Aesthetic Medical Educators Training

A One Day Seminar in the Aesthetic use of Botulinum Toxin Type A And Dermal Fillers

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Aesthetic
MEDICAL EDUCATORS TRAINING

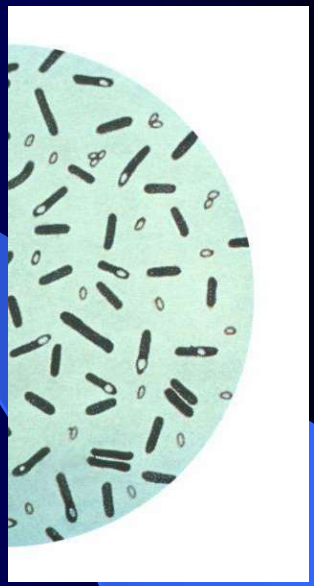

Please silence
your cell phone.
Thanks!

Disclaimer

- Today's presentation will include the use of Botulinum Toxin A in the FDA approved Glabellar and Crow's Feet areas.
- In addition, areas of the upper face that are not included in the FDA indication will be shared.
- These injections are considered off-label use and within accepted and published standards.

Botulinum toxin A therapy

- History of use: Alan B. Scott (1960's) attempted to find an agent to use on eye muscles for strabismus.



- First used in 1978 on humans.

- Carruthers and Carruthers (Canadian physicians) did joint dermatological-ophthalmologic research starting in 1987 with Alan Scott.





Pharmacology

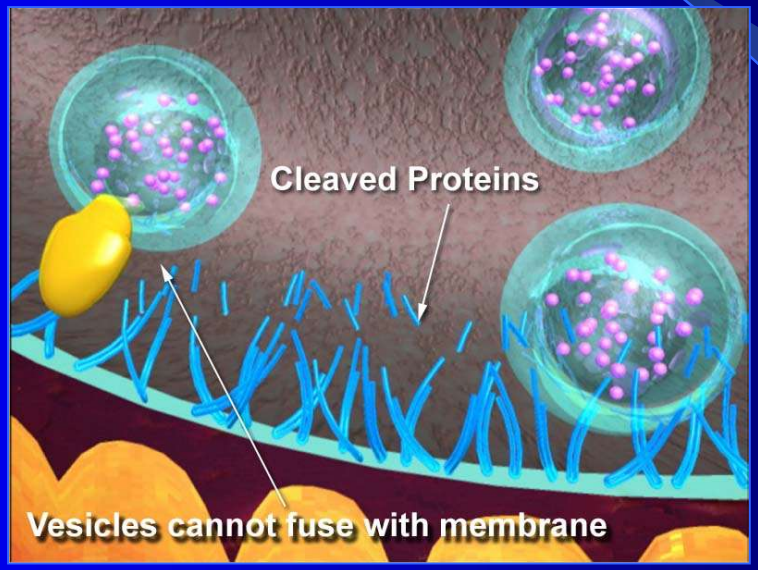


- Three step process
  - Irreversibly binds to presynaptic terminal of motor end plate
  - Internalized into axon by endocytosis
  - Cleavage of SNARE (receptor) proteins resulting in inhibition of neurotransmitter release
- SNARE proteins:
  - – N-ethylmaleimide sensitive factor attachment protein receptor
  - – Each serotype binds to a specific residue of one of the docking proteins

    (Botox=SNAP-25, Myobloc=VAMP)

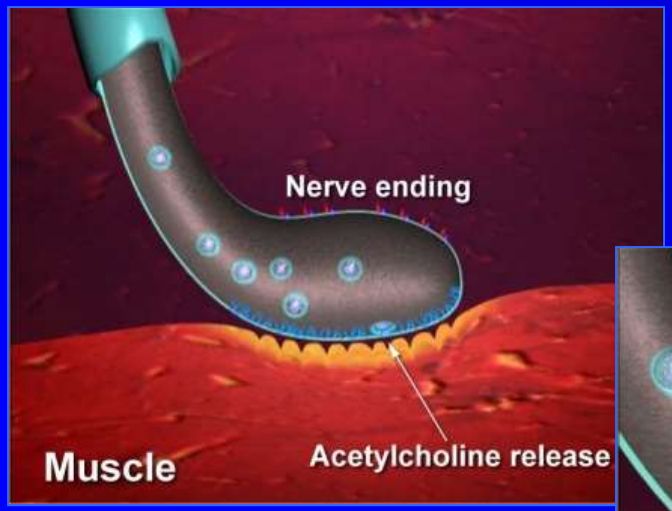
    (Dysport=SNAP-25, Xeomin=SNAP-25)

Mechanism of Action



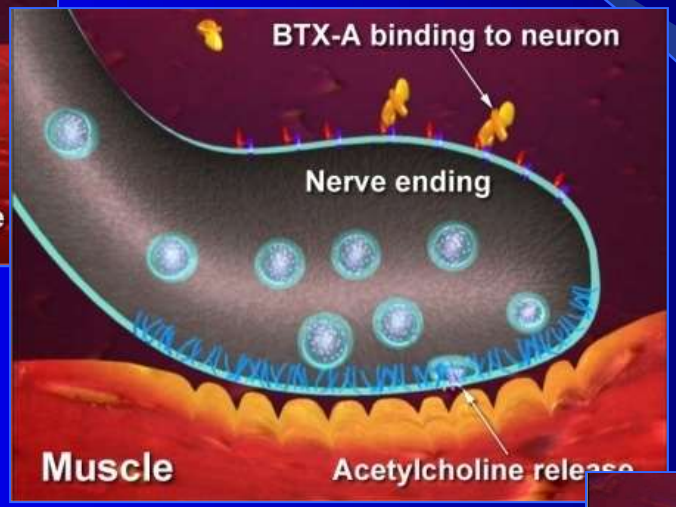
- **Light chain blocks fusion of neurotransmitter vesicle with nerve membrane by cleaving SNAP-25 with Type A**

BOTOX® Cosmetic Mechanism of Action

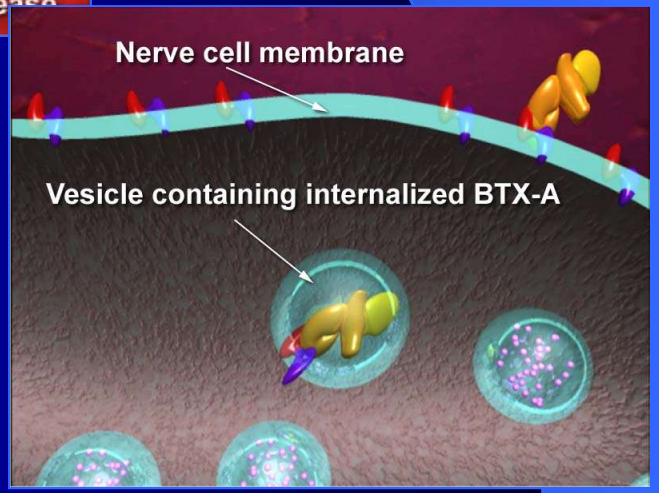


- Before BOTOX® Cosmetic: Endplate sits upon muscle fiber

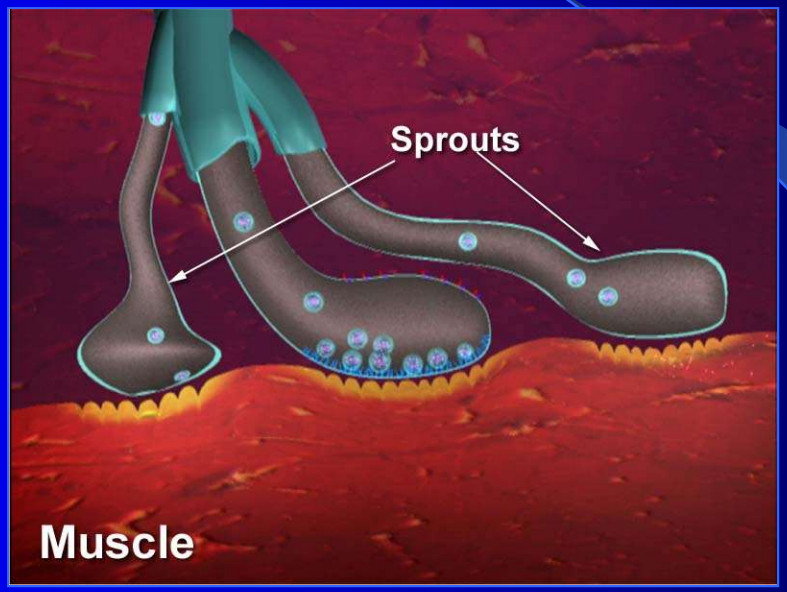
- BOTOX® Cosmetic
- binds to nerve terminal



- The neurotoxin is internalized via receptor-mediated endocytosis



Mechanism of Action



- **The endplate expands and collateral axonal sprouts emerge. Sprouts subsequently retract and are eliminated; parent terminal is re-established**

Botulinum Toxin A Mechanism

Several websites have excellent animations of the mechanism from injection to paralysis

Nonbiased (YouTube)

*Botulinum Toxin Type A Mode of Action by Lindsey Pionek

Botox/Allergan (YouTube)

*Botox Mechanism of Action Video by MedAnim

Xeomin/Merz

*http://www.xeominaesthetic.com/professionals/moa.cfm

PRODUCT OVERVIEW

- FDA-Approved
  - BOTOX® Cosmetic (OnabotulinumtoxinA: 1989/2002)
  - Dysport® (AbobotulinumtoxinA: 2009)
  - Xeomin® (IncobotulinumtoxinA: 2011)
- FDA Clinical Trials Ongoing

Botulinum A Toxin Pricing

Product	Units	Price
Botox Cosmetic	100 units	$579
Botox Cosmetic	50 units	$319
Dysport	300 units	$529
Xeomin	100 units	$466
Xeomin	50 units	$233

Exclusive pricing, rewards and rebate programs may be available.

Botulinum A Toxin Injection Prices

Product	Cost/Unit	Ratio to Botox	Injection Price Range/Unit
Botox	$ 5.79	1:1	$7-28
Dysport	$1.76	2.5-5:1	$3-10
Xeomin	$4.66	1:1	$5-24

Price to client: “by the unit”, ”by the area”, in some locales, it is customary to charge the same price for equivalent areas- regardless of the product.

Glabella example: Botox/Xeomin 20 units, Dysport 50 units

Provider/Consumer rebate offers may be available. Brilliant Distinctions (Allergan) and Aspire Galderma)

Alternatives to Injectables

- Surgery
- Laser
- IPL
- Topical Skin Products
- Microdermabrasion
- Chemical Peels
- Medical Needling
- Radiofrequency Neuroablation
- Cryoneuromodulation
- LED Light Treatments
- Microcurrent Toning



Topical Skin Products



Wide Range

- Over the Counter (ROC, Olay,Neutrogena, etc)
- Direct Sales (Avon, MaryKay, Jaffra, BeutiControl)
- Clinical (Aesthetician, RN, ARNP, MD/DO) (Rejuve, SkinMedica, Prevage, VIVITÉ, Cosmedix, NIA24, Neocutis, NeoStrata, MD Skincare, SkinCeuticals, ZO Skin Health, Obagi)
- Prescription (Retin-A, Refissa, Renova, Avage/Tazarotene)





Product Partnering

Allergan

- Botox
- Juvederm/Voluma
- SkinMedica/Vivité/Prevage

~~Galderma~~

- ~~Dysport~~
- ~~Restylane/Perlane~~
- ~~Obagi~~

Merz

- Xeomin
- Radiesse/Belotero
- NeoCutis







Minimum Skin Care

- Cleanse the skin twice a day
- Moisturizer
- Sunscreen
- Retinol, Retinoid or Retin-aldehyde

Purchase products FDA approved for sale in the United States

BOTOX®
Toxina Botulínica Tipo A





The importation of drugs from other countries for use in OTHERS is illegal.

Authorized Suppliers of BOTOX® Cosmetic

AmerisourceBergen Corp.
ASD Healthcare
Burlington Drug Company
Cardinal Health
Clint Pharmaceuticals
Dakota Drug
Dik Drug Company
DMS Pharmaceutical Group
Florida Infusion/NationsDrug
Frank W Kerr Co.
H.D. Smith
Healthcare Device Solutions
Henry Schein
Lifeline Pharmaceutical
McKesson Specialty Health

- Miami-Luken
- Moore Medical(H L MOORE)

Morris & Dickson Co.
North Carolina Mutual Wholesale Drug Company
Physician Supply Co.
PSS World Medical, Inc.
RDC, Inc.
Seacoast Medical
Smith Drug Company
Southern Anesthesia & Surgical Inc.
Superior Medical Supply, Inc.
The Harvard Drug Group
TQM, Inc./Two Rivers Medical
Value Drug Company





Allergan

800-377-7790

Arrives on dry ice—overnight

Store refrigerated

- if it is left at room temperature, it loses potency.

Dysport®

Shipped through Medicis/GaldermaMcKesson
877-520-0500



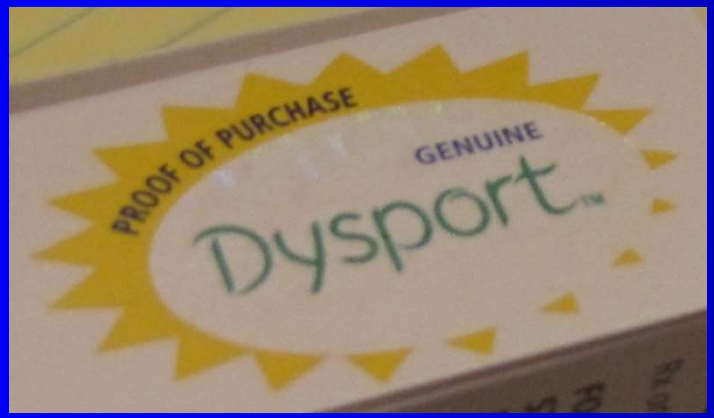
Ratio of diffusion differs from Botox®

Specific training for Dysport® is recommended to prevent inappropriate injection/diffusion. Medicis has a DVD and online videos on reconstitution/injection at
www.dysportusa.com/HCP-Reconstitution-Chart.aspx
www.dysportusa.com/HCP-Administering-Dysport.aspx

Dysport® should be stored at 2-8°C (36-46°F) (NOT FROZEN) prior to reconstitution/injection. It should be protected from light.

Dysport ®

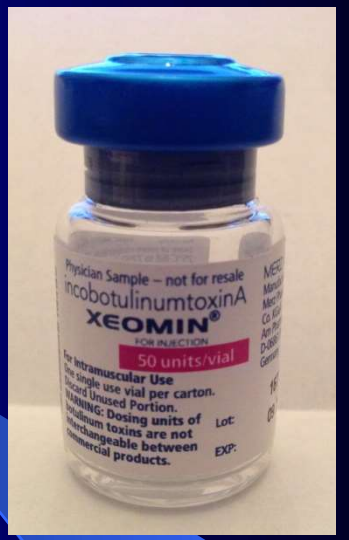
- The 300 unit aesthetic vial is a 3ml glass vial with a rubber stopper covered by an aluminum cap
- A 500 unit Neurologic product is available as well as a 1000 unit 2-vial box







Xeomin



- Merz Aesthetics
- 866-862-1211
- Ratio of diffusion is similar to Botox.
- Package insert cautions that the units of biological activity cannot be compared or converted to other botulinum toxin products using other assay methods.
- Shipped room temperature; refrigerate after reconstituted.

Botulinum Toxin Use

- The more simple and more defined the effect of a muscle, the more obvious and predictable the effects.
- Selective flaccid paralysis of muscles occurs with localized injections into the muscle itself.
- Nearly painless injections can lead to softening of facial lines for 3-6 months.

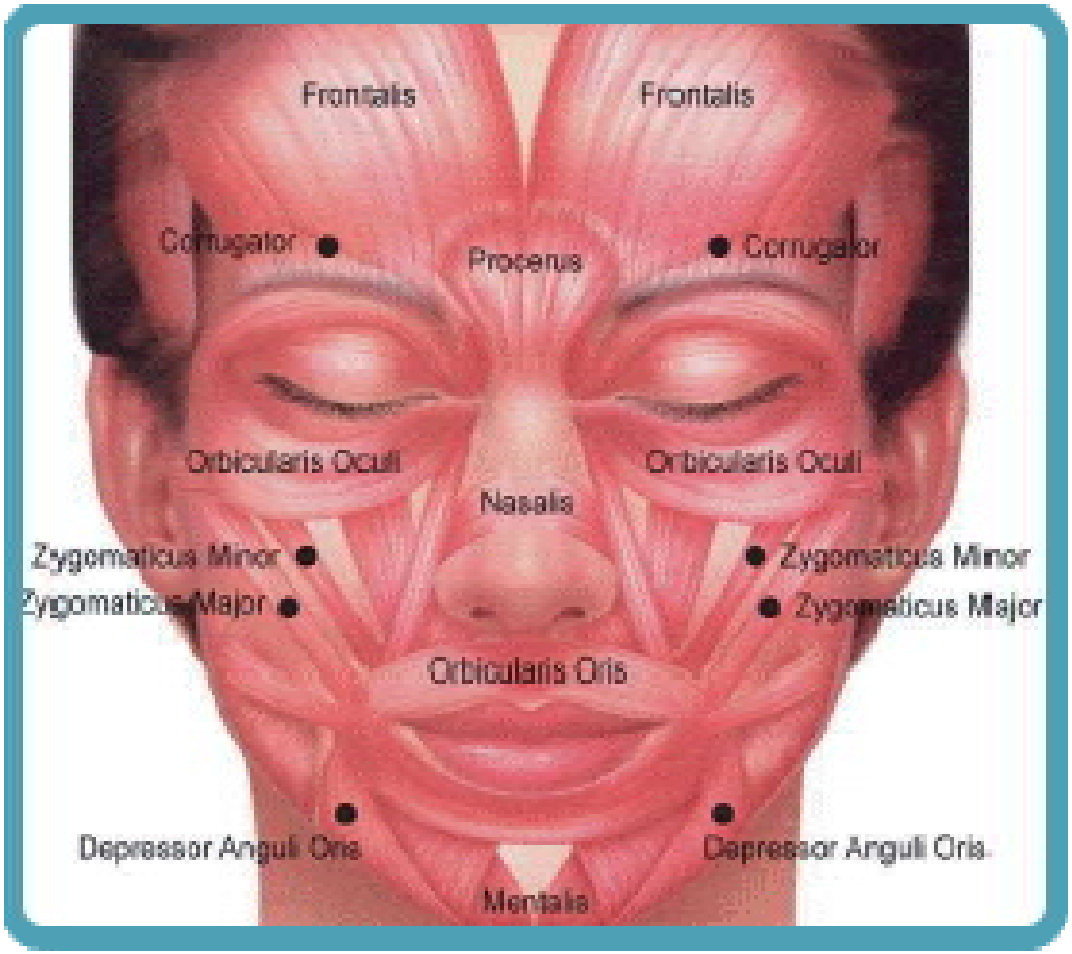
Carruthers & Carruthers Report

- 25 year recap of long term effects of BOTOX®

  Very safe product

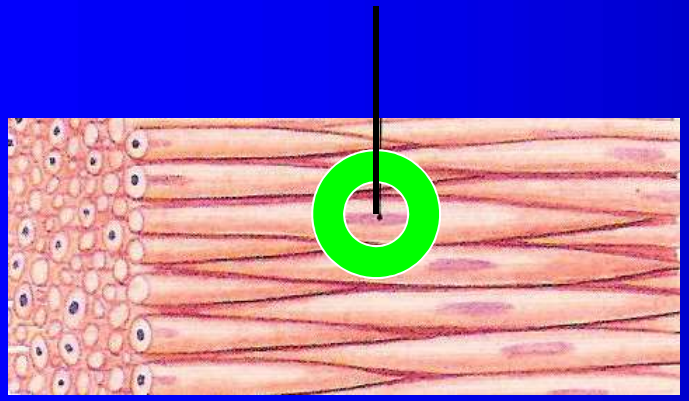
  Initial clinical trials:
  - 853 treatments on 50 patients, just 1% resulted in adverse events.
  - 10 adverse events in 8 patients were reported over the study including: ptosis, dysphagia, bruising and injection pain.
  - No allergic reactions were reported
  - The study found no increase in adverse events with number of treatments

