A close-up photograph of a woman with blonde hair and closed eyes, receiving a facial filler injection. A hand in a white glove is holding her chin, while another hand in a white glove is injecting a blue liquid into her cheek with a syringe. The background is a bright blue sky.

Facial Fillers

Dr Tarek Said
Professor of Plastic Surgery
Cairo University
2010



Synthetic Fillers

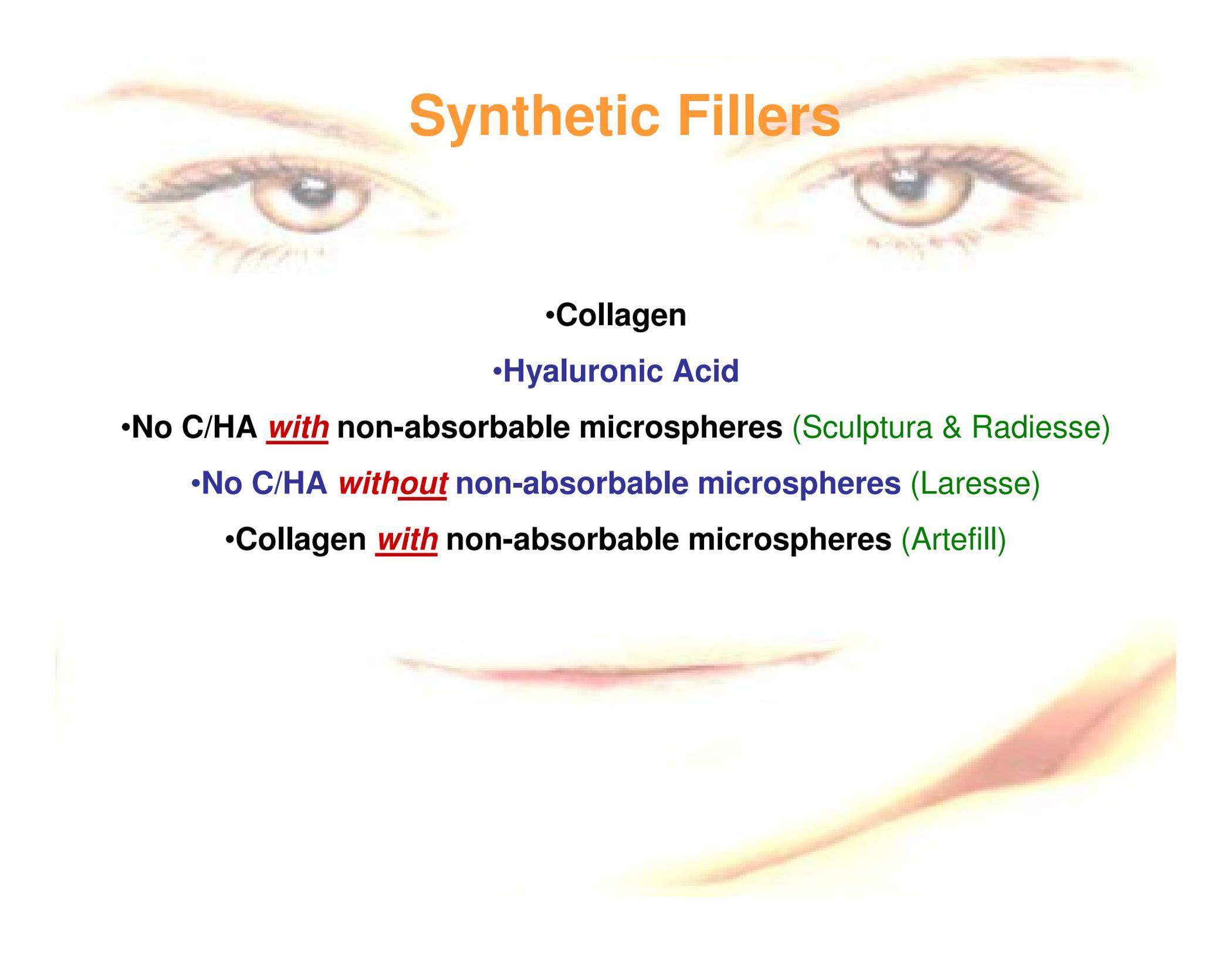
(HA fillers, Non-HA fillers including Collagen)

Autologous Fat

Facial Implantables *(AlloDerm & Gore-Tex)*

Facial Implants



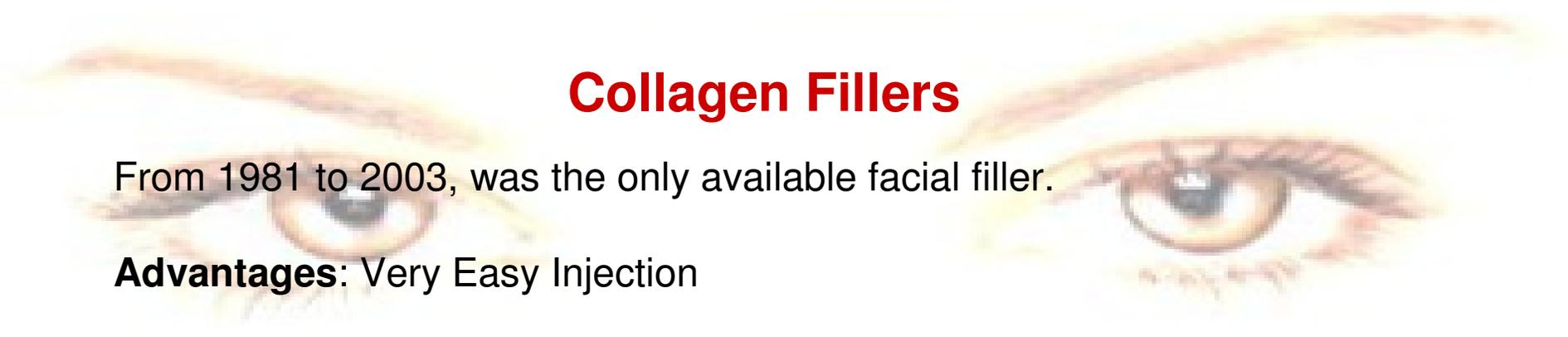


Synthetic Fillers

- Collagen

- Hyaluronic Acid

- No C/HA with non-absorbable microspheres (Sculptra & Radiesse)
- No C/HA without non-absorbable microspheres (Laresse)
- Collagen with non-absorbable microspheres (Artefill)



Collagen Fillers

From 1981 to 2003, was the only available facial filler.

Advantages: Very Easy Injection

Limitations:

- Very short-lived duration usually lasting around 6 weeks or so
- Because collagen was bovine-derived (from cows), A small percent of patients had allergic reactions





Collagen Fillers

Cross-Linking Collagen

Zyderm, Zyplast & Evolence

last longer than 6 months but still need pretreatment hypersensitivity testing, in 2009 Evolence was withdrawn from US market

Adding non-absorbable Component

ArteFill

Microsphere-enhanced collagen filler for the correction of nasolabial folds with unique composition of polymethylmethacrylate (PMMA) microspheres (20% of implant volume) and purified bovine collagen (80% of implant volume, containing 0.3% lidocaine)



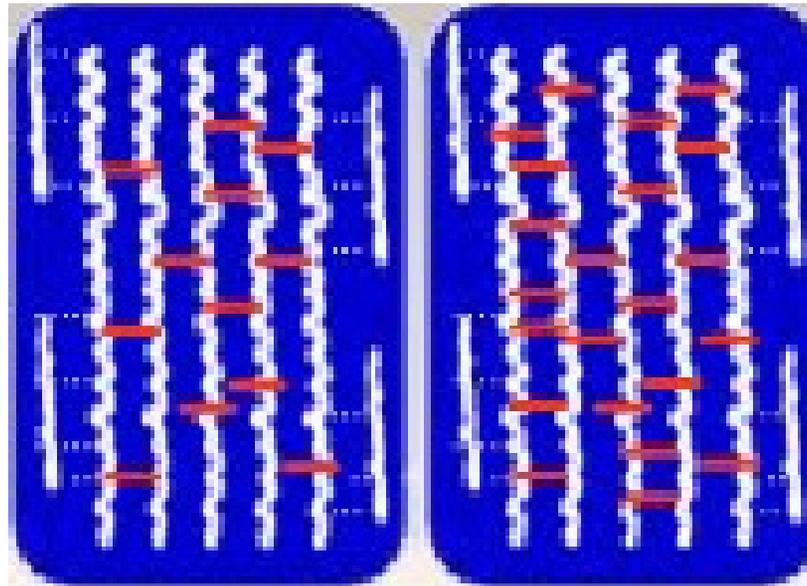
Hyaluronic Acid

- *Naturally occurring Polysaccharide (Sugar) present in skin more in dermis than epidermis*
- *It has the ability to bind to large quantities of water (1 gm can bind up to 3 litres of water)*
- *Excellent lubricant which aids Cell mobility*

