SELPHYL®

Injection Techniques and Best Practices

Confidential. This presentation is intended exclusively for training purposes and based on the practices of Richard Goldfarb, MD.
Disclaimer

Please note that the content of this presentation is based on the injection technique of Richard M. Goldfarb, MD and other physicians currently using Selphyl®. There are other injection techniques that may work equally as well.

Selphyl® is intended for the safe and rapid preparation of autologous platelet-rich plasma (PRP) from a small sample of blood at the patient point of care. The PRP can also be mixed with autograft and allograft bone prior to the application to an orthopedic surgical site as deemed necessary by the clinical use requirements.

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Presentation Objectives

• SELPHYL® Injection Techniques
  – Places to inject
  – Suggested amounts per area

• SELPHYL® With Fat Injection Techniques
  – Preparation
  – Selphyl ® to fat ratios
  – Places to inject
  – Suggested amounts per area
  – Equipment needed

• SELPHYL® Best Practices

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SELPHYL® INJECTION TECHNIQUES
The SELPHYL® System

Medical device to enable collection, processing and delivery of PRFM (Platelet-Rich Fibrin Matrix) to promote tissue regeneration

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Preparation Steps

- Injection
- Blood Draw
- Transfer to Syringe
- Centrifugation
- Activation
Available Syringes & Needles

- Many difference types of syringes and needles are available
  - **Syringe**
    - 1 cc luer lok
    - 3 cc luer lok
    - 5 cc luer lok
  - **Needle Gauge**
    - 30g – used with Collagen and HA’s
    - 28g – used with Radiesse
    - 27g – used with Radiesse prior to 28g coming out
    - 25g – used with Sculptra and to cover large volume areas
  - **Needle Length**
    - 0.5” – preferred in small areas such as Oral Commissures and Marionette Lines
    - 0.75” – not a common length, developed for 28g
    - 1.0” – used for areas such as NLF, cheek augmentation, pre-jowl sulcus
    - 1.25” – preferred in larger areas to reduce number of needle sticks
    - 1.5” – preferred in larger areas to reduce number of needle sticks
Various Injection Techniques

Facial Lipoatrophy -- Fanning, Linear Threading and Crosshatching

- The facial Lipoatrophy procedure involves inserting a needle into the cheek and under eye areas of the face and injecting a filler solution in a fan-shaped pattern across the cheek area. A cross-hatched pattern made with the filler is used to create a grid on the facial area. This filler can then be massaged or molded into shape using the doctor's hands while the material is still malleable. This creates an even texture that looks realistic and lifelike all across the face with a minimum of effort.

Nasolabial Folds -- Linear Threading and Fanning

- The nasolabial folds are the area right underneath the nose to either side of the nostril. These areas are often wrinkled or worn due to age, sun exposure and laugh lines. Using the same linear threading and fanning techniques that are mentioned earlier, the nasolabial folds can be injected with dermal filler and massaged until the wrinkles have disappeared. Fanning helps to improve the joint between the dermal layer and the subdermal layer without creating noticeable lines.

Marionette Lines -- Fanning and Crosshatching

- Marionette lines are the lines around the corners of the mouth that come from smiling and frowning. Using the cross-hatching technique allows these lines to be filled without having to use many injection sites and without creating an unnatural stretching of the facial area in that range.

Read more: Dermal Filler Injection Techniques | eHow.com
http://www.ehow.com/info_8039309_dermal-filler-injection-techniques.html#ixzz1GZdMhFga
Places to Inject

- Glabellar Region
- Zygomatic Arch
- Malar Region
- Nasolabial Fold
- Marionette Line
- Lateral Brow
- Forehead Lines
- Tear Trough
- Zygomatic Arch
- Malar Region
- Nasolabial Fold
- Marionette Line
- Jawline/Pre-Jowl Sulcus
- Chin
- Oral Commissure
- Mental Crease
- Lateral Chin
- Sub-Malar Region
- Nasal Tip
- Nasal Dorsum
- Acne Scars
- Hands
- Other Places
Facial Rejuvenation

Images Courtesy of Dr. Richard M. Goldfarb, M.D., F.A.C.S.

Before

3 Month

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Volume and Texture

Images courtesy Walter W. Tom, MD, FACS  Santa Rosa & Napa, CA  www.laserandvein.com

Before  6 Weeks

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“Crows Feet”
Nasolabial Folds

Patient only received Selphyl Treatment in the Nasolabial Fold area.

