# **The Lips –**
# 45 Injection Techniques for Esthetic Lip Treatment

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K|V|M

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# The following abbreviations are used in this book:

### Medical abbreviations

| | |
|---|---|
|  | Sharp needle |
|  | Blunt cannula |
| ▲ | Viscous (HA material) |
| ● | Soft (HA material) |
| Ala | Attachment point of the wing of the nose |
| AN | Tip of the nose (apex nasi) |
| B‘ | Soft tissue B-point (the deepest point of the labiomental fold) |
| BDDE | Butanediol diglycidyl ether |
| C | Cervical point (junction of the submental and neck contours, neck–throat junction) |
| Cm | Columella nasi (fleshy external end of the nasal septum) |
| CPM | Cohesive polydense matrix |
| DCLT | Dynamic cross-linking technology |
| DN | Dorsum nasi (bridge of the nose) |
| Gl | Glabella (skin of the forehead between the eyebrows) |
| HA | Hyaluronic acid |
| Li | Labiale inferius (foremost edge of the lower lip) |
| LL | Lower lip |
| Ls | Labiale superius (foremost edge of the upper lip) |
| Me‘ | Soft tissue menton (the most inferior point on the soft tissue of the chin) |
| N‘ | Soft tissue nasion |
| NASHA | Non-animal stabilized HA |
| Or‘ | Soft tissue orbitale |
| Pg‘ | Soft tissue pogonion |
| Ph | Philtrum |
| PL | Perioral zone of the lower lip |
| Pn | Pronasale |
| Por | Porion (external auditory meatus) |
| PU | Perioral zone of the upper lip |
| RHA | Resilient hyaluronic acid |
| SMART | Supreme monophasic and reticulated technology |
| SMAS | Superficial musculoaponeurotic system |
| Sn | Subnasale |
| St | Stomion (oral fissure when the lips are closed) |
| Trg | Tragus |
| Tri | Trichion (hairline) |
| TWN | Thin wall needle |
| UL | Upper lip |
| UTWN | Ultrathin wall needle |

### Editorial abbreviations

| | |
|---|---|
| c. | Circa (approximately) |
| cf. | Confer/conferatur (compare with) |
| e.g. | Exempli gratia (for example) |
| et al. | Et alteri (and others) |
| etc. | Et cetera (and so on) |
| i.e. | Id est (that is) |
| f. | And the following page |
| ff. | And the following pages |
| Fig. | Figure |
| max. | Maximum |
| n.d. | No date |
| No. | Number |
| p/pp | Page/pages |
| Syn. | Synonym |
| Tab. | Table |

### Units of measurement

| | |
|---|---|
| % | Percent |
| ° | Degrees |
| G | Gauge |
| g | Grams |
| L | HA particle size for a thick material with lifting capacity |
| M | HA particle size for a material of medium thickness with lifting capacity |
| mg | Milligrams |
| ml | Milliliters |
| S | HA particle size for a material with weak lifting capacity |
| XL | HA size for a very thick material with strong lifting capacity |
| XS | HA particle size for a thin material with no lifting capacity |

## ■ Periodontium and Surrounding Area (→ Fig. 1.21)

The space between the lip and the alveolar process with teeth is referred to as the oral vestibule. At rest, it is reduced to a narrow gap, as the soft tissue of the lips nestles tightly against the teeth and gums in this region.

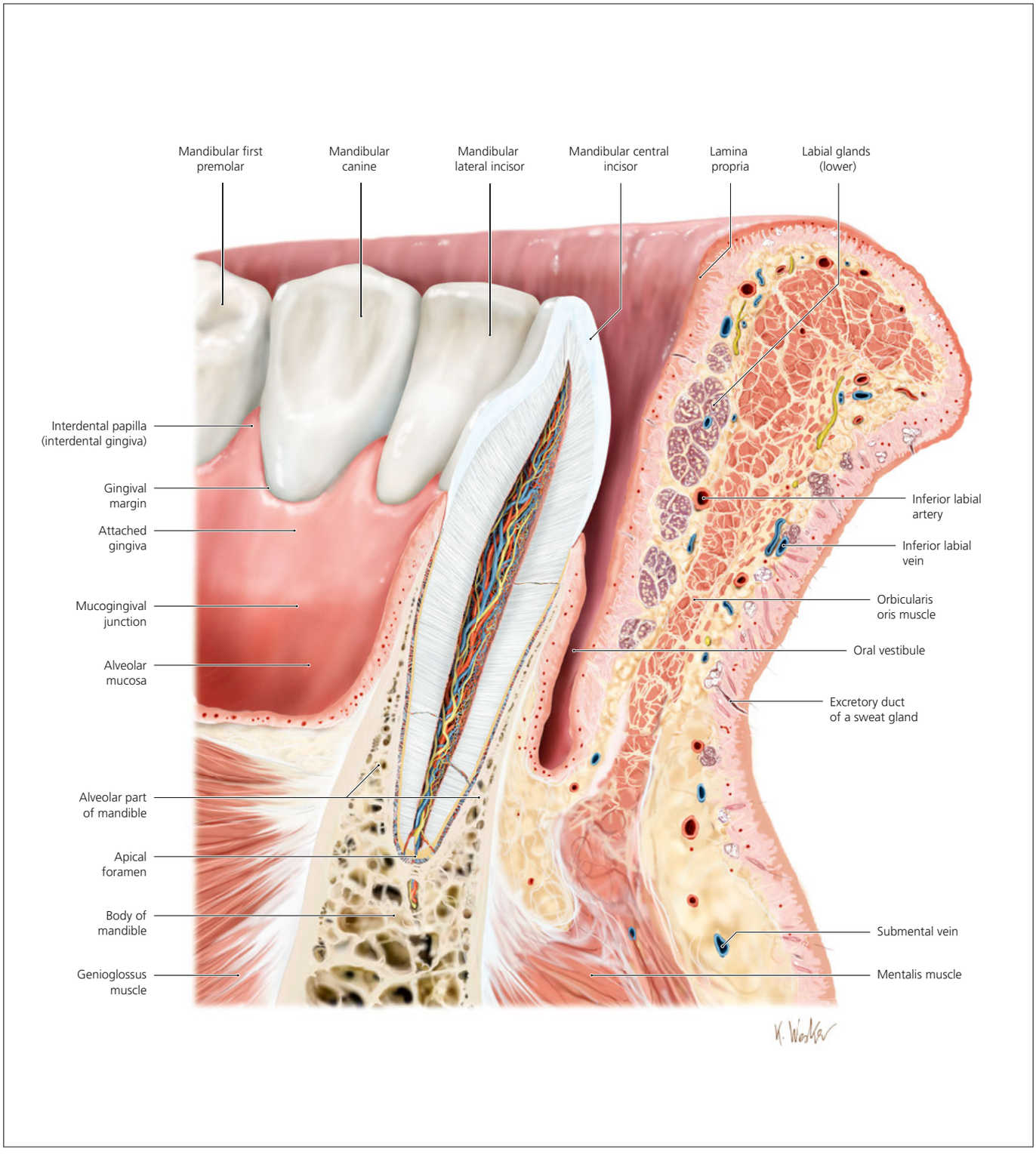



**Fig. 1.21** Sagittal section through the left mandibular central incisor and its surroundings. The large vessels are located subcutaneously in the zone that adjoins the muscle.

### 1.3.3 Anterior Vestibule (→ Fig. 1.22 a–c)

The vestibule is lined with highly mobile mucosa. The alveolar bone is covered with the alveolar mucosa, with a network of collagenous and elastic fibers running through its lamina propria. It is highly mobile. This elastic fiber network ends so abruptly against the adjoining attached gingiva that a clear junction is visible as a morphologic feature.

The mucous membrane in the mandible does not differ from that of the maxillary vestibule. The mentalis muscle has its origin medially at the bone of the mandible on both sides and extends toward the skin of the chin. When it contracts, it produces the typical cobblestone skin pattern. The depressor labii inferioris muscle has its origin at the bone margin of the mandible, caudally of the mental foramen. In the chin region, the vestibular gingiva, the alveolar mucosa, and the mucous membrane of the oral vestibule are served by blood vessels and nerves that emerge from the mental foramen. The lip is also served by these blood vessels and nerves: it feels numb when mandibular nerve block anesthesia is administered into the mental foramen. In most cases, the mental foramen is located in the region between the root apices of the first and second premolars. If the dental arch sits further in the anterior direction on the body of the mandible, the mental foramen is located closer to the first molar. This is the case when the front teeth show pronounced anterior inclination, a feature that is frequently encountered in patients of African or Asian origin.

## Vestibule

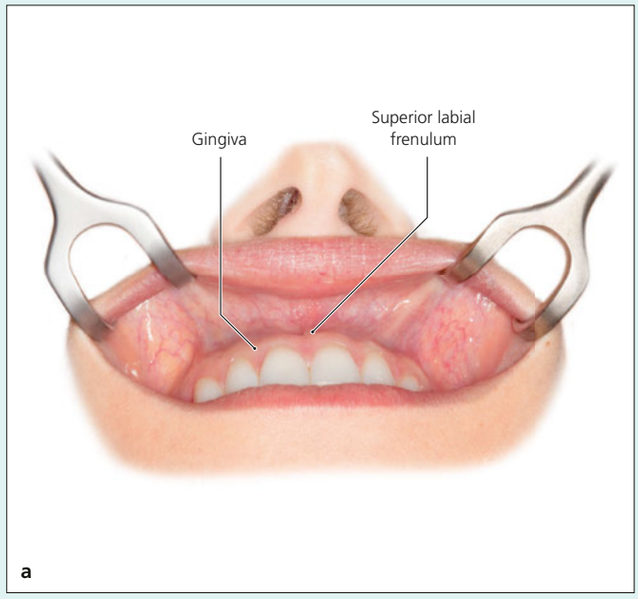



**Fig. 1.22 a–c** (a) Maxillary vestibule (anterior and 45-degree caudal view), (b) mandibular vestibule in the chin region (anterior and 45-degree cranial view, cutaway view on the left side), (c) mandibular vestibule in the chin region (with bone exposed).

**Key Points**

The various aging classifications involve different treatment concepts:

- The aim of perioral rejuvenation is to reverse the aging process of this specific esthetic unit.
- The aim of perioral beautification is to enhance the beauty of an intact young lip (Penna et al. 2015).
- The various individual deformities and anatomical circumstances affecting the lip need to be factored in and taken into account when treating aging lips (average, symmetric lips were selected for the aforementioned study).