It is prepared either bacterial based (Restylane & Juviderm 4000-6000 monomers) or Animal based (Hyalform 10000-15000 monomers) ***No Significant Difference***

Hyaluronic Acid

- *Formed of polymers each resembling a chain composed of repeating units of smaller molecule called monomers*
- *When these chains are bound together by glycosaminoglycan crosslinkers it is called Cross-linked HA*



Hyaluronic Acid

WHY does it contain both cross-linked and Non cross-linked HA

--Non cross-linked component aids extrusion and flow but is rapidly degraded

--Cross-linked component provides persistency on the expence of gel softness and ease of injection

Hyaluronic Acid

Important Parameters affecting performance of HA fillers

- Total HA Concentration per ml (range: 8-27 mg/ml)**
- Percentage of crossed linked HA of the Total HA concentration (range: 0-90%)**
- Degree of cross-linkage (number of cross-linkers between HA chains)**
- Gel consistency: Smooth (eg. Juvederm) or Granular (eg. Restylane)**
- Gel hardness**
- Degree of hydration of HA chains**

Hyaluronic Acid

Gel hardness or G-prime value: measures gel hardness

More particle size= More gel hardness

More conc. of HA= More gel hardness

More conc. of cross-linked HA= More gel hardness

More degree of cross linkage of HA= More gel hardness



Hyaluronic Acid

Degree of Hydration of HA Chains

When HA chains are near Equilibrium Hydration their ability to bind water is minimal (What you inject is what you get) e.g Hyalform

When HA chains are far below Equilibrium Hydration they are more hungry for water e.g restylane & Juviderm

Hyaluronic Acid

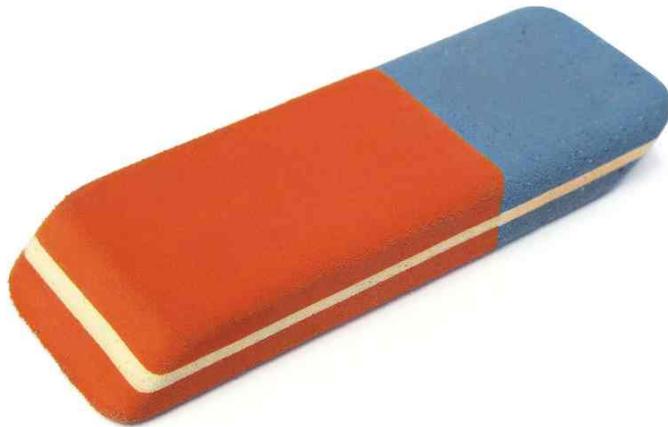
Why is it so popular?

No allergic reactions

Reasonable duration

Lower possibility of Granuloma formation

THE ERASER “*Hyalase*”



Non-HA Non Collagen Fillers

Famous examples: *Radiesse, Sculptra, Aquamid & Laresse*

A portion of non-resorbable beads or particles mixed in a carrier solution.
e.g *Radiesse* uses ceramic beads and *ArteFill* uses plastic beads

The non absorbable component stimulates collagen synthesis

As a result, they last longer than the HA fillers even if 80 - 90% of the particulated filler does go away

Adverse effects and Limitations

- Lump formation due to scarring around beads
- Chronic inflammation in and around the injection site
- No eraser !!**

So their use in the lips is not recommended but they can be used deep at the bone level for temporary cheek, chin and jaw enhancement



Sculptra

Sculptra, or poly-L-lactic acid (PLLA) microspheres, was approved by the FDA on August 3, 2004, for the treatment of facial fat loss.

It causes the skin to thicken via collagen neo-synthesis, improves appearance of folds and sunken areas, and hides the fat loss.

For most PLLA clinical studies, the effects lasted for 2 years.





Aquamid

Comprised of 97.5% apyrogenic water bound to 2.5% cross-linked acrylamide polymer.

The effects of Aquamid are currently known to last at least 11 years, as the product has not been field-tried longer than this period yet.

It is currently not approved by the FDA for use in the United States





Radiesse

Calcium-based microspheres (**Ca Hydroxylapatite**) suspended in a water-based gel

Upon injection, it immediately adds volume to safely contour, correct, and beautify facial feature

With its patented microsphere technology, it starts *collagenesis*, encouraging collagen to grow around the injection area



Approved by the FDA for use in the United States

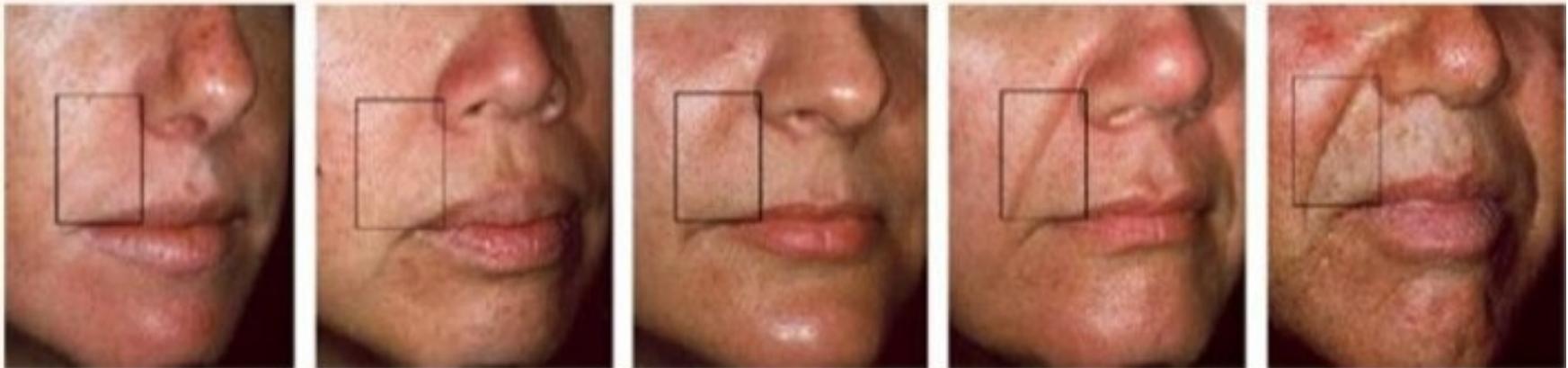


No non-absorbable component

Composed of two absorbable medical polymers called carboxymethylcellulose (CMC) and polyethylene oxidel (PEO)

Approved by the FDA for use in the United States

Validated 5-Point Photographic Wrinkle Assessment Scale



0
None

No wrinkle

1
Mild

Shallow, just perceptible wrinkle

2
Moderate

Moderately deep wrinkle

3
Severe

Deep wrinkle, well-defined edges (but not overlapping)

4
Extreme

Very deep wrinkle, redundant fold (overlapping skin)