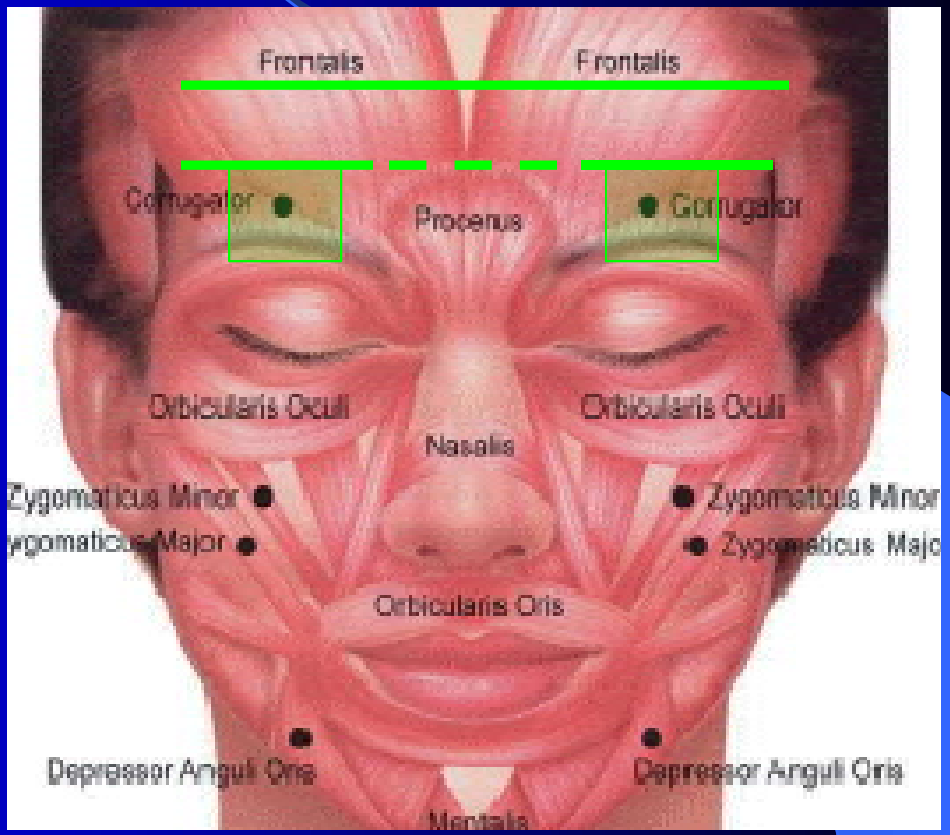
Interactive: Facial Muscle Anatomy



Think of how a muscle is built

1 cm diffusion





How long can it be used once reconstituted?

- Once reconstituted, store refrigerated
- Ideally, use within 24 hours - this follows manufacturer's specifications.
- Originally thought to degrade sharply – Study by Garcia and Fulton demonstrated continued potency to 30 days.
- Study by Hexcel found 6 weeks of efficacy/sterility.

Reconstitution

BOTOX® 100 u vial (STRONG VACUUM IN VIAL)

- Use 2.5 ml sterile saline per 100 unit vial (or the appropriate volume for the desired dilution)
  - (1.25ml saline to reconstitute a 50 unit vial)
- Use preservative-free 0.9% saline (manufacturer's recommendation) or preserved 0.9% saline
- Introduce saline **VERY** slowly into BOTOX® vial.
- Do not shake vial! Make every effort to avoid foaming.

BOTOX® Storage

- Prior to reconstitution, keep refrigerated.
- After reconstitution, keep refrigerated or on ice.



Syringes

1 ml Syringe with 0.1ml increments

--TB—with detachable needle

--Norm-Ject or Exel 26048—with detachable needle and no dead space

--Allergy—with attached needle

Insulin Syringes—with attached 30-32g 5/16” to ½” needle

--30 unit (3/10ml)

--50 unit (1/2ml)

--100 unit (1ml)

UniTox Syringe—must use 2.5ml saline in a 100 unit vial dilution. Increments are 5,10,15 and 20 units

--with attached 30g 5/16” needle

Comfortox Syringe


PEEL TO OPEN
0.5 ml/cc
20 Units
UNITOX®
ADVANCED UNI-BODY DESIGN
UniTox® Syringe is for use with Botox® cosmetics only
Disposable
Botox®
Syringes
GMP
CE
0120
STERILE EO
· SINGLE USE ONLY.
· DO NOT USE IF PACKAGE IS OPENED OR DAMAGED.
5
10
15
20
UNITS




0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
ml




Comfortax™

Botox® Reconstitution

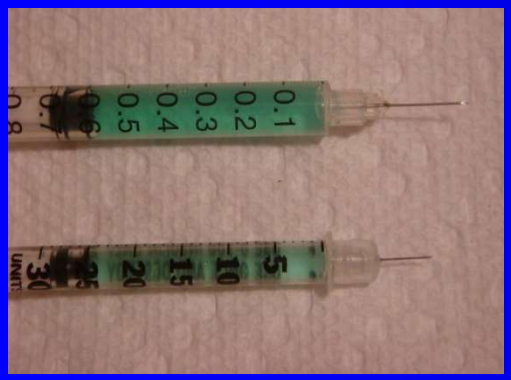


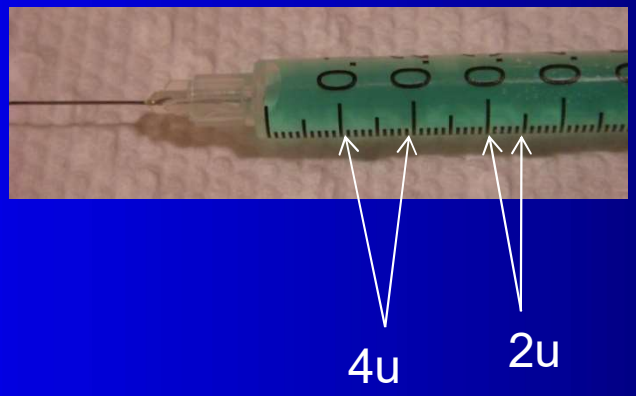


Diluent added (0.9% Saline, sterile, nonpreserved)	Resulting dose/ Units per 0.1 mL
1.0 mL	10.0 U
2.0 mL	5.0 U
2.5 mL *	4.0 U*
4.0 mL	2.5 U
8.0 mL	1.25 U

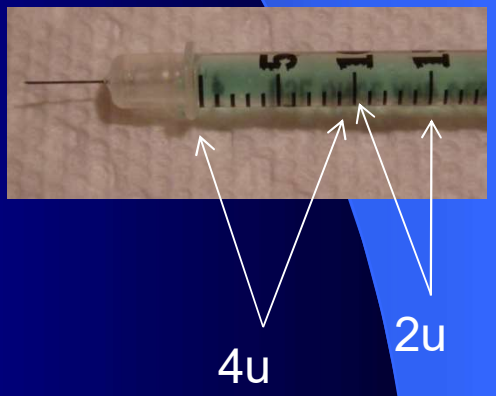
BOTOX® Injections

Typical individual injections are from 2-4 units.





1ml TB Syringe



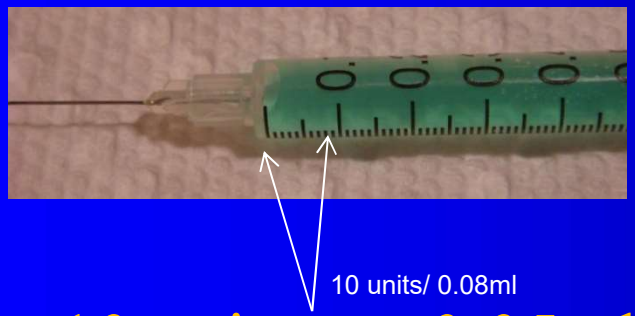
3/10ml Insulin Syringe

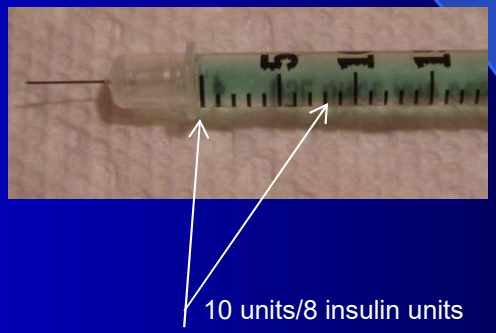
Reconstituting Dysport®

- Using a 21 g needle and aseptic technique, draw up the proper amount of sterile, preservative-free 0.9% saline.
- Insert the needle into DYSPORT® vial at a 45° angle and allow saline to be pulled into the vial by partial vacuum.
- Gently invert the vial (do not shake)
- Reconstituted DYSPORT ® should be a clear, colorless solution, free of particulate matter.

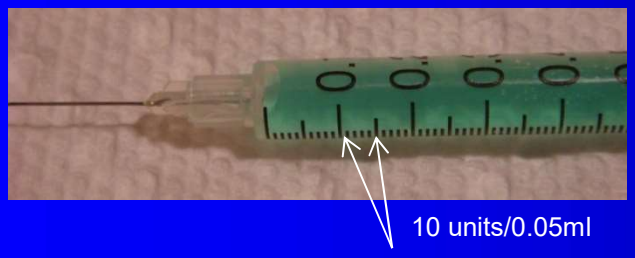
Reconstituting Dysport®

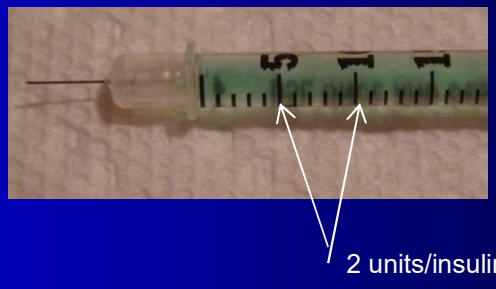
- Typical individual injections are 10 units.
- There are 2 “on-label” dilutions
  - 10 units per 0.08ml
    - 2.5ml of preservative-free 0.9% sterile saline to a 300 unit vial





  - 10 units per 0.05ml
    - 1.5ml of preservative-free 0.9% sterile saline to a 300 unit vial





Reconstituting Dysport®

- Off-Label "Easy Transition #1" dilution
  - Same volume injected as Botox/Xeomin
    - 2.5 ml of preservative-free 0.9% sterile saline to a 300 unit vial



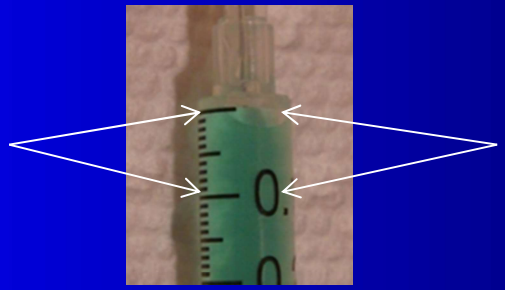
12.5 units per 0.1 ml



12.5 units per 10 insulin units

When recording the number of units injected, this will be about 3 times the units of Botox

Botox 4 units



Dysport 12.5 units

Reconstituting Dysport®

- "Dr. G's" Method of reconstituting Dysport
-
  - 3 ml of preservative-free 0.9% sterile saline to a 300 unit vial



10 units per 0.1ml



10 units per 10 insulin units
or 1:1 with Insulin Syringe

Dysport

- Dysport® cosmetic recommendation is 10 units per injection site with 50 units injected into the glabellar area--the only FDA-approved indication.
- Typically 3 times the units of Dysport per injection site compared to units of Botox or Xeomin



Reconstituting Xeomin

- Product arrives at room temperature
- Do not release vacuum. The partial vacuum will draw the saline into the vial.
- Once reconstituted, must be refrigerated or on ice
- Reconstitute with sterile 0.9% preservative-free saline
- Package insert recommends use within 24 hours
- Single patient vial

Xeomin Reconstitution

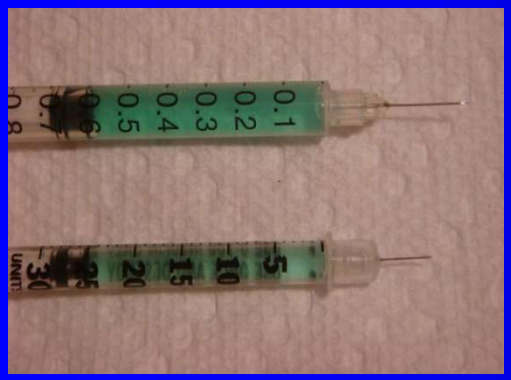


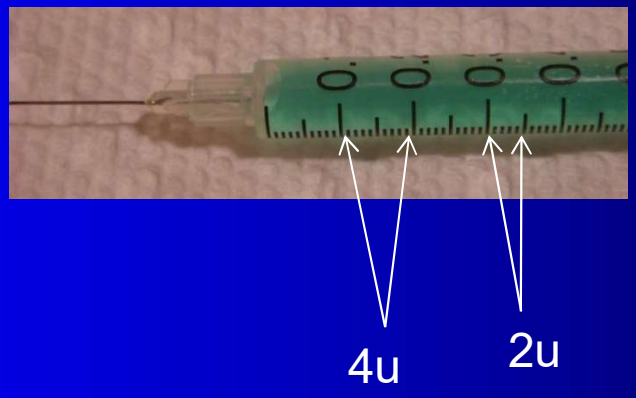


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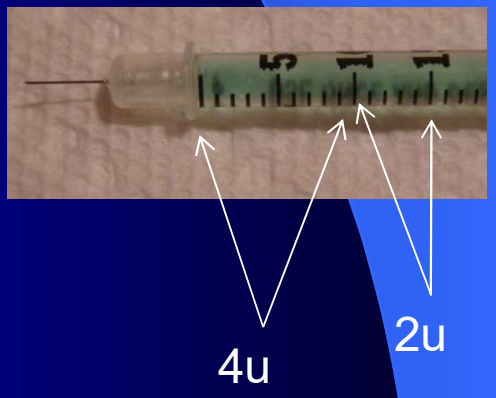
Xeomin® Injections

Typical individual injections are from 2-4 units.





1ml TB Syringe



3/10ml Insulin Syringe

Client Selection

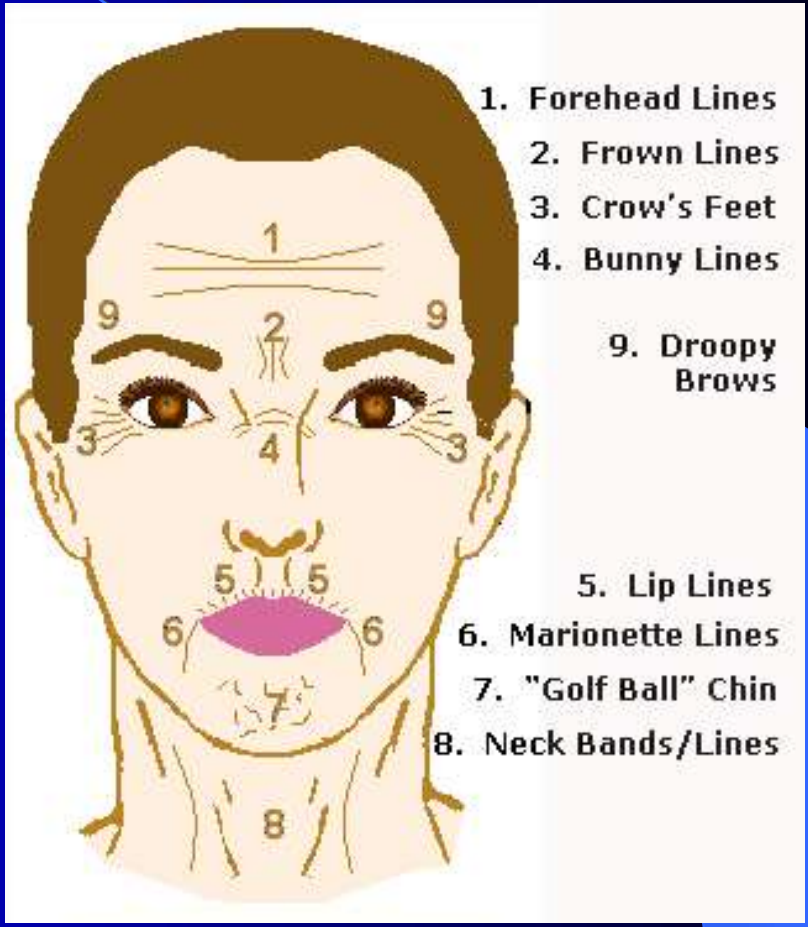
- Basic points – all risks and complications have been clearly stated/explained
- If client is unsure have them wait.
- BTXa cannot replace psychotherapy.
- Assess expectations – if unrealistic, safer to avoid treatment
- Best age for BTXa is 30-65 years.
- Judge facial condition!

Botulinum Toxin - Indications

- Most of the folds and wrinkles in our face are the result of traction of underlying mimetic muscles on the skin, ptosis of the fat pads and loss of collagen.
- Muscles are in a dynamic balance.
- Treatment should affect specific muscles while sparing the surrounding muscles.

Botulinum Toxin - Indications

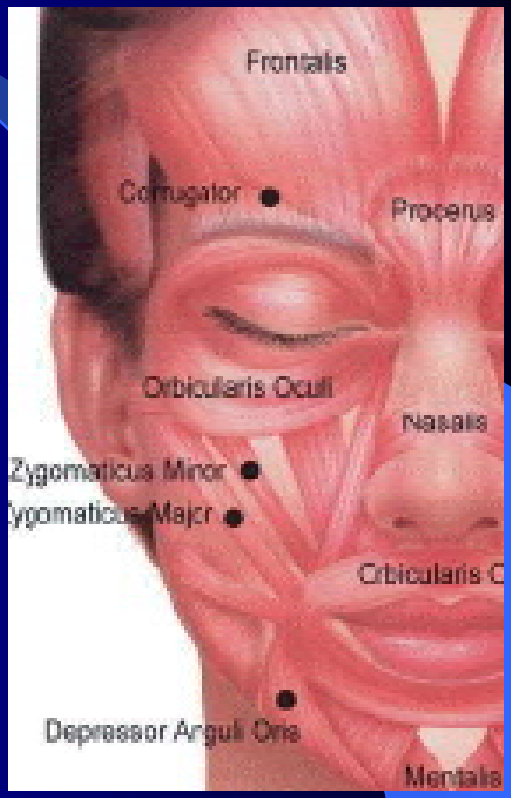
- Horizontal forehead lines
- Glabellar folds "frown lines"
- Lateral canthal lines "crows feet"
- Fine wrinkles on bridge of nose "bunny lines"



Botulinum Toxin - Indications

- Main area of Botulinum Toxin treatment is upper half of the face. Lower half of face and neck treated less frequently.

