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Pallavi Ailawadi, Rashmi Sarkar

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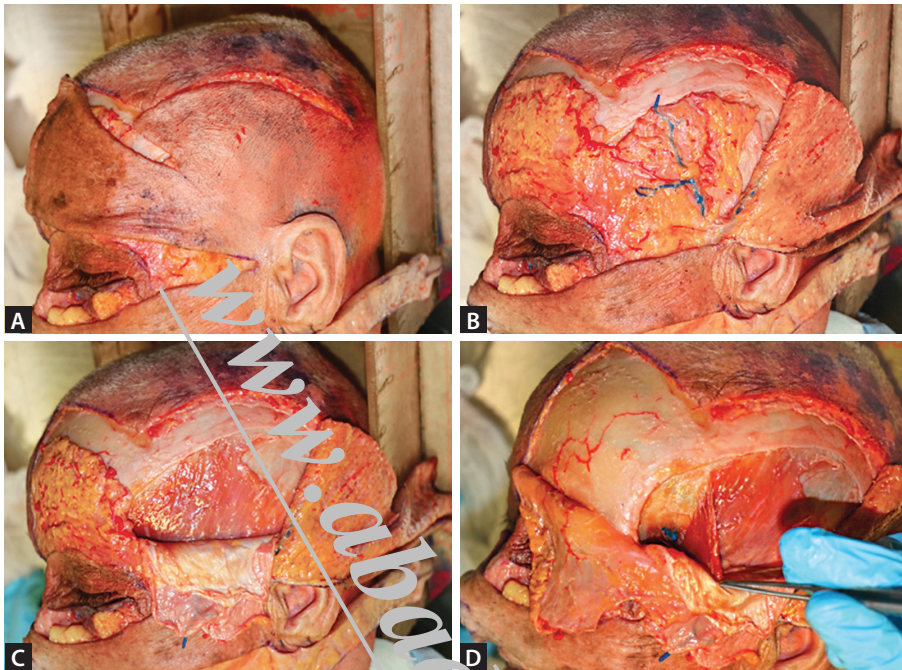
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Table 2: Guidelines for filler selection.

Facial zone	Objective	Desirable feature of filler	Rheological properties	Brand recommended
Lips	Intradermal or subdermal placement to restore volume	<ul style="list-style-type: none"> Easily moldable Not bulky 	<ul style="list-style-type: none"> Low-medium elasticity (G') Low viscosity for ease of injection Low cohesivity 	Juvéderm Ultra/ Ultra Plus, Volbella, Restylane Kysse, Belotero Balance
Midface	Deep dermal or subdermal placement for restoring volume and to achieve projection	<ul style="list-style-type: none"> Ability to maintain shape Resist shear deformation and compression No displacement 	<ul style="list-style-type: none"> High elasticity (high G' HA fillers can be injected in the suprapariosteal plane of the malar prominence and low to moderate G' HA can be used more superficially for refinement) Low viscosity Medium-high cohesivity 	Voluma, Restylane Lyft/Volyme, Belotero Volume
Nasolabial (NL) fold	Suprapariosteal in upper-third of NL fold and intradermal in lower two-third	<ul style="list-style-type: none"> Nonbulky Minimal projection 	<ul style="list-style-type: none"> Moderate elasticity (G') Medium cohesivity 	Juvéderm Ultra Plus, Restylane Lido/Lyft, Belotero Balance
Lower face	Deep dermal or subdermal placement for restoring volume	<ul style="list-style-type: none"> Minimal projection Easily moldable Nonpalpable 	<ul style="list-style-type: none"> Moderate elasticity (G') Low viscosity Medium cohesivity 	Volift, Restylane Lido, Belotero Intense
Chin and nose	Suprapariosteal placement on dorsal nose and subcutaneous placement for tip correction	<ul style="list-style-type: none"> Maximum vertical projection Minimum lateral spread 	<ul style="list-style-type: none"> High elasticity (G') Low viscosity High cohesivity 	Voluma, Restylane Lyft, Belotero Volume
Tear troughs	Suprapariosteal placement to fill troughs and to make lower lid bags less noticeable	<ul style="list-style-type: none"> Minimum projection Nonpalpable 	<ul style="list-style-type: none"> Moderate elasticity (G') Low viscosity Low cohesivity 	Volbella (for grade 1 and 2); Ultra plus (for grade 3 and 4), Restylane Lido, Belotero Balance
Fine lines	Intradermal or subdermal placement in crow's feet, perioral lines, fine forehead lines	<ul style="list-style-type: none"> Minimum projection Easily moldable Nonpalpable Undercorrection is advised 	<ul style="list-style-type: none"> Low elasticity (G') Low viscosity Low cohesivity 	Volbella, Restylane Fynesse, Belotero Soft