## 1.5 Lip Shape and Expression

Lip shape has a pronounced, defining effect on the face. If the natural shape of the lips is inadvertently altered as a result of a treatment error or due to the unrealistic wishes of the patient, facial expression will be altered as well. The same applies if too much volume is injected into the atrophied lip of an elderly patient: the lip looks artificial and does not harmonize with the rest of the face. Improving a face harmoniously is often a balancing act between injecting as much as necessary and as little as possible.

Figures 1.30–1.41 show how changing the lips in the same face can lead to conclusions about someone's personality, mood, and general presence. These examples also illustrate what can happen if the natural shape of the face is ignored. For this reason, if a patient's wishes are based on fashion trends, they need to be evaluated by the therapist with regard to these potential effects, and the issue explored in detail with the patient.

The examples given here assume that the teeth are normally positioned. Only the mouth has been changed in each case. It is amazing how the expression of the eyes also changes when the lip shape is altered.



### Lip Shape and how it Defines the Face

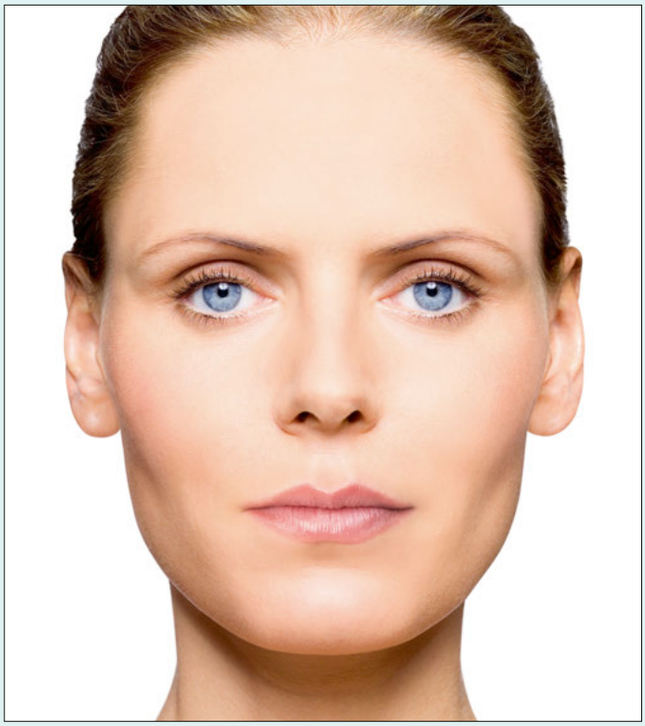


**Fig. 1.30** Pronounced Cupid's bow and well-defined philtrum.

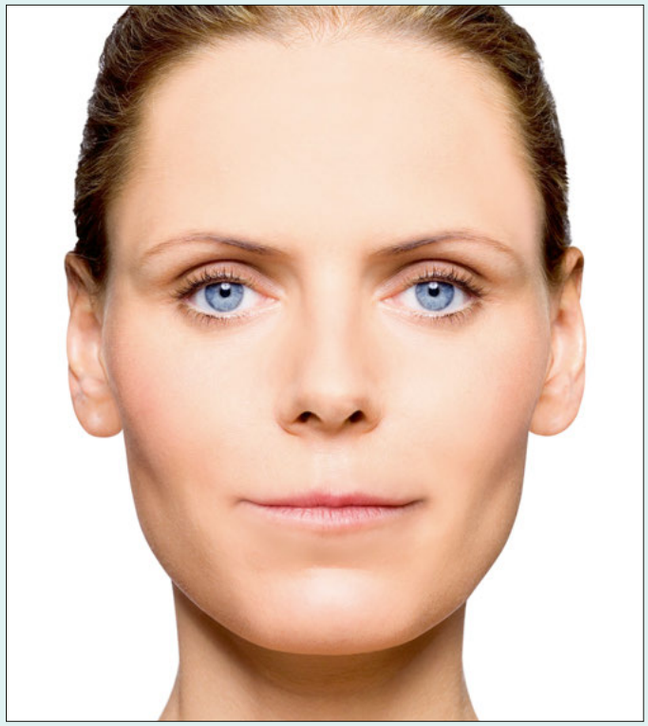


**Fig. 1.31** Thin upper lip, blurred contours, and dry lips.

## Lip Shape and how it Defines the Face

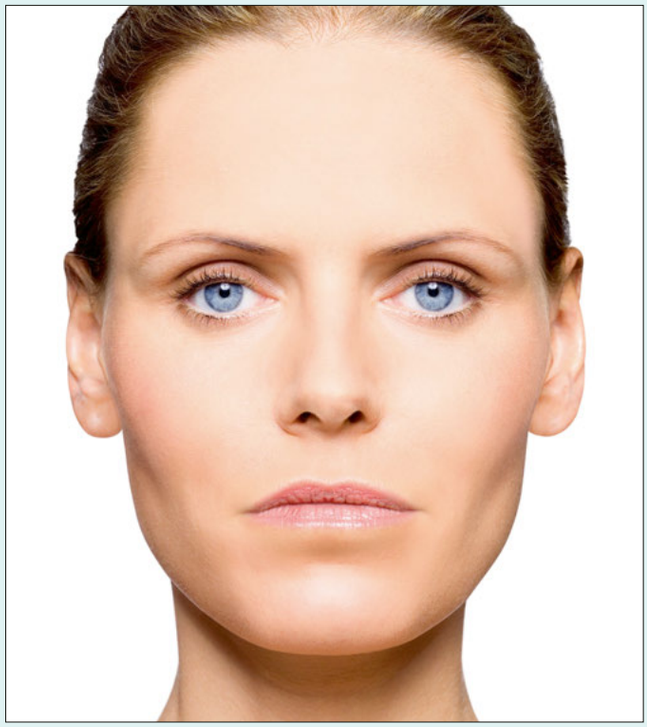


**Fig. 1.32** The corners of the mouth have sagged slightly, the Cupid's bow is flat.

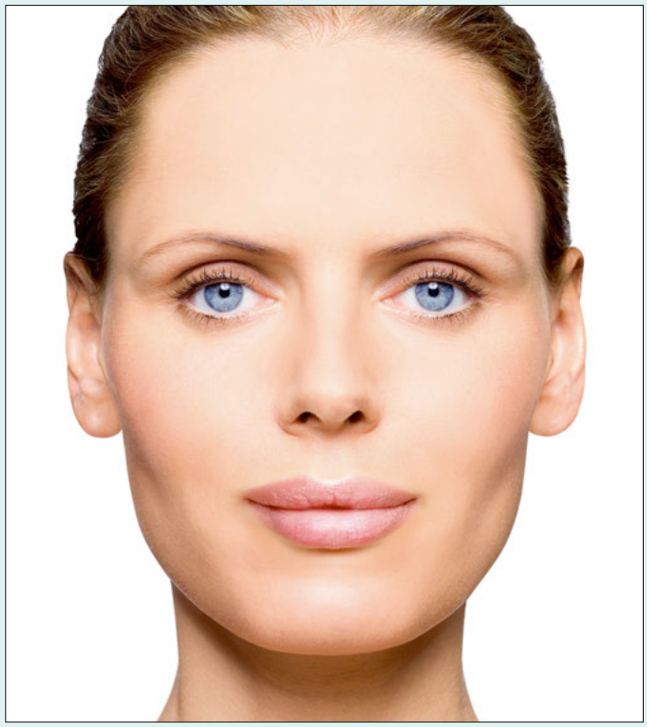


**Fig. 1.33** Full lips, with the upper lip wider than the lower lip, larger lateral tubercles, and a natural central groove. The volume of the lip falls forward slightly, with a lateral deficit.

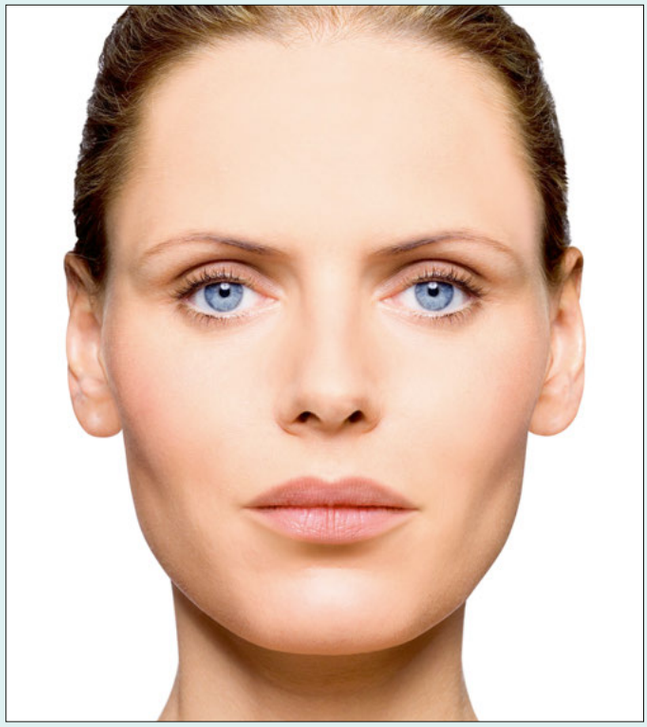


**Fig. 1.34** In this image, the upper to lower lip ratio is 1 : 1, making the lower lip appear narrower.

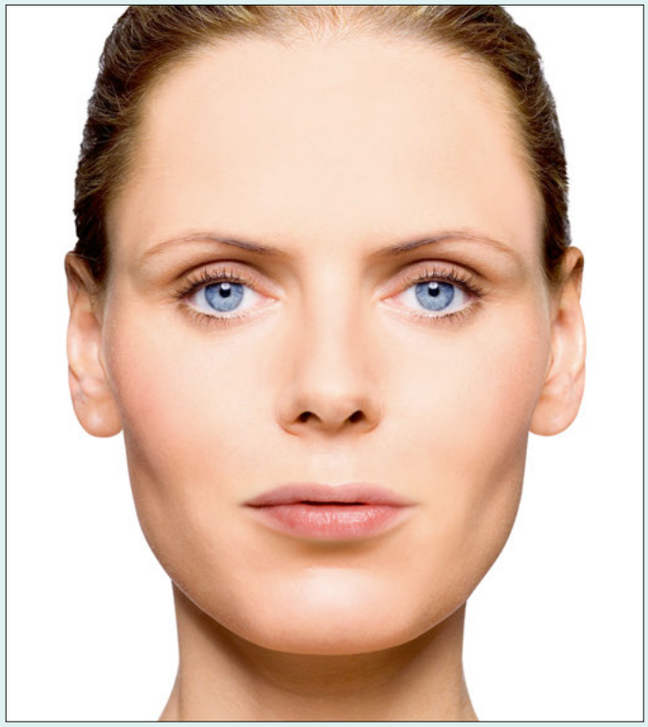


**Fig. 1.35** Poorly defined Cupid's bow in a thin, stretched upper lip. The lower lip is not as wide but is more voluminous.