- We will rejuvenate the lower face today with Dermal Fillers



Botulinum Toxin-Contraindications

- Allergy to any components of the toxin preparation. (i.e. albumin/egg allergy)
- Generalized impairment of muscle strength (i.e. Myasthenia Gravis, Eaton-Lambert syndrome, ALS)
- Antibiotic therapy shortly before or after treatment (Aminoglycosides - (gentamicin) intensify effect, others can lessen effect.)
- Clients planning Lasik surgery

Botulinum Toxin Contraindications

- Treatment with ASA, NSAIDS or Anticoagulants one week prior to Tx.
- Infections of the eyelids or of other intended injection sites.
- Serious preexisting disease
- Pregnancy and for the duration of breast-feeding.
- Underage clients – need parental consent.
- Blood donors – can't donate after Botulinum toxin A for a period of time determined by the blood bank.

Preparing the client

- Take “before” photograph
- Take “after” photo **two weeks** after – If necessary to help resolve complaints such as “I can’t see any difference” or “It’s worse now than it was before”.
- Inform client orally about treatment and its complications.

Botulinum Toxin A Treatment

- Use written consent
- Document status prior to treatment (describe in chart, as well as photo)
- Cleanse injection site (if you use alcohol, dry the area, as this may adversely effect BTXa).

Botulinum Toxin A Treatment

- Evaluate anatomy in upright position.
- Inject Botulinum toxin with client in upright position.
- Client asked to contract targeted muscles, needle is inserted in the belly of the target muscle while relaxed.

Botulinum Toxin A Treatment

- The needle is inserted into the muscle and the BTXa is injected.
- If uncertain as to appropriate depth, advance needle to point of contact with periosteum then retract slightly, and inject.
- Dermal wheal (bleb/intradermal) in most areas.

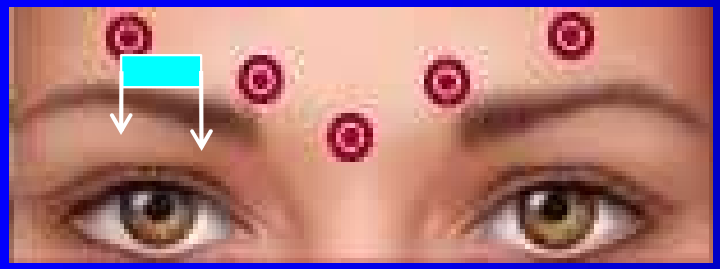


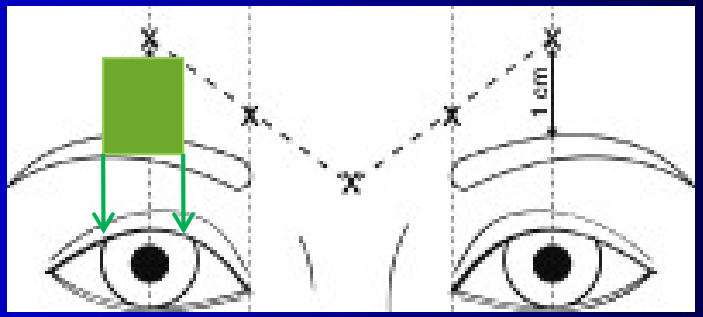


Botulinum Toxin A Treatment

Botox®, Dysport® and Xeomin® will diffuse approximately 1 cm in a radius from the injection site when reconstituted with 2.5ml saline.

Avoid the area less than 1 cm above the orbital rim over the iris. Diffusion of the toxin into this area can cause ptosis. With Dysport®, avoid the area 1 cm above the brow.





BOTOX Injections

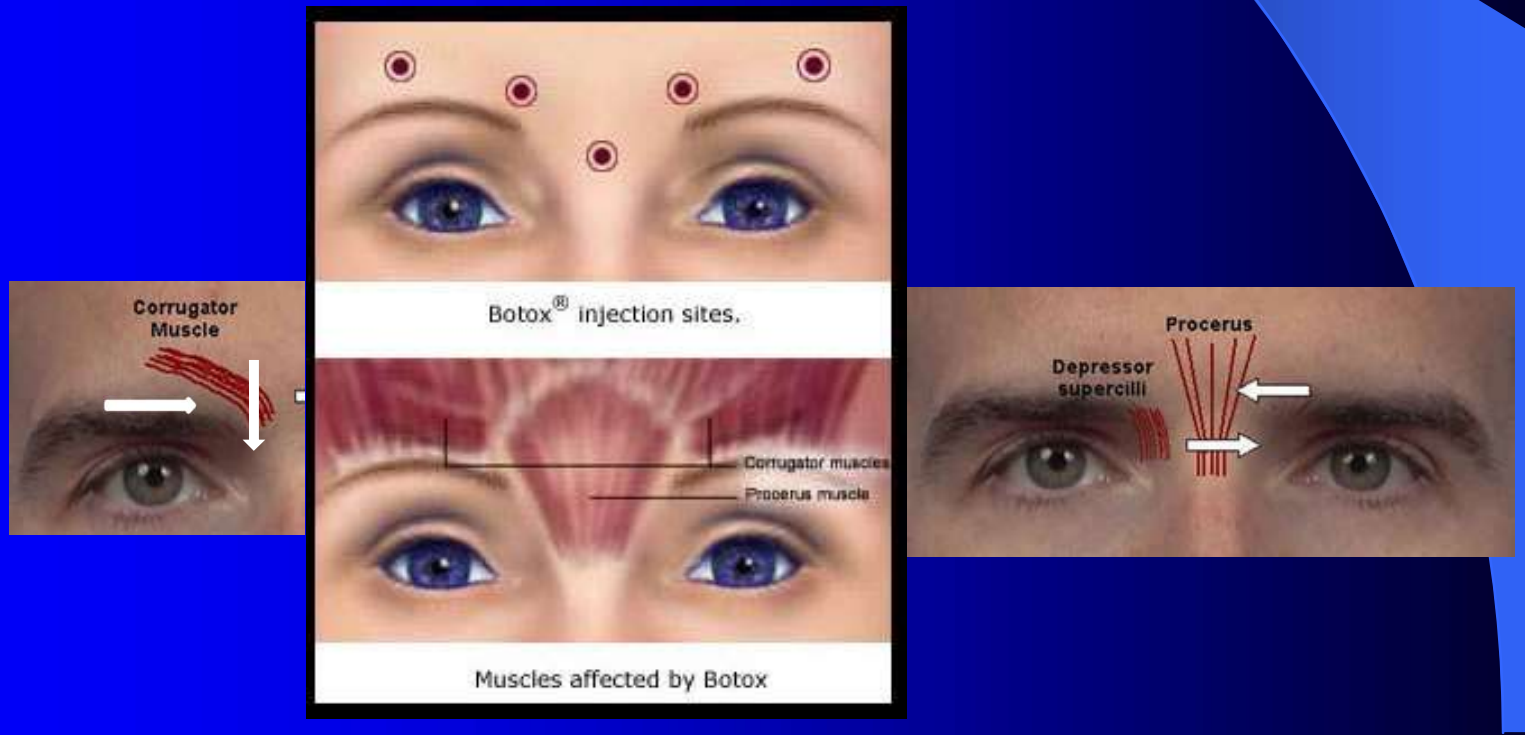
- Recommended maximum dose of Botox® to be administered at one time is 100 units. Keep in mind, however, that neurologists often inject 600-800 units/session. The lethal dose for a 70Kg person is 2500 units.
- Men typically require 2-3 times the amount of BOTOX® as women, dependent upon muscle mass.
- Athletic women may need more
- After two years of injections every 4-6 months, the frequency and amount of neurotoxin injected may be able to be decreased

Glabellar region “frown lines”

- Recommended Botox®/Xeomin dose: 12-24 units – 4 units per injection site.

Dysport 50-85 units—10 units per injection site

- By paralyzing the Corrugator muscle and parts of the Procerus muscle, the frown lines are arrested and the effect of the muscles lifting the brows dominates.



Glabellar lines, cont.

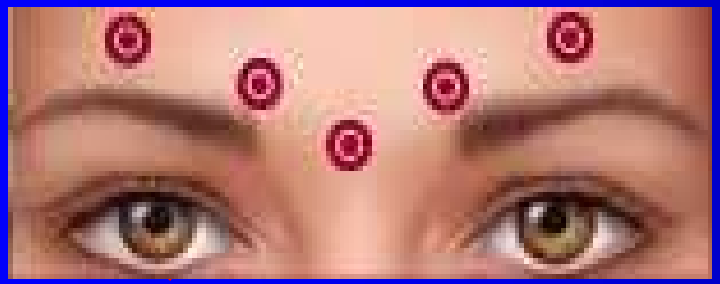
- Treatment softens the vertical glabellar furrows, and is frequently accompanied by a mini brow lift, raising the eyebrows about 1-3 mm medially
- BTXa injected into the glabellar region causes the frontalis muscle to dominate. (Can help with older clients or those with low set eyebrows.)
- Failure to include the glabella when injecting the forehead can cause lowering of the brow (Neanderthal appearance)



Glabellar furrows & nasal wrinkles

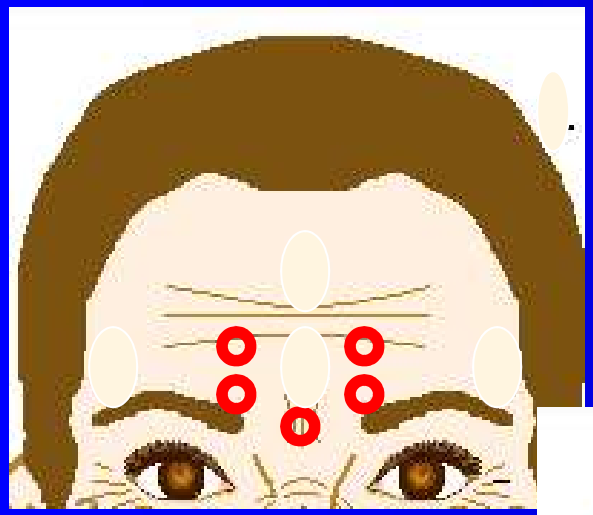
- Recommended Botox®/Xeomin dose: ≅ 4 units/site
- Recommended Dysport® dose: ≅ 10 units/site

- Horizontal glabellar furrows (caused by the Procerus muscle) 1 injection on the midline in the belly of the muscle will usually handle this.

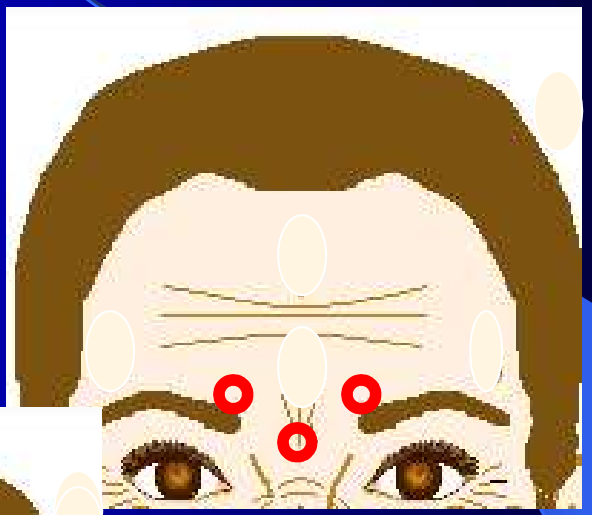




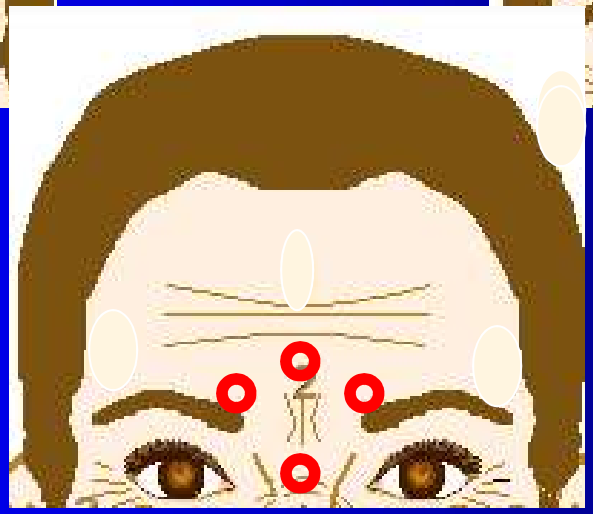
Additional Glabellar Injection Patterns



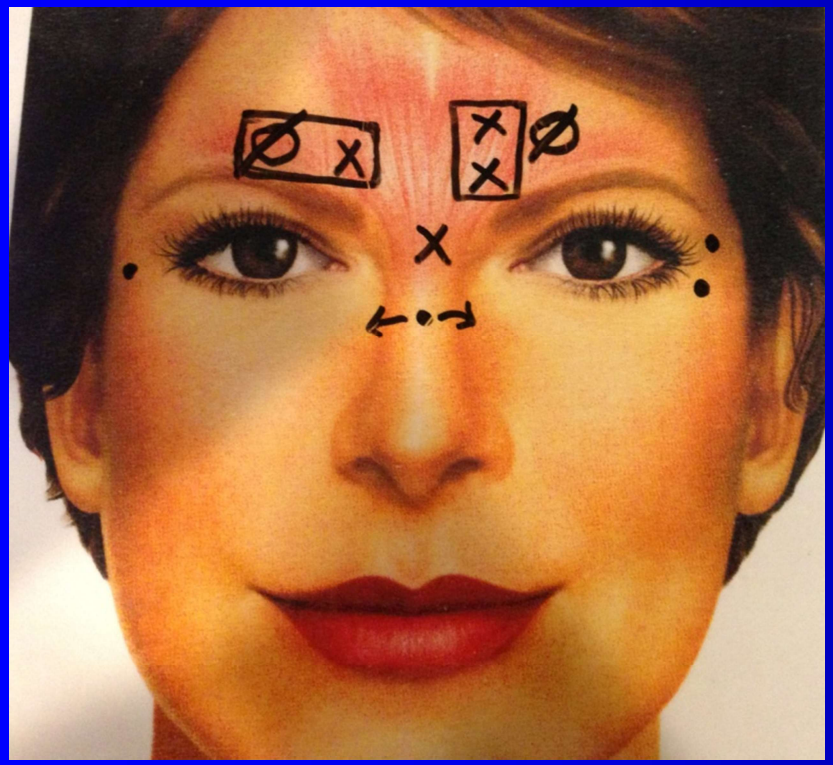
Stacking

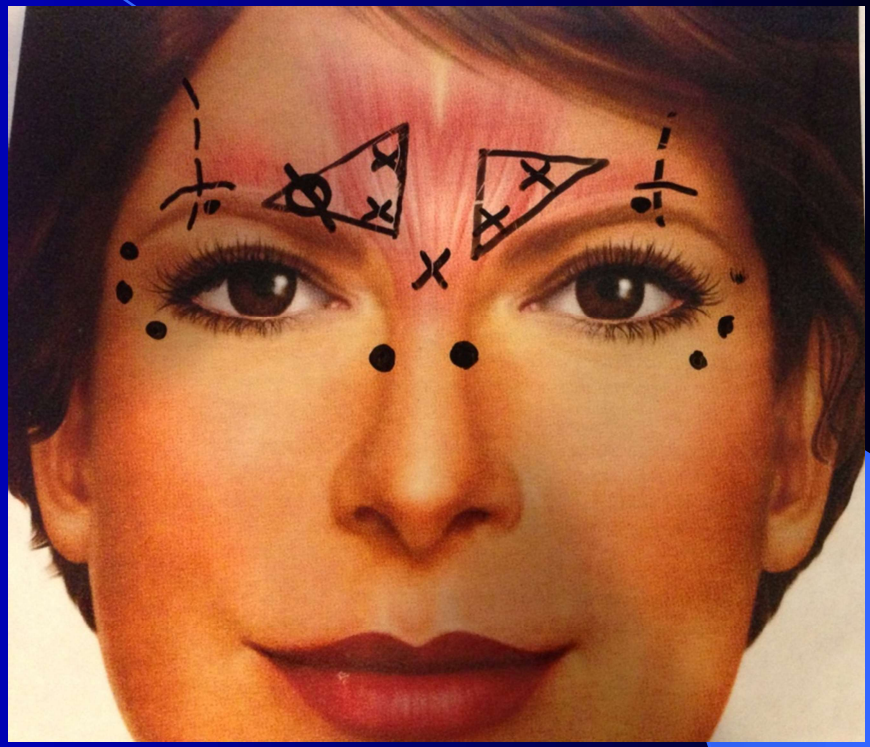


Trio



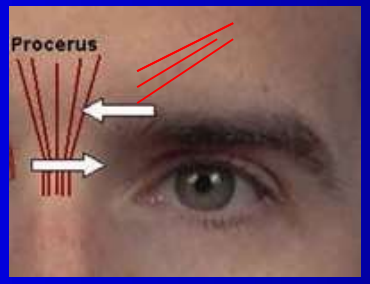
Diamond

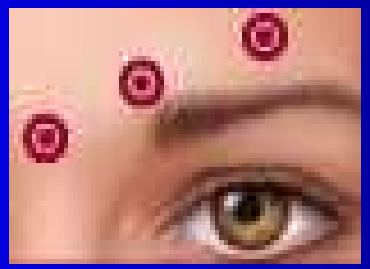




Glabellar Landmarks

- Commonly used landmarks lie about 1 cm above the medial ends of the eyebrows, directly over the glabellar furrow, in the middle of the bridge of the nose and usually also in the medial belly of the glabellar fold.

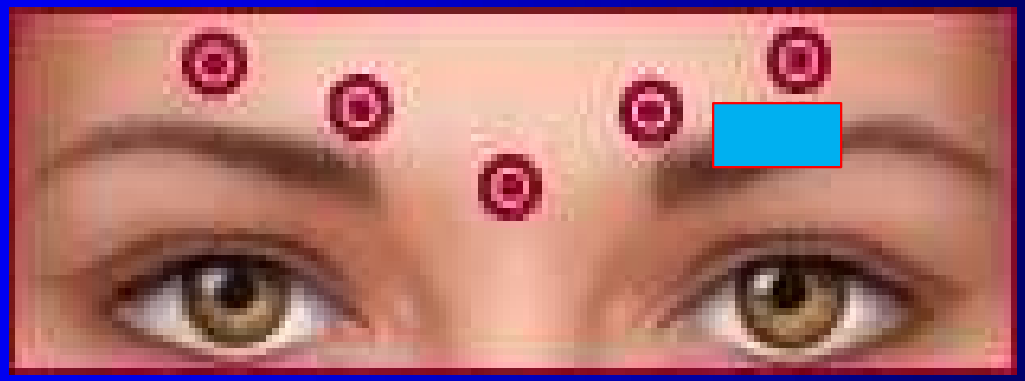




Easy Administration

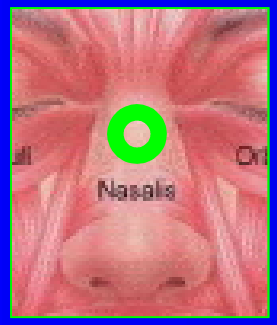
•Medial corrugator injections should be placed at least 1 cm above the bony supraorbital ridge[1]

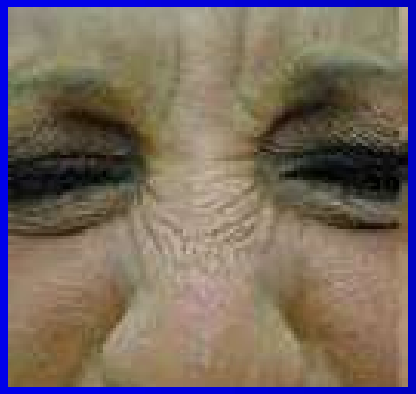




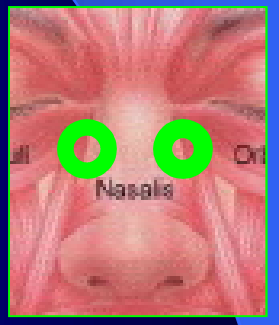
Bunny Lines

For fine lines on the nasal bridge, place injections of 1-2 U BOTOX® on both sides of the rhytide or one injection centrally.







