



The SoftHarvest Protocol

For Microfat and Nanofat

Tulip SoftHarvest Advantages

Efficient

- Delivers nearly 100% throughput of harvested fat

Scientifically Proven

- Published cellular characterization

Intuitive Closed System

- Easy-to-follow protocol. Seamlessly harvest, process and inject adipose tissue

Regulatory Friendly

Office-Based

- Minimal procedure time, minimal personnel needed

Profitable

- Low consumable cost for practitioner

Patient-Friendly

- Procedure performed through a puncture opening under local anesthesia - no patient down time

The Tulip SoftHarvest Technique



Pre-Harvesting

Preparing the patient for fat harvesting by creating a path with tumescent solution.



Harvesting

Obtaining the fat from your patient.



Processing Adipose

Sizing the fat down to Microfat and Nanofat.

Pre-Harvesting Steps

◆ Patient Preparation & Incision

Outline donor and recipient sites with skin marking pencil. This serves as a distribution pattern for local anesthetic infiltration.

◆ Tumescant Infiltration

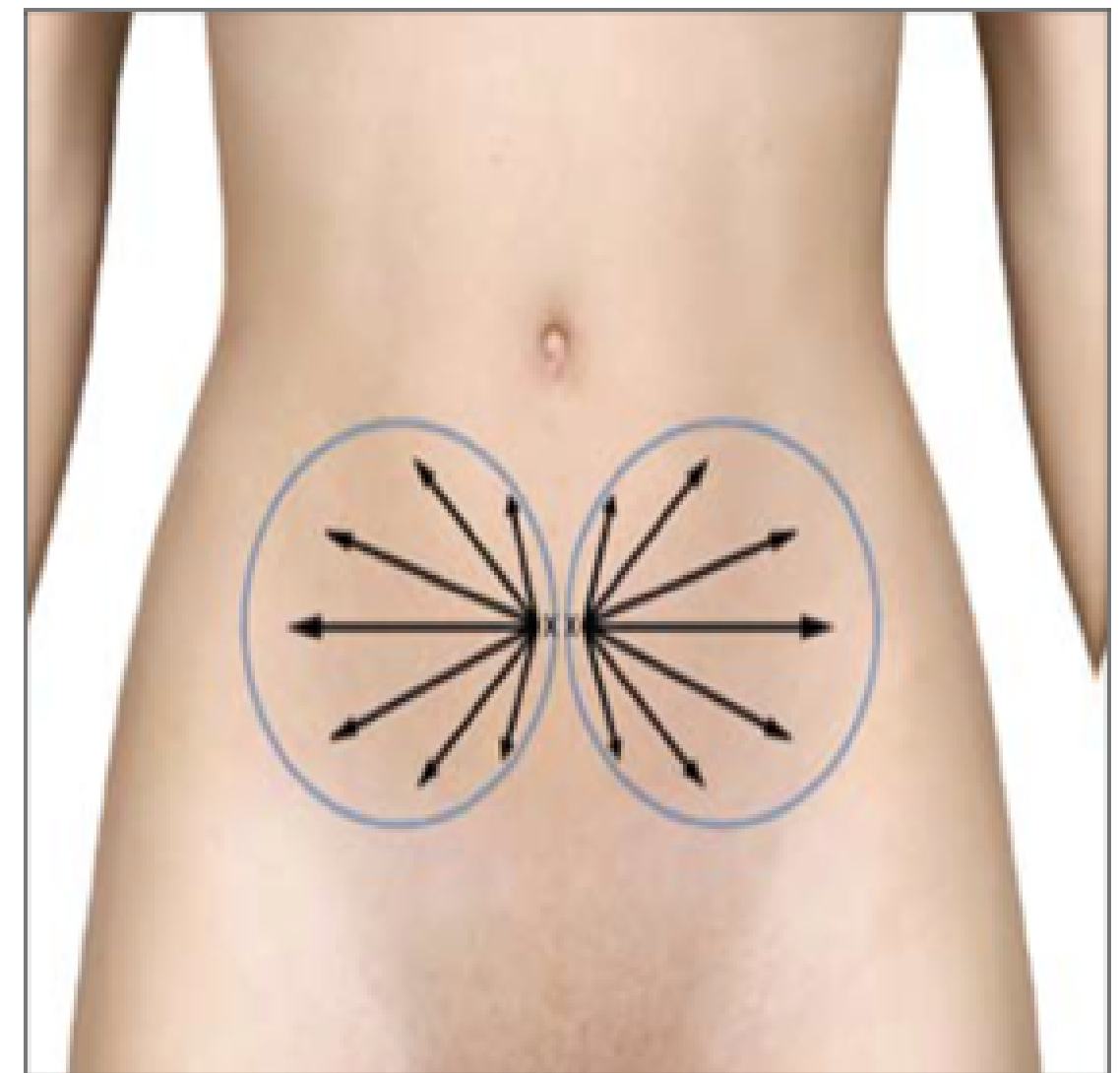
Following the incision point of entry, the multi-port infiltrator cannula is passed in a horizontal fashion.