### 1.6.3 Landmarks according to Daniel Brusco
(→ Fig. 1.59)

To give a more complete perspective, we have also included the approach of Daniel Brusco, maxillofacial surgeon in Zürich, Switzerland, who kindly shared his findings with us.

## ■ Ideal Profile

#### Side View

When photographed in a strictly lateral view, we perceive a profile as harmonious if the foremost points of the upper lip (labiale superius, Ls), lower lip (labiale inferius, Li), and chin (soft tissue pogonion, Pg') lie on a line that, when taken from the midpoint between the tip of the nose (pronasale, Pn) and the point of attachment of the wings of the nose (alare, Ala), forms an angle of 82 to 86 degrees (in men, this may be as high as 90 degrees) with the absolute vertical (modified Steiner line, S-line). In this context, the lips should be closed but completely relaxed, with a soft labiomental depression (no sharp line or true fold).

#### Front View

In the front view, the rule of thirds, if fulfilled, is regarded as esthetic for the anterior height of the face. According to this rule, the distance between the attachment point of the nasal septum (subnasale, Sn) and the oral fissure when the lips are closed (stomion, St) is half the distance from the oral fissure (with the lips closed) to the tip of the chin (soft tissue menton, Gn'). With the lips slightly parted, the incisal edges of the anterior teeth should still be clearly visible (2–4 mm), while the gum margin should be only just revealed (1–2 mm) when the lips are open in a full smile. When conducting maxillary and orthopedic surgical procedures of varying complexity, all of these points can be taken into account, and, above all, influenced almost at will to produce a natural and esthetically appropriate result.

## ■ Deviations from the Ideal Profile

It is essential to bear in mind that the soft tissue of the perioral region is supported by the underlying dentoskeletal structures, which differ in shape from one individual to another, with corresponding alterations to the appearance of the perioral soft tissue. Good knowledge and correct interpretation of these differences in shape are relevant when deciding which treatment strategy might be promising and which might not.

It soon becomes clear that treatment with a dermal filler will not be sufficient to achieve a harmonious result under certain anatomical conditions (→ author's treatment recommendations) (→ Figs. 1.60–1.64).



### Ideal Profile Proportions according to Daniel Brusco

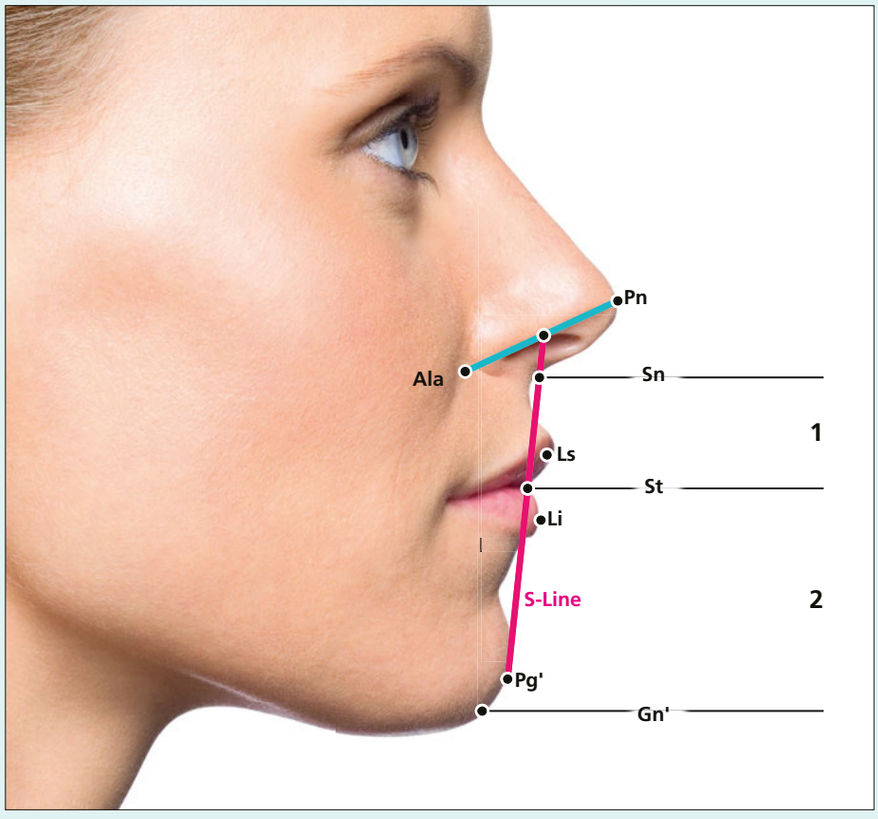



**Fig. 1.59** The most commonly used landmarks and mapping lines (see Fig. 1.48, p. 31), limited to the mouth region, with two additional lines to better represent deviations from the norm of the mouth and jaws (modified from Brusco et al. 2013).

| | |
|---|---|
| Pn | Pronasale |
| Ala | Attachment point of the wings of the nose |
| Sn | Subnasale |
| Ls | Labiale superius |
| St | Stomion |
| Li | Labiale inferius |
| Pg' | Soft tissue pogonion |
| Gn' | Soft tissue menton |

## Dentoskeletal Variants and Perioral Soft Tissue

### Maxilla too Far Back

**Fig. 1.60** As an example, if the maxilla lies too far back relative to the mandible or the facial plane, this automatically produces a "hanging" or even inverted upper lip as a whole, with a wider nasolabial angle, a negative lip profile, and insufficient vermillion eversion. In the front view, the upper lip is thin with insufficient Cupid's bow support and a narrower or less pronounced philtrum. The paranasal region is also flattened, and nasolabial lines are almost universal, even at a young age. The same effect can also be caused by vertical (or, in extreme cases, even lingually inclined/retroclined) maxillary anterior teeth, of the kind that commonly need adjustment following an orthodontic treatment that involves the extraction of two premolars due to overcrowding.

→ **In this case, improvement can be achieved with dermal fillers in the upper lip and in the cutaneous part of the upper lip. If tooth displacement/poor alignment is the cause, the result can be considerably improved by measures to correct this displacement.**

### Mandible too Far Back with Everted Lower Lip

**Fig. 1.61** If the mandible is too far back, the lower lip, with a receding chin, is frequently excessively everted, producing a negative lip profile, while the labiomental groove is often deeper or even takes the form of a line. This effect is also seen if the mandibular anterior teeth have no contact with the maxillary teeth or if they create a gap into which the lower lip can retract.

In the front view, relaxed closure of the lips is generally not possible but needs to be forced, with a corresponding crinkling of the lip margin (activation of the orbicularis oris muscle) and the formation of skin retractions on the chin, known as cobblestone chin (overactivity of the mentalis muscle).

→ **Slight improvement in the upper lip region is possible here. The curve between the nose and lip can be straightened slightly by augmentation of the subnasale part. The receding chin cannot be harmonized using fillers.**

## Analysis using a Quadrant Template


**Fig. 2.6** The quadrant template allows the therapist to determine the ratios of the four parts of the lips in relation to each another, i.e. to ascertain whether these ratios are "correct."

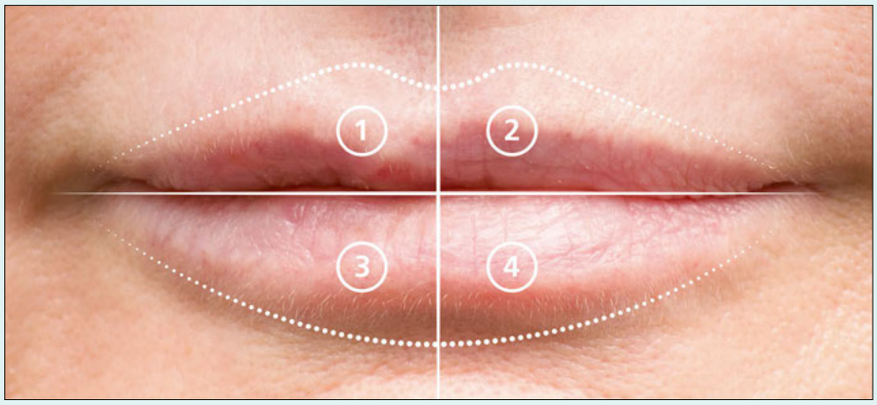



**Fig. 2.7** Use of this analytical template clearly shows up the asymmetry of the lips.

The Cupid's bow shows a shift to the right (from the patient's point of view). The right upper lip is smaller, thinner, and more inverted in the center. The tubercle is not located in the center but more toward the right. The two philtral columns are flattened, more so on the right side than on the left. There is also a small scar on the right philtrum near the contour. The right lower lip is less pronounced than the left one: it is flatter, thinner, and shorter. The center of the lower lip is parallel to the center of the Cupid's bow.

## Treatment Plan

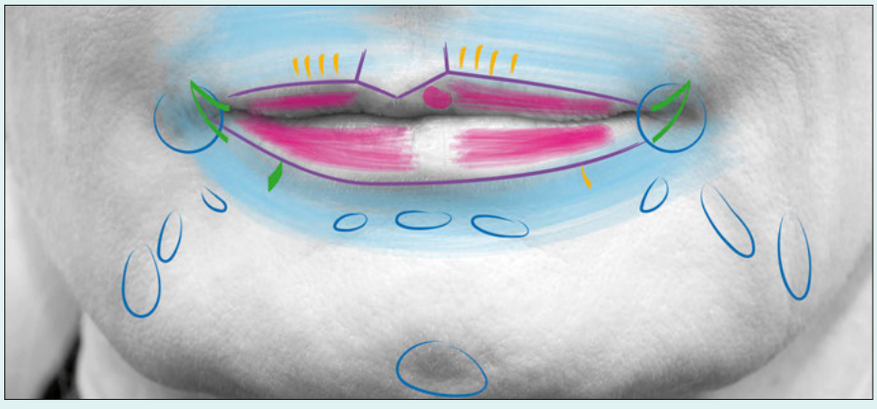


**Fig. 2.8** The lips and perioral areas have been marked to indicate treatment sites for the following indications:

- Rehydration and revitalization of the perioral zone
- Contouring and accentuation of the lost shapes
- Balancing out asymmetries
- Volume replacement
- Removal of the shadows and lines on the chin
- Lip corner lift
- Lip moistening
- Reduction or removal of the perioral lines

When it comes to balancing the upper lip asymmetry, an improvement can be made by sharp contouring of the philtrum. To do this, 1.0 mm will be added to the medial side of the right philtrum, close to the natural philtral peak, to achieve visual centering of the philtrum. The tubercle should be accentuated slightly on the left side (with 0.02 ml HA). The right upper lip can be matched up with the left by balancing out the deficit. The right lower lip can be augmented laterally, using technique 42 (see Chap. 9.6.6, p. 294) with 0.5 ml HA. The volume deficit of the right lower lip will be remedied by matching it to the left lower lip. Once the symmetry has been improved, the lips as a whole can be treated over several sessions. The revitalization needs to be carried out over three consecutive sessions, to allow neocollagenesis to take place. The first session provides the basis for all subsequent treatments.