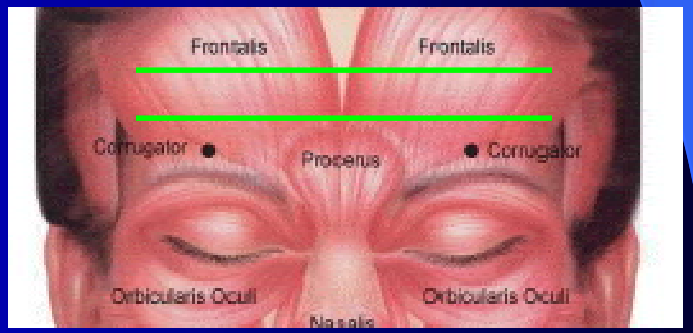


Do not inject too low as this can cause the lip to droop if the Labii superioris alaeque nasi is affected.

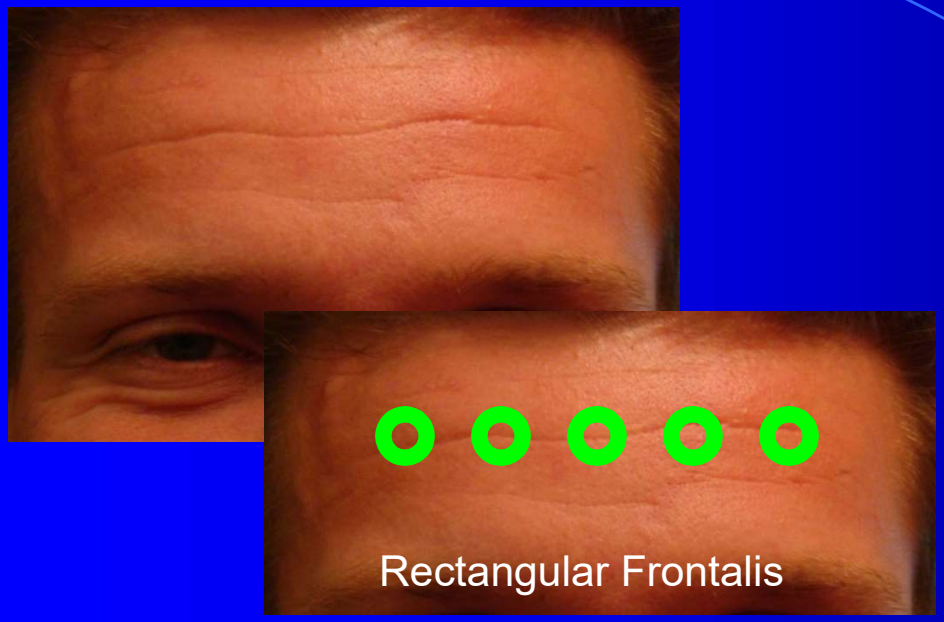
Horizontal forehead lines

- Recommended Botox® dose is 12-40 units (2-4 units each site)
- Since the frontalis muscle is responsible for elevating the eyebrows and wrinkling the forehead, paralyzing this muscle can lower the forehead and the eyebrows.
- Because of this, the glabellar region should always be treated first or at the same time in order to raise eyebrows



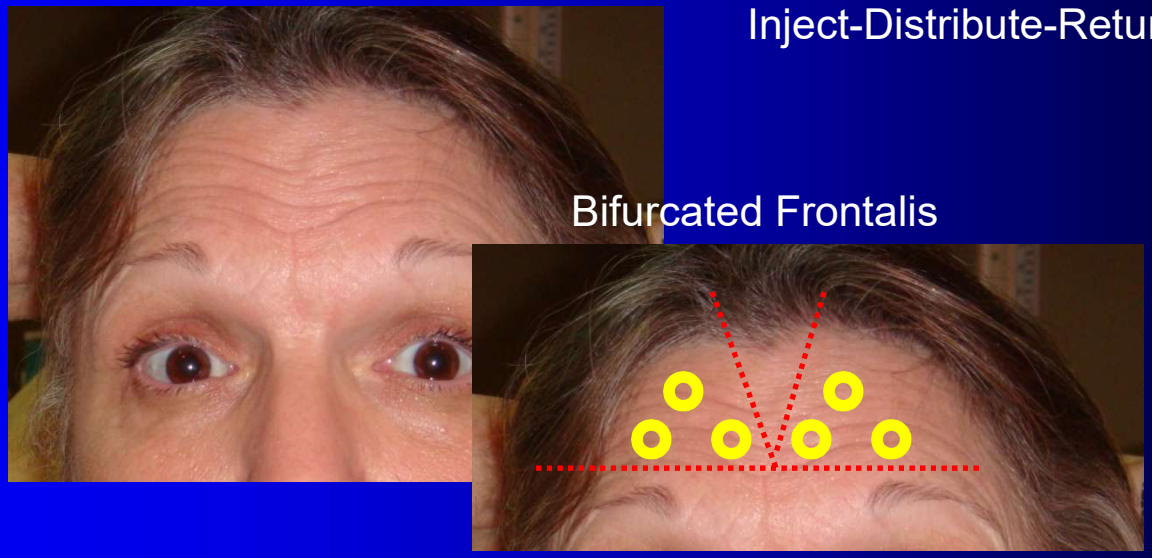


Horizontal Forehead Lines





Inject-Distribute-Return in 2 weeks

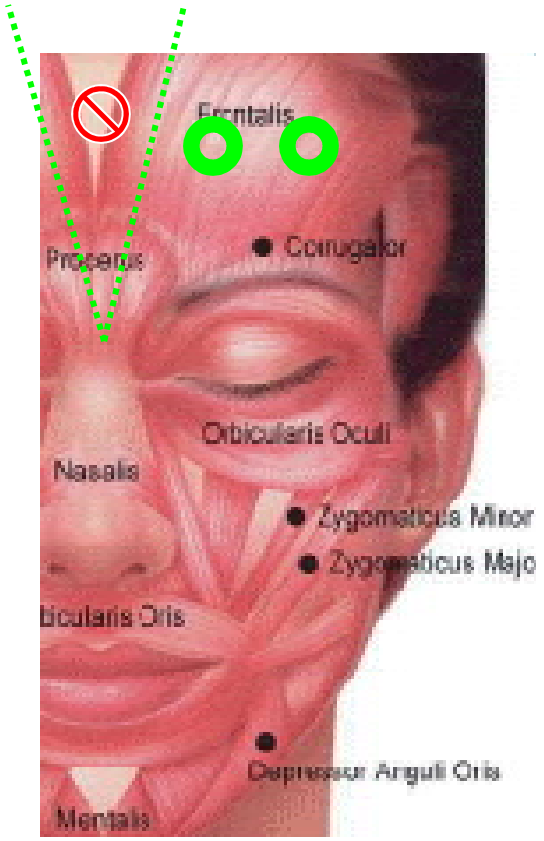


Horizontal forehead lines



Product placement is based on the pattern of wrinkle formation:

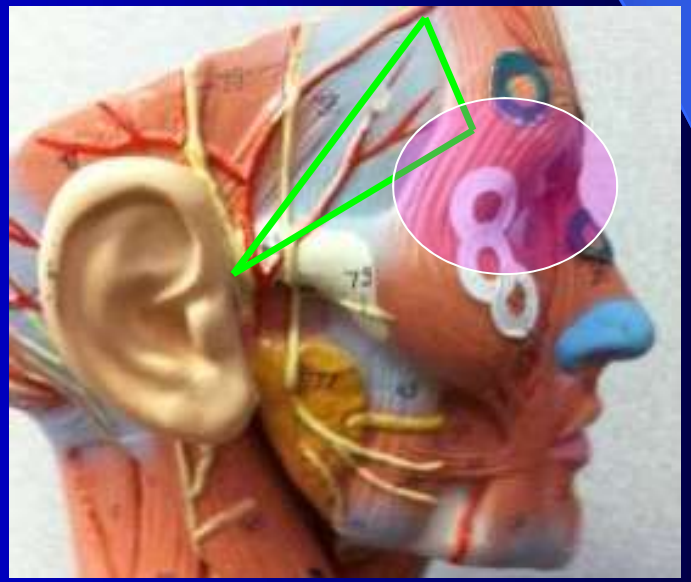
1. Single wrinkle zone
2. Diffuse wrinkling
3. Bifurcated muscle vs a rectangular muscle
4. Post-trauma



SITES TO AVOID

- Injections of toxin in the lateral forehead region.
- The ‘Bermuda Triangle’ area of the forehead is to be avoided, since paralyzing this area can cause a ptosis of the eyebrows.





BOTOX® Treatment

- Injection in the 'crows feet' area are frequently performed intradermally rather than in the belly of the muscle and are quite effective.



Lateral Canthus Lines
'Crows Feet'

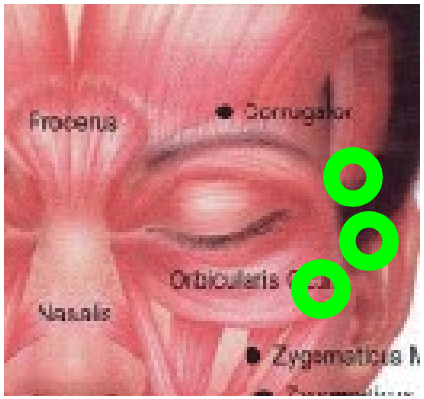
- Recommended dose is 12-24 units - use multiple injections of 2 units to maximize the benefits

- Start injections about 1 to 1.5 cm lateral to the outer canthus.

- Injection pattern is individualized to client.







Crow's Feet Caution:

- The provider must be careful when treating clients with loose, baggy skin on their lower lids, since this provides a path for BTXa to migrate into unintended areas.



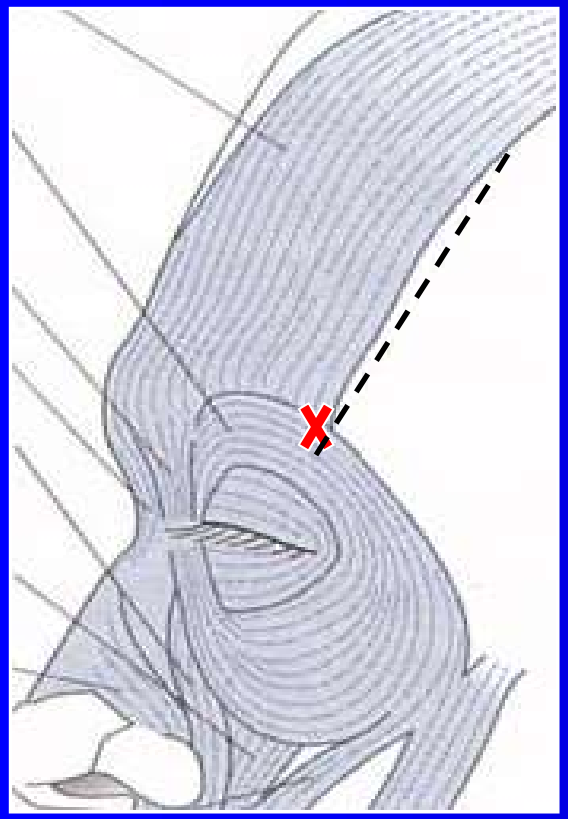


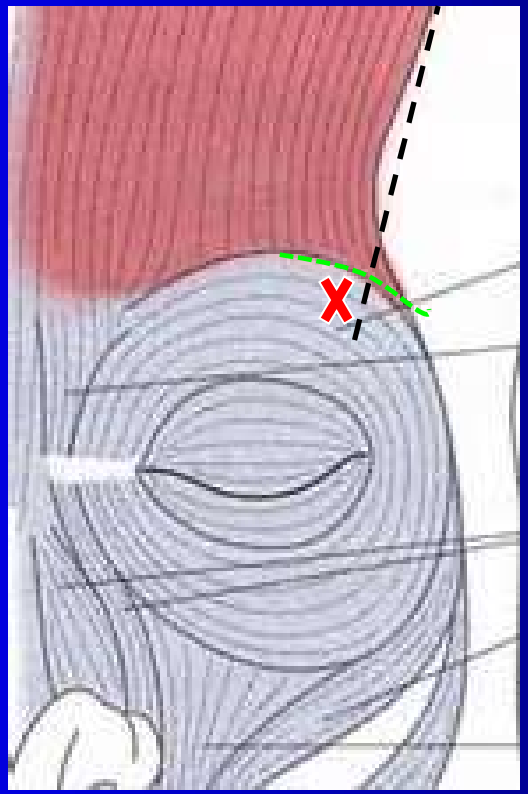
Spa Brow (Lift)

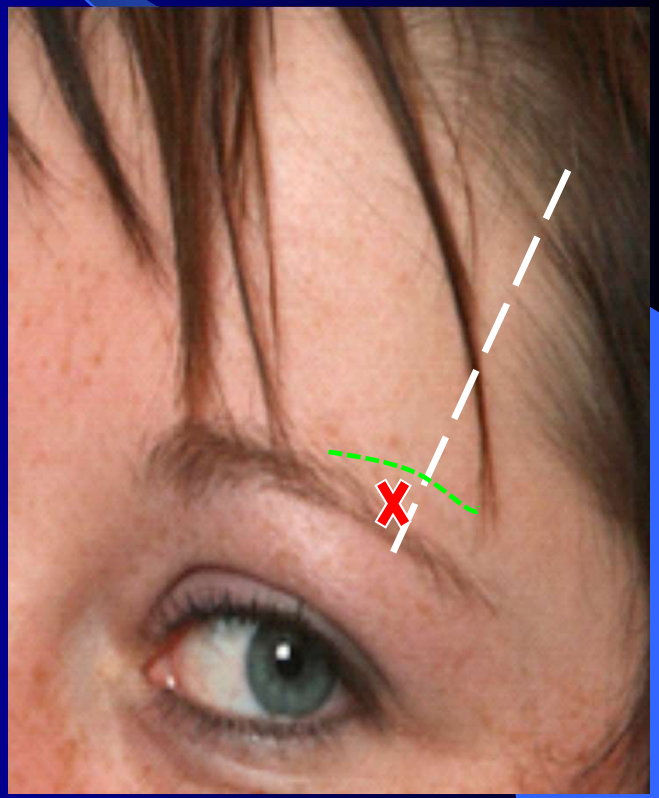
- To raise lateral brow (‘Spa brow’), inject 2u
- of BOTOX® into the Orbicularis oculi muscle just under the lateral tip of the eyebrow.



Temporal Brow Lift: The Lateral Injection
Where the Temporal Fusion Line Crosses the Brow







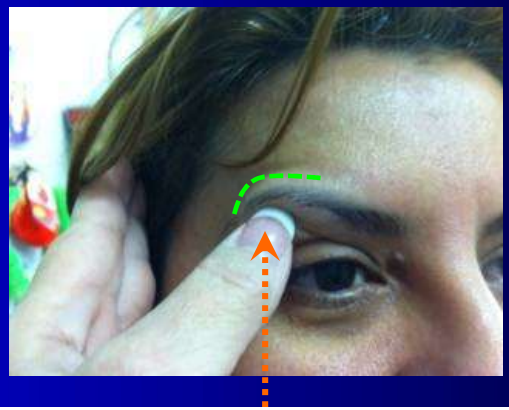
Interactive: Landmarks

- Locate Temporal Ridge



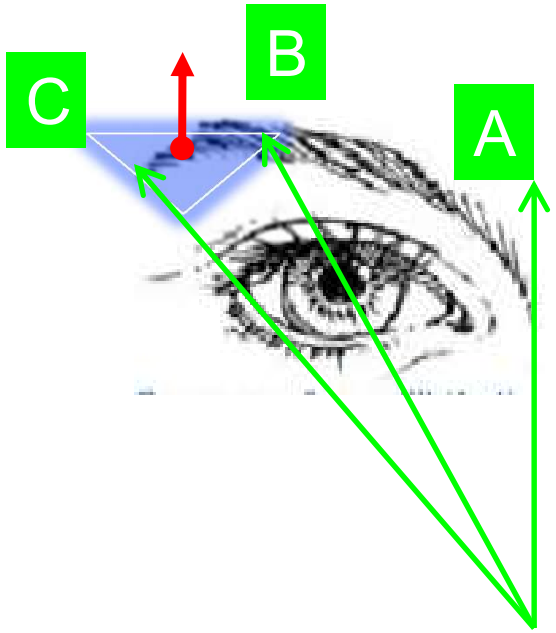


- Establish Orbicularis oculi border

Brow Lift

- Brow proportion usually dictates that the female brow should gently arch at the junction of the lateral 1/3 and the medial 2/3 of the brow.



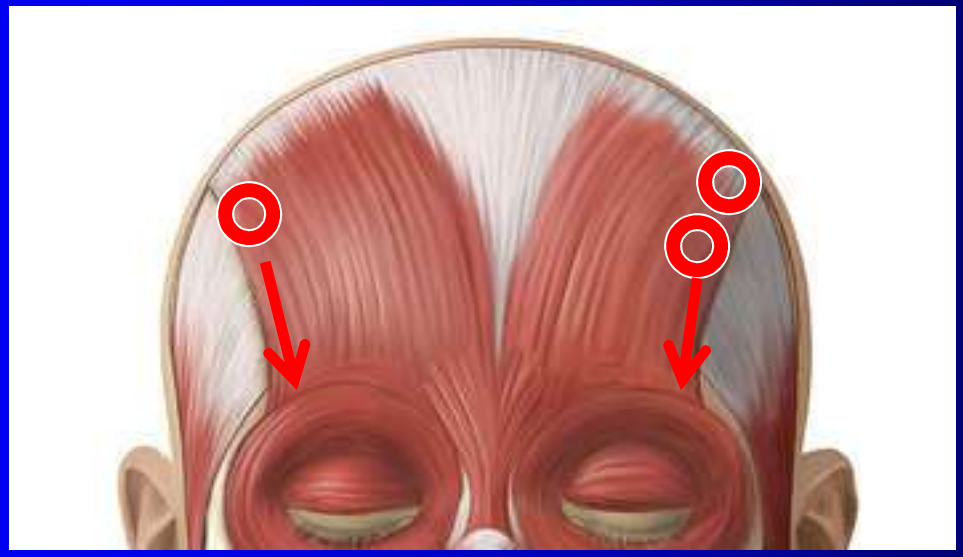
- A-B=Medial 2/3
- B-C=Lateral 1/3

Reversing the “Spock Brow”









2-4 units per site
to “drop” the brow

Refreshment Break

Botulinum Toxin-after treatment

Remind the client frequently about the following points:

- Stay upright for four hours
- Do not massage or scratch injection site
- Exercise treated muscles

Botulinum Toxin – after treatment

- Explain to the client that effect is not immediate – they should expect to see results in 3-7 days.
- Follow up or advise to call in 14 days if unsatisfied with results. Take additional photo then or as needed.
- Schedule additional treatment as desired, typically in 3 - 6 months.