The Modified Fitzpatrick Wrinkle Scale



0
No Wrinkle
No visible wrinkle
continuous skin
line



1
Fine Wrinkle
Visible wrinkle and
slight indentation



2
Moderate Wrinkle
Clearly visible
wrinkle; 1-2 mm
wrinkle depth



3
Deep Wrinkle
Deep and furrow
wrinkle; more
than 3 mm
wrinkle depth

0.5
Very shallow yet
visible wrinkle

1.5
Visible wrinkle and
clear indentation;
less than 1 mm
wrinkle depth

2.5
Prominent and visible
wrinkle; more than 2
and up to 3 mm
wrinkle depth

Brow droop

Crow's feet

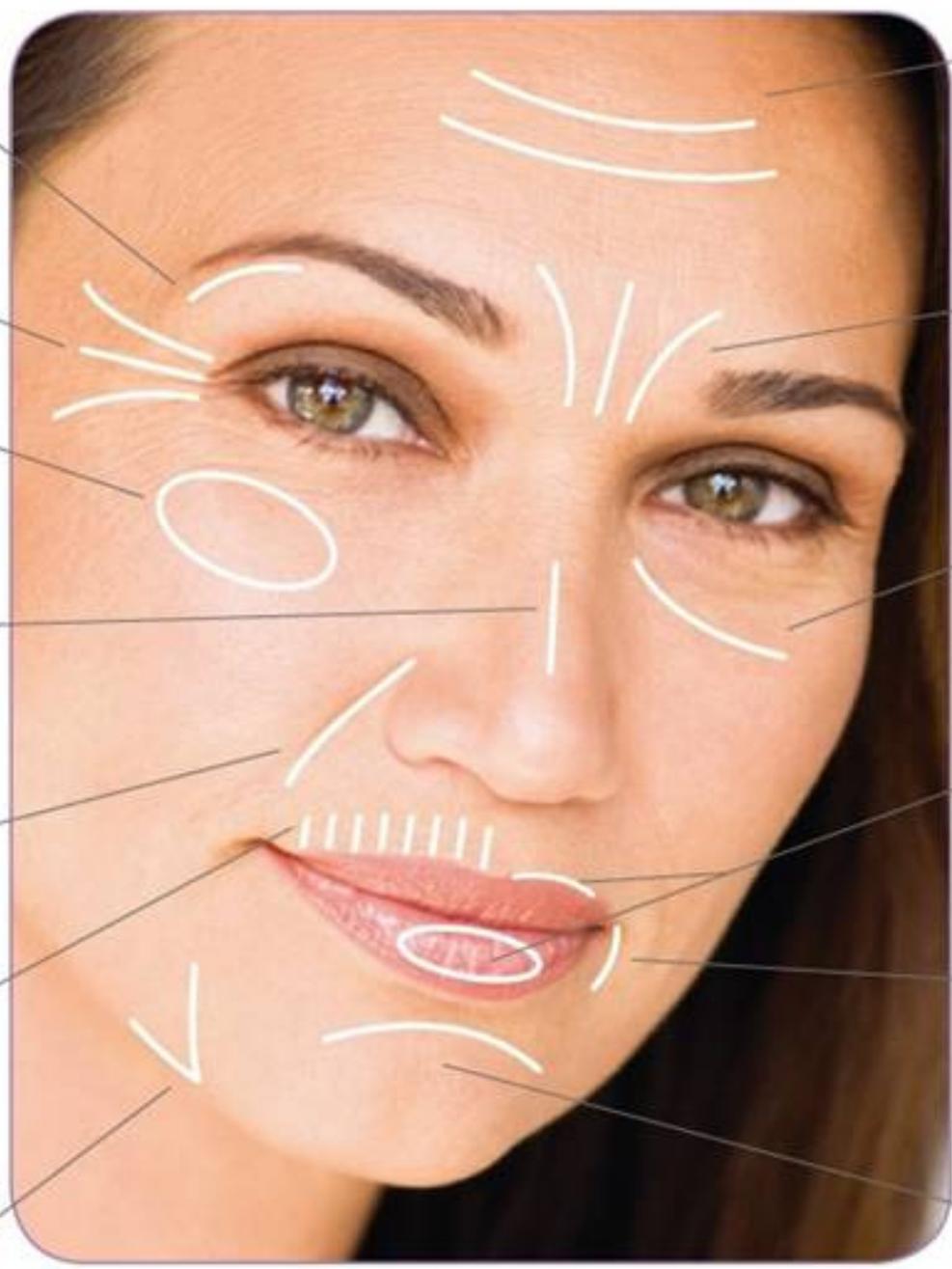
