

LIPOCCELL

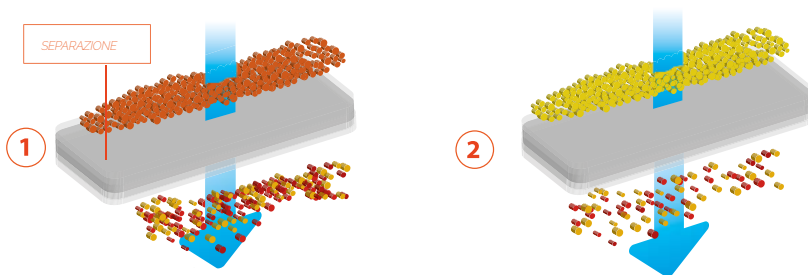
Adipose tissue was first used during the First World War to promote the healing of soldiers' wounds. After a century, researchers have discovered that fat is one of the richest adult tissues in mesenchymal stem cells frequency.

These cells can differentiate into specialized cells, but more importantly they can respond to local stimuli coming from a degenerated tissue and release molecules, such as growth factors and anti-inflammatory cytokines to promote healing.

**Lipocell** is a technology able to enhance the biological properties of adipose tissue

## Technology

**Lipocell** is equipped with a semipermeable membrane that separates adipose tissue from waste elements with the help of a continuous irrigation. The dialysis of the tissue minimizes the stress and trauma to cell and extracellular matrix architecture, removing the blood and oil residues which are pro-inflammatory. The final product is a purified adipose tissue reduced into clusters.

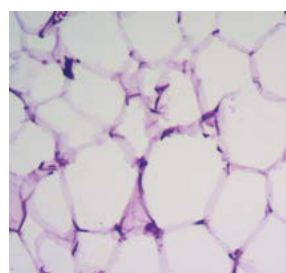


## High regenerative potential

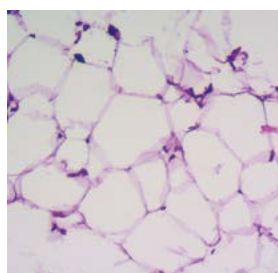
The atraumatic processing of the tissue limits the cell stress, thus not impairing their trophic and anti-inflammatory activity. An undisturbed extracellular matrix is able to act as a natural scaffold for cells improving their vitality and contributing to tissue regeneration. The removal of blood and oil from adipose tissue limits the stress and inflammation of the tissue hosting the graft.

## A simple, effective and safe procedure

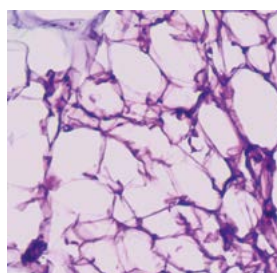
The system is a closed-loop circuit and the procedure is completely performed in the sterile field, minimizing the risk of contamination. The device fulfills the requirements of cell and tissue minimal manipulation. The procedure is simple, fast, and reproducible - being versatile in different therapeutic fields.



NT



LC



CF



## Characteristic

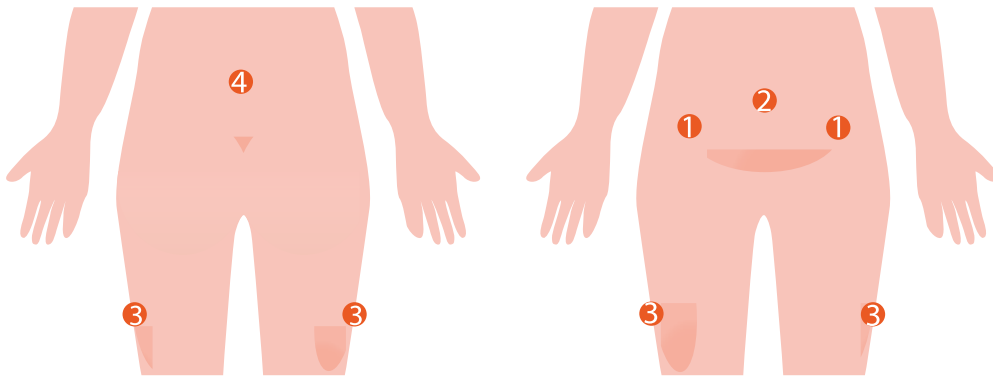
Minimal mechanical stress to maintain the biochemical properties of cells and the integrity of extracellular matrix.