Side effects and complications

- Local injection pain
- Bruising (3-10%)
- Pressure sensation above the upper lid/lower forehead
- Reversible lid ptosis (3%)
- Diplopia (very rare)
- Headache, “flu”, hearing impairment (<1%)
- Numbness in forehead
- Brow ptosis – usually occurs after injection of frontalis and can last up to 3 months.
- Non-responder
- Paralysis of neighboring muscles due to incorrect injection technique

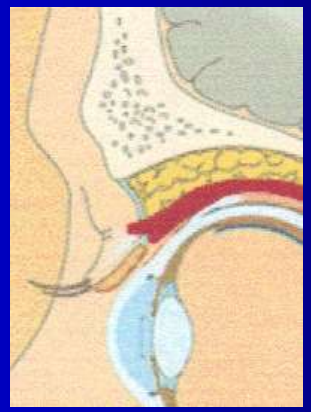
Side Effects

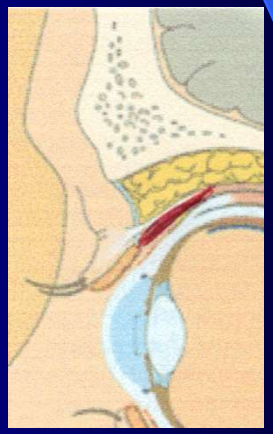
- Anaphylaxis – extremely rare. Carruthers reports performing over 10,000 treatments, and has never seen one.
- Dr. Wm Binder of UCLA reports using over 1 million units of Botox® and has never seen one.
- Still be vigilant and prepared.

Side Effects

- Ptosis of upper eyelid. This may occur after injection of glabellar frown lines if the toxin migrates to the upper eyelid levator muscle. May appear as early as 48 hours or as late as 12 weeks after injection and may last from 2 to 12 weeks.
- Naphcon-A®/Opcon-A® or Apraclonidine 0.5% eye drops (one or two drops three times a day) can be used until ptosis resolves.
- To avoid – do not inject any closer than 1 cm from orbital rim.







Side Effects





Botox® and Fillers

- BTXa typically should be performed prior to filler injections, **not** at the same session.
- Perform BTXa first (about 2 weeks prior) and take advantage of the muscular relaxation and therefore immobility of the filler. Filler will last longer in the skin after BTXa .
- BTXa in the upper face and Fillers in the lower face are acceptable. But, if at the same session, exercise caution.



Antitoxin

- An antitoxin is available if overdose or mis-injection occurs.
- Contact your Local or State Health Department to process a request for antitoxin through the CDC. If you do not receive a response within 30 minutes, contact the CDC directly at 770-488-7100.
- Antitoxin will not reverse Botulinum toxin induced muscle weakness already apparent by the time antitoxin is administered.

CONCLUSION

- As an aesthetic treatment, BTXa offers a unique treatment that is relatively low in cost, while giving rapid and marked results.
- BTXa Is the first of many procedures that you can safely add to your new practice of aesthetic medicine.
- Consider other facets of aesthetic medicine to promote repeat business and a loyal, routine, and growing client base.

Before & After Botox®





Before & After Botox®





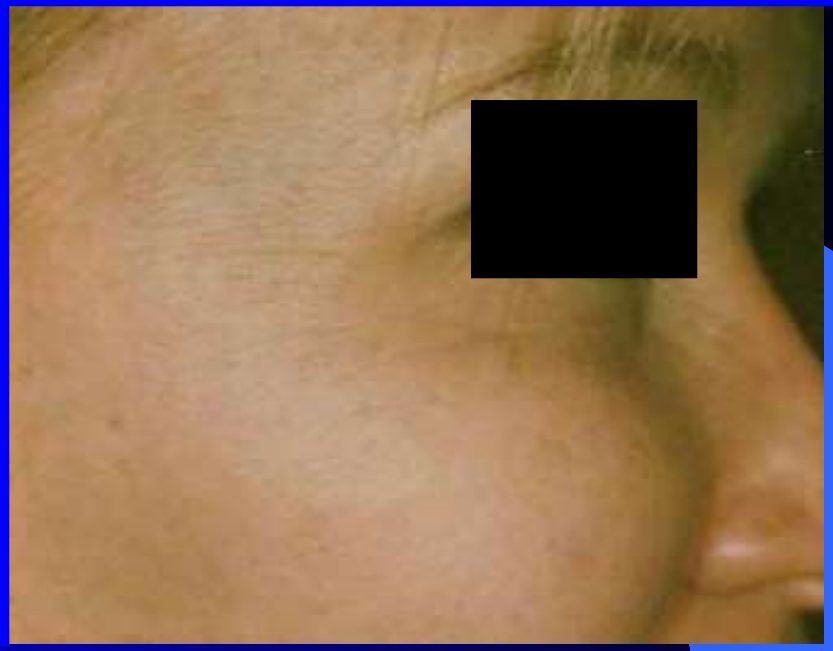
Before & After Botox®





Before & After Botox®





Before and After



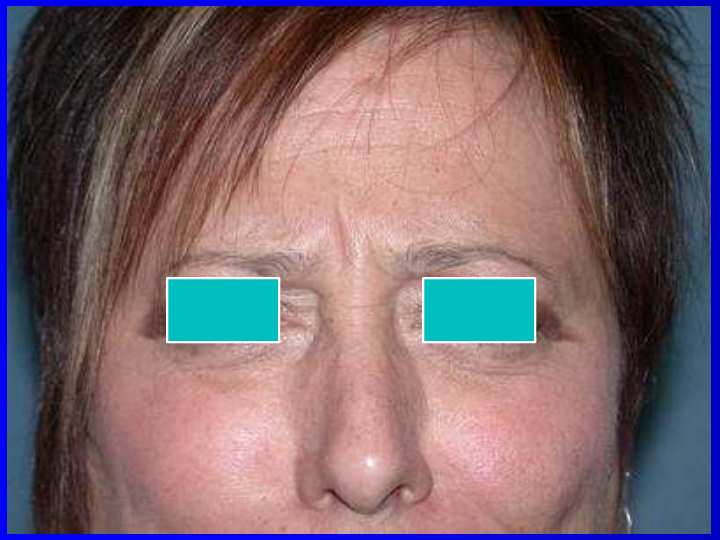


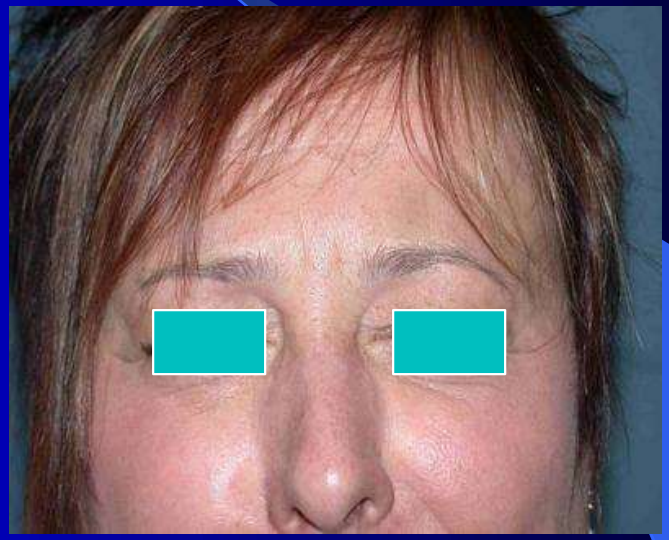
Before & After Botox®





Before & After Dysport®





Photos

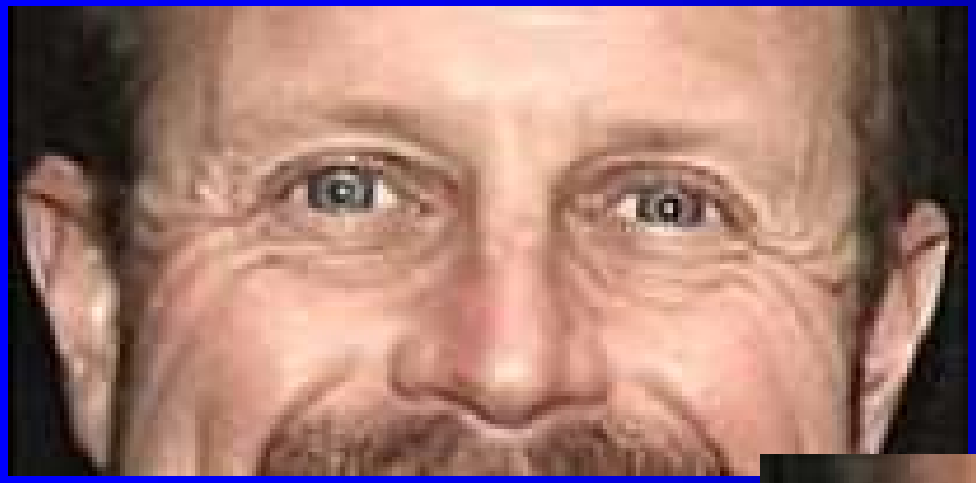


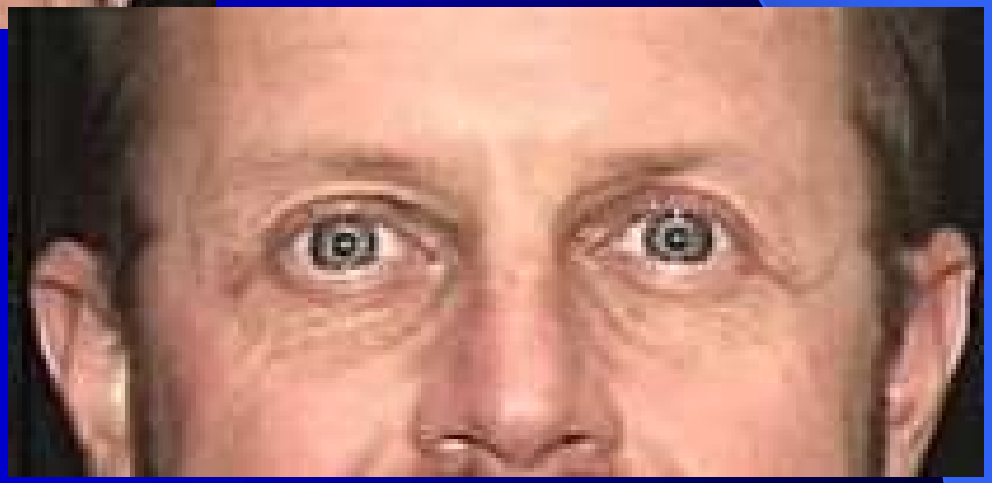






Before and After





Before & After Botox®





Before & After Botox®







BOTOX®– supplies list

- Alcohol or Non-alcoholic disinfectant
- 2X2 or 4X4 pads, Applicator or Q-tips
- 1 ml syringes (Tb). Watch "safety" syringes!
- Botulinum toxin A
- 0.9% Sterile Saline preservative free or preserved
- Ice packs **prior** to injections only
- 30-32 gauge needles to administer
- 23-27 gauge for mixing and drawing up solution
- 30-32 gauge ultrafine insulin syringes may also be used to administer
- Gloves

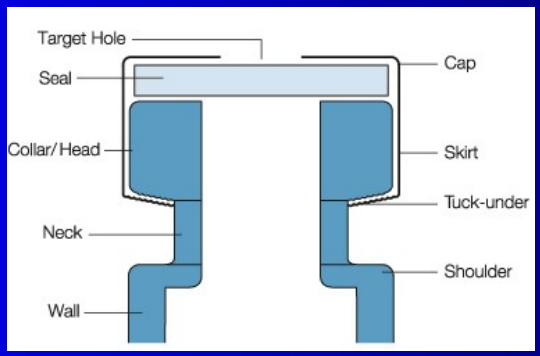
Points to be aware of

- Avoid:
  - Errors in preparing the solution (wrong dilution, contamination, foaming or shaking)
  - Local anesthetics (may weaken effect)
  - Use of alcohol without drying (might degrade toxin)
  - Drop of BTXa solution on tip of needle
  - Aspiration before injection (not recommended)

Get every last dr♦p of Botulinum Toxin



Kebby Pliers or other de-capping device such as a hemostat, paint can opener or even a beer opener





20mm size Decapper for Botox
13mm size Decapper for Dysport

Kebby: www.kebbyindustries.com
Phone: 815-963-1466

Get every last dr♦p of Botulinum Toxin

Syringes with less dead space



Norm-Ject® and
Excel



Insulin

Needles with less dead space
30 gauge vs 18 gauge

Delasco Dermatology-www.delasco.com

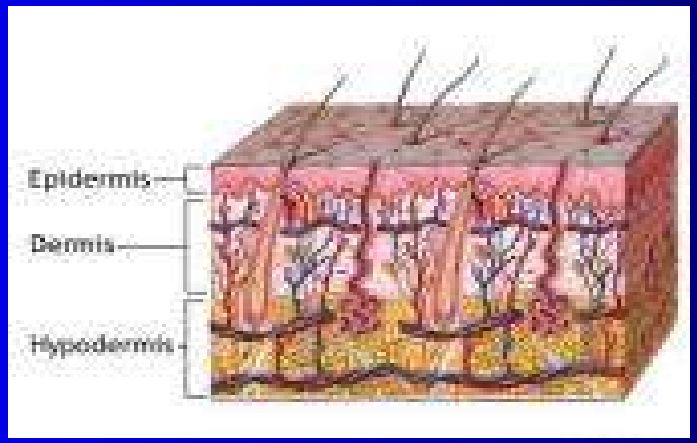
Injectable Fillers

PART I

OVERVIEW OF INJECTABLE FILLERS

Where is collagen found?

- Collagen is a natural protein that provides structural support.
- It is found throughout the body in skin, muscle, tendon, and bone. Fibers of collagen are woven together, like threads in fabric.
- It forms a framework into which new cells can grow. Collagen provides the texture, resiliency, and shape to skin.



What weakens collagen?

- In addition to being a natural part of aging, other factors weaken the collagen fibers:
  - Exposure to the environment (esp. sun)
  - Injury
  - Heredity
  - Lifestyle

Why injectable fillers?

- The way your skin looks is directly related to the way your skin is supported. Collagen is the naturally occurring component of skin that is part of the support structure of skin. Wrinkles form when this natural collagen layer thins during the course of aging.
- Injectable fillers are implanted in the skin directly into the areas where collagen has weakened.
- Depressions in the skin can be raised to the level of the surrounding skin. Thus, lines and scars can be minimized.

Why not collagen creams?

- Creams and moisturizers work only on the skin's surface as a temporary barrier to help retain water.
- Injectable products are placed in the skin to replace what has been lost.
-
- Although, they don't reverse aging they do make aesthetic improvement.

How long do they last?

- Temporary
- Semi-permanent
- Permanent

Temporary Injectable Fillers

- **Bovine Collagen—**Zyderm/Zyplast
  - Required Allergy Testing 30 days prior to injection



Human Collagen – no allergy test needed

Foreskin Fibroblast Culture

CosmoDerm/CosmoPlast

Human Cadaveric Fibroblast Culture

Cymetra, Dermalogen, Fascian



Longevity: 3-6 months

Temporary Injectable Fillers

- **Hyaluronic Acid Products**
- Trade Name: Restylane-L (Medicis/Valeant), Juvederm Ultra XC, Juvederm Ultra Plus XC (Allergan), Perlane-L, Hydrelle (contains Lidocaine)(Anika/Coapt), Prevelle Silk (contains Lidocaine) (Mentor/Genzyme)
- Most are synthetically derived
- Allergy testing not required
- FDA approved
- Longevity: varies by product, but typically anywhere from 4-18 months







Restylane Family of Fillers
Galderma Aesthetics
877-520-0500

Restylane-L	**1ml**	**$247/1**
Restylane Lyft	**1ml**	**$282/1**
Restylane-L	**2ml**	**$493/1**
Restylane-L	**0.5ml**	**$172/1**
Restylane Silk	**1ml**	**$282/1**

Juvederm Family of Fillers
Allergan
800-377-7790

Juvederm Ultra-XC	**1ml**	**$621/2 ($282.50/1)**
Juvederm Ultra Plus-XC	**1ml**	**$621/2($310.50/1)**
Juvederm Voluma	**1ml**	**$808/2 ($404/1)**

Hyaluronic Acid Cohesive Gel

Trade Name: **BELOTERO Balance**

Merz Aesthetics—866-862-1211

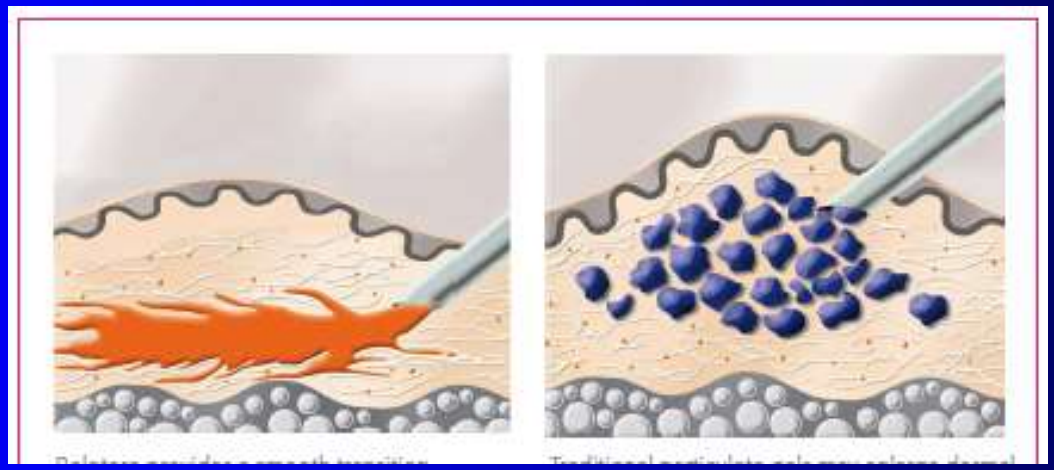
FDA Approved: 11/16/11

Injected into Mid-deep dermis

1ml prefilled syringes, $240

Cohesive Polydensified Matrix Technology





Hyaluronic Acid Volumizer

Trade Name: **Juvederm Voluma XC**

Allergan

FDA Approved: November 2013

Injected into Submuscular /Subdermal plane

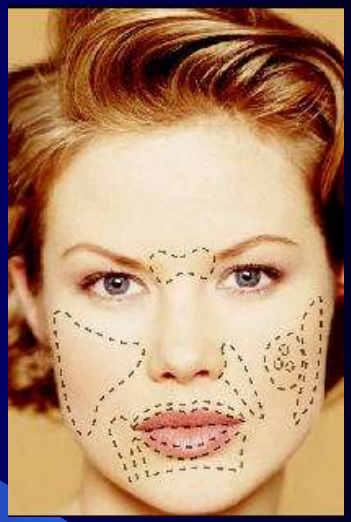
1ml prefilled syringes

Vycross technology—90 % LMWHA+10%HMWHA





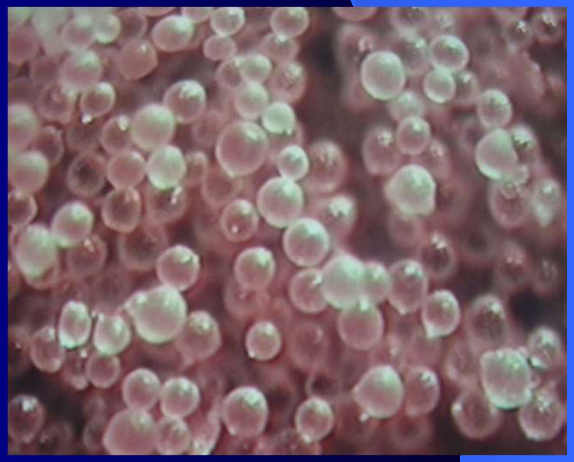
Semi-Permanent Fillers



Calcium hydroxylapitite

- Trade Name: **Radiesse** (Merz)
- FDA approved 2006 for treatment of facial wrinkles and folds. Not for lip augmentation.
- Longevity: 12+ months
- Subdermal injection
- This filler "improves" over time
- 1.5ml--$315, 0.8ml--$210