Cheek definition

Nose shaping

Nasolabial folds

Vertical lip lines

Marionette lines/jowls



Forehead lines

Frown lines

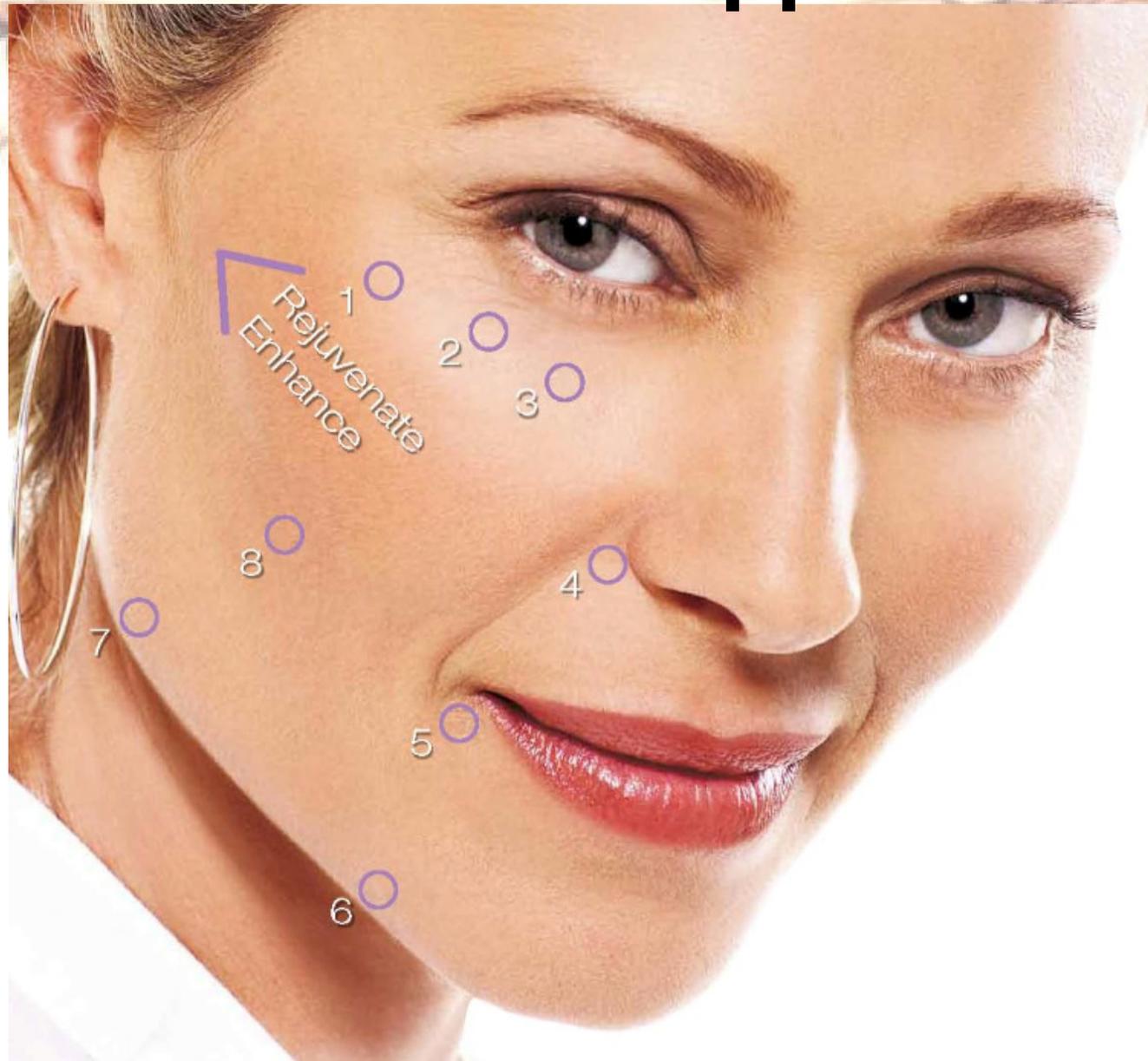
Tear troughs

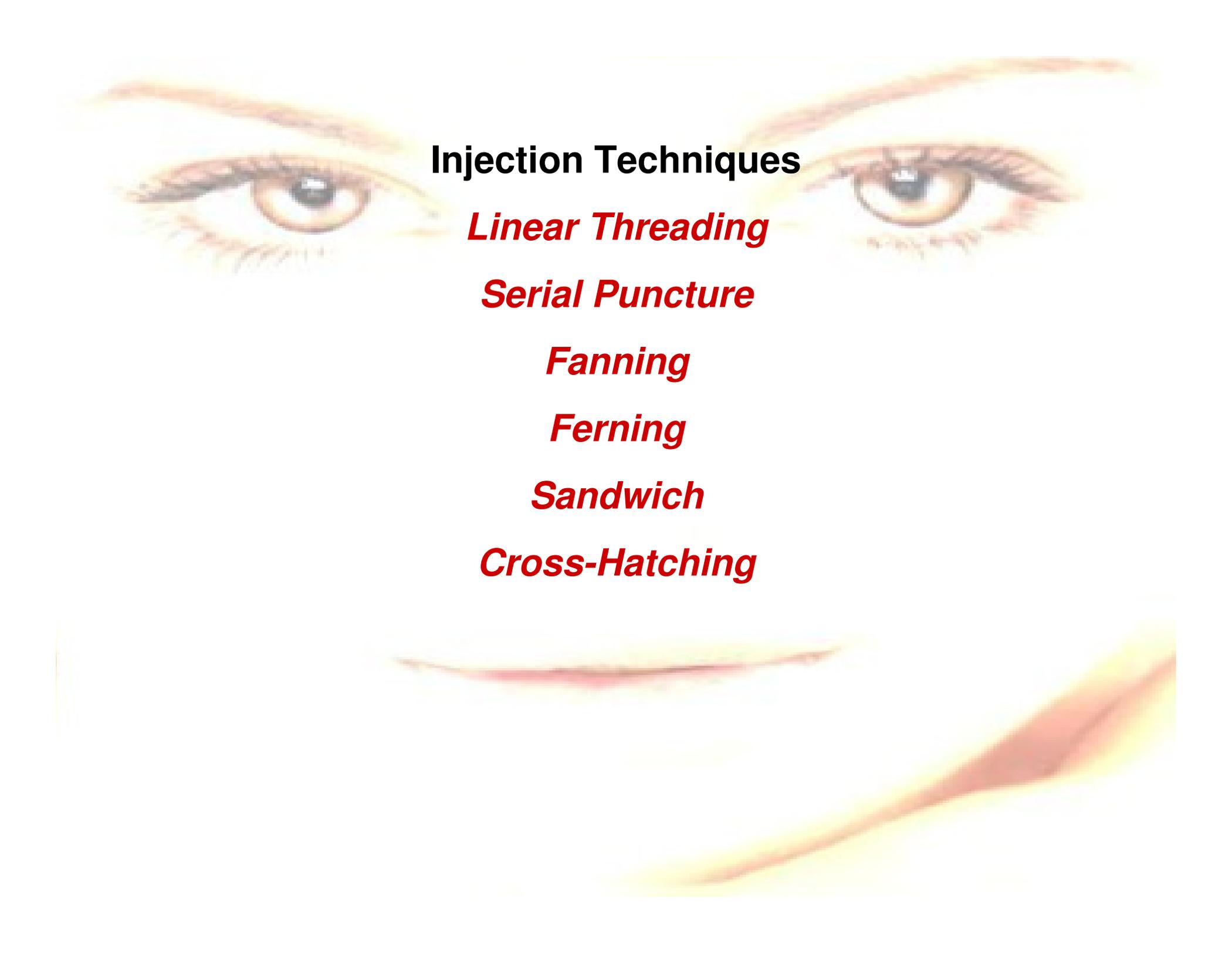
Lip border & volume

Mouth frown

Mental crease

The 8 Point Approach



A close-up photograph of a person's face, focusing on their eyes and a slight smile. The eyes are brown and looking directly at the camera. The mouth is slightly open, showing a gentle smile. The skin is fair, and the overall lighting is soft and natural.

