Adipose Harvesting & SVT Technique

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Bio – Dr. Sabrina Solt

- Naturopathic medical doctor
- Specialized in regenerative medicine since 2013
- Approximately 100 adipose procedures per year (last 3 years)
- Also do PRP, bone marrow, birth tissue biologics, BHRT, IV nutritional therapy, prolotherapy

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TO GET THIS SLIDE DECK

Learning Objectives

- Why choose fat?
- FDA regulations
- Microfat & Mechanical SVF
- Patient selection and preparation
- Supplies needed
- Procedural steps
- Post care and follow up
- Q&A

Why Start With Fat?

The gold standard!

By far the greatest autologous regenerative potential in the current U.S. landscape

In comparison to bone marrow, Dufrane et. al 2017 says:
(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5680951/):

1. Higher number of stem cell progenitors from an equivalent amount of tissue harvested
2. Less invasive
3. Increased proliferation and differentiation capacities
4. Subcutaneous native adipose tissue was not affected by the donor's age in terms of cellular senescence and yield of ASC isolation

FDA Approved?

- FDA = Food & Drug Administration
  - Does not govern practice of medicine
- Claim that SVF is a drug (361 regulations) when more than minimally manipulated
  - Ezymatic processing
- Fat graft is minimally manipulated, homologous use

Microfat vs. Mechanical SVF

MICROFAT GRAFT - JOINTS & AESTHETICS

Lipoaspirate re-sized using specific harvesting cannulas and processing tools

Arguably better than SVF in joint application due to the intact perivascular niche leading to greater CFU formation

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6265639/

MECHANICAL SVF – SOFT TISSUE

One step beyond a microfat graft

Involves centrifugation of the graft to acquire a SVF pellet

Not nearly as effective as a collagenase digestion (in regards to *number* of cells) but will still yield potent regenerative cells as seen previously

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4656256/
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4656256/table/Tab1/?report=objectonly

Adipose Tissue

PROS

Highly regenerative!
- SVF & SVT are incredible

Bonus of liposuction for the patient
- “Can you take extra?”

CONS

Surgical procedure
- Highly skilled

Costly for patient & provider
- Kits, equipment, time

Large variation in quality of product

Patient Selection

1. Must have adequate fat tissue for harvesting! Pinch a stick of butter
2. Non-smoker, non-diabetic, not on blood thinners or NSAIDs
3. Must sign informed consent

Pre Procedure Instructions for Patient

1. No drinking alcohol for 1 week prior to procedure and 1 week following
2. No NSAIDs for 1 week prior to procedure and 1 week following
3. No smoking or tobacco products for 30 days prior to procedure and 30 days following
4. No steroids for 6 weeks prior to procedure and 30 days following

Supplies

Tumescent Solution (per patient):

- 250ml bag of 0.9% saline
- 5cc Sodium bicarbonate
- 10cc 1% or 2% lidocaine with epinephrine
- 18g needle
- 20cc syringe
- alcohol swabs

Sterile Supplies (per patient):

- Sterile gloves
- Mayo stand cover
- 4 pack OR towels
- No 11 scalpel
- 4x4 gauze
- 5cc syringe
- 27g 1/2" needle
- two 16oz sterile bowls
- 100ml sterile saline for washing sample (can use another 250ml bag if easier)
- Betadine
- Surgical marker

Non sterile supplies:

- Gown
- Mask
- Hair net
- Table cover

For re-injection into joint:

- 5cc syringe
- 22g needle
- Alcohol/betadine
- Bandaids

For patient recovery:

- Abdominal pads
- Abdominal compression binder

Procedural Steps for LipoAspirate

1. Clean & prep the patient and mark borders of extraction site
2. Numb incision site with bleb of tumescent, continuing into deeper and surrounding tissues with a total of ~5cc solution
3. Make incision with No 11 scalpel
4. Begin infiltration of remainder of tumescent solution in designated tissue, let sit for 10-15min to take full effect
5. Begin aspiration of adipose tissue by tunneling and then creating moderate negative pressure in syringe
6. Transfer aspirated tissue to holding syringe and repeat aspiration process until desired amount of tissue has been gathered (20-40cc)
7. Bandage patient and begin washing & processing tissue

t Harvest

0cc of fat

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nal: spin

Procedural Steps for Processing SVT

1. Let sample decant and remove excess fluid
2. Add sterile saline to syringe, invert gently to mix, and wait 2-3min to decant
3. Repeat process 2-3 times, or until infranatant is relatively clear
4. Fully remove any fluid from syringe before re-sizing
5. Select desired re-sizer or micronizer from kit and attach to syringe with sample on one end, and an empty syringe in another
6. Pass sample back and forth 15-30 times

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ral knees receiving ~4cc of a pure microfat graft, g the perivascular niche in

sing" each graft with ~2cc nee of a spun down anical graft, which yielded ll SVF pellet that was stituted in saline

Post Care

SURGICAL SITE

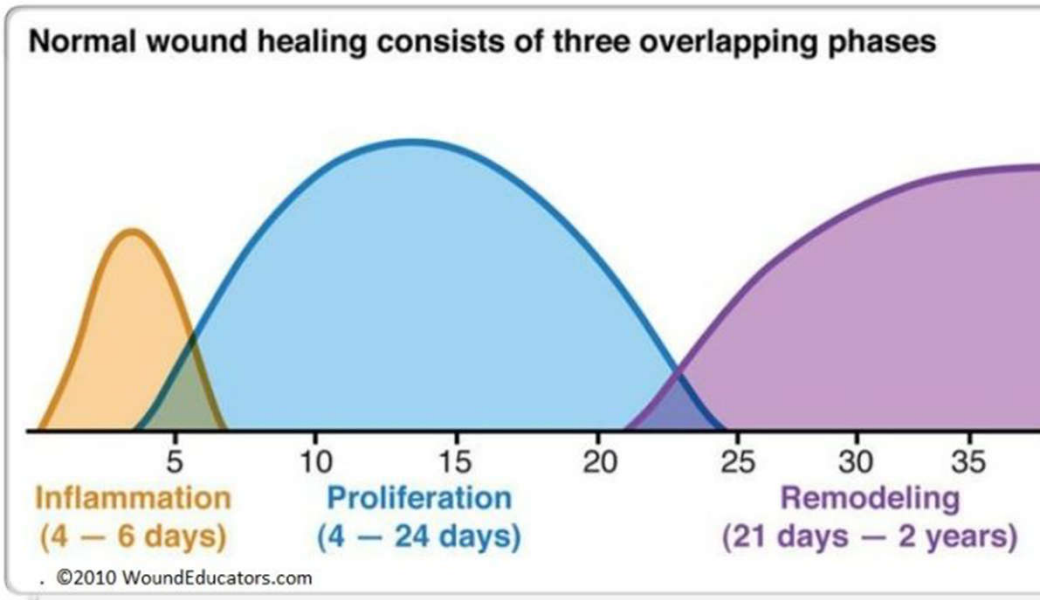
- Wear abdominal compression binder for minimum 1 week (can take off to shower and clean it), or until no longer sore
- Change out abdominal pad once it becomes saturated (can use maxi pads)
- DO NOT scrub at incision site with any soap or submerge in water until it has healed shut
- Swelling, bruising, edema are all normal for anywhere from 1-6 weeks
- Watch for signs of infection

INJECTION SITE

- No physical activity of the treated area for 1 week following treatment (specific recommendations can be made according to physician)
- Watch for signs of infection
- Allow time to heal!
- I always say 6-12 weeks

Healing Timeline

- Once activation has occurred at the injection site, release of growth factors initiates an inflammatory response that lasts approximately 3 days
- Fibroblasts accumulate at the site of injection, which marks the beginning of the proliferative phase of healing that lasts several weeks.
- After that, remodeling occurs to the collagen matrix that was laid down by the fibroblasts. This remodeling phase that leads to the formation of mature tissue lasts about 6 months.



Q&A

REMINDER: SLIDE DECK CAN BE ACQUIRED BY E-MAILING

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