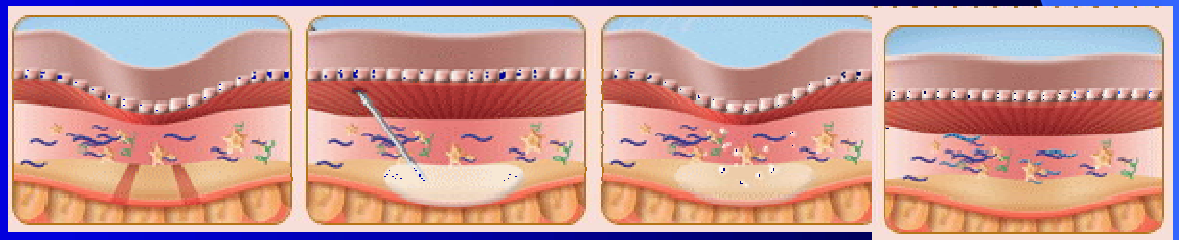


Semi-Permanent Fillers

- **Poly-L-lactic acid**
- Trade Name: Sculptra (Galderma)
- Must be reconstituted with sterile water at least 2 hours prior to injection
- FDA approved for restoration and/or correction of HIV-associated lipoatrophy and cosmetic applications
- Longevity: 1-3 years
- $691/2 vials



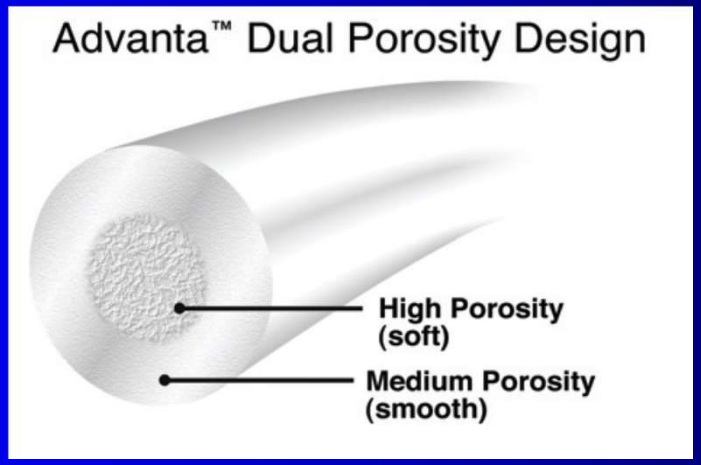




Permanent Fillers

- **Expanded Polytetrafluoroethylene (ePTFE)**
- Trade Name: Gore-Tex, Gore S.A.M., SoftForm, Advanta
- Solid implants requiring small incision
- Best when supplemented with other fillers
- Not approved for cosmetic use, used off-label
- Longevity: Permanent unless removed







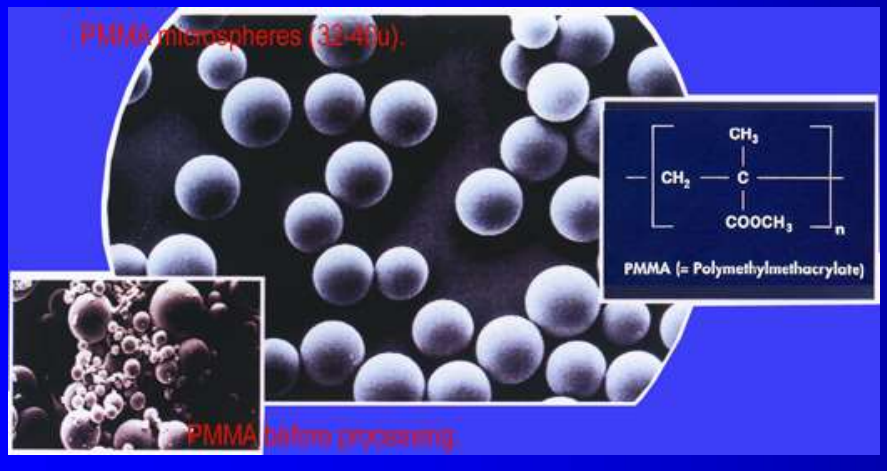
Permanent Fillers



- **Silicone Oil**
- Trade Name: Silikon 1000, Vitresil
- Indicated for retinal detachment, not FDA approved for cosmetic use but is used off-label
- Longevity: Permanent

Permanent Fillers

- **Polymethylmethacrylate (PMMA)**
- Trade Name: **ArteFill, Bellafil**
- Suneva Medical, Inc., 858-550-9999
- Suspended in bovine collagen, so must be allergy tested
- Contains 0.3% Lidocaine
- FDA approved 2006 for nasolabial folds.
- FDA approved 1/2015 for acne
- Longevity: Permanent





Autologous Growth Factor

- PRP/Platelet Rich Fibrin Matrix (PRFM)
- Trade Names: Selphyl (UBS Aesthetics) and

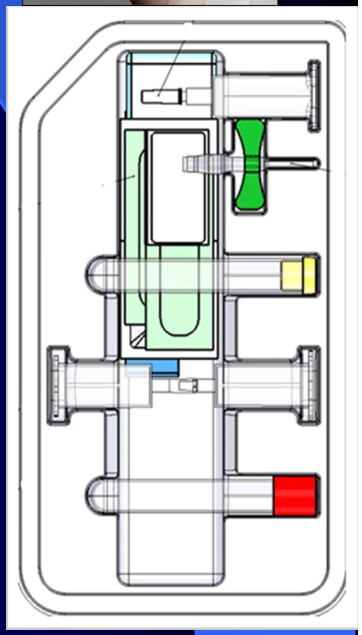
MyCells (Kaylight Corporation), Harvest PRP

- Patient's blood is drawn into an anticoagulant in a specialty tube or prep pack
- After centrifugation, the platelets and fibrin form a matrix.
- PRP is injected to stimulate cell proliferation.
- Volume is increased and the skin is

rejuvenated by targeted tissue regeneration.

Selphyl $1100/$700 per kit, Harvest-buy centrifuge then disposables





PART II

FOCUS ON HYALURONIC ACIDS

What Is Hyaluronic Acid (HA)?

- HA is a naturally occurring substance that, in the skin, forms the fluid matrix in which collagen fibers are embedded
- It is negatively charged and binds enormous amounts of water, giving skin its supple, resilient quality
- The amount of HA in the skin decreases with age, resulting in reduced dermal hydration and increased wrinkling

HA PHYSIOCHEMICAL ATTRIBUTES

- The half-life on natural HA in tissue is only 1-2 days.
- HA molecule are chemically cross-linked , forming more stable macromolecules which have the same biocompatibility as native HA, but are water-insoluble.
- 'Shear-thinning' gels: Under pressure of injection, gel can pass through a relatively small gauge needle, but removal of the shearing force causes increased viscosity.
- Viscosity also decreases with warmer temperature.

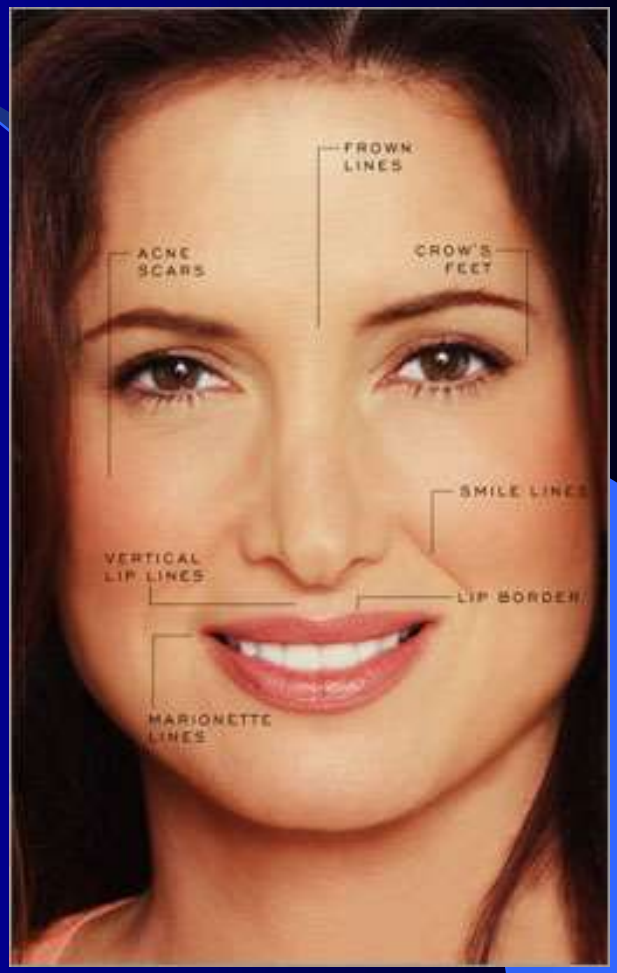
CLASSIFICATION METHODS

- Source of HA
- Method and degree of cross-linking
- HA concentration
- Particle size



Indications

- Nasolabial folds
- Melomental folds
  (oral commissures or marionette lines)
- Acne scars
- Mental crease
- Lip sculpture
  - Volume enhancement
  - Vermillion border definition
  - Philtral crest definition
  - Oral commissure effacement



Indications

Facial Contouring

- Cheek augmentation
- Chin augmentation
- Temporal augmentation
- Infraorbital augmentation

Static and Dynamic facial rhytids—Consider Botulinum toxin injections first for the dynamic wrinkles then consider filler in the remaining static fold or wrinkle

- Forehead
- Periorbital lines
- Perioral lines
- Glabellar lines

NOT Indicated For:

- Dynamic rhytids
- ‘Ice pick’ and other nondistensible scars
- Widened surgical scars
- Actinic damage of lips
- Extensive facial rhytids

Contraindications

- Absolute
  - Previous serious reaction to hyaluronic acid derivatives
  - History of anaphylactic reactions
  - Patients with multiple severe allergies
  - Pregnancy and lactation
- Relative
  - History of hypertrophic or keloid scars
  - Active inflammation at site to be treated
  - Patient has important social function in next 72 hours
  - Unrealistic patient expectations

Side Effects

- Herpetic outbreak – prophylaxis recommended.
- Infection – good aseptic technique a must
- Swelling/Bruising – common, self-limited. Ice recommended post-op. Avoid ASA/NSAIDs prior to injection.
- Nodules (depending on product injected) Respond to massage, or to local injection of corticosteroid and massage.

Side Effects, cont.

- Tenderness – will resolve in 1-3 days.
- Pain – Recommend good topical anesthetic or dental block.
- Erythema
- Itching

Antiviral Prophylaxis

- Acyclovir—800mg TID x 5 days
- Famciclovir—500mg, 3 once
- Valacyclovir—1000mg, 2 BID x 1 day

Consultation

- Assess expectations – “silk purse from a sow’s ear”. Attempt to determine if expectations are reasonable.
- Medical History – make sure there are no contraindications to treatment
- Medications – ASA’s, NSAID’s, should be avoided prior to treatment. Accutane – avoid treatment until off for six months.
- Explain treatment and risks and determine level of understanding
- Pre-procedure photographs recommended

Consultation - Continued

- Assess patient's pain tolerance
  - May use ice, topical anesthetic or nerve blocks
- Be sure patient understands that the results are temporary
- Use manual stretching of skin to demonstrate how well a particular perceived imperfection may or may not respond to filler.
- Have patient sign informed consent!

Treatment Techniques

- Remove make-up and cleanse area with alcohol prep pad or other antiseptic.
- Apply/perform appropriate anesthesia, if required
- Warming the syringe in your hand prior to injection may reduce the injection pressure needed.

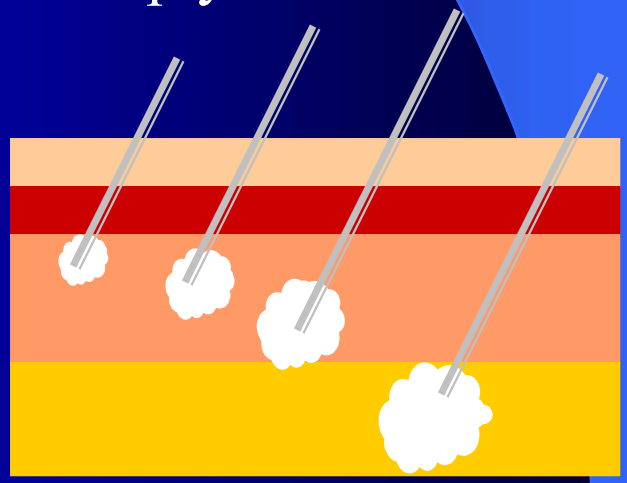


Treatment Techniques

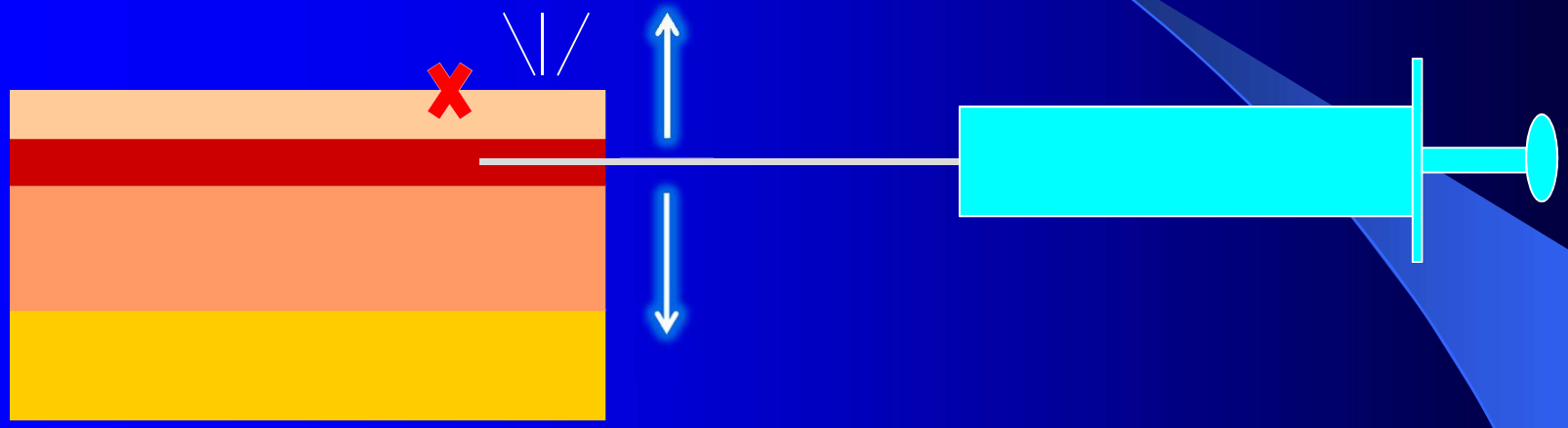
- Insure that the needle is snugly screwed onto the syringe
- Prime the needle--before injecting, press the plunger carefully until a glisten or single droplet is visible at the tip of the needle
- Determine appropriate injection technique.

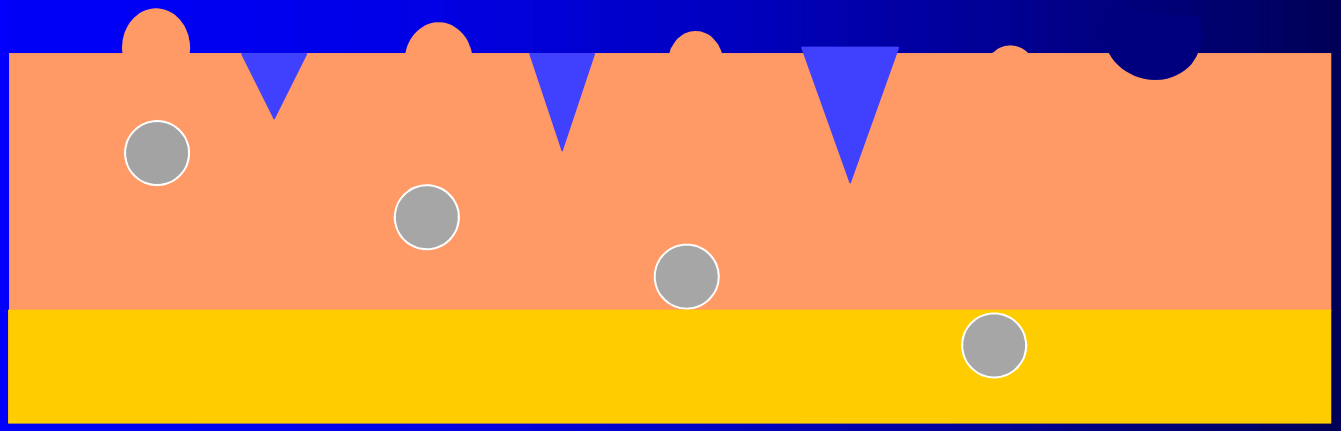
Treatment Techniques

- The depth of the needle should be high dermis for superficial lines, mid-dermis for more substantial wrinkles, and deep dermis for heavy folds.
  - Good rule of thumb: For mid-dermis placement, the contour of the needle should be visible, but not its color.
  - Better to err on the side of injecting too deeply if unsure, as superficial injections can leave surface irregularities.



Dermal Depth Of Injection





Treatment Techniques

- If blanching is seen then the provider should immediately stop injecting and massage the skin until normal color is returned.
- Blanching—indicates vascular compression



Nitroglycerin paste or ointment can be applied immediately to dilate the vessels and re-establish good circulation if massage is ineffective.

Treatment Techniques

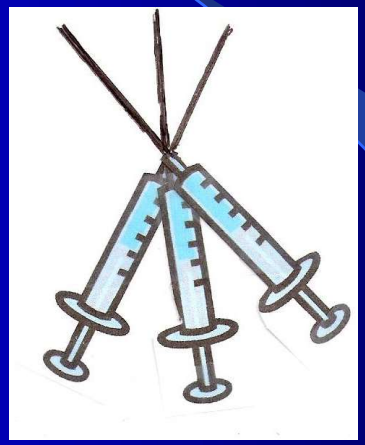
- Treatments should not over correct but should be corrected to 100% during session.
- The correction site should be massaged to be consistent with surrounding tissue contour.