## First Session: Early January

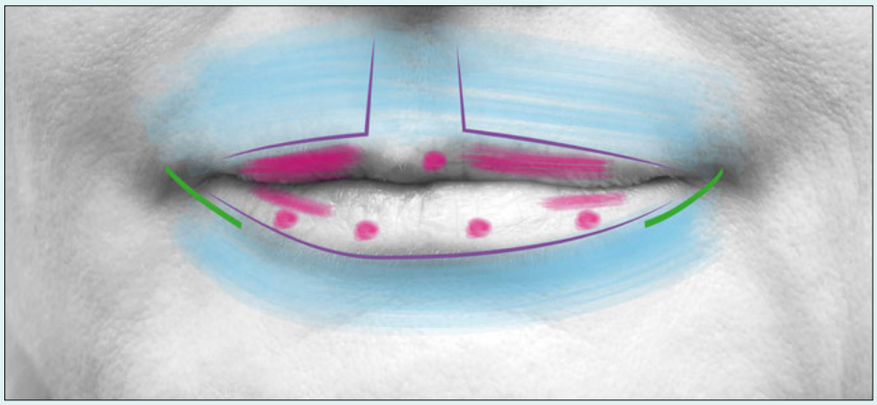


**Fig. 2.9**

– Revitalization, hydration in the perioral region
– Stabilization of the contours
– Balancing and shaping of the philtrum
– Volume replacement
– Gentle lip corner lift
– Widening the lips

| Treatment* | Technique no. | HA product | UL | LL | PU | PL |
|---|---|---|---|---|---|---|
| Contour | 6 | M | 0.3 | 0.35 | – | – |
| Philtrum | 9 | M | 0.2 | – | – | – |
| Mouth corners | 39 | M | – | 0.4 | – | – |
| Volume | 18 | M | 0.3 | 0.3 | – | – |
| Tubercles | 27 | | 0.05 | – | – | – |
| Revitalization | 1 | XS | – | – | 0.5 | 0.5 |
| HA filler in ml | | | 2.9 | | | |

**Table 2.1** *The HA volumes are given in ml. The technical details may be looked up in this book under the respective technique number. The name and batch number of the product being used would always be entered into a real treatment plan. UL = upper lip, LL = lower lip, PU = perioral zone of the upper lip, PL = perioral zone of the lower lip.

## Second Session: Early February

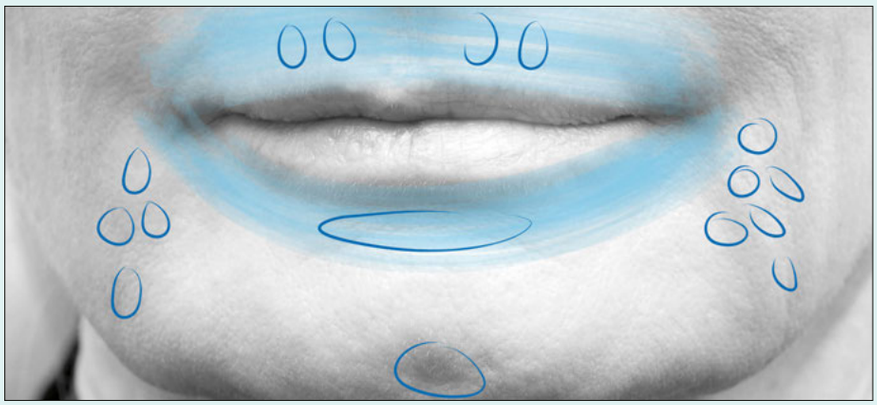


**Fig. 2.10**

– Second revitalization, hydration of the perioral zone
– Inject filler into the perioral shadows (vertical injection technique)
– Filling of the chin groove
– Filling of the labiomental fold

→ **The second revitalization and the perioral volumization are scheduled for the 2nd session.**

| Treatment* | Technique no. | HA product | UL | LL | PU | PL |
|---|---|---|---|---|---|---|
| Revitalization | 2 | XS | – | – | 0.5 | 0.5 |
| Perioral shadows | 31 | M | – | – | 0.4 | – |
| Labiomental fold | 29 | M | – | – | 0.4 | – |
| Chin augmentation | 30 | M | – | – | 0.2 | – |
| HA filler in ml | | | 2.0 | | | |

**Table 2.2** *The HA volumes are given in ml. The technical details may be looked up in this book under the respective technique number. The name and batch number of the product being used would always be entered into a real treatment plan. UL = upper lip, LL = lower lip, PU = perioral zone of the upper lip, PL = perioral zone of the lower lip.

## 4.4 Filler Products for Treatment of the Lips and Perioral Region

| HA Fillers for Treatment of the Lips and Perioral Zone (Authors' Recommendation) | | | | | | |
|---|---|---|---|---|---|---|
| **Product name** | **Supplier** | **Indication** | **Depth of administration** | **HA concentration Viscosity Crosslinking** | **Needle/ cannula gauge** | **Special material properties** |
| BELOTERO Soft ● | Merz Aesthetics | • Correction of superficial lines | Upper dermis | 20 mg/ml Dynamically multi-crosslinked (CPM and DCLT technology) | 30G 1/2 | • Polydensified, cohesive gel<br>• Very good tissue integration<br>• Weak water-binding capacity<br>• Persistence of 6–9 months<br>• Very well tolerated<br>• Available with lidocaine (0.3%) |
| BELOTERO Lips Contour ▲ | Merz Aesthetics | • Lip contours<br>• Fine, perioral lines and wrinkles<br>• Moderate lines at the corners of the mouth | Upper and middle dermis | 22.5 mg/ml Multi-dynamically crosslinked (CPM technology) | 27G 1/2<br>30G 1/2 | • Medium-viscosity, polydensified cohesive gel<br>• Very good tissue integration<br>• Virtually no water-binding capacity<br>• Persistence of 12 months<br>• Very well tolerated<br>• With lidocaine (0.3%)<br>• Blanching possible |
| BELOTERO Lips Shape ● | Merz Aesthetics | • Lip volume<br>• Highly pronounced lines at mouth corners | Middle and deep dermis | 25.5 mg/ml Multi-dynamically crosslinked (CPM technology) | 27G 1/2 | • High-viscosity, polydensified elastic gel<br>• Very good lifting capacity and tissue integration<br>• Very well tolerated<br>• Persistence of 12 months<br>• Available with lidocaine (0.3%) |
| Juvéderm HYDRATE ● | Allergan | • Improvement of skin moisture and elasticity | Upper dermis | 13.5 mg/ml Non-crosslinked HA with 0.9% mannitol | 30G 1/6<br>32G | • Good water-binding capacity<br>• Short persistence |
| Juvéderm ULTRA 3 ▲ | Allergan | • Medium-depth and deep skin lines<br>• Lip contours<br>• Lip volume | Middle and deep dermis | 24 mg/ml Crosslinked (HYLACROSS technology) | 27G 1/2 | • Smooth, supple gel<br>• Long persistence<br>• With lidocaine (0.3%) |
| Juvéderm ULTRA 4 ▲ | Allergan | • Deep skin lines<br>• Volume build-up of lips and cheeks | Deep dermis | 24 mg/ml Crosslinked (HYLACROSS technology) | 27G 1/2 | • Smooth gel<br>• Long persistence<br>• With lidocaine (0.3%) |
| Juvéderm ULTRA SMILE ● | Allergan | • Medium-depth and deep skin lines<br>• Lip contours<br>• Lip volume | Middle and deep dermis | 24 mg/ml Crosslinked (HYLACROSS technology) | 30G 1/2 | • Smooth gel<br>• Long persistence<br>• With lidocaine (0.3%) |
| Juvéderm VOLBELLA ● | Allergan | • Superficial and medium-depth lines<br>• Volume build-up and definition of lip contours | Upper and middle dermis | 15 mg/ml Cross-linked (VYCROSS technology) | 30G 1/2 | • Good persistence<br>• Good distribution (reason: minimal cohesiveness)<br>• Very good tissue integration and neocollagenesis<br>• With lidocaine (0.3%) |
| Juvéderm VOLIFT ● | Allergan | • Deep skin lines<br>• Contour deficits<br>• Volume build-up of cheeks, chin, and lips | Deep dermis (recommendation: not for intradermal use) | 17.5 mg/ml Crosslinked (VYCROSS technology) | 30G 1/2 | • Very long persistence (up to 18 months)<br>• Good distribution<br>• Very easy to inject<br>• Very good tissue integration and neocollagenesis<br>• With lidocaine (0.3%)) |
| Restylane ▲ | Galderma | • Lip contours<br>• Philtrum<br>• Perioral region | Middle dermis | 20 mg/ml stabilized (NASHA technology) | 29G 1/2<br>27G Pixl<br>28G Pixl + | • Solid gel with moderate lifting capacity<br>• Available with or without lidocaine |
| Restylane Defyne ● | Galderma | • Deep lines<br>• Soft to moderate facial contouring<br>• (Oral commissures, chin crease, chin) | Deep dermis Superficial subcutis | 20 mg/ml Very high degree of crosslinking and calibration (Balance technology) | 27G 1/2 (UTWN) | • Moderately solid gel with high lifting capacity<br>• With lidocaine |