Before | 3 Months | 1 Year

Single Treatment

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Tear Troughs

Images courtesy Adam B. Smith, D.O., F.A.C.O.S., Fort Worth, TX  www.fortworthlepband.com

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Depth of injection is based on the area being augmented.
<table>
<thead>
<tr>
<th>Area</th>
<th>Type of Injection</th>
<th>Level of Injection</th>
<th>Amount of Product (Per Side/Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glabellar Region (11’s)</td>
<td>Linear Threading</td>
<td>Superficial (Upper Dermis)</td>
<td>0.50 cc / 1.0 cc</td>
</tr>
<tr>
<td>Crows Feet</td>
<td>Linear Threading</td>
<td>Superficial (Upper Dermis)</td>
<td>0.50 cc / 1.0 cc</td>
</tr>
<tr>
<td>Under Eye Hollows / Tear Troughs</td>
<td>Linear Threading</td>
<td>Mid-Dermis</td>
<td>0.50 cc / 1.0 cc</td>
</tr>
<tr>
<td>Bunny Lines</td>
<td>Linear Threading</td>
<td>Superficial (Upper Dermis)</td>
<td>0.10 cc / 0.20 cc</td>
</tr>
<tr>
<td>Malar Region (Cheek)</td>
<td>Linear Threading</td>
<td>Dermis Dermal-Subcutaneous Junction</td>
<td>2.0 cc / 4.0 cc</td>
</tr>
<tr>
<td>Lateral Cheeks</td>
<td>Linear Threading</td>
<td>Mid-Dermis</td>
<td>2.0 cc / 4.0 cc</td>
</tr>
<tr>
<td>NLF’s</td>
<td>Linear Threading</td>
<td>Mid-Dermis</td>
<td>1.0 cc / 2.0 cc</td>
</tr>
<tr>
<td>Area</td>
<td>Type of Injection</td>
<td>Level of Injection</td>
<td>Amount of Product (Per Side/Total)</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Peri-oral lines (smoker’s lines)</td>
<td>Linear Threading</td>
<td>Superficial</td>
<td>.10 cc per vertical lines 0.5 cc across the lines</td>
</tr>
<tr>
<td></td>
<td>- Into lines</td>
<td>(Upper Dermis)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Across lines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lips</td>
<td>Linear Threading</td>
<td>Vermillion Channel</td>
<td>.50 cc / 1.0 cc, 0.50 cc / 1.0 cc</td>
</tr>
<tr>
<td>Vermillion Border</td>
<td></td>
<td>Belly of lip</td>
<td>.50 cc total</td>
</tr>
<tr>
<td>Upper Lip (for volume)</td>
<td></td>
<td>Belly of lip</td>
<td></td>
</tr>
<tr>
<td>Lower Lip (mid)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marionette Lines</td>
<td>Linear Threading</td>
<td>Mid-dermis</td>
<td>.60 cc / 1.2 cc</td>
</tr>
<tr>
<td>Chin Volume Loss</td>
<td>Linear Threading/Fanning</td>
<td>Mid-dermis</td>
<td>.50 - .75 cc/ 1.0 – 1.5 cc</td>
</tr>
<tr>
<td>Mental Crease</td>
<td>Linear Threading Possible subcision</td>
<td>Dermis</td>
<td>2.0 cc</td>
</tr>
<tr>
<td>Pre-Jowl Sulcus</td>
<td>Linear Threading/Fanning</td>
<td>Mid-dermis</td>
<td>.50 cc / 1.0 cc</td>
</tr>
</tbody>
</table>

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What can you do with large Selphyl® Kit (8.0 – 9.0 cc)?

<table>
<thead>
<tr>
<th>Option 1:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheeks : Malar (apple) and lateral</td>
<td>2.0 cc’s per side = 4.0 cc’s total</td>
</tr>
<tr>
<td>Tear Trough:</td>
<td>0.5 cc’s per side = 1.0 cc’s total</td>
</tr>
<tr>
<td>Nasolabial Folds:</td>
<td>1.0 cc’s per side = 2.0 cc’s total</td>
</tr>
<tr>
<td>Marionette Lines :</td>
<td>0.6 cc’s per side = 1.2 cc’s total</td>
</tr>
<tr>
<td></td>
<td>8.2 cc’s total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheeks : Malar (apple) and lateral</td>
<td>2.0 cc’s per side = 4.0 cc’s total</td>
</tr>
<tr>
<td>Nasolabial Folds:</td>
<td>1.0 cc’s per side = 2.0 cc’s total</td>
</tr>
<tr>
<td>Chin (volume loss) :</td>
<td>0.5 cc’s per side = 1.0 cc’s total</td>
</tr>
<tr>
<td>Pre-jowl sulcus :</td>
<td>0.5 cc’s per side = 1.0 cc’s total</td>
</tr>
<tr>
<td></td>
<td>8.0 cc’s total</td>
</tr>
</tbody>
</table>
What can you do with small Selphyl® Kit (4.0 – 4.5 cc’s)?

- **Option 1:**
  - Tear Trough:
  - Crow’s Feet:
  - Malar Crease:
    - 0.5 cc’s per side = 1.0 cc’s total
    - 0.5 cc’s per side = 1.0 cc’s total
    - 0.5 cc’s per side = 1.0 cc’s total
    - 4.0 cc’s total

- **Option 2:**
  - Cheeks: Malar (apple) and lateral
    - 2.0 cc’s per side = 4.0 cc’s total
    - 4.0 cc’s total

- **Option 3:**
  - Nasolabial Folds:
  - Marionette Lines:
  - Lip Lines (across):
    - 1.0 cc’s per side = 2.0 cc’s total
    - 0.6 cc’s per side = 1.2 cc’s total
    - 0.4 cc’s per side = 0.8 cc’s total
    - 4.0 cc’s total