Injection Techniques

Linear Threading

Serial Puncture

Fanning

Ferning

Sandwich

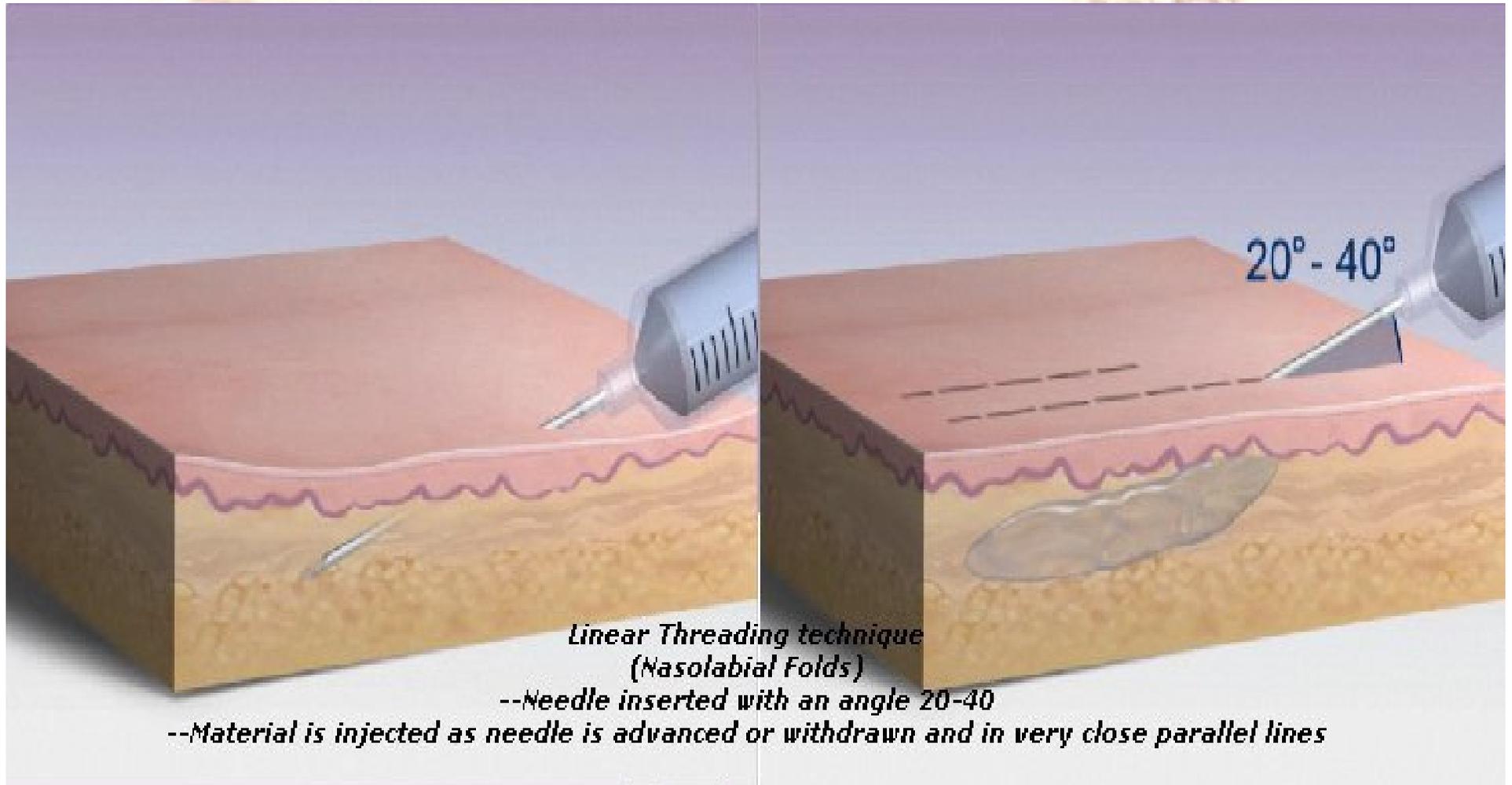
Cross-Hatching

Injection Techniques *Linear Threading*

Nasolabial Folds

Needle inserted at 20-40 Degrees

Material Injected as needle is advanced or withdrawn

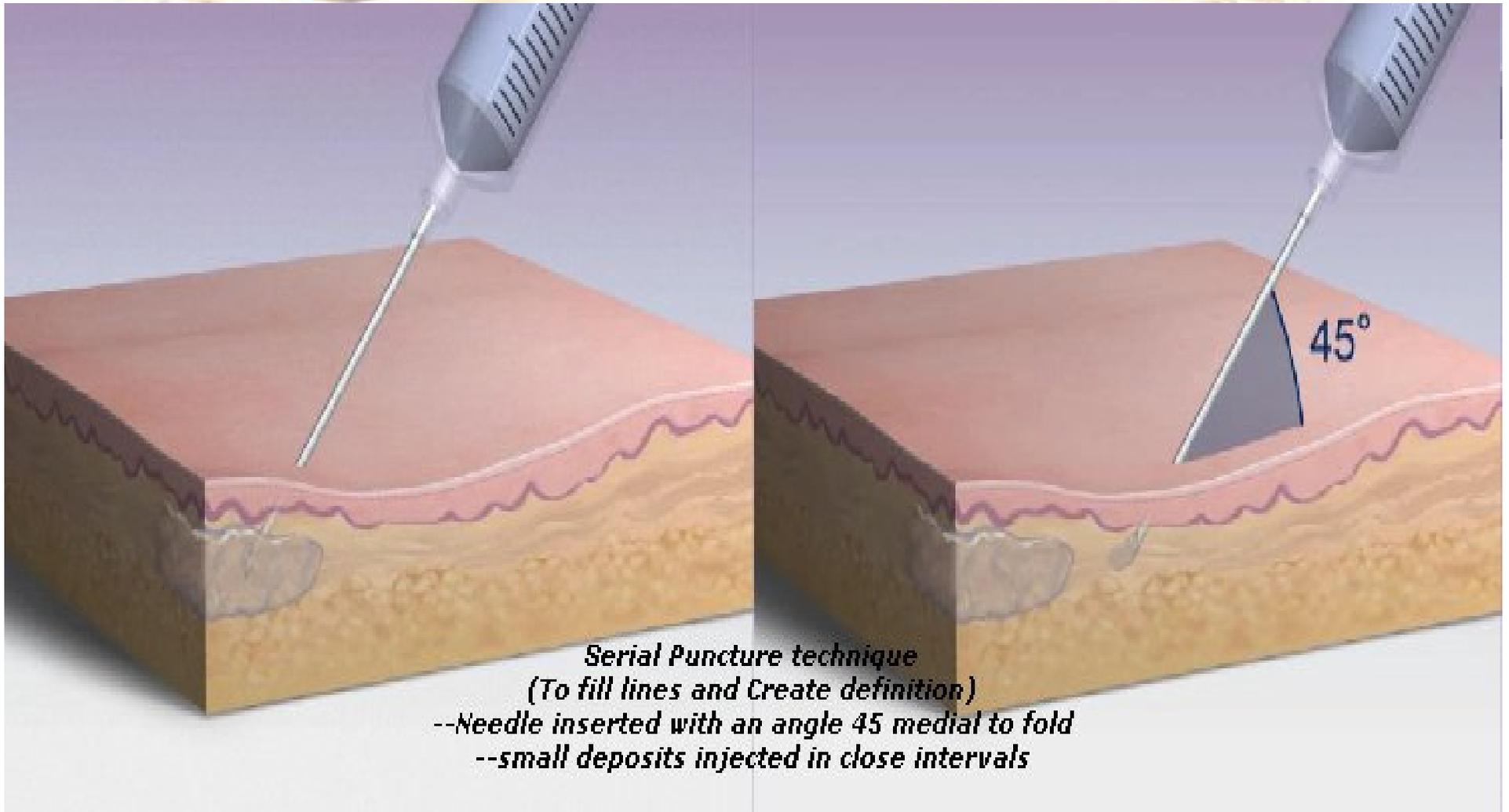


Injection Techniques *Serial Puncture*

To fill lines and create definitions

Needle inserted at 45 Degrees **Medial to fold**

Small Material Deposits Injected at Close Intervals

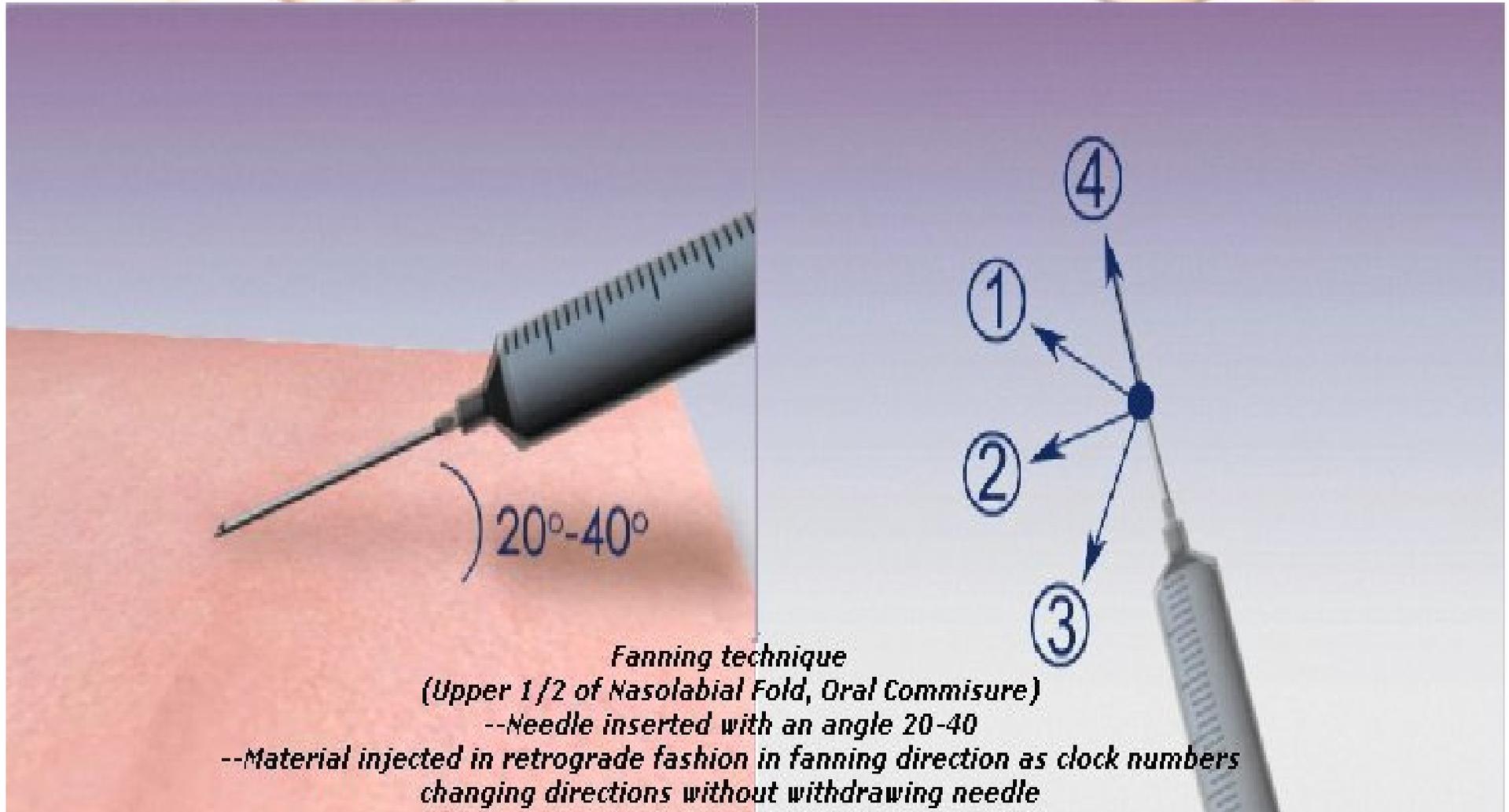


Injection Techniques *Fanning Technique*