| HA Fillers for Treatment of the Lips and Perioral Zone (Authors' Recommendation) | | | | | | |
|---|---|---|---|---|---|---|
| **Product name** | **Supplier** | **Indication** | **Depth of administration** | **HA concentration Viscosity Crosslinking** | **Needle/ cannula gauge** | **Special material properties** |
| Restylane Lyft Lidocain ▲ | Galderma | • Powerful lifting capacity<br>• Deep lines<br>• Soft to moderate facial contouring<br>• (Oral commissures, chin crease, chin) | Deep dermis Superficial subcutis | 20 mg/ml Stabilized (NASHA technology) | 29G 1/2; 23–25G Pixl, 25G Pixl + | • Solid gel with high lifting capacity<br>• Available with and without lidocaine |
| Restylane Skinbooster Vital ▲ | Galderma | • Improvement of skin moisture, skin structure, skin elasticity<br>• Requires more tissue coverage (thicker skin) | Intra-dermally | 20 mg/ml Stabilized (NASHA technology) | System; 30G Pixl 29G TWN | • SmartClick system<br>• Strong water-binding capacity<br>• Well tolerated |
| Restylane Skinbooster Vital Light ● | Galderma | • Improvement of skin moisture, skin structure, skin elasticity<br>• Requires more tissue coverage (thinner skin) | Subcutane-ously | 12 mg/ml Stabilized (NASHA technology) Low crosslinking | 29G TWN 30G Pixl | • SmartClick system<br>• Strong water-binding capacity<br>• Well tolerated |
| Restylane Kysse ● | Galderma | • Lip volume<br>• Lip contours | Vermillion Submucosa | 20 mg/ml With moderate degree of crosslink-ing and low calibration rate (Balance technology) | 30G 1/2 (UTWN) | • Moderately soft gel with moderate lifting capacity<br>• With lidocaine |
| saypha FILLER Lidocain ▲ | Croma Pharma | • Lip volume<br>• Correction of moderate to pronounced facial lines and wrinkles | Middle to deep dermis | 2.3 % HA (23 mg/ml) | 2 x 27G Terumo 1/2", thin-walled | • Sterile<br>• Viscoelastic<br>• Clear, colorless, isotonic, homogenized gel implant<br>• With 0.3% lidocaine |
| TEOSYAL Kiss ▲ | TEOXANE | • Harmonization of lip volume and lip contours<br>• Hydration of the lips | Subdermally Intramuscu-larly | 25 mg/g Crosslinked (RHA technology) | 27G 1/2 | • Moderately viscous gel<br>• Persistence approximately 9 months |
| TEOSYAL RHA 2 ● | TEOXANE | • Moderate lines<br>• Also universally for all indications | Middle dermis | 23 mg/g Crosslinked (RHA technology) BDDE Crosslinking agent only 3.1% | 30G 1/2 | • Specially for the mobile regions (forehead, glabella)<br>• With lidocaine |
| TEOSYAL RHA 3 ● | TEOXANE | • Deep, pronounced lines | Deep dermis | 23 mg/g Crosslinked (RHA technology) BDDE Crosslinking agent only 3.6% | 27G 1/2 | • Specially for dynamic regions (nasolabial folds, marionette lines)<br>• With lidocaine |
| TEOSYAL Global Action ▲ | TEOXANE | • Medium-depth lines<br>• Also universally for all indications except tear trough | Middle dermis Subdermally | 25 mg/g Crosslinked (RHA technology) | 30G 1/2 | • Moderately viscous gel<br>• Also available with lidocaine |

## 7.3 Hygiene

The hygienic measures during a filler injection treatment for facial lines are no different from the standard measures at any medical practice:

- Well-ventilated room
- Freshly covered treatment chair (fabric sheet/paper roll)
- Disinfected trays and other surfaces for tools and materials, with sterile coverings
- Sterilized practice tools and equipment (kidney dishes, etc.)
- Disposal of needles and cannulas in a dedicated sharps disposal box
- Disposal of waste materials after every treatment
- Cannulas and injection needles must not be touched with the fingers and must not come into contact with hair or skin
- Single-use gloves to be worn; sterile gloves should be worn when administering injections
- Use of medical masks to cover the nose and mouth
- Cleaning and disinfection of the skin area being treated

**Caution**

**Cleaning and disinfection of the skin area being treated**

Before each treatment, thoroughly remove all makeup, and disinfect the skin area being treated by wiping it with a sterile swab soaked in a product such as Octenisept or Kodan. Repeat this procedure three times in a row, using a new, freshly soaked swab each time. During the treatment, a swab soaked in an alcohol-free disinfectant should be held ready in the therapist's free hand, so that any blood can be removed and the skin cleaned. This swab should be changed immediately after use. After the treatment, clean the wound once again with disinfectant. It is advisable to apply a wound-healing cream.

## 7.4 Equipment used in Pre- and Post-Treatment Care

The following procedures and products are needed for pre- and post-treatment care in a lip treatment with HA (→ Figs. 7.3–7.18):



**Equipment used in Pre- and Post-Treatment Care**

**Fig. 7.3 Makeup removal –** Use makeup remover wipes or swabs soaked in a facial cleansing product.


**Fig. 7.4 Disinfection –** Before the treatment, thoroughly disinfect the area being treated with Kodan or Octenisept (also suitable for the mucosa) or similar skin disinfectants.

**Equipment used in Pre- and Post-Treatment Care** (continued)


**Fig. 7.5 Cleaning the hands –** Before each treatment and before putting on single-use gloves, clean the hands thoroughly with medicated soap, then disinfect them.

**Fig. 7.6 Marking –** Mark the area being treated with a white or colored skin-marker pencil.

a


b

c

**Fig. 7.7 a–c Swabs –** Apart from classic medical swabs (a) and sterile swabs or compresses (b), one can also use cotton pads (c) because they are pleasant for the patient and also highly absorbent.

## 8.3.6 Bolus and Depot Technique

(→ Figs. 8.12, 8.13)

**Bolus technique**: The HA is injected into the skin vertically and delivered as a bolus into the center of the target area. This raises the tissue and corrects the shadow. It is advisable to grasp the area being injected between thumb and forefinger, which produces counterpressure that prevents the HA from spreading too far.

**Depot technique**: Volume can be built up by placing a number of boluses side by side, or the tissue stabilized by placing several depots into the target area. For larger treatment areas, distributing several small depots side by side or on top of each other can prevent the material from being encapsulated with connective tissue.

**Fig. 8.13** If the therapist squeezes the outside of the cheek between the thumb and forefinger, thus producing a degree of resistance to the injection, supramucosal depots can be accurately placed into the target area where there has been a loss of substance (vertical depot technique). It is advisable to aspirate beforehand to prevent the infiltration of larger blood vessels.

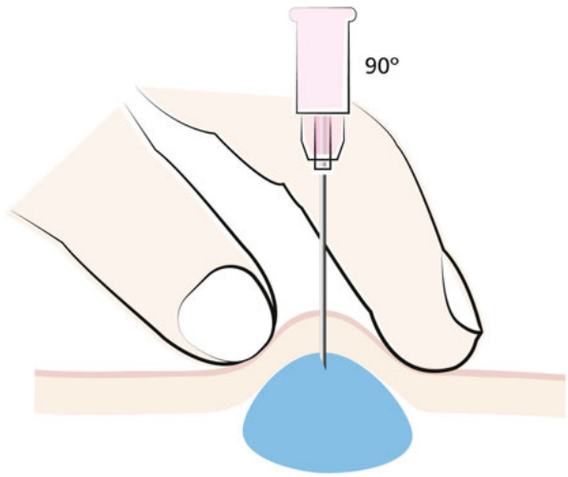



**Fig. 8.12 Bolus and depot technique.**

**Angle of insertion:** 90 degrees
**Needle bevel:** specified
**Layer:** deep and middle dermis, intracutaneous
**Injection volume:** 1–2 boluses of 0.05–0.1 ml using the retrograde method.

## 8.3.7 Sandwich Technique

(→ Fig. 8.14)

The sandwich technique is suitable for the placement of material into various tissue layers, to raise the tissue, to arrest any muscle effects or to correct shadows.

This is a form of the bolus technique involving the placement of depots in several layers. To do this, the tissue (e.g. along a marionette line) is raised between the thumb and forefinger, and the depots then injected one over the other. Different HA strengths can also be injected in layers in a similar fashion.

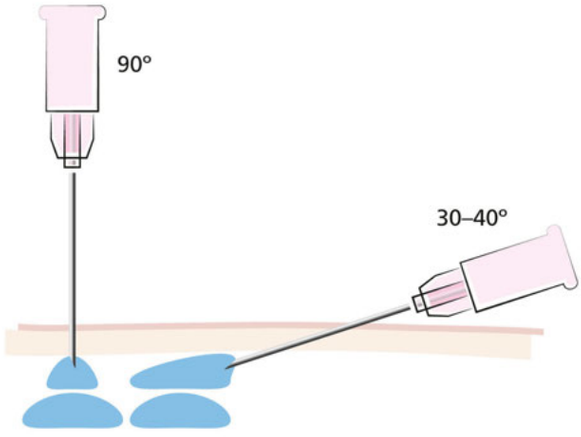



**Fig. 8.14 Sandwich technique.**

**Angle of insertion:** 30–40 and 90 degrees, respectively
**Needle bevel:** facing up
**Layer:** deep and middle dermis
**Direction of insertion:** The material is injected along the area in two layers, one above the other. Several depots are placed in this way.

### 8.3.8 Stretching Technique

(→ Fig. 8.15)

The stretching technique applies to the linear and point injection techniques for superficial correction. During the injection, the skin is stretched transversely to the direction of insertion, and as much as possible. The counterpressure of the stretched skin can prevent overcorrection and help the HA distribute more widely into the tissue. Asking an assistant to help with this can be useful.

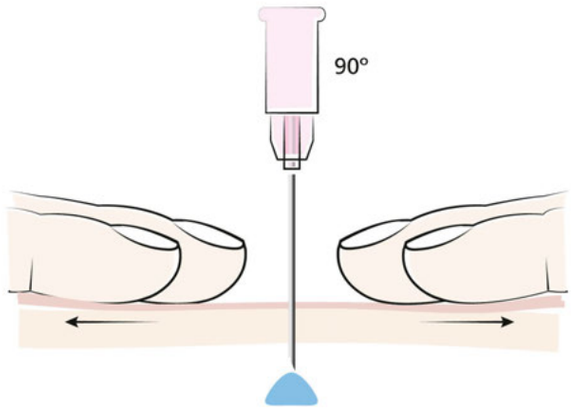



**Fig. 8.15 Stretching technique.**

**Angle of insertion:** 90 degrees

### 8.3.9 Compression Technique

(→ Fig. 8.16)

The compression technique applies to the linear, point, and bolus injection techniques. During the injection, the skin around the area being treated is compressed between the thumb and forefinger. This changes the tissue pressure, limiting the distribution of the HA. The material can thus be "forced" into a specific area.

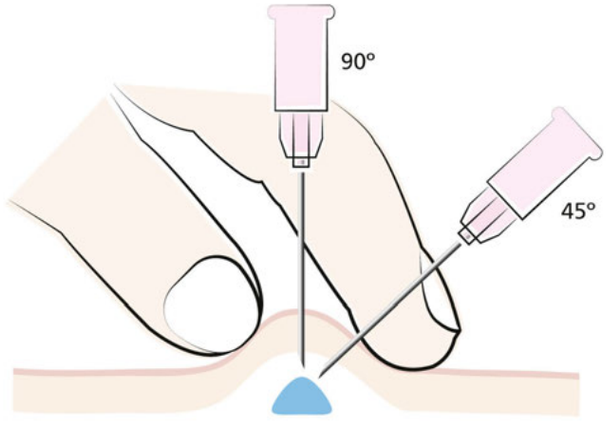



**Fig. 8.16 Compression technique.**

**Angle of insertion:** 45–90 degrees

# 9.1.3 TECHNIQUE 3
## Hydration – Vermillion (Blunt Cannula)

The treatment goal is rehydration and revitalization of the entire surface of the vermillion. Lip dryness manifests as flaking, wrinkling, and sometimes also cracks in the skin surface. Hydration greatly improves the texture of the skin of the lips.