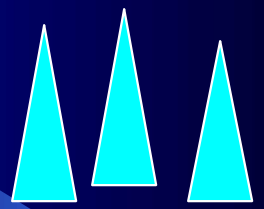


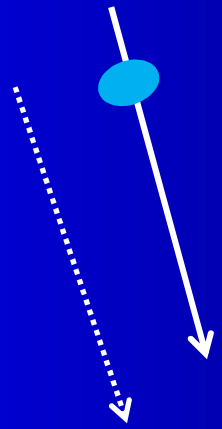


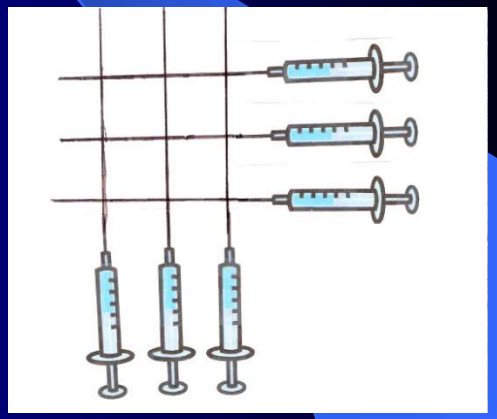
Methods of Filler Implantation

- Serial Puncture
- Linear Threading
- Fanning
- Crosshatching
- Layering
- Microdroplet
- Ferning
- Push Ahead
- Tower Technique
- Liquid Threadlift® (ArqueDerma®)



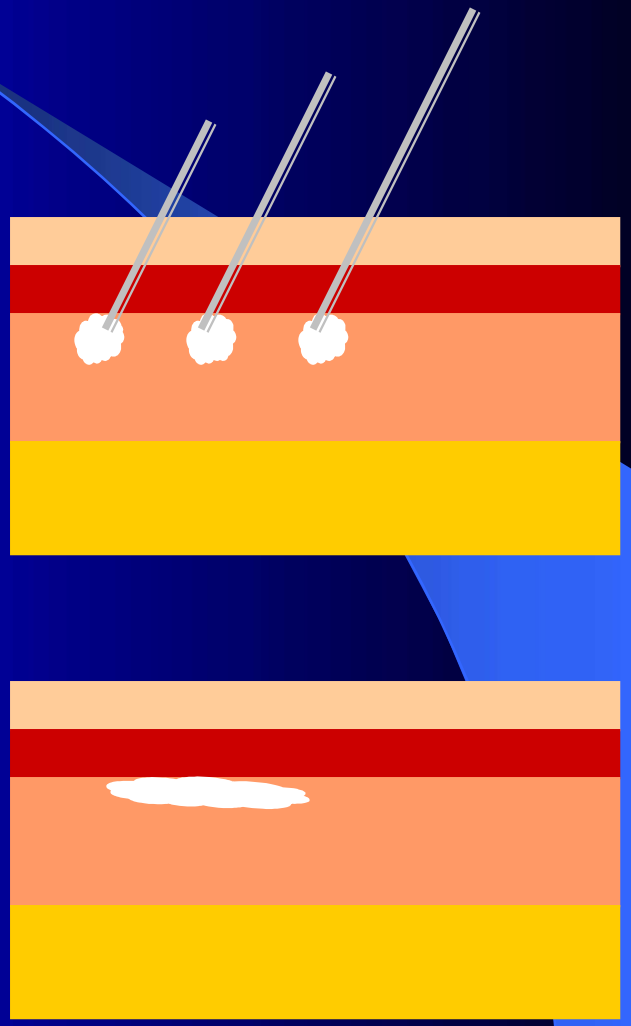






Methods of Filler Implantation

- Serial Puncture
- Multiple punctures to implant small amounts at a time.
- Smooth or mold after filler injected
- Easiest technique, and often preferred by beginners
- Needle enters the skin at desired depth, a small amount of filler is deposited, and the needle is withdrawn.

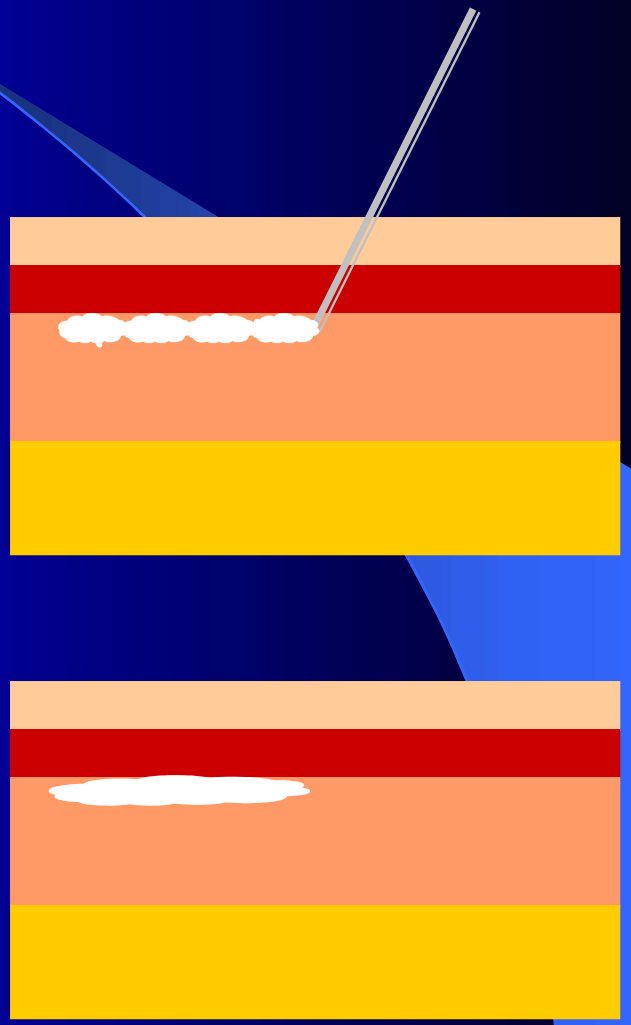


Serial Puncture



Methods of Filler Implantation

- Linear Threading/Tunneling
  - Hold the syringe parallel to the length of the area to be treated, pierce the skin and advance the needle to its fullest extent.
  - While slowly withdrawing the needle, apply even pressure to the plunger
  - Relieve pressure just before withdrawing.
  - Frequently used with longer needles
  - Smooth or mold after filler injected



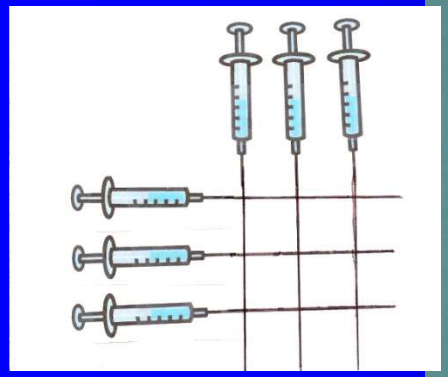
Linear Threading

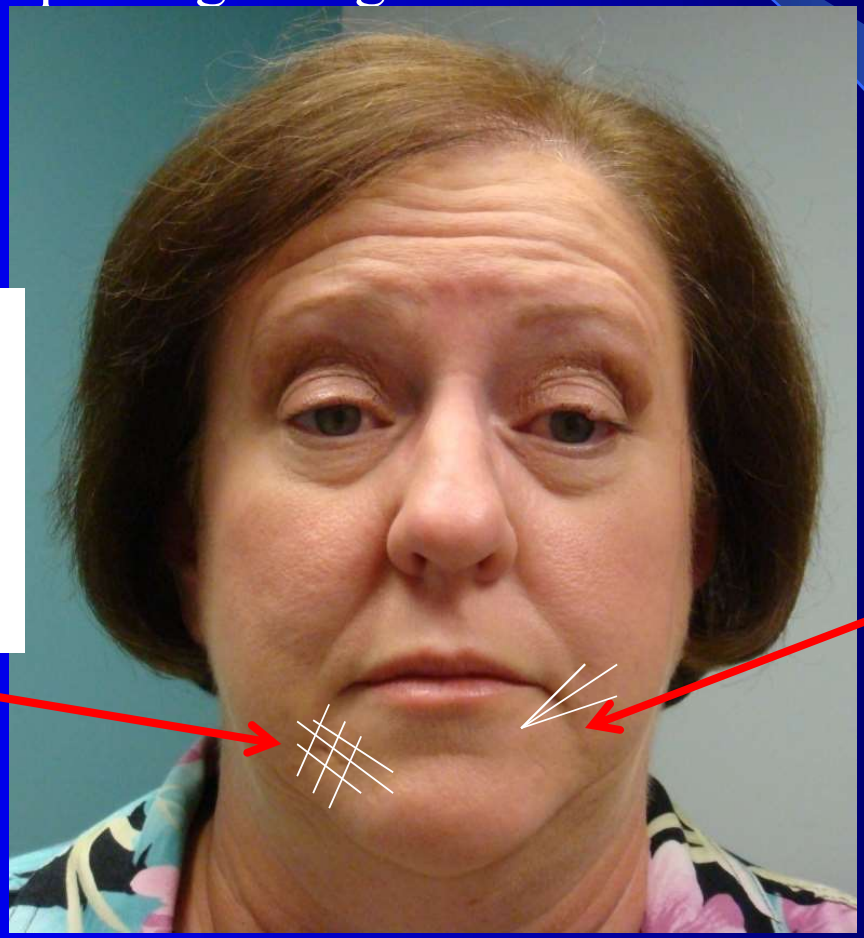
Inject Medial to the fold

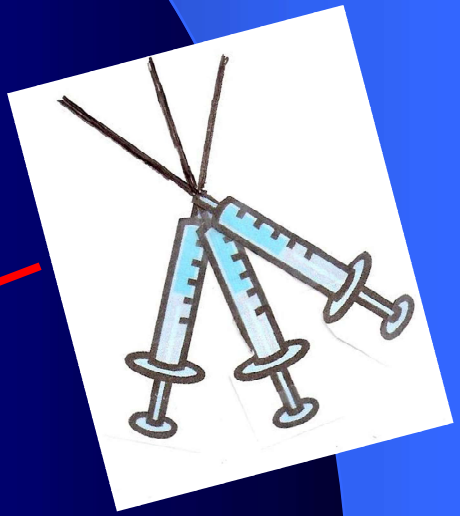


Treatment Techniques

- Fanning and cross-hatching techniques are variations of the linear threading technique.
  - Used when placing a larger amount of filler more deeply.







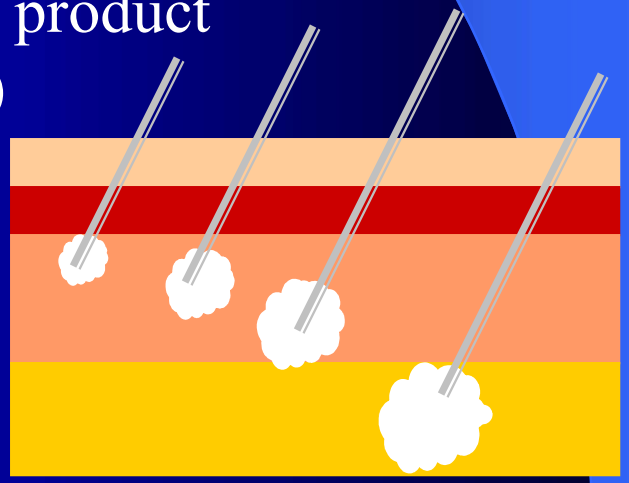
Fanning

Inject Medial to the fold



Treatment Techniques

- Layering
  - Implant layers of product at different levels to improve the wrinkle.
    - Avoids a “blob” of product in one area
    - Lends to different products—placing a firmer product (Juvederm UltraPlus-XC, Perlane, Radiesse) deep then softening the more superficial layer with a softer product (Juvederm Ultra-XC, or Restylane)

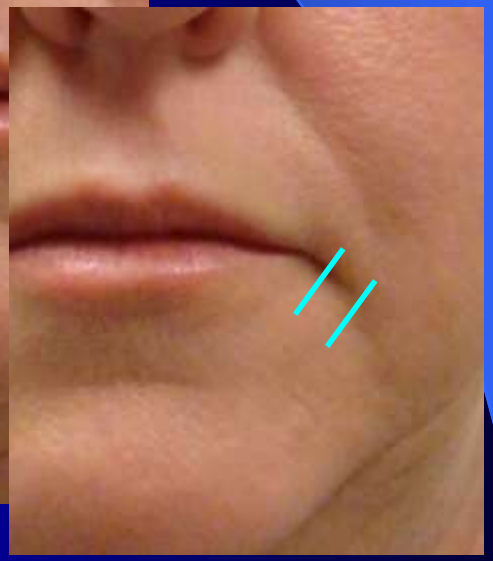


Ferning and Stabilizing Bars

A modification of threading

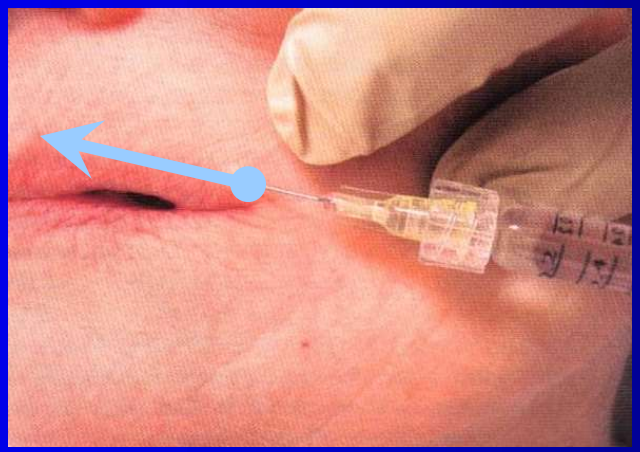




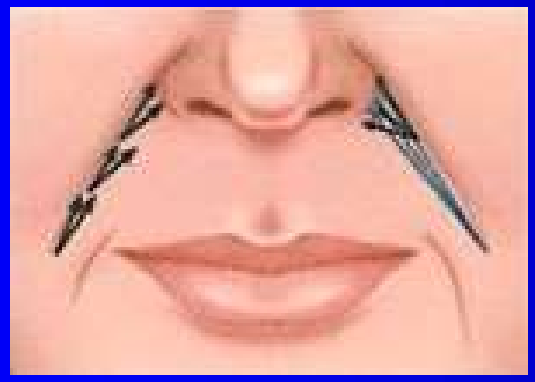


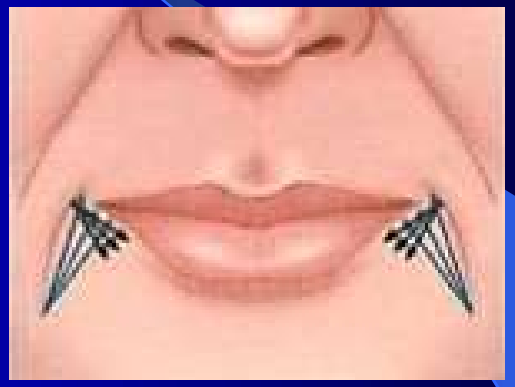
Treatment Techniques, Continued

- Push-ahead technique
  - Insert the needle and inject as you advance the needle.
  - Should only be used in areas where vessels cannot be embolized.
  - Great technique in lips that have been treated previously (vermillion border)