Total purification blood and oil residues that can possibly lead to inflammation.

Minimal manipulation of the tissue granted by a "point-of-care" technology that performs intraoperatively.

Closed-loop circuit a procedure completely performed in the sterile field.

Histology of untreated (NT), Lipocell-processed (LC), and centrifuged (CF) lipospirates. The hematoxylin eosin staining shows the maintenance of tissue architecture integrity in the LC sample.



## A small liposuction

Adipose tissue can be harvested with a small liposuction from subcutaneous fat. In most of the regenerative medicine procedures the necessary final volume of Lipocell needed varies from 6 to 12 ml, which can be obtained from 60 to 90 ml of lipoaspirate (variability depends on patient characteristics and harvest technique).

The technique can be executed using local anesthesia thanks to the infiltration of Klein solution, however a mild sedation is recommended. The preferable harvesting area is the abdominal subcutaneous fat.

Patient needs to be in supine position and a symmetric double access is possible between iliac and lumbar abdominal area (1); alternatively the access can be positioned in the periumbilical area (2). Depending on patients' characteristics, it is possible to choose alternative harvesting areas such as trochanteric fat, that must be executed bilaterally (3) or lumbar fat (4).

Patients who have little adipose tissue, sports people or patients with excess scar tissue may require harvest by a plastic surgeon.

## Infiltrazione

**KLEIN SOLUTION**  
 250 ml saline solution  
 20 ml Lidocaine 2%  
 0,5 ml Epinephrine 1mg/ml  
 \* values are just indicative and may vary

The infiltration aims to prepare for the adipose tissue liposuction. Epinephrine can limit the bleeding during the liposuction thanks to its vasoconstrictory effect, while lidocaine has an aesthetic effect. The saline, while promoting more vasoconstriction through pressure increase, creates a tumescent area that help the liposuction with the provided aspirating cannulae.

After performing an incision in the illustrated spots, use the infiltration cannula (16G) connected to 50 ml syringes pre-filled with Klein solution. It is very important to perform the infiltration using retrograde movements of the cannula homogeneously. Avoid transverse movements with the cannula. After the infiltration of 150-200 ml of Klein solution, wait 10 minutes.

It is possible to perform a digital manipulation of the abdomen to help the distribution of the Klein solution into the subcutaneous layers.