**Patient Selection**

- Patients with age-related lip dryness due to a lack of sebaceous glands or genetic factors; extrinsic and intrinsic factors also play a major role

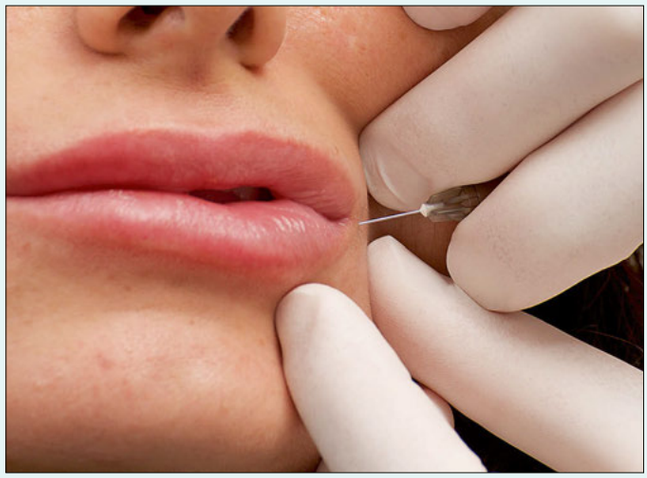
### Injection Scheme and Planning (→ Technique 3 – Figs. 1, 2)

The injections are given using the cannula technique. The first puncture is made c. 5 mm from the mouth corner. After pre-pricking with the sharp needle (Nokor needle), the therapist carefully introduces the blunt cannula into the pre-pricked opening. The injections with the cannula are delivered very superficially into the subcutaneous layer. The skin layers are teased apart carefully to form an extensive hollow space below the vermillion. The material is introduced under mobilization and placed throughout the vermillion (horizontal mobilizing technique with the cannula). The low-crosslinked HA is delivered slowly and uniformly and is distributed with the aid of gentle massage.

**Technique:** linear technique
**Direction of insertion:** along the body of the muscle
**Layer:** subcutaneous throughout the vermillion
**Material:** class "XS to S soft" product
**Volume:** max. 0.5 ml per upper and lower lip, 1.0 ml in total
**Needle:** 27–30G cannula, > 25G Nokor needle
**Anesthesia:** lidocaine cream, conduction anesthesia

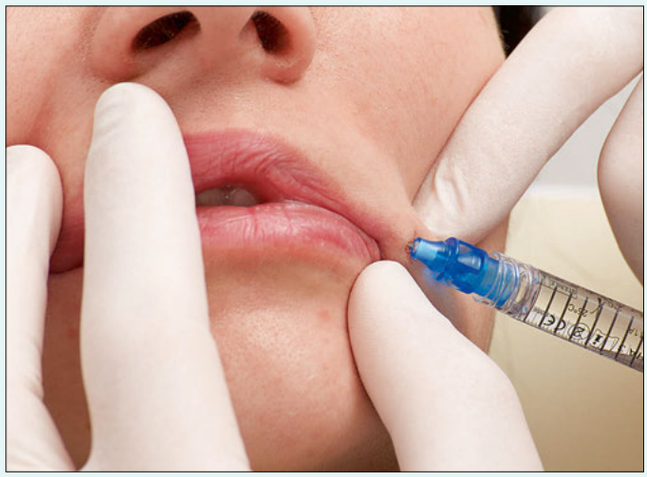
**Technique 3 – Figs. 1, 2** Injection scheme and planning for hydration – vermillion (blunt cannula).

## Treatment Method (→ Technique 3 – Figs. 3–7)



**Technique 3 – Fig. 3** Pre-prick with the Nokor needle c. 3–5 mm from the mouth corner. Plunge in the Nokor needle to a depth of 2–3 mm.

**Technique 3 – Fig. 4** Stretching the lip makes it easier to guide the cannula up to the center of the lip. If the cannula is pushed against the skin of the lip, the therapist can check the location of its tip.



**Technique 3 – Fig. 5** Scrape the cannula tip against the skin of the lip to detach it from the muscle along several parallel lines. After this, inject the material very superficially and uniformly, with continuous visual monitoring.

**Technique 3 – Fig. 6** The bulge produced by the delivered HA allows the therapist to see exactly where the material is located.

**Technique 3 – Fig. 7** Use the same procedure in the lower lip. Gently pushing the cannula tip against the tissue indicates its location.

## Important Notes

Since a fine, and thus very flexible, cannula (27–30G) is used in this technique, it is slightly more difficult to maintain the direction of insertion. We therefore recommend squeezing the lip gently between thumb and forefinger and delivering the material into the channel formed in this way. This stops the cannula from escaping. The procedure should be repeated until the whole of the desired target area has been treated. Several adjacent channels should be created to form an extensive hollow area below the skin of the lip, which is then filled with low-crosslinked HA.

### ⚠ Possible Side Effects

Slight reddening, rarely inflammation, rarely hematomas, mild to more severe swellings

### ⚠ Undesirable Side Effects

Overcorrection with resultant alteration of the oral region, asymmetry due to non-uniform delivery of material

## Treatment Protocol at a Glance

- History, evaluation, and patient information
- Informed consent form
- Photo documentation: “before” images
- Analysis and marking of the areas to be treated
- Cleaning
- Thorough disinfection
- Local anesthesia (lidocaine cream), conduction anesthesia
- Injection technique: linear technique, several lines per upper and lower lip
- Layer: subcutaneous
- Material: class “XS to S soft” product
- Volume: max. 1 ml in total
- Needle: 27–30G cannula, > 25G Nokor needle
- Gentle massage may be applied
- Cooling if required
- Heparin cream for hematomas, ibuprofen p.o., arnica
- Photo documentation: “after” images
- Advice on dos and don’ts after the procedure
- Follow-up appointment for a check-up after 8–14 days

# 9.4.5 TECHNIQUE 19
## Moderate Augmentation (Blunt Cannula)

This involves a deep, horizontally mobilizing technique using a cannula. The treatment goal is the uniform, soft build-up of volume within the lip. Use of a blunt cannula is recommended for a particularly injury-free and less painful procedure. This treatment requires accurate planning to define how much material is to be delivered in which area. Even the slightest differences between the right and left halves of the lips lead to asymmetry.

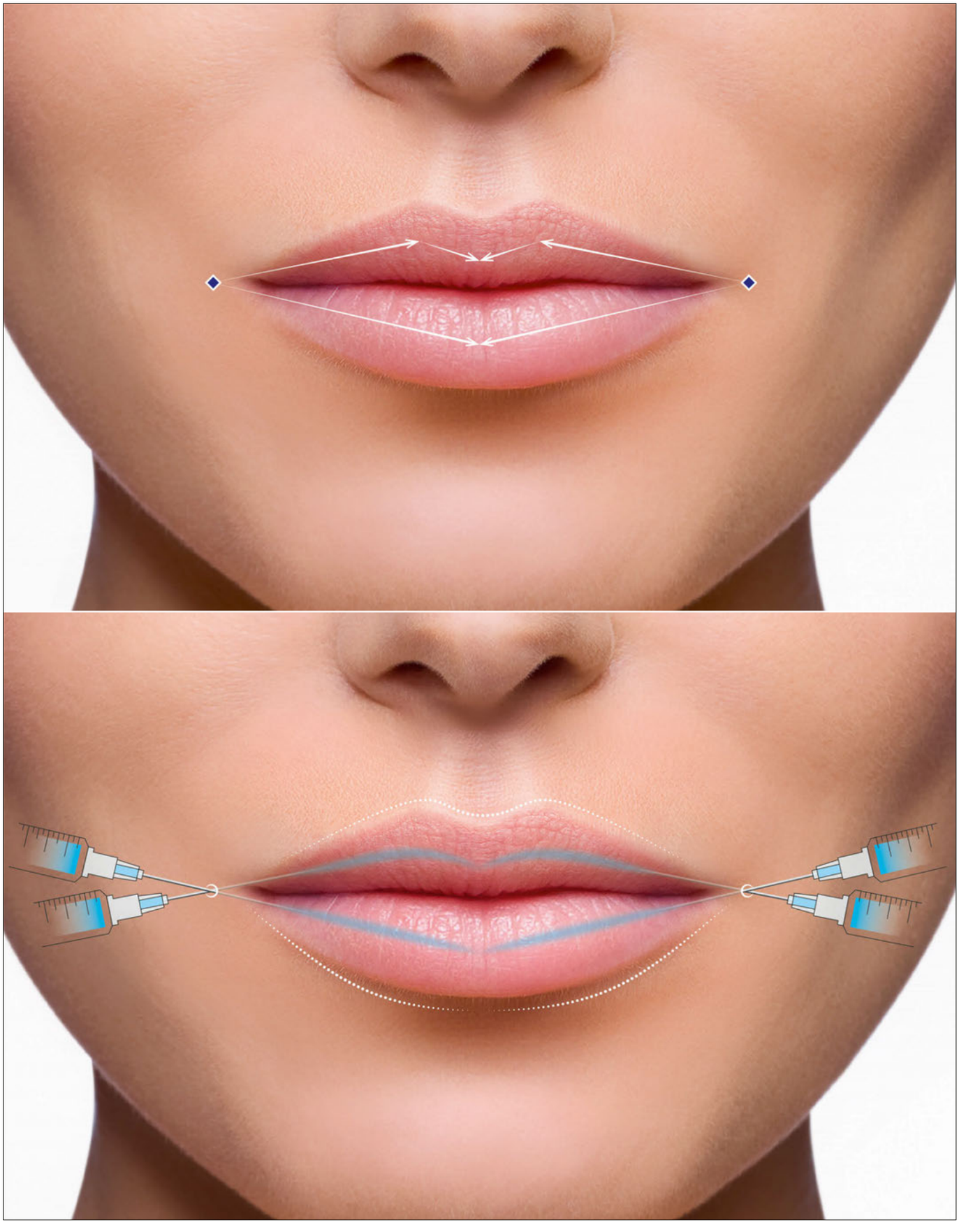
**Patient Selection**

- Where there is a volume deficit
- If an increase in lip volume is desired

### Injection Scheme and Planning (→ Technique 19 – Figs. 1, 2)

As there is only one entry point on each side, injury to the blood vessels is less likely than when a sharp needle is used. The first perforation is made with a sharp Nokor needle inserted adjacent to the mouth corners to make an entry point for the cannula. The blunt cannula is then advanced into the pre-pricked opening. It is sometimes difficult to find this hole; we therefore recommend using a Nokor needle of larger gauge than that of the cannula itself. The direction of insertion of the cannula is along the insertion points of the zygomaticus muscle above the depressor anguli oris muscle. If the cannula is not in the correct layer and resistance can be felt, it must not be advanced by force. If this happens, the therapist should withdraw the cannula and look for another layer. The needle needs to glide smoothly. The material is introduced up to the middle of the lip on each side, with mobilization. To make space for the material, the layers of lip skin are teased apart gently (see Fig. 8.30, p. 121). The material is placed into the vermillion over the orbicularis oris muscle. If the tubercles of the lip are very prominent, they should be avoided when placing the material. The therapist's discretion and the patient's wishes take priority here.