For upper ½ of Nasolabial folds and oral commisures

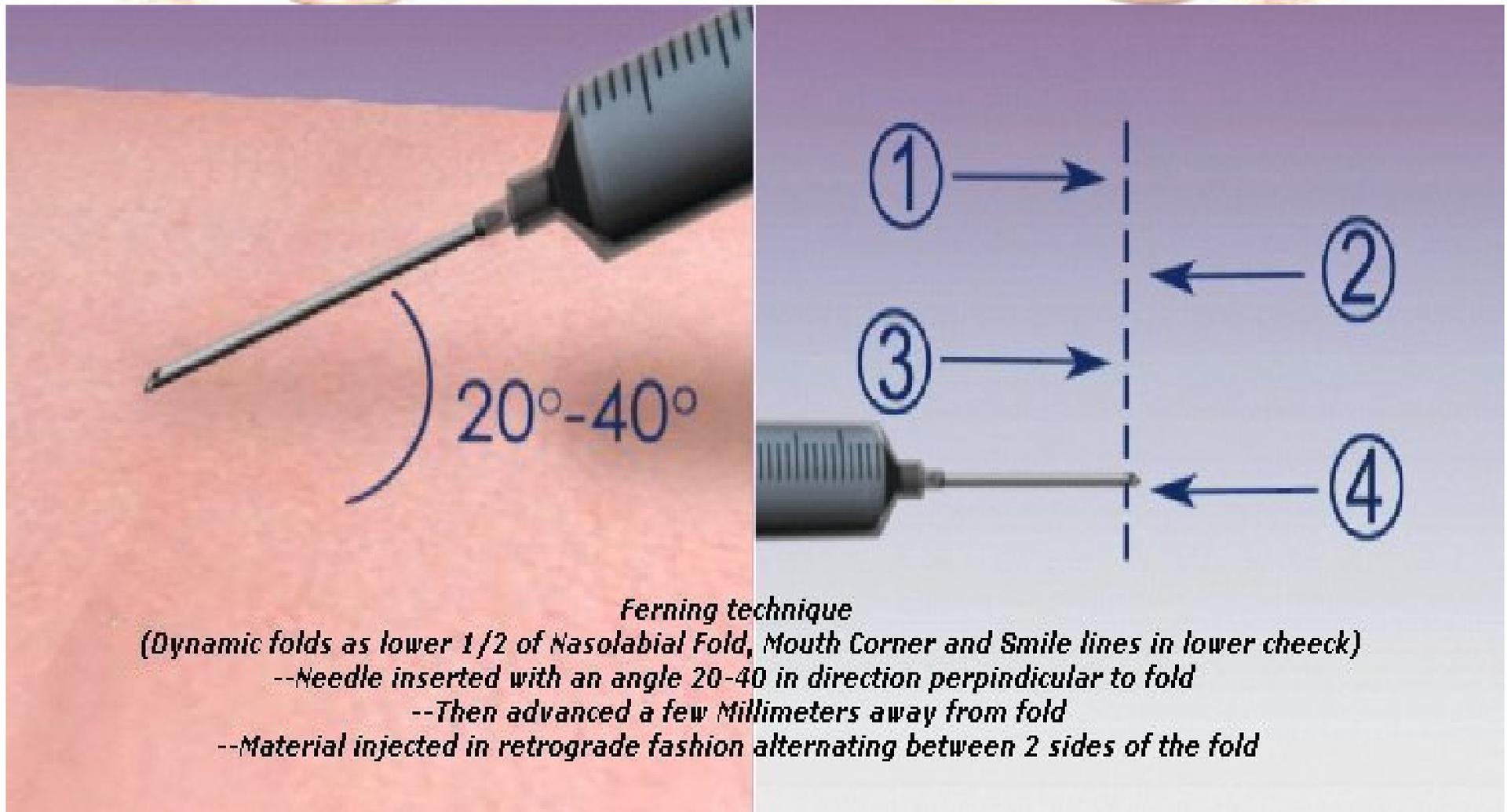
Needle inserted at 20-40 Degrees

Material Injected in retrograde fashion in fanning directions as clock numbers without withdrawing needle

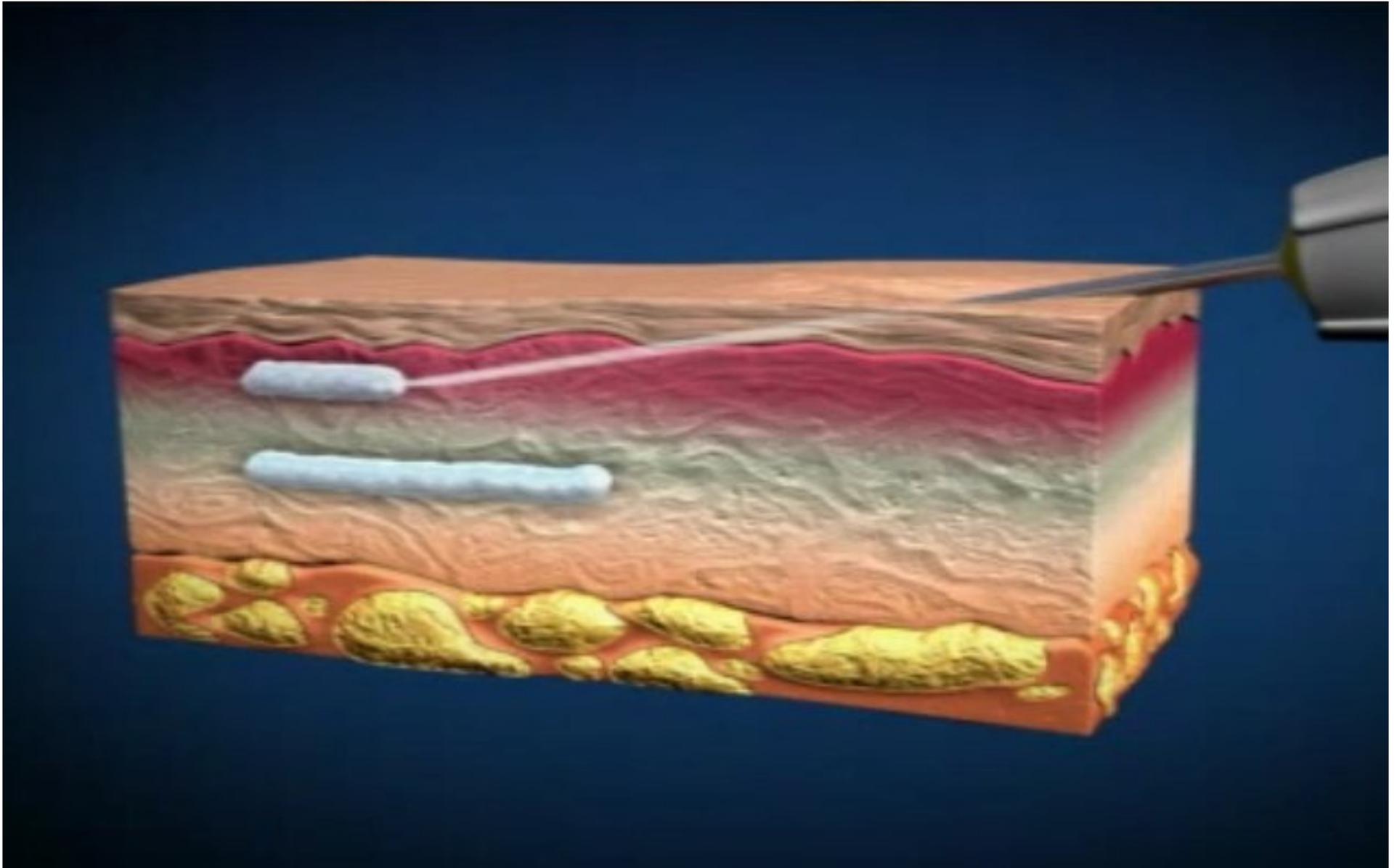


Injection Techniques *Ferning Technique*

For Dynamic Folds as lower ½ of Nasolabial folds, Mouth Corners & Smile Lines in Lower Cheek
Needle inserted at 20-40 Degrees perpendicular to fold then advanced a few mms away from it
Material Injected in retrograde fashion alternating between both sides of fold