◆ Pre-Tunneling

Re-pass the empty infiltrator throughout the donor area. Do this multiple times- this is important for attaining an even, high quality fat graft.

◆ Charging

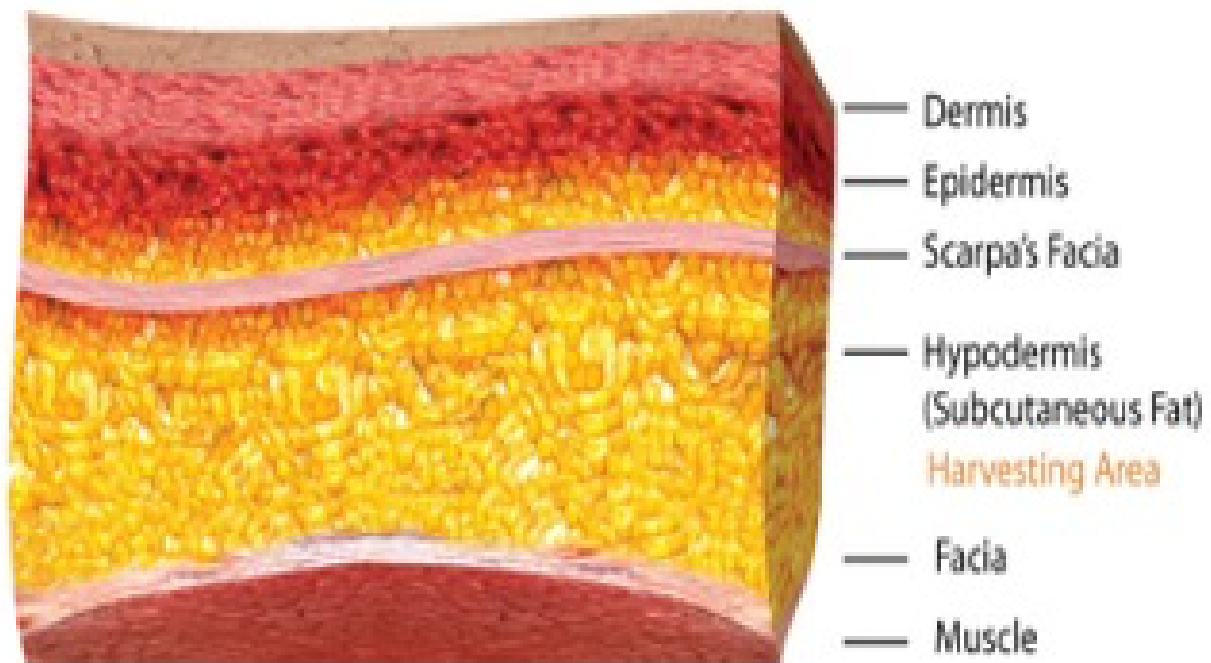
Necessary to eliminate all air within the cannula and syringe.