(HA: hyaluronic acid)



Figs. 6A to D: (A) The temporal region with skin flap elevated; (B) Exposed temporoparietal fascia showing the superficial temporal artery dividing into its anterior and posterior branches about 5 cm from the tragus, with accompanying veins; (C) Shows reflected deep temporal fascia exposing the temporalis muscle arising from the superior temporal crest and temporal fossa; (D) The reflected anterior edge of the temporalis muscle showing the anterior deep temporal vessels about 2 cm behind the junction of the lateral orbital rim and the superior temporal crest (Swift point is 1 cm above and lateral to avoid the vessels in a temple filler injection).

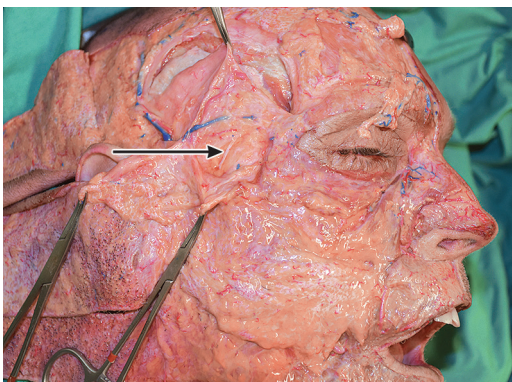


Fig. 7: Showing the temporal branch of the facial nerve crossing over the zygomatic arch at its midpoint, lying in the deep part of the temporoparietal fascia enveloped with fat (black arrow).

two layers, lies a fat pad called the superficial temporal fat pad (also called the supra zygomatic fat pad).⁶ Also, in this space the medial zygomaticotemporal (sentinel) vein can be found.

Deep to the deep temporal fascia is a space which is continuous with the infratemporal fossa. Some fat is present in this space and is called the deep temporal fat pad (subzygomatic fat), which is the temporal extension of the buccal pad of fat.

The *temporalis muscle* originates from the periosteum of the temporal fossa, the superior temporal crest and the deep surface

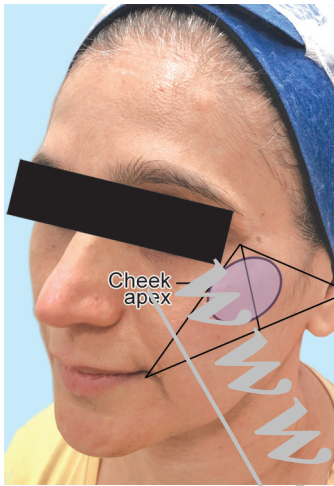


Fig. 11: The triangle is formed by a line from lateral canthus to lateral angle of mouth and from angle of mouth to tragus and from tragus to lateral canthus.

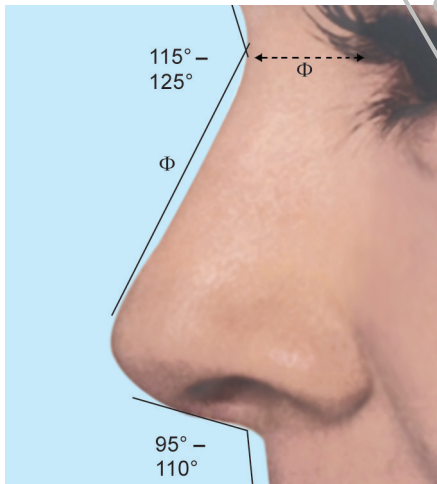


Fig. 12: Nasal tip projection.

nose to lips and chin. Nasal tip projection can be measured using other Parameters (**Fig. 12**). As listed in the following **Table 1**.⁹

According to Powell and Humphreys the ideal Baum and Simons ratios for whites are 2.8:1 and 2:1, respectively.²⁹

Table 1: Nasal tip projection.