**Technique:** linear technique
**Direction of insertion:** along the course of the lip, from the mouth corner going medially to the center of the lip
**Layer:** subcutaneous, in the vermillion over the orbicularis oris muscle
**Material:** class "S/M soft" product
**Volume:** c. 0.5–1.0 ml in total
**Needle:** 27G blunt cannula, 38 mm, > 25G Nokor needle
**Anesthesia:** lidocaine cream



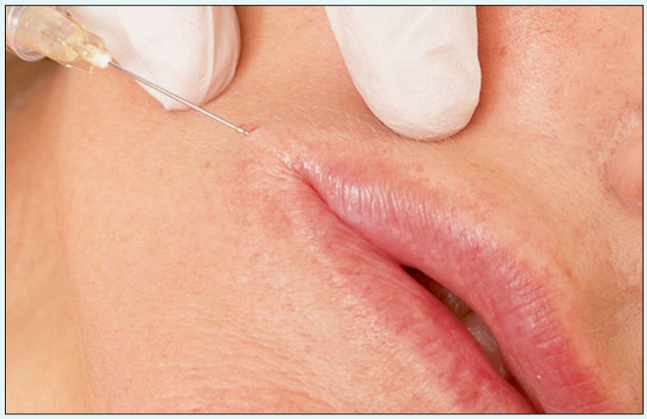
**Technique 19 – Figs. 1, 2** Injection scheme and planning for moderate augmentation (blunt cannula).

## Treatment Method (→ Technique 19 – Figs. 3–7)

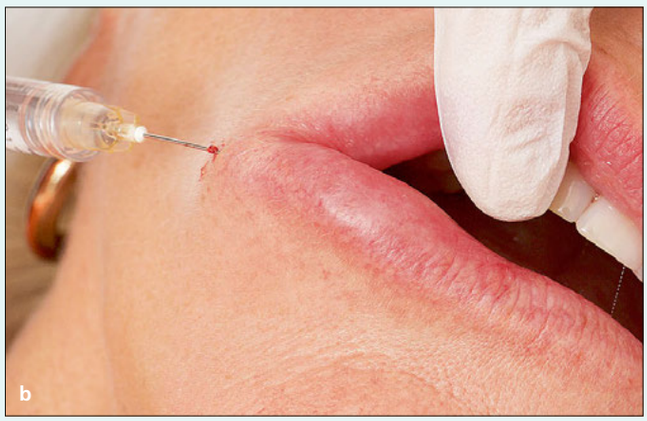
**Technique 19 – Fig. 3** Before using the cannula, first perforate the skin with a pre-pricking needle (Nokor needle).

**Technique 19 – Fig. 4** The insertion point should be chosen so that all the parts of the upper and lower lip being treated on each side can be reached with the cannula. Plunge the needle bevel into the skin to a depth of 1–2 mm at the entry point.

**Technique 19 – Fig. 5** Insert the cannula into the pre-pricked hole and allow it to find a subcutaneous path through the tissue gently and without force. Always do this with visual and sensory checks. In the lower lip, the cannula needs to negotiate the tendon of the risorius muscle. If the going is difficult here, change the angle of insertion or the depth of the skin layer again.



**Technique 19 – Fig. 6** When changing direction, e.g. from the lower to the upper lip, the tip of the cannula should be left in the pre-pricked hole at a depth of c. 1 mm, to ensure that the hole does not close up and need re-puncturing. If it proves difficult to advance the cannula into the lower lip, repeat perforation with the Nokor needle may be necessary. The direction of insertion of the Nokor needle should be toward the lower lip.


**Technique 19 – Figs. 7 a+b** Lifting the cannula reveals the location of its tip to ensure accurate delivery of material (a). In the upper lip, delivery should stop 1 cm from the corner of the mouth. In the lower lip (b), the pronounced bulge shows where the delivered material is located.

## Important Notes

- The treatment result depends greatly on how symmetrically the filler has been delivered into the lip quadrants. The key factors here are the volume of material and its placement.
- The material should be injected sparingly, since overcorrection can lead to an unnatural result.
- The material can be readily distributed by gentle massage after the treatment.

### Possible Side Effects

Rarely inflammation, very rarely hematomas at the insertion site of the Nokor needle, mild swellings

### Undesirable Side Effects

Inflammation, overcorrection with resultant alteration of the shape of the lip, nodule formation, asymmetry due to non-uniform delivery of material, rarely necrosis

## Treatment Protocol at a Glance

- History, evaluation, and patient information
- Informed consent form
- Photo documentation: “before” images
- Analysis and marking of the areas to be treated
- Cleaning
- Thorough disinfection
- Local anesthesia if required (lidocaine cream)
- Injection technique: linear technique, 1 line per quadrant
- Layer: subcutaneous in the vermillion over the orbicularis oris muscle
- Material: class “S/M soft” product
- Volume: c. 0.5–1.0 ml in total
- Needle: 27G blunt cannula, 38 mm, > 25G Nokor needle
- Massage may be applied
- Cooling if required
- Heparin cream for hematomas, ibuprofen p.o., arnica
- Photo documentation: “after” images
- Advice on dos and don’ts after the procedure
- Follow-up appointment for a check-up after 8–14 days

# 9.6.5 Technique 41
## Indentation in the Center of the Lip (Sharp Needle)

A length of dental floss in combination with the bolus technique is used to create a central indentation in the lower lip, and also in the upper lip if desired, to give the lips a sensual expression.

**Patient Selection**

- If the patient wants to change the appearance of the lips in this way
- If the natural indentation in the center of the lip has been reduced by aging processes and the patient wishes to restore it
- Where there is a difference in volume between the upper and lower lip and/or between the right and left side of the lip

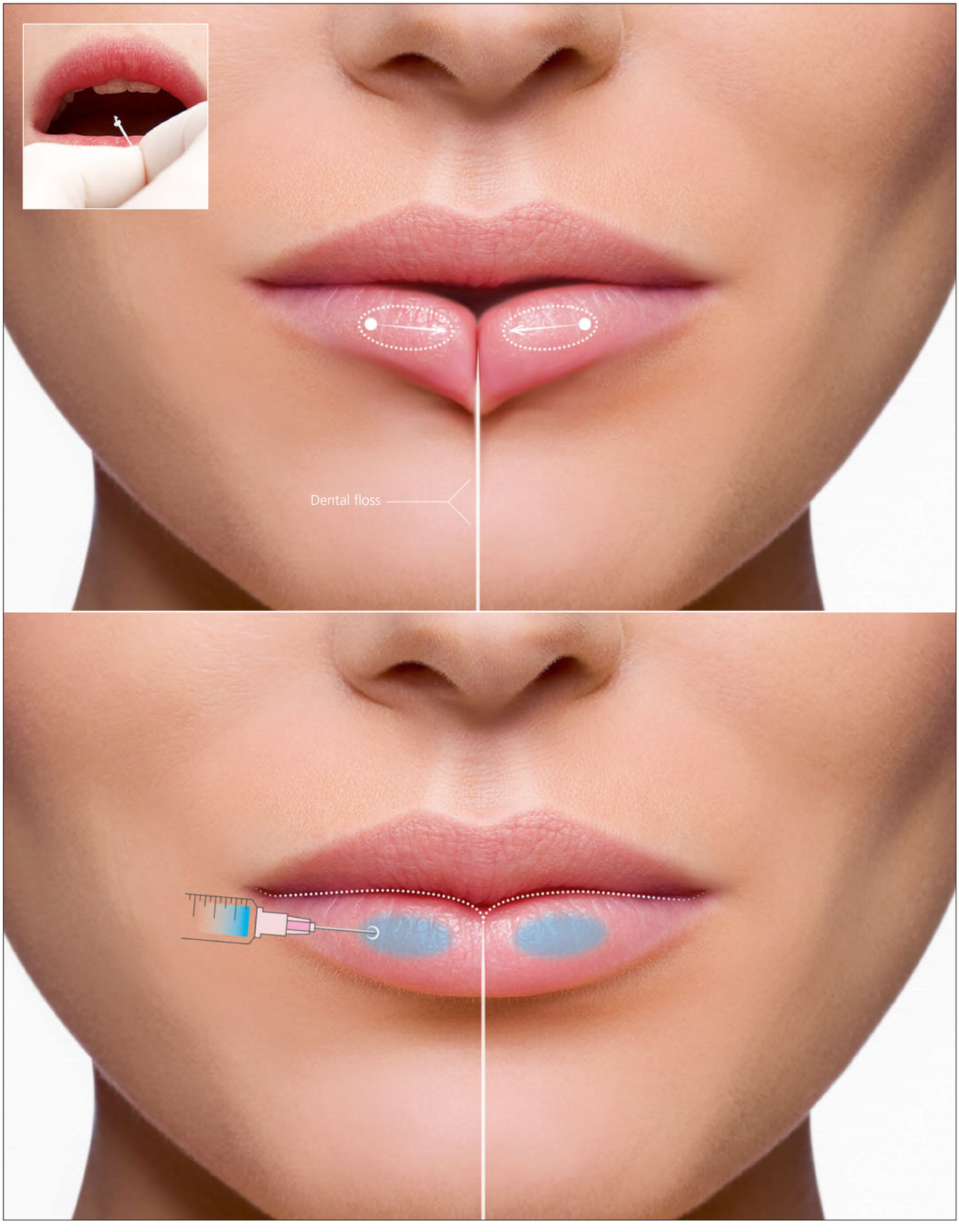
### Injection Scheme and Planning (→ Technique 41 – Figs. 1, 2)

This thread treatment is used primarily in the lower lip. However, the upper lip can also be treated in this way to make the central groove more pronounced. Following an accurate analysis, the lower and upper lips are marked to divide them into four quadrants. A piece of dental floss 15-cm long is knotted at one end and threaded through the two mandibular anterior teeth so that the knot catches between the teeth at the back and can be pulled tight. The thread is now pulled over the marked point on the upper lip and toward the chin, dividing the lip in two.