Fat Layer Review

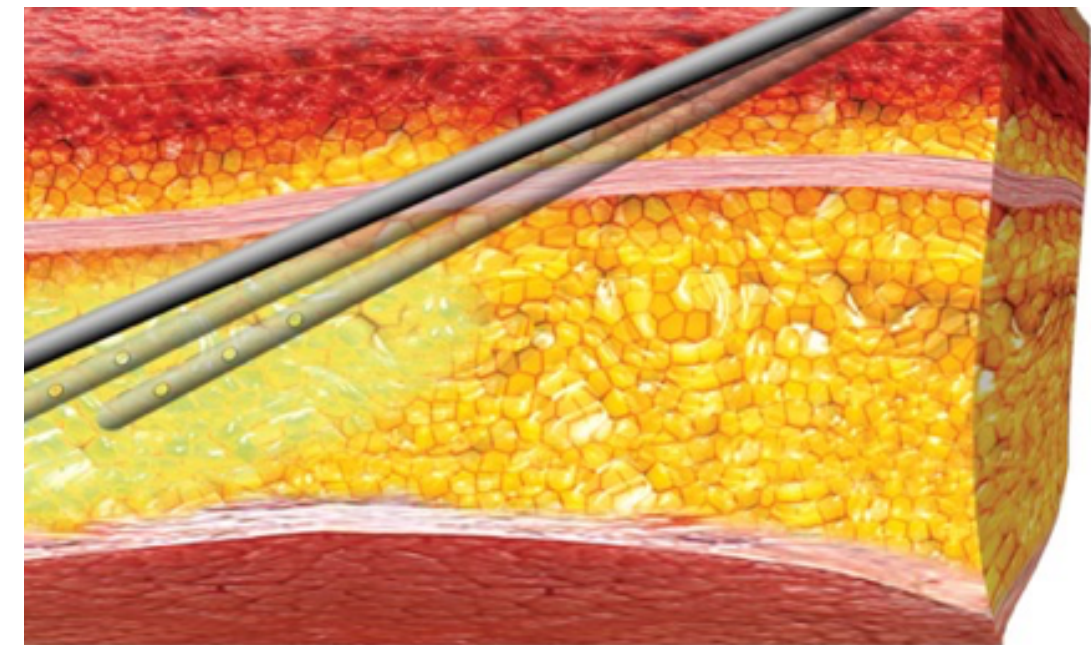
Three layers of fat:

- Superficial
- Middle layer
- Deep layer



Important:

- Aim for the middle layer of fat for best harvesting
- Stay parallel to skin and muscle



Incision Approach

An 18-20g needle side edge positioned vertically (see image at right) is used to create a small slit-like opening, extending through the epidermis and dermis, into the subdermal fat plane of the donor site