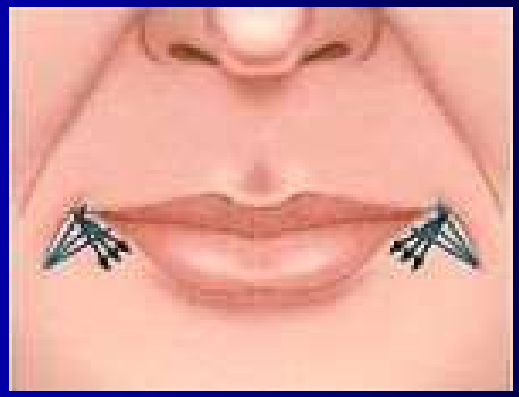


Treatment Techniques

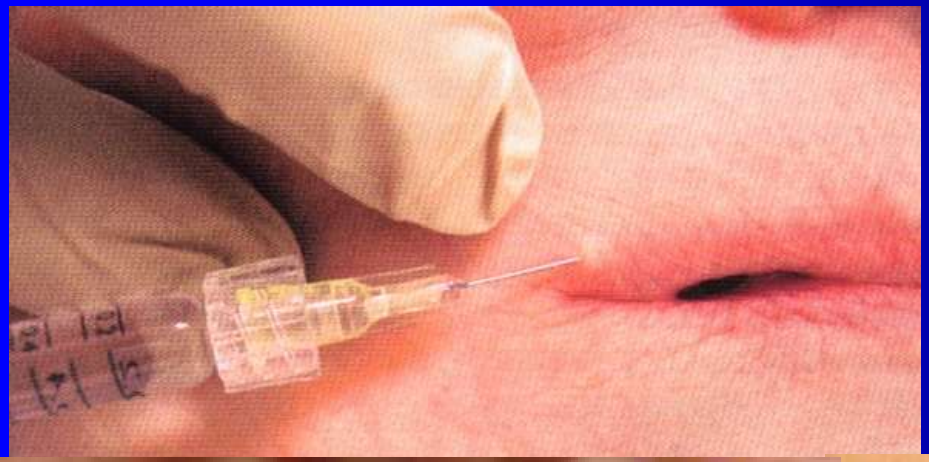


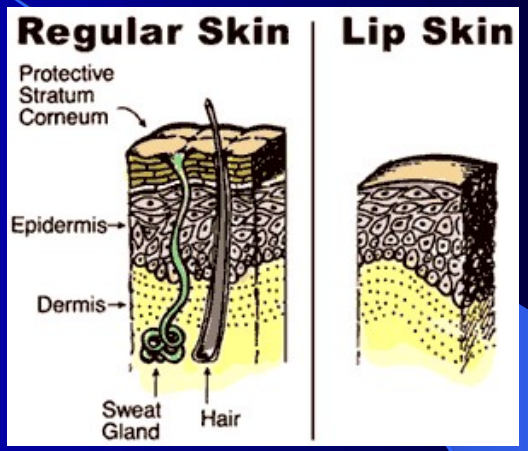


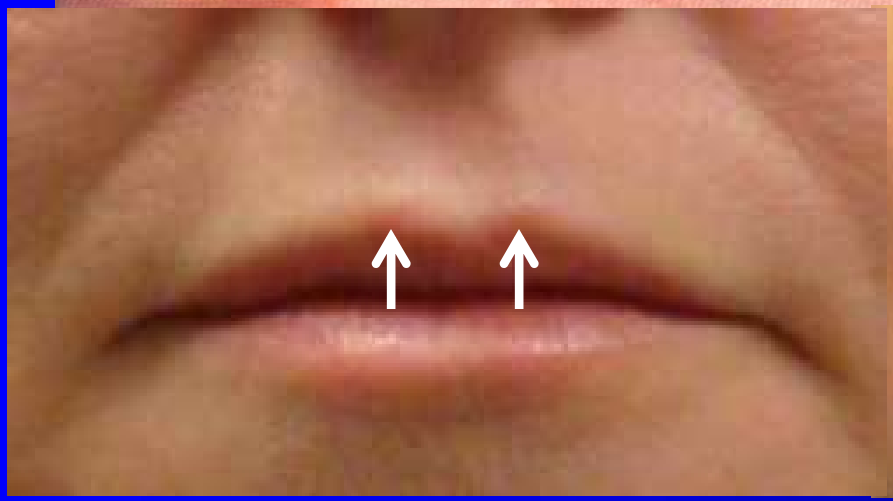


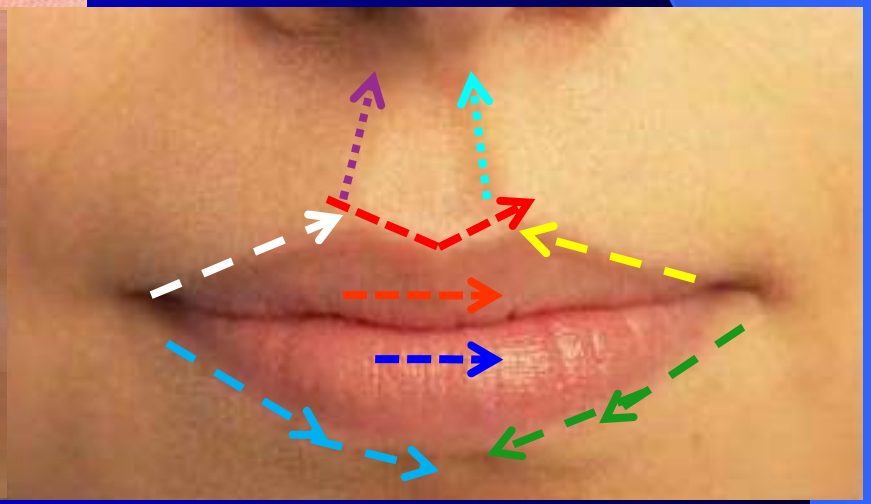


Lip Augmentation

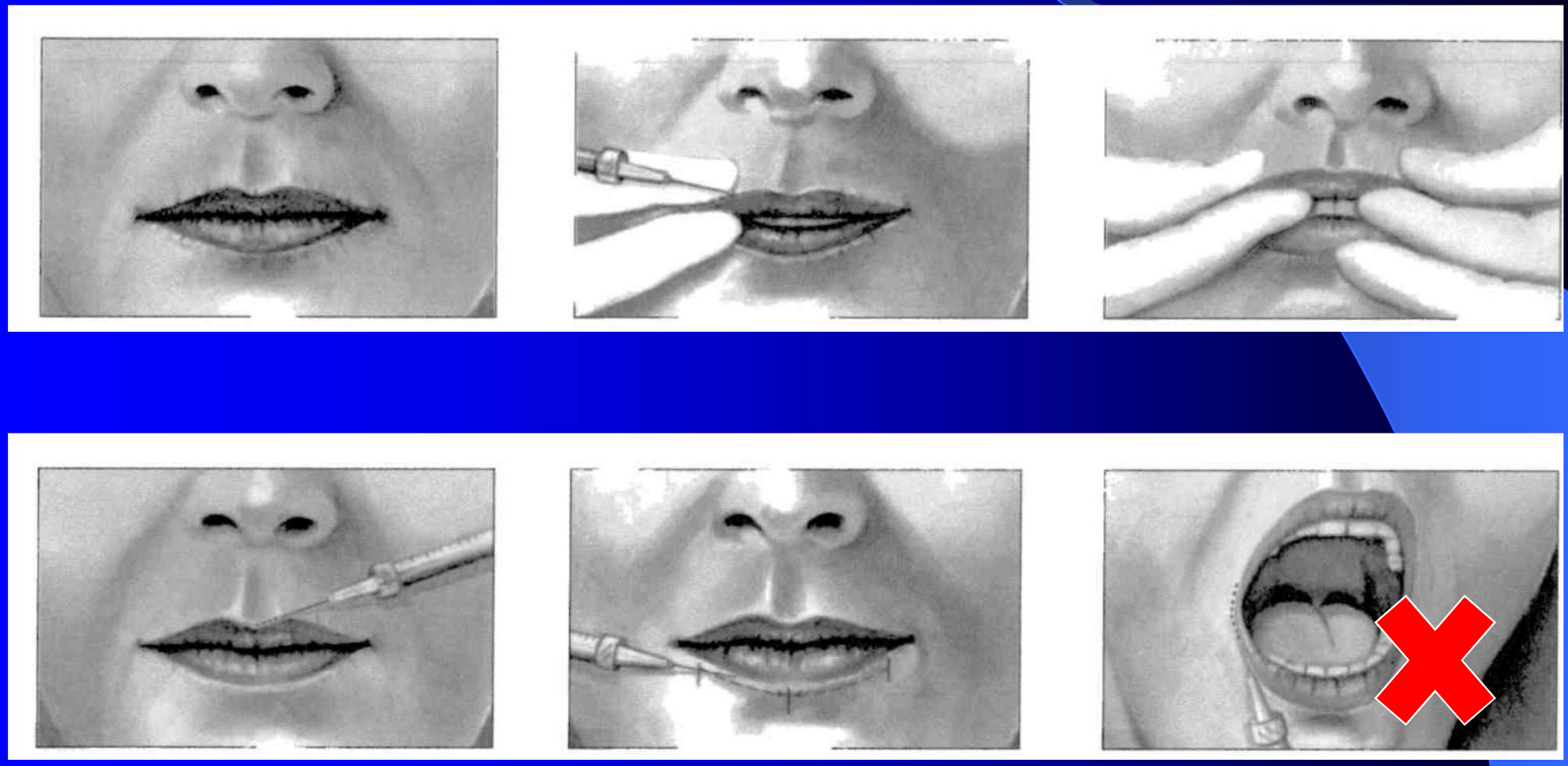








Lip Enhancement



Lip Enhancement

- Ensure comfort. Recumbent position is recommended
- Adequate pain control
- Clean the lips with mouthwash or something that does not taste bad
- Several enhancement techniques are possible

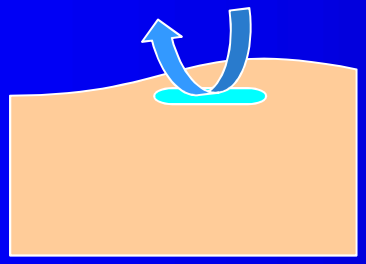


After Care

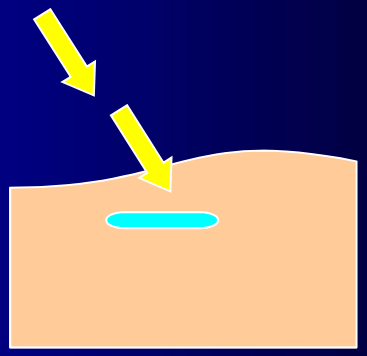
- Ice to area frequently for remainder of day.
- Explain that swelling/bruising are to be expected.
- Prophylaxis offered if applicable-Valtrex, Famvir or Acyclovir
- NSAIDS post-op (only) if necessary for pain or swelling
- Explain signs and symptoms of infection

After Care

- Make sure that patient understands that with a temporary product, touch ups will be needed, and estimate how soon the patient can anticipate needing to come back.
- If considering any long term filler , use a temporary filler first to demonstrate results.



Tyndall Effect



- Avoid injections which are too superficial
- Tyndall Effect (Blue discoloration from light bouncing off product beneath the surface)
- Allow swelling to subside—do not over-correct
- Massage out any irregularities.
- Hyaluronidase if indicated

Hyaluronidase



- If overfill occurs or lumpiness that cannot be molded out, Hyaluronic Acid Fillers can be degraded or broken down with Hyaluronidase.
- Commercially available: Vitrase contains 200 units/ml. (STATDDS $119.95), Hylenex contains 150 units/ml ($80.75 x 6) (Henry Shein)
- Compounding Pharmacies: 4 licensed in US. $21 for 150 units/ml
- Ideally, allergy test at least 15 minutes before administering
- Inject 10-30 units at a time. More is not indicated.
- After 2-3 days, re-evaluate and re-inject if needed.
- If new filler is needed to fill the void, wait 2 weeks before the injection to avoid breakdown

Protocol for Impending Embolization with risk for Necrosis

- Based on Articles by Steven H. Dayan, M.D.

- Hyaluronidase—10-30 units mixed 50/50 with 0.9% saline. Inject into the area and massage gently to disperse.
- Nitroglycerin Ointment 2% applied to the overlying area
- Aspirin 325mg daily with food
- Warm compresses and massage
- Topical Dermacyte (Oxygen cosmeceutical) QID
- See patient daily. If no improvement, repeat regimen and add a Medrol Dosepak
- Refer to a Plastic Surgeon if no improvement seen




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Anesthesia

Topical anesthesia

EMLA-Eutectic Mixture of Local Anesthetics is a eutectic mixture of Lidocaine and Prilocaine.

LMX-5 is 5% Lidocaine in a lisosomal encapsulated system, may be superior (LMX4 is OTC)

BLT-Benzocaine, Lidocaine and Tetracaine. This is usually compounded at a local or regional compounding pharmacy. Applied 15-45 minutes prior to the procedure. Apply like icing with a Q-tip.

Cetacaine-benzocaine, aminobenzoate and tetracaine. Rapid onset. Runny at body temp.

Various other topicals







Anesthesia



Vibration Anesthesia

Any vibratory massager may be used. One study has shown that the pain sensitivity gradually declines as vibration amplitude increases.

Gate theory of pain control explains how this works.

Massager is applied 2-3 seconds prior to the injection 1-2 cm from the site on a bony prominence and continued throughout the procedure.

Anesthesia

Ice Packs









Stand Alone Devices

Cryo-6 Zimmer Cooler-blows very cold air across the target area to “numb” the area.
$$$$$$$

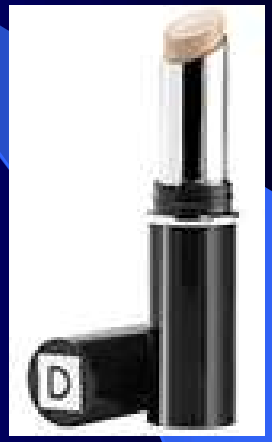


Bruising



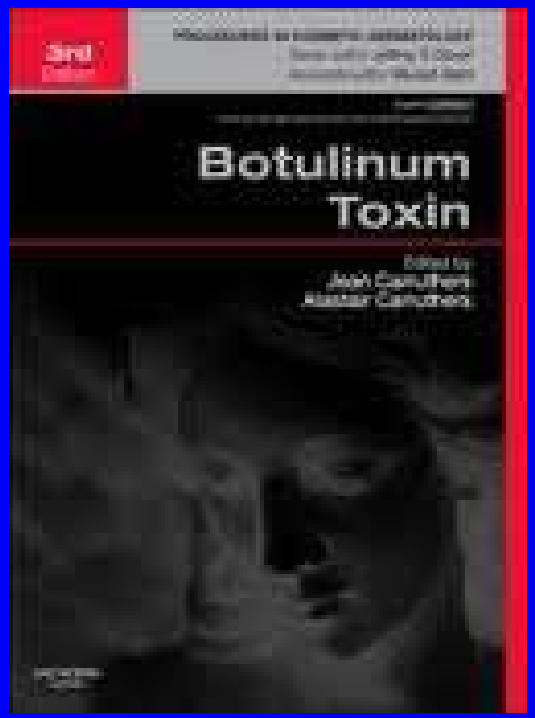
- Ice
- Gentle pressure on bleeders
- Arnica montana cream or gel
- Arnica montana tablets
- Vitamin K cream
- Covermark, Dermablend

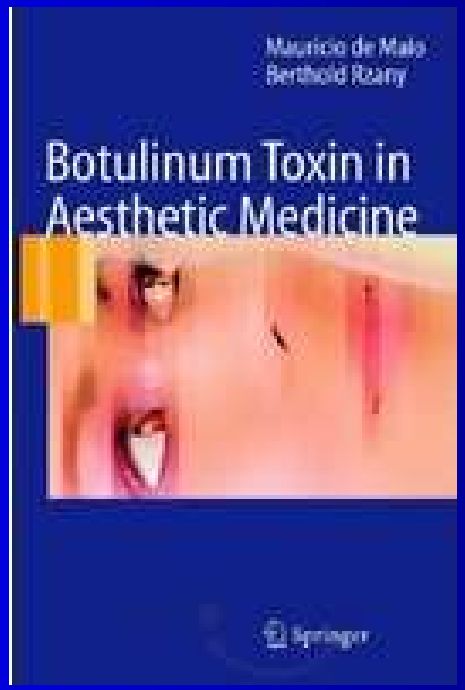


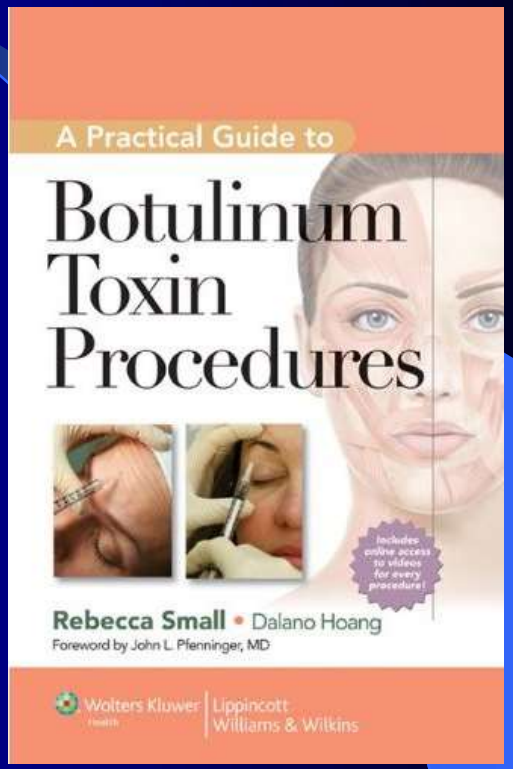




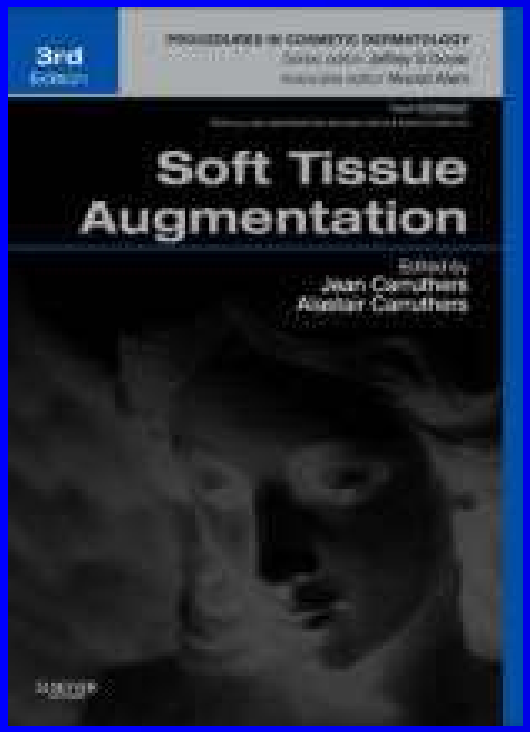
Recommended Books

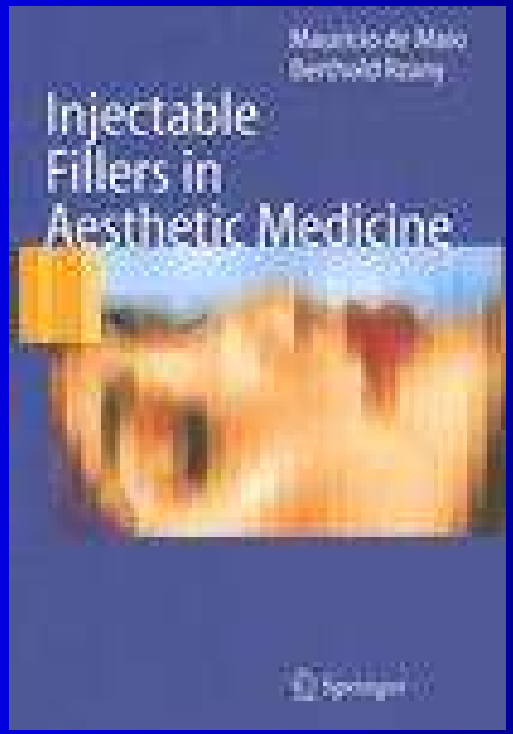


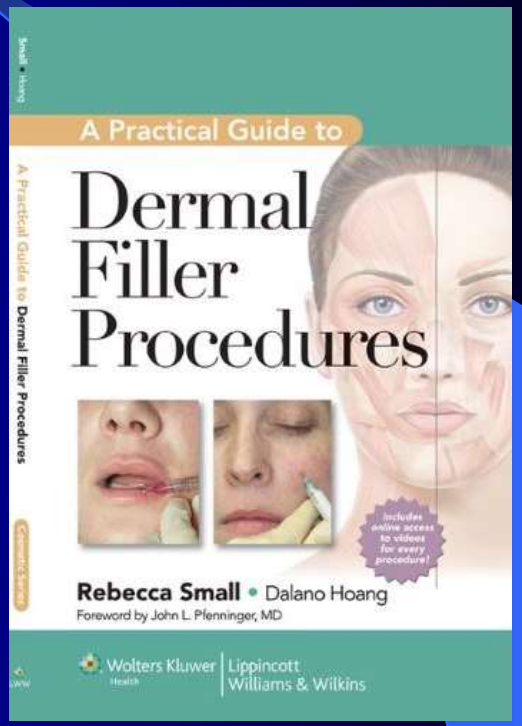




Recommended Books

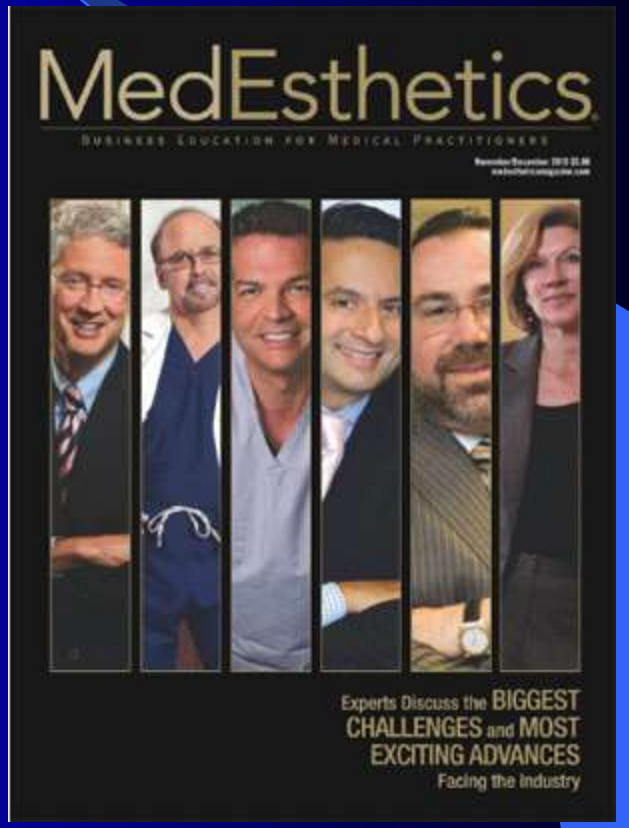






Complimentary Journal

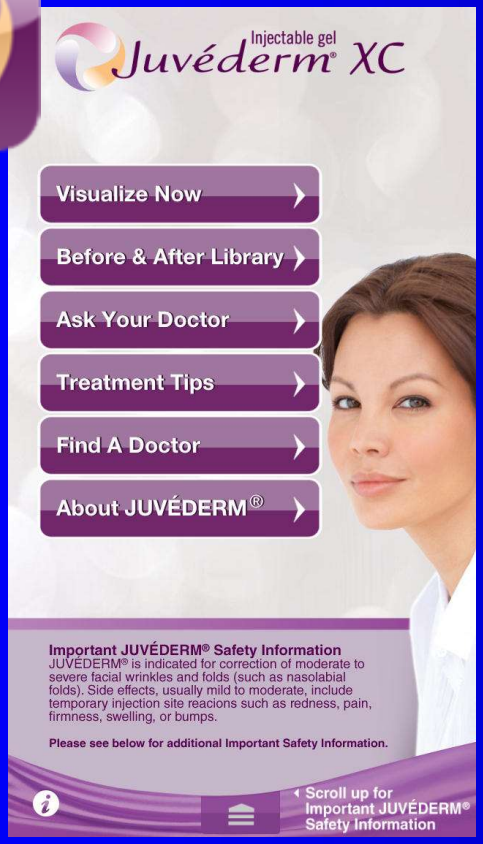
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