The same defined volume of HA is placed into the orbicularis oris muscle on either side of the taut thread, on the left and right beside the notch, thus producing an artificial groove that creates the desired visual effect.

If desired, this procedure can be repeated on the upper lip. The result depends on its volume: if the upper lip is very voluminous in the middle or if the tubercle is too prominent, the lip may become misshapen, producing an unnatural treatment result.

**Technique:** bolus technique
**Direction of insertion:** into the body of the muscle
**Layer:** vermillion, into the orbicularis oris muscle
**Material:** class "M soft" product
**Volume:** max. 0.15 ml per bolus, 0.6–1 ml in total
**Needle:** 27–29G sharp needle
**Anesthesia:** lidocaine cream, conduction anesthesia




**Technique 41 – Figs. 1, 2** Injection scheme and planning for an indentation in the center of the lip (sharp needle).

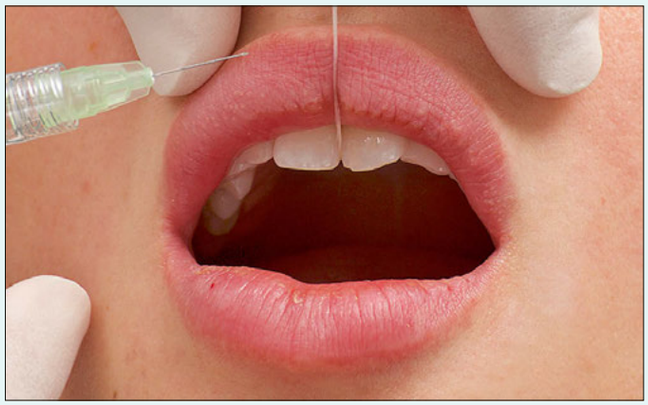
## Treatment Method (→ Technique 41 – Figs. 3–8)

**Technique 41 – Fig. 3** Knot one end of the length of floss and thread it between the two mandibular central incisors so that it lies exactly in the middle. An assistant, the therapist or the patient needs to hold the thread firmly during the treatment, maintaining the same degree of tension.

**Technique 41 – Fig. 4** The first dose of material into the upper lip should always be given while keeping a close eye on the syringe to check the delivered volume. The bulge in the tissue produced by the injected bolus is clearly visible. Inject exactly the same amount of HA into the other half of the lower lip.



**Technique 41 – Fig. 5** The closer the material is placed to the thread, the sharper the groove will be. Conversely, the further away from the thread the material is placed, the softer the indentation in the center of the lip will appear.



**Technique 41 – Fig. 6** This procedure may be repeated a bit more moderately on the upper lip. Knot the thread and fix it into place between the two maxillary central incisors with the knot at the back, then pull upward toward the nose. If no assistant is available, pull the thread upward with the free hand, keeping the hand steady with the thumb and forefinger on the patient's upper lip.

**Technique 41 – Fig. 7** Alternatively, the thread may be held in place on the lip with one finger. Insert the needle from the side to inject the bolus. Repeat on the other side of the upper lip.

**Technique 41 – Fig. 8** The desired indentation in the center of the lip can also be massaged into shape slightly.

## Important Notes

- If a lip is inherently asymmetric, the therapist will need to balance this out by delivering different amounts of material on each side. For this reason, the pre-treatment analysis is very important.
- The technique is not feasible if the patient has a bridge or too little space between the central incisors. If the space is very wide, a plastic bead or a small piece of wood 1-cm long (e.g. broken off a toothpick) can be tied to the end of the thread in order to hold it in place against the teeth inside the oral cavity.

### Possible Side Effects

Slight reddening, rarely inflammation, hematomas, mild to more severe swellings

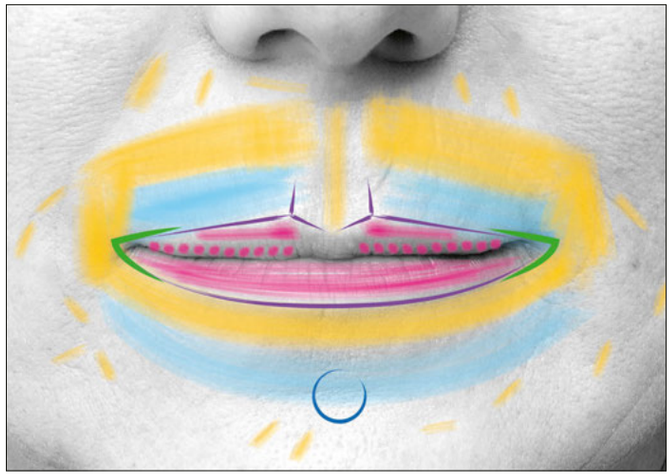
### Undesirable Side Effects

Inflammation, overcorrection with resultant alteration of the shape of the lip or nodule formation, asymmetry due to non-uniform delivery of material, necrosis

## Treatment Protocol at a Glance

- History, evaluation, and patient information
- Informed consent form
- Photo documentation: “before” images
- Analysis and marking of the areas to be treated
- Cleaning
- Thorough disinfection
- Local anesthesia if required (lidocaine cream), conduction anesthesia
- Injection technique: bolus technique, 2 boluses each into the lower and upper lip
- Layer: vermillion, into the orbicularis oris muscle
- Material: class “M soft” product
- Volume: max. 0.15 ml per bolus, 0.6–1 ml in total
- Needle: 27–29G sharp needle
- No massage, possibly gentle shaping
- Cooling if required
- Heparin cream for hematomas, ibuprofen p.o., arnica
- Photo documentation: “after” images
- Advice on dos and don’ts after the procedure
- Follow-up appointment for a check-up after 8–14 days

## 11.8 Thin Lips with Poorly Defined Contours



**Status:** 32-year-old woman, no defined contours, thin and inverted lips, skin drawn through by fine melomental folds, slight drooping of the oral commissures, small scars



**Treatment Planning with Injection Volumes**

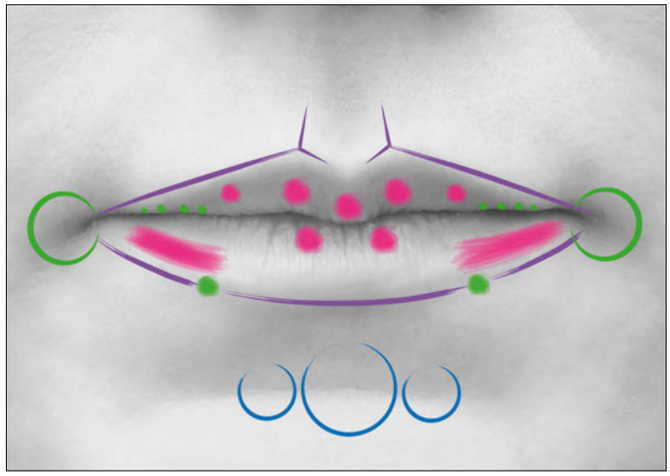
- Hydration possible: 0.3–0.5 ml
- Contour philtrum: 0.2 ml
  Accentuate Cupid's bow: 0.1 ml
  Contouring: 0.5 ml
- Smooth out perioral skin texture and scars: 1.0 ml
  Smooth out melomental folds: 0.3 ml
- Subtle to moderate lower lip filling: c. 0.4 ml
  Fill upper lip subtly and in the dry/wet boundary: c. 0.2 ml
- Lift labiomental fold: 0.3 ml
- Reinforce mouth corners: 0.2 ml

**Caution**

- Since both the upper and lower lip are thin, the contouring material may be injected into the lip roll, causing the lip to curve upwards very gently, with soft augmentation.
- Important note: the underlying anatomical conditions must be respected here. The dental substance and jaw alignment are defining factors for the procedure.
- Delivering too much volume risks producing a "duck's bill" effect.

| Potential lip treatment techniques to be used according to the therapist's preference and experience | | | |
|---|---|---|---|
| **Level 1** | | **Level 2** | |
| **T6** | Contouring ▲ | **T3** | Hydration (vermillion) ● |
| **T9** | Contouring (philtrum) ▲ | **T4** | Revitalization (vermillion) according to Patrick Trevidic ● |
| **T15** | Four-point volume replacement ● | **T7** | Lip contouring ▲ |
| **T29** | Volumization (labiomental fold) ● | **T10** | Modeling (philtrum and Cupid's bow) ▲ |
| | | **T14** | Perioral lines (fern pattern technique) ▲ |
| | | **T19** | Augmentation (moderate) ● |
| | | **T22** | Volumization (dry/wet boundary) ● |
| | | **T24** | Volumization (vermillion with tubercle accentuation) ● |
| | | **T27** | Volumization (extreme, multiple injection technique) ● |
| | | **T28** | Lip tenting technique according to Tom van Eijk ▲ |
| | | **T37** | Mouth corner lift (subtle) ▲ |
| | | **T45** | Augmentation of the upper lip – Pillar Technique according to Anil Rajani ● |

## 11.9 Small Mouth with a Prominent Medial Tubercle



**Status:** 25-year-old woman, small mouth with a thin, slightly asymmetric lower lip

**Treatment Planning with Injection Volumes**

Contouring (subtle): 0.3 ml

Subtle lower lip filling: 0.4 ml
Subtle upper lip filling: 0.1 ml
Correct asymmetry (lower lip): 0.05 ml

Lift labiomental fold: 0.3 ml

Reinforce mouth corners: 0.2 ml
Widening the arch of the lower lip: 0.2 ml
Raise the upper lip segments close to the mouth corners: 0.2 ml

**Caution**

- This treatment falls under the category "Beautification" because the lips are still young.
- All that needs to be done is for the volume deficit to be corrected and the shape defined more clearly.



| Potential lip treatment techniques to be used according to the therapist's preference and experience | | | |
|---|---|---|---|
| **Level 1** | | **Level 2** | |
| **T6** | Contouring ▲ | **T7** | Lip contouring ▲ |
| **T25** | Volumization (bolus technique) ● | **T19** | Augmentation (moderate) ● |
| **T29** | Volumization (labiomental fold) ● | **T23** | Augmentation from the mucous membrane ● |
| | | **T24** | Volumization (vermillion with tubercle accentuation) ● |
| | | **T26** | Volumization (cutaneous part of the lip) ● |
| | | **T37** | Mouth corner lift (subtle) ▲ |
| | | **T42** | Widening the arch of the lower lip ▲ |
| | | **T45** | Augmentation of the upper lip – Pillar Technique according to Anil Rajani ▲ |