Injection Techniques *Sandwich Technique*

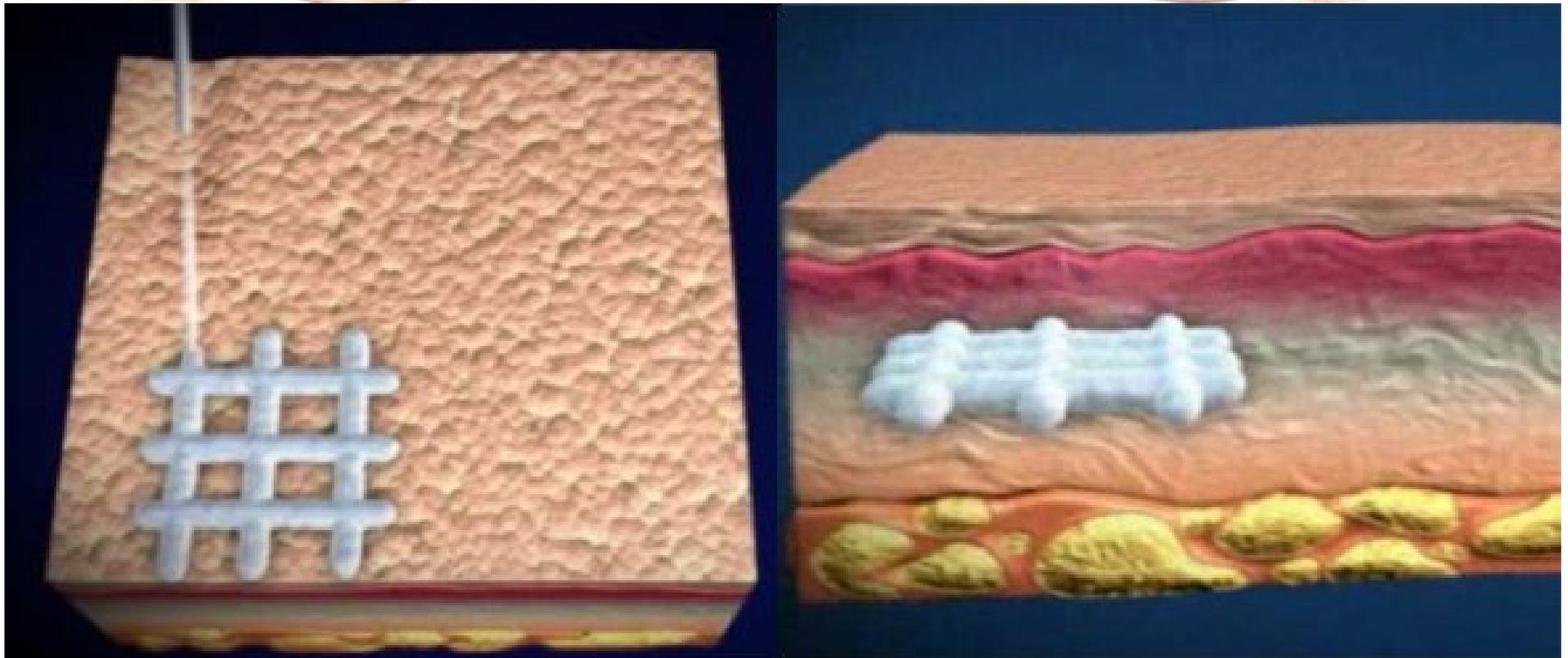


Injection Techniques **Cross-hatching Technique**

For Modifying Facial Contours and enhancing volumes

Needle inserted at 20-40 Degrees

Material Injected in retrograde fashion



Cross hatching Technique

For Modifying Facial Contours and enhancing volumes

Needle inserted at 20-40 Degrees

Material Injected in retrograde fashion



Complications

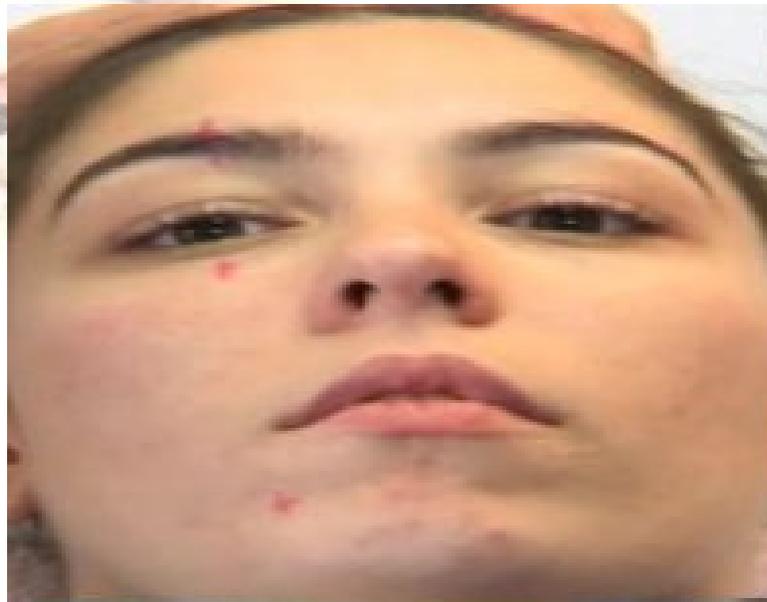
EARLY

- Over & Under Correction
- Filler Visibility
- Skin Necrosis
- Infection

LATE

- Nodule Formation
 - Granuloma Formation
- 

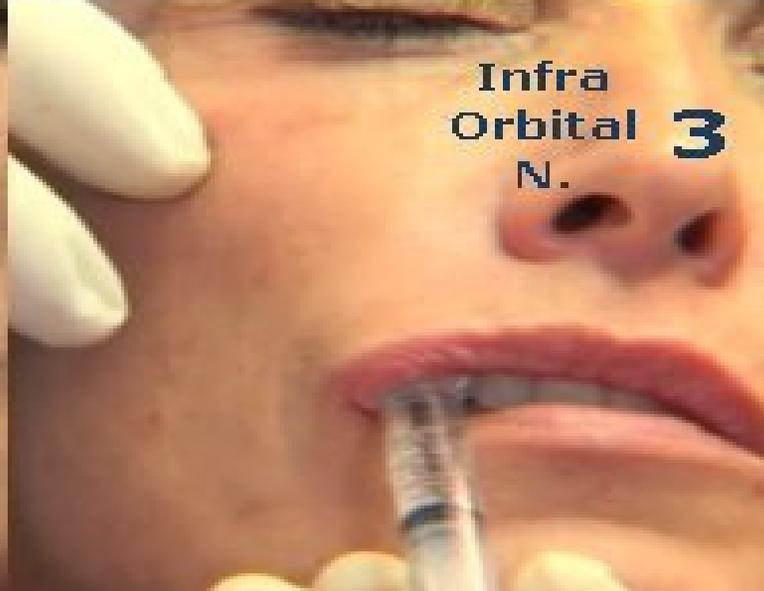
Anaesthesia



**Supra
Orbital 1
N.**



**2
Mental
N.**



**Infra
Orbital 3
N.**

Injecting Nasolabial Folds



Injecting Marionette Lines



Injecting The Lip



Restoring Facial Volumes and Facial Sculpturing



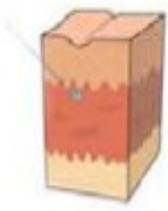
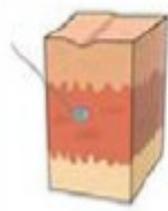
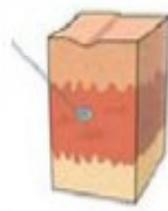
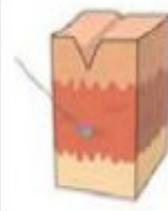
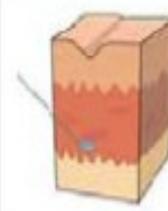
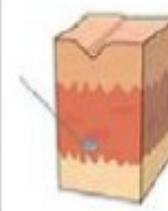
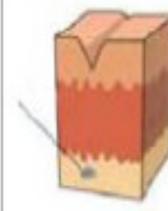
Instructions After Injection