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SELPHYL® WITH FAT INJECTION TECHNIQUES

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Selphyl® with Fat Transfer Instructions

• Step 1: Optimal Fat Retrieval (upper abs, lower abs, outer thighs and inner thighs)

• Step 2: Decant fat (no spinning)
  – You will know when done when you see fat on top and blood cells & tumescent on bottom
  – Homogeneous

• Step 3: Remove supernatant (blood cells and tumescent)
  – 250-500 cc sterile glass container

• Step 4: Mix Selphyl
  – Place Selphyl into sterile glass containers of fat
  – Gently stir for 60 seconds
  – **Key message: Minimize disruption of cellular integrity of fat**
Selphyl® with Fat Injection Technique

- Use 16 G 1” needle (Diamond Tip 16”) to puncture sites (see face)
- Use 30 G (TB or Insulin needle) to administer lidocaine mix (1% lidocaine with Epinephrine mixed with 8.4% sodium bicarbonate and also place topicane; 2:1 lidocaine to sodium bicarbonate
- Wait 90 seconds
- Use Coleman canula or other fat transfer kit – will use puncture sites to inject Selphyl/Fat mixture
- Draw up Selphyl/Fat mix with 1, 3 or 5 cc luer lok syringes (syringe size is dependent on area)
- Pre-fill syringes
  - 1 staff member fill syringes
  - 1 staff member documents injection site
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Selphyl® with Fat Injection Technique

Supplies/Equipment Needed

- Camera for Before and After Pictures
- Antibiotics (Ampicillin or Erythromycin)
- BLT
- Arnica Spray
- Betadine
- Hibiclens
- OR Towels
- Sterile Gloves
- Pain Ease
- 1% Lidocaine with Epi
- 8.4% Sodium Bicarbonate

Supplies/Equipment Needed

- Syringes:
  - 1 cc syringe
  - 5 cc syringe
- Needles:
  - 18G 1 1/2"
  - 27G 1/2"
  - 16G 1 1/2"
- Selphyl Kits
- 4 X 4 gauze
- Alcohol Swabs
- Bouffant Cap
- 0.9% Sodium Chloride
- Peroxide
# Selphyl® with Fat Injection Technique

## Supplies/Equipment Needed
- Towel Clamps
- Hemostat
- Infusion Tubing
- Aspirating Tubing
- Tumescent Fluid:
  - 1% Lidocaine
  - 8.4% Sodium Bicarbonate
  - 1:1000 Epinephrine
- Garment
- Band-aids
- Antibiotic Ointment
- aspirator
- infuser
- Toomey Syringe
- marking pens

## Instruments Needed
- Capistrano
- Garden sprayer
- Becker flat
- Delrin handles
- Fat Transfer tools
- Glass bottles

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Selphyl® to Fat Ratios

- Face - 2:1 fat to Selphyl ratio

- Larger body parts - 4:1 fat to Selphyl ratio
  - Or as much Selphyl as possible
  - Will be superior to fat alone
Selphyl® Best Practices

- Manage physicians’ expectations
- Patient Health History
- Over correct
- Multiple Treatments
- Amount of product (PRFM) you inject is based on the surface area, the number of treatments is based on the volume loss
- Depth of injection is based on the area being augmented
- Make sure skin is taut prior to inserting the needle
- Anesthetize as physician sees fit (topical, wheel of lidocaine)
# Injection techniques used with Selphyl<sup>®</sup> - Area Specific

<table>
<thead>
<tr>
<th>Area</th>
<th>Injection Site</th>
<th>Technique(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasolabial Folds</td>
<td>Subdermal</td>
<td>Linear Threading, Fanning</td>
</tr>
<tr>
<td>Marionette Lines</td>
<td>Subdermal</td>
<td>Linear Threading, Fanning</td>
</tr>
<tr>
<td>Oral Commissure</td>
<td>Subdermal/Conservative</td>
<td>Fanning</td>
</tr>
<tr>
<td>Malar Augmentation</td>
<td>Subcutaneous/Supraperiosteal</td>
<td>Linear Threading, Fanning</td>
</tr>
<tr>
<td>Submalar</td>
<td>Subcutaneous/Supraperiosteal</td>
<td>Linear Threading, Fanning</td>
</tr>
<tr>
<td>Glabella Furrows</td>
<td>Subdermal</td>
<td>Linear Threading</td>
</tr>
<tr>
<td>Acne Scars</td>
<td>Subdermal</td>
<td>Subcision, Linear Threading, Fanning</td>
</tr>
<tr>
<td>Chin Contouring</td>
<td>Subcutaneous/Supraperiosteal</td>
<td>Linear Threading</td>
</tr>
<tr>
<td>Mental Crease</td>
<td>Subdermal</td>
<td>Subcision, Linear Threading</td>
</tr>
<tr>
<td>Nasal Contouring</td>
<td>Supraperiosteal/Supraperichondrium</td>
<td>Linear Threading</td>
</tr>
<tr>
<td>Pre-Jowl Sulcus</td>
<td>Subdermal or Subcutaneous</td>
<td>Linear Threading</td>
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