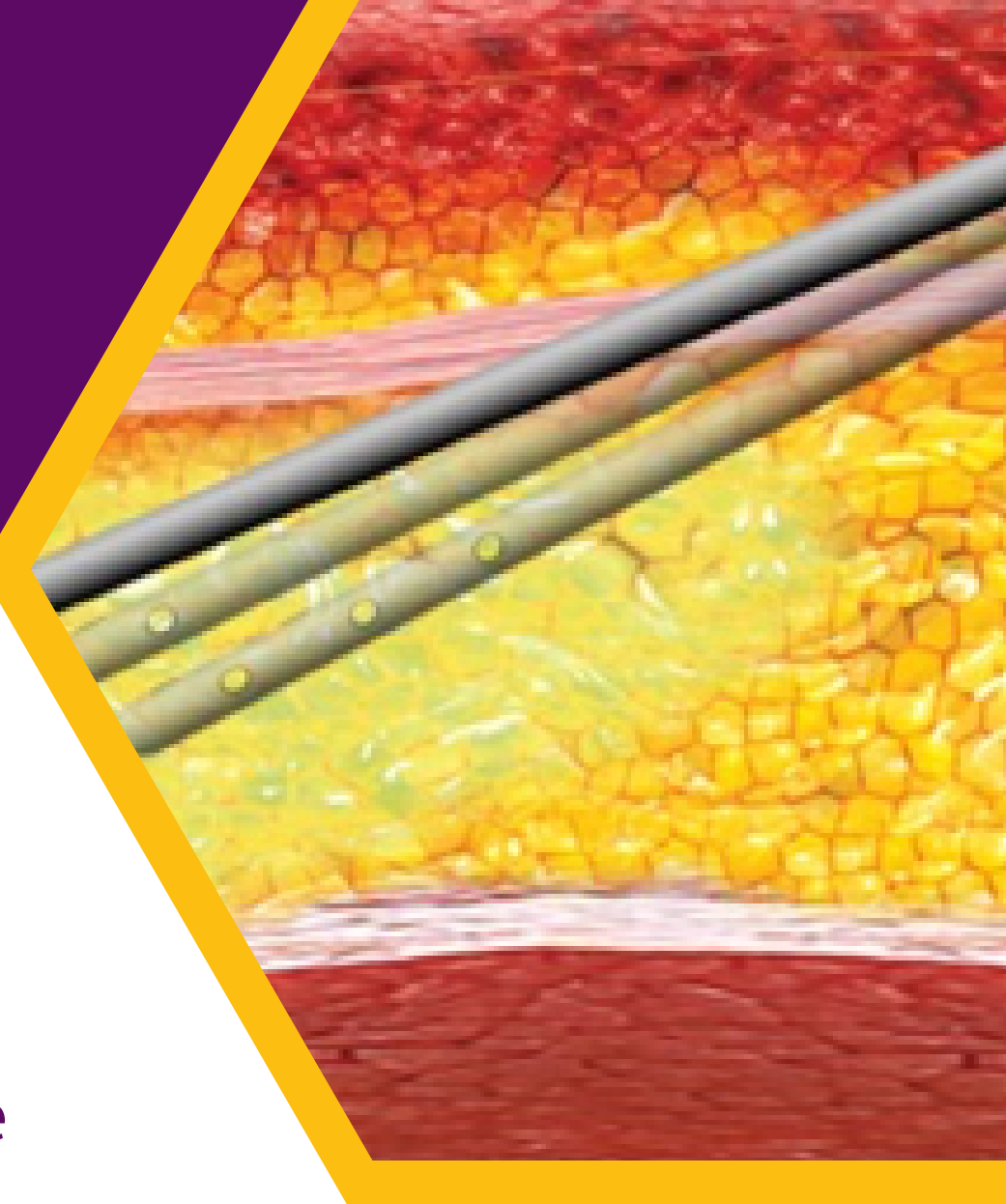
Alternatively, a #11 blade and hemostat can be used to create a small incision

Important: Avoid too large an opening. Closed syringe system vacuum depends on maintaining a tight side wall opening to insure even vacuum application.

Tumescent Infiltration Technique

•Tumescent Solution Cocktail: Using a general guideline of at least a 1:1 ratio of infiltrant to anticipated fat harvest volume

- Following entry, the multiport infiltrator cannula is passed in a horizontal fashion
- Keep the infiltrator moving at a 30-degree angle to the patient's skin within the subcutaneous fat, above the muscular layer, using a "spokes-of-a-wheel" pattern
- Pinch the skin-fat tissue around the infiltrator to help in passing the instrument through the tissue
- Very slowly inject the tumescent solution on both the entry and withdrawal strokes, evenly and in layers





Pre-Tunneling After Tumescant Infiltration

For optimal distribution of the tumescant solution

- Re-pass the empty infiltrator throughout the donor area
- Multiple times is important for attaining an even, high quality graft
- Pre-tunneling adds to the patient comfort during the harvest

•Note: This is a very important step which will improve comfort during harvest, plus make extraction more efficient and result in markedly less volume of the unwanted infranatant fluid layer.