ACTIVITIES TO AVOID

EXERCISE SUN HEAT ALCOHOL FOR 24 HOURS

TEOSYAL® RANGE - INDICATIONS AND SUMMARY TABLE

	TEOSYAL® Meso	TEOSYAL® First Lines	TEOSYAL® Global Action	TEOSYAL® Touch Up	TEOSYAL® Deep Lines	TEOSYAL® Kiss	TEOSYAL® Ultra Deep	TEOSYAL® Ultimate
Concentration	15 mg/g	20 mg/g	25 mg/g	25 mg/g	25 mg/g	25 mg/g	25 mg/g	22 mg/g
Volume-creating capability	○ ○ ○ ○ ○	● ○ ○ ○ ○	● ● ● ○ ○	● ● ● ○ ○	● ● ● ○ ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ●
Needle	30G 1/2	30G 1/2	30G 1/2	30G 1/2	27G 1/2	27G 1/2	26G 5/8	21G 1 1/2
Indication	Rehydration of the dermis with treatment protocol.	Lines and superficial crows' feet and peribuccal wrinkles.	All moderately pronounced wrinkles. Glabella wrinkles, moderately pronounced nasogenian folds and peribuccal wrinkles.	All moderately pronounced wrinkles, ideal for touch-ups.	Highly pronounced wrinkles. Nasogenian folds and deep vertical lip lines. Moderately pronounced lower eyelid depression.	Lip contour and volume.	Creates and restores volumes, facial contours and lower eyelids. Very deep wrinkles in thick skin.	Cheeks, upper cheeks, chin, facial contours.
Skin lesions								
Blister pack	2 x 1ml	2 x 0.7ml	2 x 1ml	2 x 0.5ml	2 x 1ml	2 x 1ml	2 x 1ml	1 x 3ml
Estimated duration before top-up*	2 - 3 months	6 months on average	6 - 9 months on average	6 - 9 months on average	6 - 9 months on average	6 - 9 months on average	9 - 12 months on average	12-18 months on average

*This average lifespan depends on several factors: patient's skin type, severity of the wrinkle to be corrected, type of injection (superficial, medium or deep dermis) and the volume injected.

	STYLAGE® HYDRO	STYLAGE® S	STYLAGE® M	STYLAGE® L	STYLAGE® XL	STYLAGE® 
COMPOSITION	Non cross-linked antioxidant Hyaluronic Acid	Cross-linked antioxidant Hyaluronic Acid				
CONCENTRATION	14 mg/g	16 mg/g	20 mg/g	24 mg/g	26 mg/g	18,5 mg/g
VOLUME	1 x 1 ml	2x0,8 ml	2 x 1 ml	2 x 1 ml	2 x 1 ml	0,8 ml
NEEDLES	30G 1/8	30G 1/2	30G 1/2	27G 1/2	26G 1/2	30G 1/2
INDICATIONS	MESO	Fine to medium wrinkles Lip	Medium to deep wrinkles	Deep to very deep wrinkles	ENHANCEMENT	LIPS
STORAGE	Between 2°C and 25°C					
REMANENCE		9 MONTHS	12 MONTHS	12 MONTHS	12 MONTHS +	6 - 9 MONTHS
PACKAGING						

	 VARIO DERM FINE LINE	 VARIO DERM		 VARIO DERM PLUS	 VARIO DERM SUBDERMAL
Concentration	6 mg/ml	12 mg/ml	Concentration	18 mg/ml	27 mg/ml
Cross linking grade	70-90%	70-90%	Cross linking grade	70-90%	70-90%
Needle size	Varioderm contains 2 x 1 ml syringes and 4 sterile needles		Needle size	Varioderm contains 2 x 1 ml syringes and 4 sterile needles	
Packaging	2 x 1,0 ml	2 x 1,0 ml	Packaging	2 x 1,0 ml	2 x 1,0 ml
Indications	Superficial Wrinkles Crow ´s feet Red part of the lips Perioral lines	Medium and Deep Wrinkles in all areas Lip contours	Indications	Deep Wrinkles Contour of the face Volume creation	Facial Contour and Augmentation, Very Deep Wrinkles, Volume Creation, Nasal Augmentation, Scar and Acne Scar Correction and Breast Augmentation
Skin level	Superficial Dermis	Middle and Deep Dermis	Skin level	Deep Dermis or Subcutis	Subcutis and Epiperiostal
Injection technique	based on the indications: retroracing, criss cross, multiple point and fan technique		Injection technique	based on the indications: retroracing, criss cross, multiple point and fan technique	



Restylane and Restylane Lidocaine

Restylane® was the first hyaluronic acid product to be approved by the FDA for aesthetic use.

Restylane is specifically designed to reduce moderate facial wrinkles and folds, such as for example glabellar frown lines.

It can also be used to treat smile lines and marionette lines at the corners of the mouth. Restylane Lidocaine can be used as an alternative to increase patient comfort.

Indications:

Moderate facial wrinkles.

Where to inject:

Mid-dermis.

Available syringe size:

- 1 ml
- 0.5 ml



Restylane Touch

Restylane Touch™ is designed to reduce the appearance of fine, superficial lines such as the periorbital and perioral lines.

Indications:

Fine superficial facial lines.

Where to inject:

Upper dermis.

Available syringe size:

- 0.5 ml



Restylane Lipp

Restylane Lipp™ is designed for the highly dynamic anatomy of the lips.

Restylane Lipp is structured to withstand the strains associated with the full range of oral movements. It provides lip enhancement for an extended period of time.

Indications:

Lip enhancement.

Where to inject:

Deep dermis/upper subcutaneous layer.

Available syringe size:

- 1 ml
- 0.5 ml



Restylane Perlane and Restylane Perlane Lidocaine

Restylane Perlane™ is used for the correction of deeper wrinkles and folds such as nasolabial folds.

Restylane Perlane is a powerful tool for shaping facial contours such as minor to moderate contouring of the cheek or eyebrow area, and accentuating the existing features.

Restylane Perlane Lidocaine can be used to increase patient comfort.

Indications:

Deep wrinkles and folds, minor to moderate facial contouring.

Where to inject:

Deep dermis/upper subcutaneous layer.

Available syringe size:

- 1 ml
- 0.5 ml



Restylane SubQ

Restylane SubQ™ is designed for volumetric contouring of facial features.

Restylane SubQ is injected deeper to add volume and support the overlying tissue, providing facial fullness and restoring symmetry. This treatment is ideal for patients with flattened facial features, or those with an unbalanced or asymmetrical face. It is also suitable for patients reluctant to undergo facelift surgery or the insertion of permanent implants.

Meeting the increasing demands from patients requesting less invasive and non-permanent alternatives to plastic surgery, Restylane SubQ also fulfills many requirements of an ideal soft-tissue filler.

Indications:

Facial contouring/chin and cheek augmentation.

Where to inject:

Deep subcutaneous layer or supraperiosteally.

Available syringe size:

- 2 ml

Q-MED
Enabling Individual Beauty



Macrolane

Macrolane™ is the first hyaluronic acid–based product for breast enhancement, volume restoration and contouring of body surfaces. Macrolane provides instant and long-lasting results without the need for general anaesthesia. It is injected into the breast in the sub-glandular level and subcutaneously for body contouring. The Macrolane gel is based on Q-Med's unique and patented NASHA™ technology. NASHA gels have been used in over 10 million treatments in over 70 countries worldwide for facial aesthetic treatments. The safety and effectiveness of NASHA gels have been clinically proven and are well documented.

Macrolane is available in two different formulations, or volume restoration factors, Macrolane VRF20 and Macrolane VRF30. Macrolane VRF20 is suitable for areas with less tissue support and cover, while Macrolane VRF30 is a thicker gel suitable for areas with substantial tissue support and cover.

A single treatment with Macrolane can last up to 12 months. The body slowly metabolizes the biocompatible Macrolane gel. If longer lasting results are desired, re-treatments can be made to maintain the aesthetic results.

Juvéderm® ULTRA and Juvéderm™ VOLUMA™



Juvéderm® ULTRA 2 gently treats moderate lines, especially those around the lips and corners of the eyes and those very close to the surface of the skin.



Juvéderm® ULTRA 3 gently smoothes wrinkles between the nose and corner of the mouth in order to maintain a youthful smile.



Juvéderm® ULTRA 4 works on the most noticeable folds and lines, and improves the contour of the face.



Juvéderm® ULTRA SMILE is specifically for your lips for natural, smooth, long-lasting results; and it's formulated with a local anaesthetic for added comfort.



Juvéderm™ VOLUMA™ restores facial volume loss due to ageing or weight loss, for a fuller, smoother, more youthful appearance.