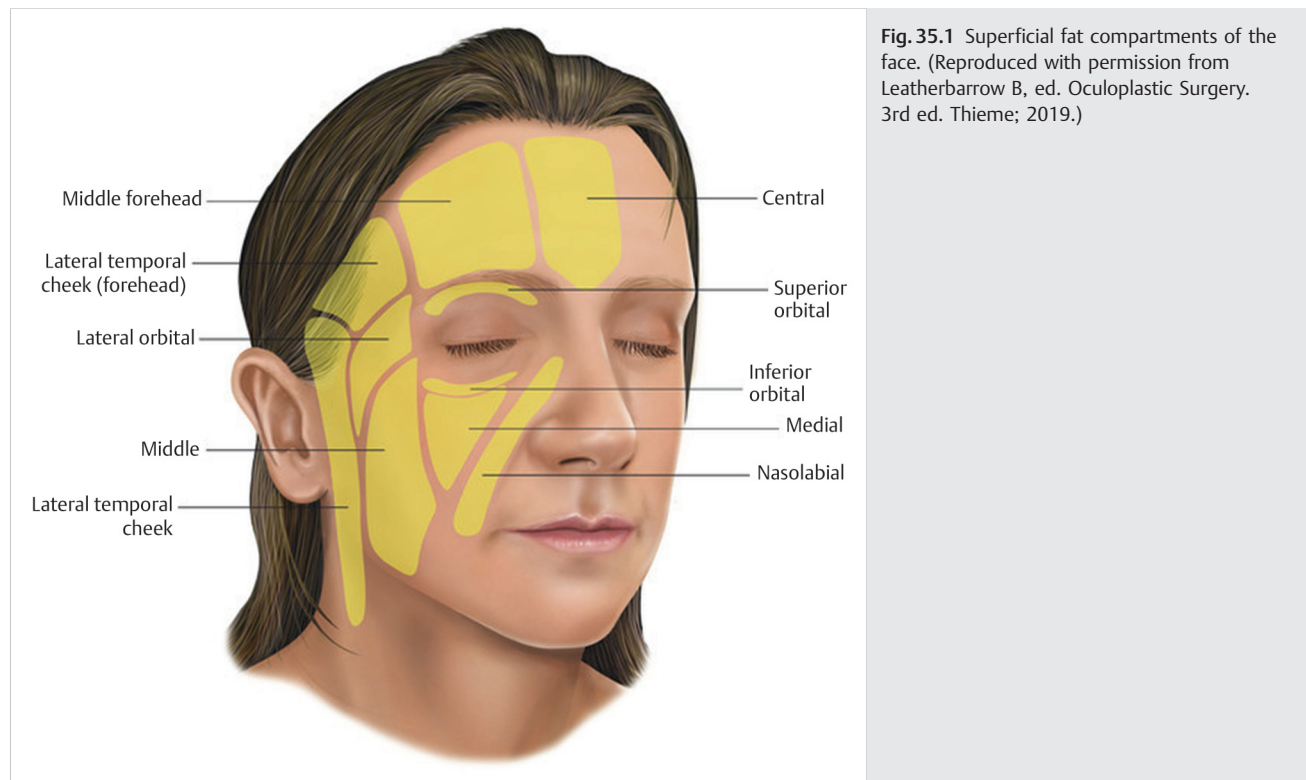
- Fat grafting to the forehead, temples, and brows is a key component of pan facial revolumization (► Fig. 35.1 and ► Fig. 35.2).
- Injections are performed in the subcutaneous plane.
- Injection of the superior brow regions not only corrects age-related changes, but also creates the illusion of more lifted brows.
- Correction of temporal hollowing requires disruption of the temporal fusion line.

