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Figure 2-1A, B, C: Preoperative view of a patient in her early 50s showing facial volume loss associated with aging. Her periorbital hollowing is much more evident on the profile and three-quarter oblique views. **D:** Postoperative view following fat transfer to the periorbital and midface regions shows aesthetic improvement in those areas.

Figure 2-2: Patient showing panfacial age-related volume loss.



RECIPIENT SITE ANESTHESIA 1 (SHARP NEEDLE PLACEMENT)

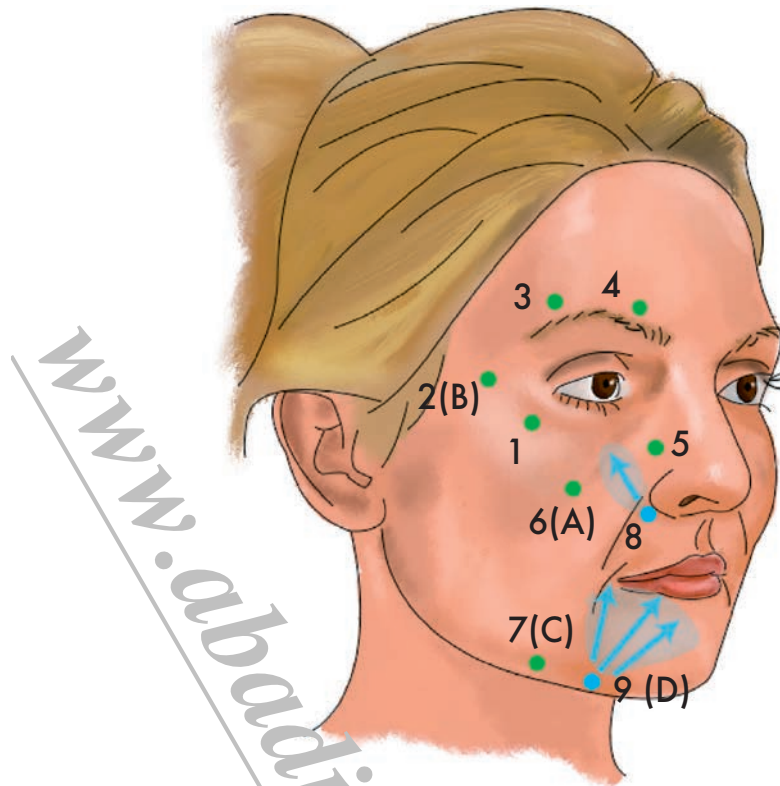


Figure 3-5: The illustration shows the first phase of recipient-site anesthesia administration. The numbers indicate where a small bleb of local anesthesia consisting of 1% lidocaine with 1:100,000 epinephrine using a 5-cc syringe outfitted with a $\frac{1}{2}$ " 30-gauge needle is delivered as regional nerve blocks. The numbers with a parenthetical letter following correlate with entry sites where the infiltration cannula will be inserted. The blue arrows indicate infiltration of the adjacent soft tissue with local anesthesia using a $1\frac{1}{4}$ " 27-gauge needle. The first point of injection corresponds with anesthesia of the zygomaticofacial nerve of the maxillary branch of the trigeminal nerve, located along the inferolateral orbital rim (**Point 1**). The second point corresponds with fat infiltration entry site B and is located 2 to 3 cm lateral to the lateral canthus (**Point 2**). Next, the zygomaticotemporal branch of the maxillary division of the trigeminal nerve, located along the superolateral aspect of the orbital rim, is anesthetized (**Point 3**). Continuing medially, the supraorbital bundle of the ophthalmic branch of the trigeminal nerve is infiltrated (**Point 4**). The fifth injection site is situated along the lateral nasal wall midway along its length in order to minimize the discomfort associated with fat infiltration in this sensitive area (**Point 5**). The sixth point corresponds to fat infiltration entry site A: It is located inferolateral to the malar depression along a horizontal axis extending from the base of the nasal ala (**Point 6**). The seventh point lies 2 cm behind the prejowl sulcus, which typically falls about midway along the length of the mandibular body and corresponds with the fat infiltration entry site C (**Point 7**). At this time, the contralateral side of the face can be injected with the same syringe outfitted with the 30-gauge needle before returning to the same side of the face to complete the last two injection sites using a longer 27-gauge needle. The eighth injection site corresponds to the injection site to anesthetize the infraorbital nerve on the maxillary face (**Point 8**). To anesthetize the nerve properly, the nerve is injected with the $1\frac{1}{4}$ " 27-gauge needle from an entry site at the precanine fossa, directing the needle toward the bony face of the maxilla superolaterally (arrow with **Point 8**). Finally, the marionette line and labiomental sulcus are infiltrated in the subcutaneous plane from what will be entry site D for fat infiltration (**Point 9**). The same $1\frac{1}{4}$ " 27-gauge needle is used to anesthetize this area in a broad, fanning method (arrows with **Point 9**).