Charging

- Charging: Necessary to eliminate all air within the cannula and syringe, thereby avoiding cavitation produced when using mechanical pump suction devices (wall suction, lipoaspiration machines, etc.)
- In small volume transfers, select a 20cc or 60cc BD Luer syringe attached to the harvesting microcannula with a mounted locking device.
- A very small volume (1-2 cc) of sterile 0.9% saline is drawn into the cannula to displace air from the system prior to insertion into the donor site.

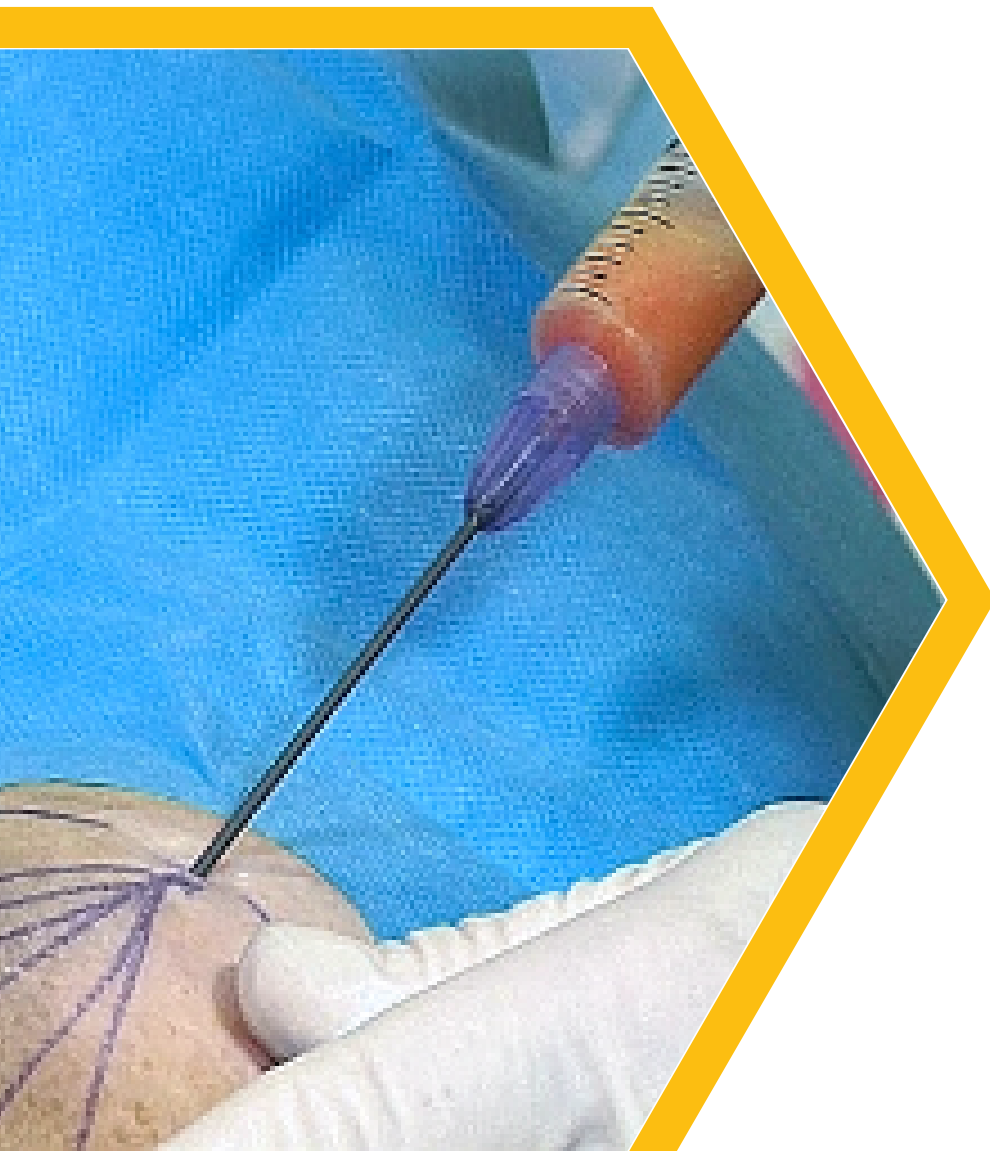
Harvesting

- Harvester should not be longer than the infiltrator
- Designed to acquire adipose tissue grafts from the subdermal fat plane, following the same pattern and location of local anesthesia distribution
- Insert the harvesting cannula through the same skin opening used for infiltration (It is important that these passages are within the same plane and same pattern as used during the placement of tumescent solution)
- Draw the plunger to partial or full extension depending on the desired vacuum pressure
- Using vacuum suction, move the cannula in a series of back and forth passes using the “spokes-of-a –wheel” pattern in multiple planes

Harvesting Technique - Troubleshooting

In the event of vacuum pressure loss during the harvesting process:

- Remove the harvesting cannula from the donor site
- Cover the ports of the harvester with a sterile 4x4, and carefully express all air from within the system
- Re-insert the cannula and activate vacuum again by locking the syringe plunger





Tulip Harvesting Cannulas

- Designed to acquire adipose tissue grafts from the subdermal fat plane