Baums ratio	2:1
Simons	2.8:1
Nasofrontal angle	115–130°
Nasolabial angle	90–120°

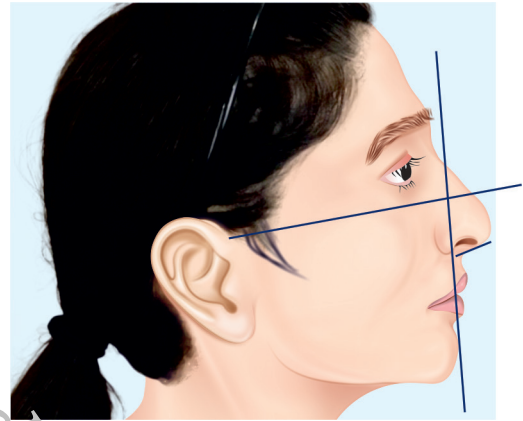


Fig. 13: Nasolabial angle.

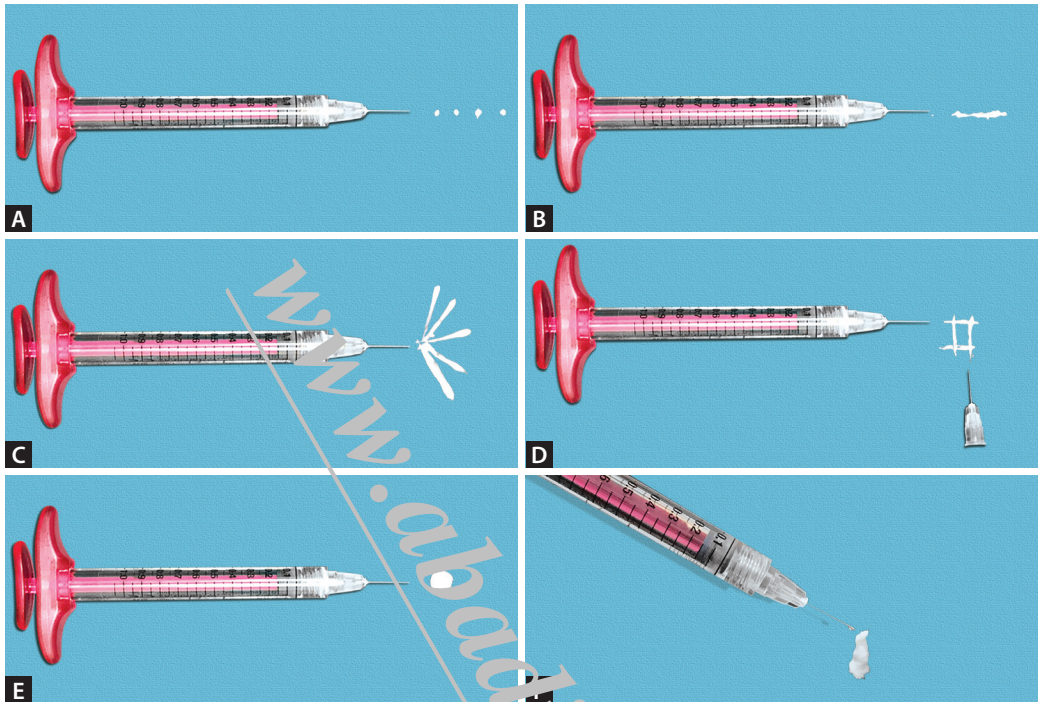
Nasolabial Angle

The Frankfurt horizontal plane (FHP) is found by drawing a line from the superior aspect of the external auditory canal to the most inferior point of the orbital rim. The nasolabial angle is formed between a line along the anterior part of the columella and a line perpendicular to the FHP and nasal tip (**Fig. 13**).