$1\frac{1}{4}$ " 27-gauge needle from an entry site at the precanine fossa directing the needle toward the bony face of the maxilla superolaterally. Finally, the marionette line and labiomental sulcus are infiltrated in the subcutaneous plane from what will be entry site D for fat infiltration (Fig. 3-5, Point 9). The same $1\frac{1}{4}$ " 27-gauge needle is used to anesthetize this area in a broad, fanning method. (Alternatively, all sites can be infiltrated using a blunt cannula described below.)

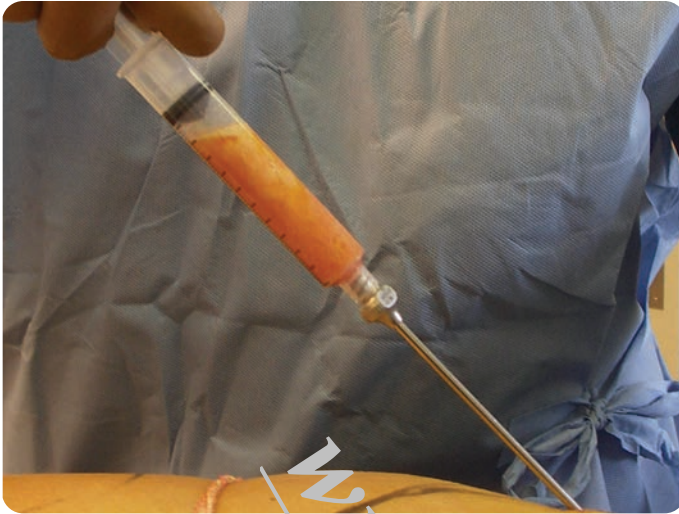


Figure 3-9: The photograph shows proper fat harvesting technique in which manual extraction is performed with only 1 to 2 cc of negative pressure exerted on the syringe plunger.

three to four passes is to simply turn his or her hand to realign the cannula without pulling almost all the way out to the entry site. Failure to withdraw the cannula sufficiently before changing directions will give the appearance of harvesting from a new area when in fact the same localized spot is being worked on (as demonstrated in the accompanying DVD) (Fig. 3-11). This error will lead to overzealous removal of fat in only one discrete area that may also reduce the quantity of fat harvested and more importantly can lead to donor-site contour irregularity.

5. The surgeon should always be conscious of where the tip of the cannula is situated within the donor site. If not mindful of the cannula position, the tip may be unintentionally passed beyond the anesthetized donor site area, leading to additional soft-tissue trauma and related pain. The first few times that a new surgeon begins to harvest fat from the donor site, he or she should progress very slowly and with each