### 35.1 Preoperative Steps

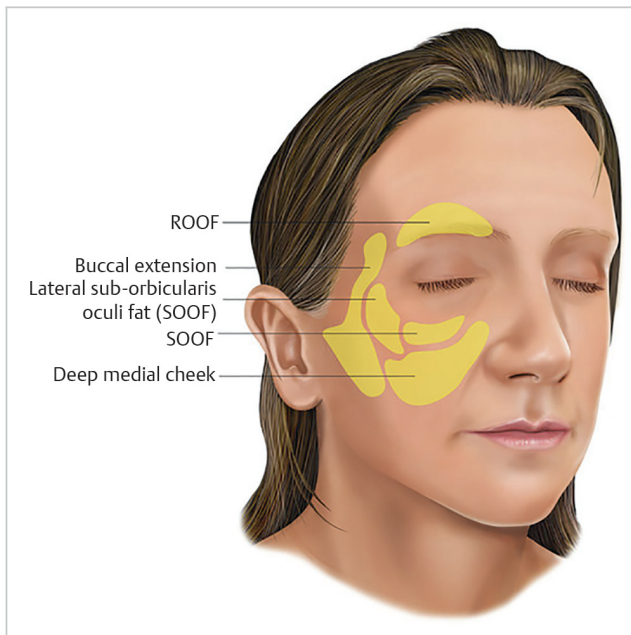
- Fat harvest is accomplished using manual low-pressure lipoaspiration using a blunt 3-mm cannula.
- Inner thighs and abdomen are the ideal donor sites, which contain the highest concentration of stromal vascular cells with the least amount of pain, as shown in previous studies and clinical experience.
- The lipoaspirate is then processed using centrifugation at 2,250 rpm for 1 minute. The supernatant and infranatant are discarded before transferring the fat graft into 1-cc syringes.
- Fractionated fat is used for periorbital injections. Fat is processed via mechanical emulsification by pushing centrifuged fat between two 10-cc syringes through a 2-mm filter 60 to 80 times. This results in fragmentation of adipose tissue structure.

### 35.2 Operative Steps

- Temporal and forehead fat grafting addresses age-related hollowing and has the added benefit of mildly lifting the brows.
- Temporal injection is performed using a single port access within the temporal hairline. The key principle is disrupting the temporal fusion line to allow uniform fill. This typically requires 1 cc of fat graft. Another 1 cc injection is then needed to correct the hollowing in a radial fashion just lateral to the lateral brow.



**Fig. 35.1** Superficial fat compartments of the face. (Reproduced with permission from Leatherbarrow B, ed. Oculoplastic Surgery. 3rd ed. Thieme; 2019.)



**Fig. 35.2** The deep fat compartments of the face. ROOF, retro-orbicularis oculi (muscle) fat; SOOF, lateral sub-orbicularis oculi fat. (Reproduced with permission from Leatherbarrow B, ed. Oculoplastic Surgery. 3rd ed. Thieme; 2019.)

- The central forehead injections must correct three distinct compartments—the glabella and the two superior brow regions. Injection is performed in the subcutaneous plane using a port either in a crease in the mid-forehead for those with a tall forehead, or in the hairline for those with a shorter forehead.
- Injection of the superior brow regions not only corrects age-related changes, but also creates the illusion of more lifted brows. A second stab incision along the medial brow line allows additional access to the superior brow, and disruption of the temporal fusion line from the medial aspect and full correction of temporal hollowing.

### 35.3 Postoperative Care

Postprocedure care is typically minimal. Patients may return to daily activities while avoiding pressure (i.e., eyeglasses) over grafted regions.

### 35.4 Case Example

This is a 50-year-old female who is 6 months post-op lift and fill facelift with 35 cc of facial fat augmentation—in the temple 2 cc per side, 4 cc in the brow, and a total of 30 cc in her face, i.e., 4 cc in the deep malar compartments and 4 cc in the superficial fat compartments per side (16), 1 cc in each earlobe (2), 2 cc in chin area (4), and 4 cc in peroral area (8 cc) (► Fig. 35.3a–e).



**Fig. 35.3 (a–e)** This is a 50-year-old female who is 6 months post-op lift and fill facelift with 35 cc of facial fat augmentation—in the temple 2 cc per side, 4 cc in the brow, and a total of 30 cc in her face, i.e., 4 cc in the deep malar compartments and 4 cc in the superficial fat compartments per side (16), 1 cc in each earlobe (2), 2 cc in chin area (4), and 4 cc in peroral area (8 cc).

## 35.5 Conclusion

Volume restoration with autologous fat of the facial fat compartments is essential to facial rejuvenation. It can be used independently or as an adjunct to rhytidectomy and blepharoplasty. Accurate preoperative facial analysis, knowledge of fat compartment anatomy, and precise intraoperative techniques are needed for successful outcomes. Preoperative bony contour and distribution of fullness dictate the contour and volume of grafting, particularly in the eyebrow, temples, and forehead regions. When used properly, fat augmentation is a powerful tool to ensure optimal restoration to youth.

See **Video 35.1**.

## Further Readings

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