The Simons ratio is used to calculate nasal tip projection. A line from the subnasale along the anterior aspect of the columella to the nasal tip (a) divided by a line from the subnasale to the superior labium (b) gives the Simons ratio (**Figs. 14 to 17**).

FACIAL PROPORTIONS AND ANGLES

These angles facilitate preoperative assessment and planning in facial rejuvenation.



Figs. 1A to F: Basic filler injection techniques. (A) Serial puncture; (B) Linear threading; (C) Fanning; (D) Crosshatching; (E) Depo (I) Tower technique.

25 mm, and 38 mm are chosen from. First a puncture with a larger bore needle is made and then the cannula is inserted through that puncture. This port of entry serves to inject a large area simply by moving the cannula in different directions and planes.¹

There is lesser risk of intravascular product migration when cannula is used. There is also evidence that after placement of product with a needle, the material can migrate backward along the trajectory of the needle³ and thus can get deposited superficially in multiple planes.⁴

It is important to point out that incidents of vascular compromise have been reported with use of cannula too. A recent consensus report therefore advises using cannulas of wider bore, i.e. 25 G or more to prevent such events.⁵



Fig. 2: Blunt tipped metal cannula being used for midface injection.

INJECTION TECHNIQUES FOR DIFFERENT SITES

Tear Trough

Bolus of 0.1–0.2 mL of material is placed supraperiosteally at 2–3 locations in tear trough. The product is then gently massaged



Figs. 9A and B: Before and after clinical pictures.



Figs. 10A and B: Before and after clinical pictures.

fillers that can be dissolved in case of an emergency or suboptimal outcome.

For patients that are middle aged or older and want a very subtle change, and for those

who never had fillers before, a soft filler with a low G-prime is suitable. Examples—Juvéderm Ultra smile, Volbella, Teosyal RHA 2, and Intraline 1.

Smoker's Lines (Lip Lines)

Gulhima Arora, Sandeep Arora

INTRODUCTION

Lips, along with the perioral area, are considered to be an important part of facial esthetics. Smoker's lines (lip lines) which are also called "lipstick lines" or "perioral rhytides" are wrinkles that appear around the mouth due to aging (Fig. 1). Chronological as well as chronic photoaging are responsible for the attenuation of the youthful appearance of the perioral area. Skeletal resorption of the maxilla, loss of muscle tone of the orbicularis oris muscle, loss of fat pads and skin aging due to loss of elastic and collagen fibers, all contribute to the aging of this region.¹

Smoking, exposure to environmental factors like sunlight and pollution, and hereditary factors² also contribute to the formation of smoker's lines. People of certain occupations like those who play wind instruments are more prone to develop these lines.^{1,3} The normal physiology of the orbicularis oris muscle due to its repetitive action during eating and talking itself leads to exaggerated wrinkling of this area. This muscle's hyperactivity, thus is an important determinant in development of the signs of aging in this area.²

Aging of this area results in the development of fine perioral lines and wrinkling, with changes in the lip causing flattening of the cupid's bow, elongation and flattening of



Fig. 1: Smoker's lines.

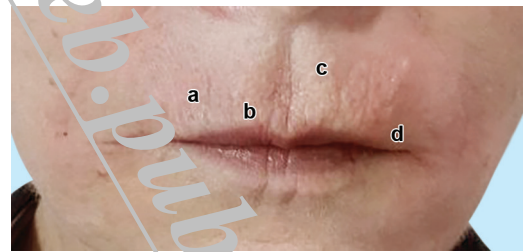


Fig. 2: Age-related changes of the perioral region. (a) Perioral fine lines and wrinkling, (b) Flattening of the cupid's bow, (c) Elongation and flattening of the philtral column, and (d) Inversion of the lips.

the philtral column, and inversion of the lips along with the formation of marionette lines (Fig. 2).¹

Improvement of the skin around the mouth and addressing dental esthetics, in part, can