



**Dr. Renato Calabria is always on the cutting edge of beauty....blending art with surgical technique.**

## The Stem Cell-Enhanced Facelift

By Dr. Renato Calabria

pulling skin too tight in the wrong direction created an unnatural look—not a more youthful appearance.

With regards to achieving a more youthful look in the quest for the ultimate in facial rejuvenation, for years I've added volume; first with the

**Vertical Face Lift** by moving a patient's own tissues in a vertical direction, then repositioning it to the original, more natural position. Now, with the (stem) cell-enhanced face lift which not only restores volume in the face, but adds regenerative cells believed necessary to enhance the rejuvenation process. The (stem) cell enhanced face lift procedure combines soft tissue transferred from one part of the body to the face with the patient's own adipose tissue-derived stem cells and regenerative cells. They are injected into the SMAS and underneath the facial musculature to restore volume.

### TECHNIQUE

The initial phase of the procedure is harvesting the cells (usually from the lower abdomen). Liposuctioned fat is rich with regenerative cells, including adult stem cells, blood vessels producing cells and growth factors secreting cells. Once harvested, the fat is treated through a device to isolate the cells.

**Celution® Technology—How it Works**  
Adipose tissue is taken from a patient by using a low volume tissue collection procedure. The collected tissue is placed in the Celution® Device, which then processes the tissue with a single-use, application-specific consumable set that easily attaches to the Celution® Device. The Celution® Device liberates the stem and regenerative cells from the adipose matrix; cells are separated, washed, and concentrated in the collection container. This real-time processing takes place in

a closed environment to minimize the risk of exposure to contaminants and can be completed within the time frame of a single surgical procedure. A syringe collects the cells to be redelivered to the same patient. Cells may be injected directly into a site or implanted with a delivery matrix or scaffold to improve performance, such as combining the cells with an adipose tissue graft in reconstructive surgery procedures.

### The (stem) cell enhanced face lift procedure combines soft tissue transferred from one part of the body to the face with the patient's own adipose tissue-derived stem cells and regenerative cells.

Following re-infusion into the body, it's thought that environmental cues from the damaged and surrounding tissue guide the stem and regenerative cells to areas of damage and facilitate a natural healing response. Cells respond by a variety of mechanisms, which promote tissue survival, graft retention, and/or differentiation of progenitor cells into the appropriate cell type. During the face lift, regenerative cells tissue embedded in fat are gently placed with a blunt cannula in layers of facial tissues like the SMAS and under muscles, etc. Once fat is placed, symmetry is checked and skin is redraped and approximated; any excess skin is excised, then anchored in a vertical direction and closed in layers. Its key to place regenerative tissue in a precise location to enhance volume of the face in areas previously volume deprived. After a cell-enhanced face lift, patients exhibit a dramatic improvement in the

underlying soft tissue contouring of the face and skin texture. Growth factors contained in the new cells induce the skin and other tissues to produce more cells of their own by initiating a signal to the local stem cells and transplanted adult stem cells to restore and multiply.

Others stem cell face lift procedures inject cells directly into the face (without surgery) but in my opinion are not as effective in volumizing the face as the cell-enhanced ( stem cell) face lift and do not address the laxity of the skin. Also the cells have not been isolated with the celution device which are essential to the final result.

### CELL REJUVENATION

The regenerative cells, by secreting growth hormone and other factors, are beneficial in creating a more youthful look, diminishing the aging process. The procedure restores a youthful contouring of the face, increasing skin tightness and evens color irregularities caused by aging and sun damage. The cell-enhanced (stem cell) face lift is the new frontier of face lifting and is rewriting a new chapter in the ultimate in facial rejuvenation.

The Celution device is not available in the U.S. yet, but is approved for clinical use in Europe and is being used in Dr. Calabria's Milan and Rome office locations. His upcoming plans include bringing the technology to the U.S. as soon as next year.

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**F**or decades plastic surgeons have focused on restoring a more youthful look to the face. Surgical techniques have improved; new lasers now achieve a goal that once was unreachable. But comparing post-operative results with photos of patients when they were younger, it appeared that there was something missing: a younger face had more volume and the skin looked fresher. I felt that with the advent of stem cell research, plastic surgery would most benefit. Using stem cell as a means to jump start the regenerative process in our bodies was an attractive proposition; we knew that the fat in our bodies contained adult stem cells along with other regenerative cells. I had used fat grafting (containing adult stem cells) on the face, with the distinct purpose of rejuvenating the skin and adding volume.

### PROCEDURE

But it wasn't until the development of a new device—the Celution Device, that facial rejuvenation was taken to the next level and ultimately, an amazingly more youthful result emerged. I call the procedure, **Cell-Enhanced Face Lift** and it has on every level outdated the standard facelift surgery. The (stem) cell-enhanced face lift specifically is used to volumize the face and create a more youthful look. In my own practice, I now view traditional face lift surgery a thing of the past: that "wind tunnel" look that was created by