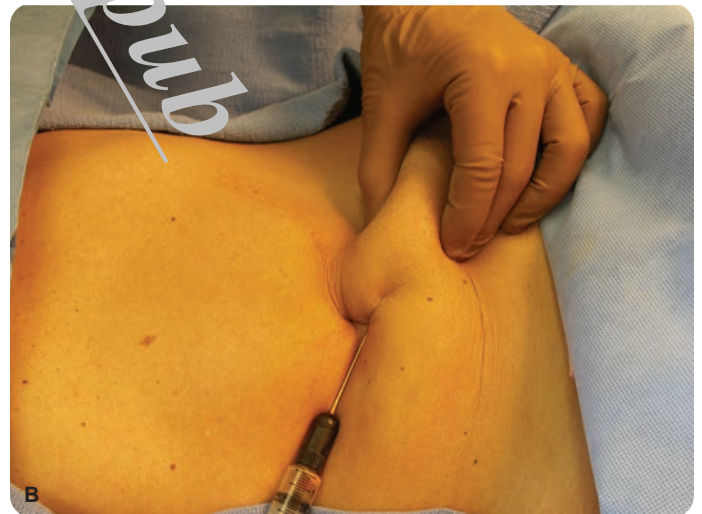
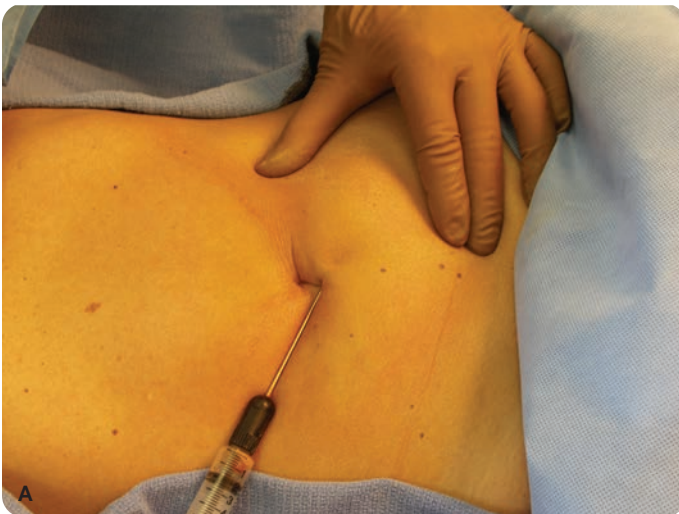
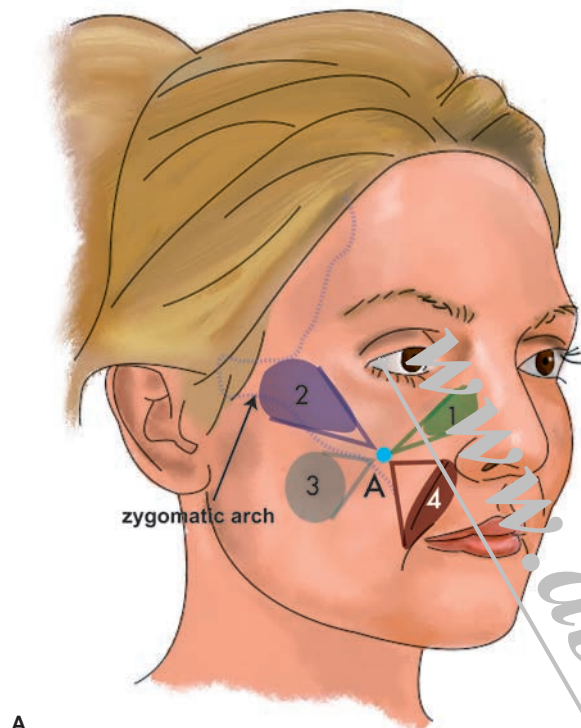


Figure 3-10A: Fat harvesting should be undertaken with the nondominant hand, applying only gentle and even traction to stabilize the fat pad. **B:** This photograph demonstrates improper technique in which the nondominant hand forcibly pinches the fat pad, which can lead to uneven harvesting and potential for contour irregularities in the donor area.