## Aspiration

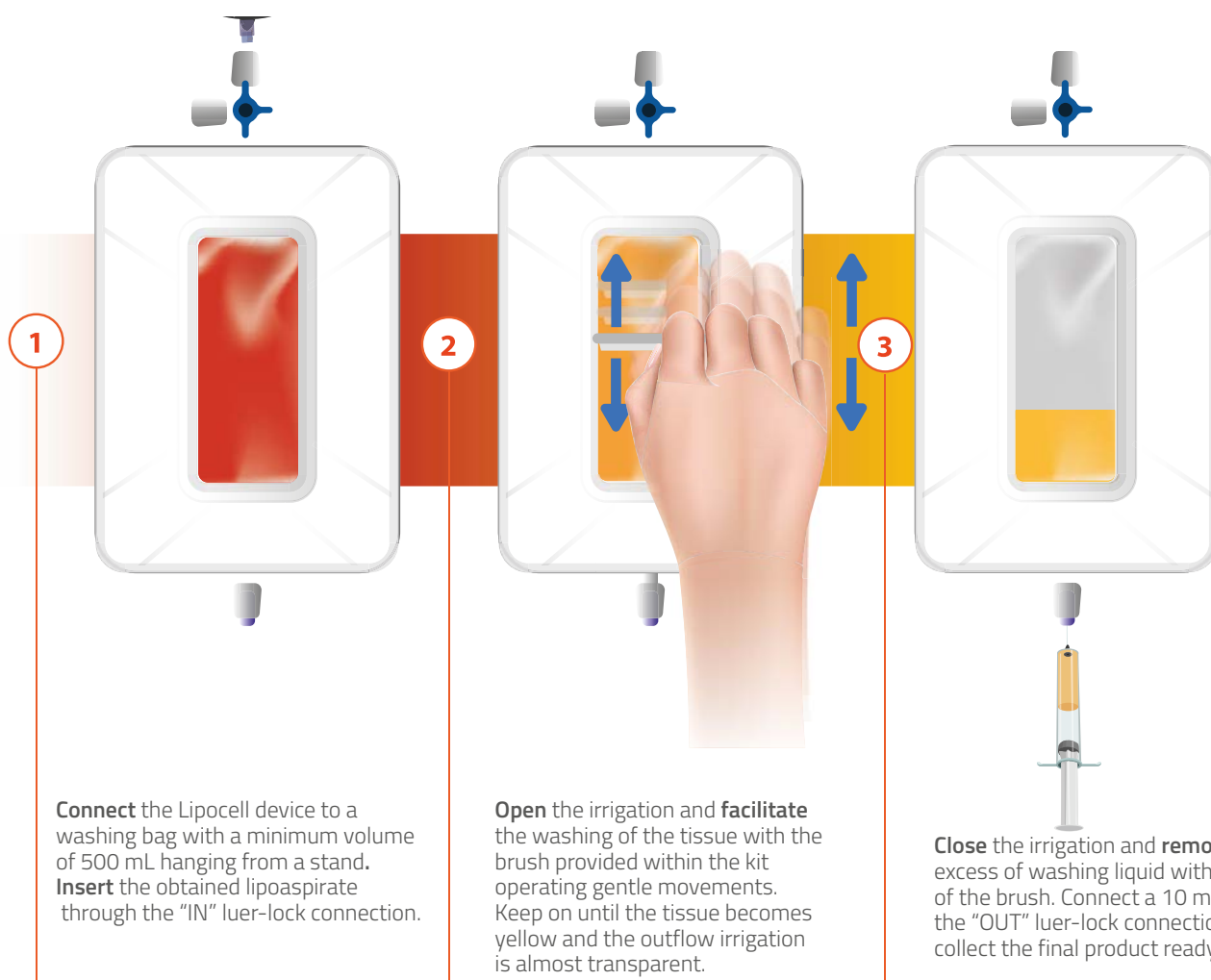
After 10 minutes, it is possible to connect the aspirating cannula (13G) to the self-blocking syringe. The block system, that must be operated while the cannula is inside the subcutaneous adipose panniculus, creates negative pressure inside the syringe.

Moving the syringe back and forth allows the harvesting of the lipoaspirate from the previously infiltrated areas.

Avoid transverse movements with the cannulas. Once the lipoaspirate is obtained, proceed to the medication. After the operation use compressive dressing to limit the occurrence of hematomas and bruises.

The use of an elastic belly for a week will help for this purpose.

It is recommended to not manipulate the tissue any further and to use it according to therapeutic needs. If the final product is very dense, transfer it into the 2,5 ml syringes provided within the kit or smaller luer-lock syringes, in order to facilitate the injection. It is possible to use the needle provided within the kit, or any other needle with a recommended diameter of 18G.



1

**Connect** the Lipocell device to a washing bag with a minimum volume of 500 mL hanging from a stand. **Insert** the obtained lipoaspirate through the "IN" luer-lock connection.

2

**Open** the irrigation and **facilitate** the washing of the tissue with the brush provided within the kit operating gentle movements. Keep on until the tissue becomes yellow and the outflow irrigation is almost transparent.

3

**Close** the irrigation and **remove** the excess of washing liquid with the help of the brush. Connect a 10 ml syringe to the "OUT" luer-lock connection and collect the final product ready-to-use.

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