- Cannula openings are typically in a non-linear pattern of openings near the tip of the cannula
- These vary in diameters of 1.67mm to 2.4mm (OD), and a length of 10-20cm
- Harvester should not be longer than infiltrator

Tulip Instrumentation

- Sterile, Coated, Single-use
- Proprietary, extremely smooth CellFriendly coating
- Glides easily through tissue

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- Minimal resistance and tissue trauma
 - Resists clogging

Tulip SoftHarvest Processing

Once harvest is completed and the desired amount of lipoaspirate is obtained, the adipose tissue must be processed for cleaning and sizing

Gravity Decantation

Gravitational decanting uses gravity to separate the lipoaspirate into three layers:

1. Lipid (Supernatant) Layer

Top oily layer that is unwanted

2. Adipose Tissue

Middle layer of golden fat that is wanted

3. Fluid Solution (Infranatant) Layer

Bottom red layer (infranatant) that contains blood and tumescent solution that is unwanted



Transfer for Basic Microfat Applications

- After cleaning (separating) the fat via gravity decantation or centrifugation so that only the golden fat is remaining, use the purple single-use 2.4mm transfer to pass the tissue into injection syringes
- Within the transfer options, use of luer-to-luer emulsification capabilities are available, which preserve the anaerobic, closed status of the grafts and permit the option of emulsification if so desired



Transfers for Sizing

- Sizes: 2.4mm (purple), 1.4mm (blue), 1.2mm (green)
- Preserves the anaerobic, closed status of the grafts during sizing
- Designed to produce micronized fat of descending sizes by passing tissue back and forth through each transfer 30 times