REFINEMENTS 1



REFINEMENTS 2

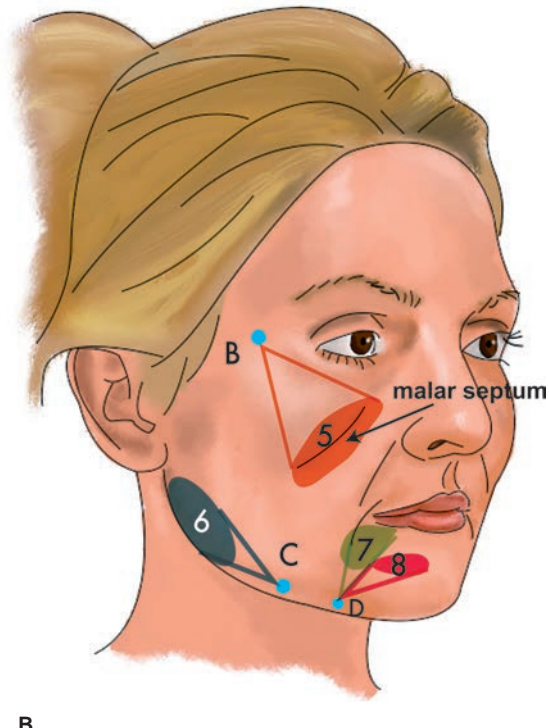
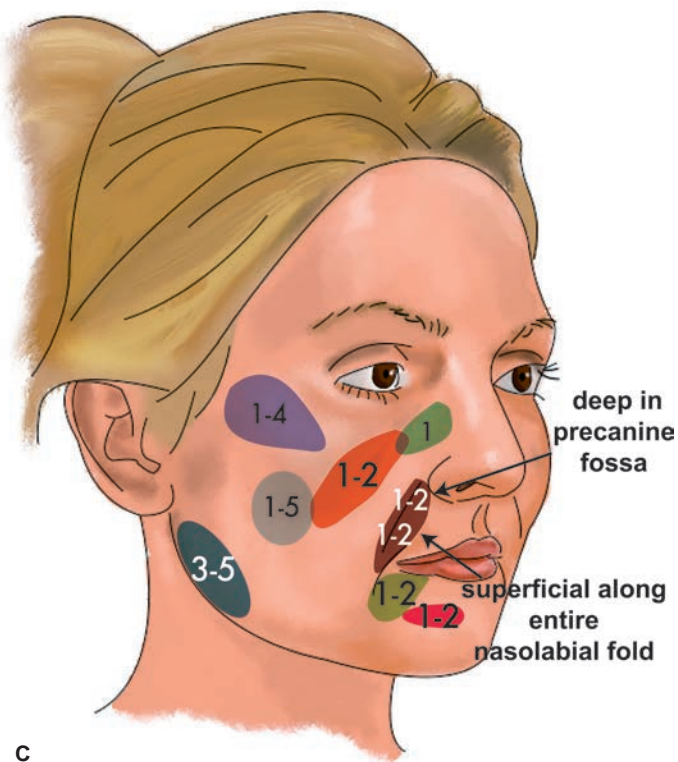
REFINEMENTS
(Fat Volumes, 11-25 cc/side)

Figure 3-38A: After volumetric foundation has been completed, the surgeon can attempt additional passes of fat infiltration based on aesthetic judgment and experience. Refinements are not necessarily recommended for the surgeon just starting out with fat infiltration. The numbers correspond to the areas for additional enhancement from entry site A as follows: **(1)** tear-trough deformity, **(2)** lateral cheek, **(3)** buccal, **(4)** precanine fossa/nasolabial fold. **B:** For sake of clarity, the second half of the refinements is shown in a separate illustration. From entry site B, additional fat can be infiltrated into **(5)** the anterior cheek/malar septum. From entry site C, **(6)** the lateral mandible can be enhanced. From entry site D, **(7)** the labiomandibular fold and **(8)** the labio-mental sulcus can be approached. **C:** As a guide, the volumes are recommended as a range based on aesthetic judgment and acquired experience. The numbers listed correspond to the volumes in milliliters of fat proposed for each facial zone.

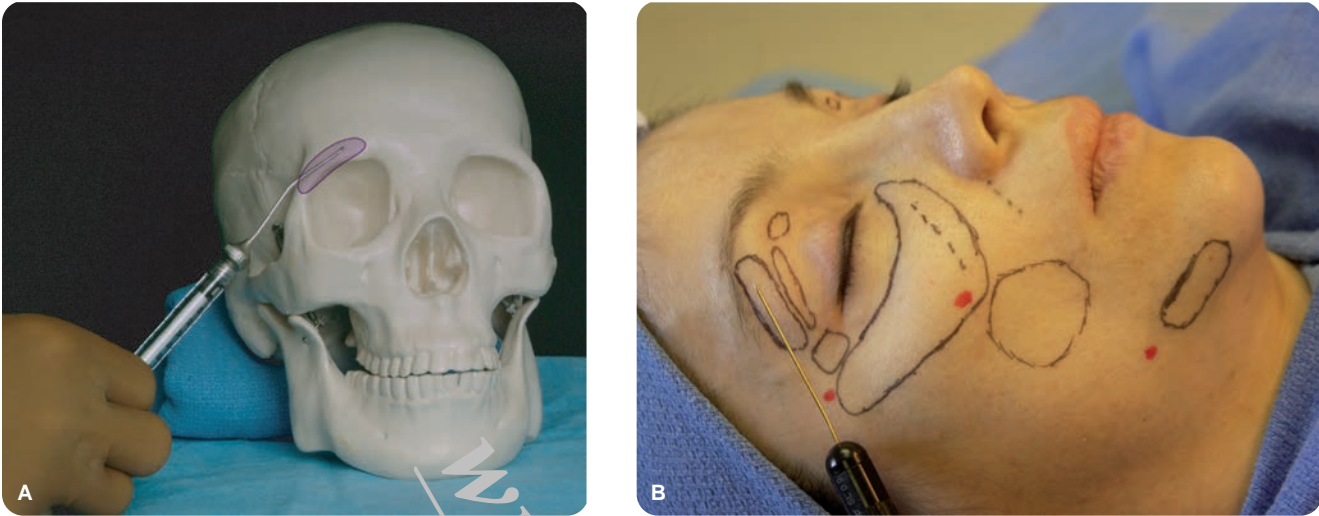


Figure 3-46A: Skull model showing the use of bony landmarks to guide placement of fat infiltration. The circled area shows the superior orbital rim with the cannula orientation for fat infiltration in this area. **B:** Intraoperative photograph showing the orientation and direction of the infiltration cannula for placement of fat along the superior orbital rim. Either a straight or curved cannula can be used for this injection.

mentioned before, the lateral canthus is replete with tough fibrous adhesions. In addition, the lateral canthus tends to be quite vascular, and hematoma formation is possible, which can in turn obscure the site and reduce fat-cell viability. If any incipient swelling arises, the surgeon should hold immediate pressure for several minutes until no further engorgement is evident. Use of a 0.9-mm blunt cannula reduces the incidence of ecchymosis and hematoma collection. The lateral canthal region is quite unforgiving like the inferior orbital rim, and it is important to maintain a conservative approach toward enhancement. Only three to five passes per 0.1 cc of fat should be administered for a total of 0.5 cc, and placement should be targeted only for the deep, supraperiosteal plane along the lateral extent of the inferior orbital rim. As the direction of the cannula is toward the eye, the nondominant hand should be used as a guide to prevent injury to the globe and to maintain accurate placement (just as with the remainder of the inferior orbital rim).

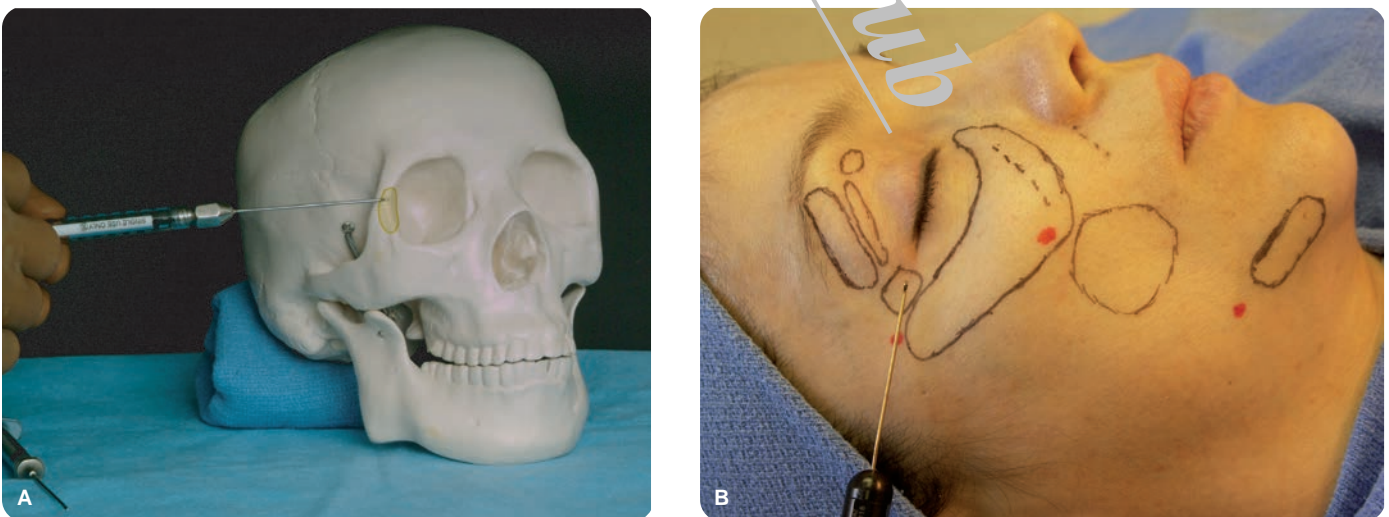


Figure 3-47A: Skull model showing the use of bony landmarks to guide placement of fat infiltration. The circled area shows the lateral canthus/lateral inferior orbital rim with the cannula orientation for fat infiltration in this area. **B:** Intraoperative photograph showing the orientation and direction of the infiltration cannula for placement of fat in the lateral canthus/lateral inferior orbital rim.