Obtaining Nanofat

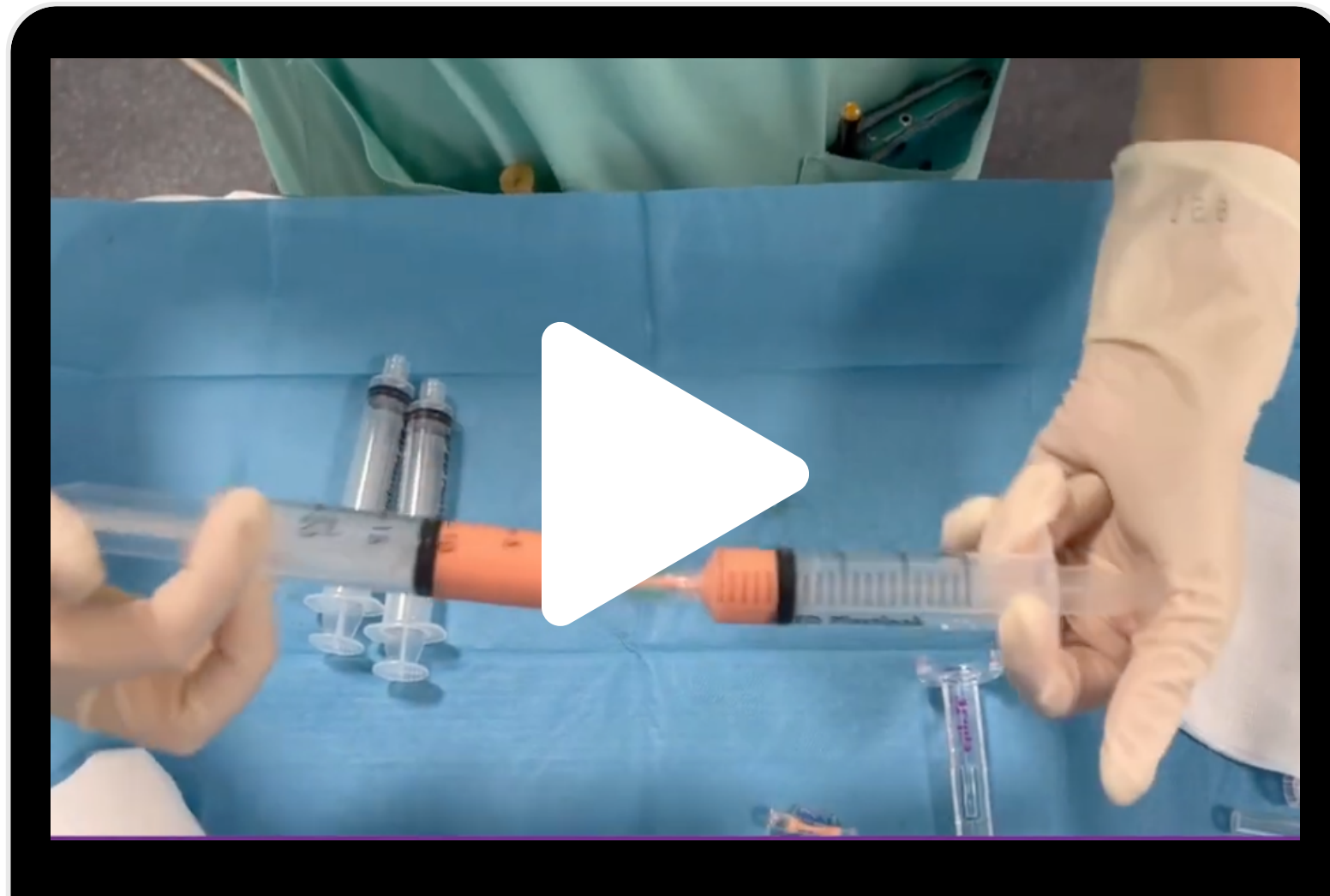


After sizing down with 2.4mm, 1.4mm and 1.2mm transfers, make one pass through the Tulip NanoTransfer to produce Nanofat

The Tulip NanoTransfer sizes adipose tissue down to Nanofat size (injectable with 27g and 30g needles)



Get Started



Click Above to Watch How to Use the Tulip Nano System



Additional Resources

Helpful links:

- [Nanofat.com](https://nanofat.com)
- [Autologous Fat Grafting Article](https://drive.google.com/open?id=1kDt_-baaadW0BUgE5UDJWgnp8nyWCa8r&authuser=sacsy%40tulipmedical.com&usp=drive_fs): https://drive.google.com/open?id=1kDt_-baaadW0BUgE5UDJWgnp8nyWCa8r&authuser=sacsy%40tulipmedical.com&usp=drive_fs
- [Emulsification Article](https://drive.google.com/open?id=1p3v_RxCinkAuGEIAE4fb1pgS0DI1Bk9Q&authuser=sacsy%40tulipmedical.com&usp=drive_fs): https://drive.google.com/open?id=1p3v_RxCinkAuGEIAE4fb1pgS0DI1Bk9Q&authuser=sacsy%40tulipmedical.com&usp=drive_fs
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