

## From Currettes to Cryolipolysis – The Evolution of Body Contouring



BY WENDY LEWIS / POSTED IN BODY CONTOURING ON MAY 14, 2015

Dr. Yves Gerard Illouz (1929-2015) was widely considered the father of modern liposuction. Wendy Lewis explores the advancements of liposuction to the non-invasive technologies of today



Flashback to 1977; Jimmy Carter is in the White House, the first Apple Computer goes on sale, Elvis Presley dies from a heart attack at 42, the US returns the Panama Canal back to Panama, and Star Wars and Annie Hall opened to long lines at the box office.

To put it in a different perspective, it's also the era of the Diane Von Furstenberg iconic wrap dress; fashioned from a silky jersey that showed every dent, dimple, and defect of a woman's derriere. If you were a woman with fatty bulges on your thighs, tummy, and buttocks back then, the only options were starving yourself, joining Jack La Lanne, or a tummy tuck that involved general anesthesia and a week in the hospital.

Enter a petit Parisian surgeon, Yves Gerard Illouz, with his somewhat crude style and too-good-to-be-true technique for removing fat without big scars or open surgery. Little did anyone know at the time that he would change the course of plastic surgery.

## Illouz the innovator

Dr. Yves-Gerard Illouz is credited with inventing the technique that came to be known as liposuction today. He was actually not the first to play in this space, but he was definitely the loudest. He catapulted onto the international scene in the late 1970s.

According to Atlanta, Georgia Plastic Surgeon Foad Nahai, 'Dr Illouz was an innovator and his techniques represented a disruptive innovation which permanently changed body contouring. Liposuction went beyond body contouring with wide applications in reconstructive and aesthetic surgery. He opened the door for today's fat grafting, which is in itself another disruptive innovation. Illouz was a gentleman, and a friend. He and his contributions will be long remembered.'

Although several initial attempts at fat sculpting date back to the 1920s with variable results and a long list of major complications, Illouz was at the forefront of the introduction of a safe and effective method of liposuction. The 'Illouz Method' demonstrated a suction-assisted method for removing fat cells through small incisions. He used cannulas to inject fluid into tissue to break up fat deposits that were then removed using the suction device. Previously, sharp curettes were used without suction. Surgeons placed a sharp instrument and scraped the fat, which caused massive bruising and swelling. The results of Illouz's new technique were high reproducibility and low morbidity.

As new methods evolved, new techniques for anesthesia were introduced that reduced or eliminated many of the potential adverse events. Liposuction has become a safe, effective, popular procedure for contouring adipose tissue and reshaping the body that has many applications in reconstructive and aesthetic surgery.

Funnily enough, for many years there were rumors in the plastic surgery community that he was an abortionist, but as it turns out, there was another Gerard Illouz in France who was an OB/Gyn and abortionist and some people mistook him for the other Dr. Illouz.

## Lipoplasty in its infancy

Los Angeles plastic surgeon Peter Bela Fodor wrote a detailed chronology of the development of liposuction in 2009 published in *Aesthetic Surgery Journal* that speaks of the important role played by organized plastic surgery in technical advances and patient safety. 'Illouz was responsible for monumental advances. His most important contribution was the introduction of the blunt cannula, which removed fat while respecting the other structures coursing between the undersurface of the dermis and the subjacent muscle fascia. Complications were dramatically reduced and the procedure became reproducible in the hands of other surgeons. The technique was adaptable to a wide range of body regions and, for the first time, its potential as a mainstay of aesthetic surgery became apparent,' said Dr. Fodor. Bullet shaped cannula with an open tip at the end (Mercedes cannula) was another Illouz introduction.

Illouz first presented his technique in the US in 1982. At that time, the maximum volume he stated that could be safely removed would be 2 liters, which is quite small in comparison to the 5 liters maximum noted in the American Society for Aesthetic Plastic Surgery (ASAPS) guidelines. A 2 liter liposuction would be a fairly small amount for an average patient by today's standards.

Although he couldn't speak perfect English, and his slides were described as crude and sloppy, Illouz's famous lecture with the backdrop of swaying palm trees in Hawaii was a turning point in the annals of plastic surgery. American plastic surgeons and dermatologists quickly began to experiment with the technique and developed various sedation methods that eliminated the need for general anesthesia.

Shortly thereafter, according to Dr. Fodor, the then American Society of Plastic Surgeons (ASPS) President, Mark Gorney, initiated a Blue Ribbon Committee whose mission was to visit Illouz and observe him at work. Upon their return, the Blue Ribbon Committee published a report with extensive recommendations, including patient safety. The committee also developed a plan to gradually introduce the procedure to other US surgeons and organized teaching courses across the country.

According to Dr. Matarasso, 'We started doing liposuction when I was a resident in 1983–84. We used an 8 mm plastic cannula used for performing abortions connected to an aspirator. The procedure was dry, and no wetting solutions were used in those days.

'Liposuction may represent the single most important development in the history of aesthetic plastic surgery, and, arguably, falls among the ten most important innovations of all time in plastic surgery, along with breast implants and others. Fat reduction alone has grown to be a billion dollar industry today and it's still growing.'

He also cites liposuction as the predecessor to stem cell research and fat grafting. Reinjection of the harvested fat for both reconstructive and cosmetic indications has been widely established as a universally accepted procedure. Adipose stem cells, extracted from the unlimited source represented by human adipose tissue, show great promise for future tissue engineering.

'It's hard to imagine your practice without liposuction today,' said Matarasso. 'Current, technology for liposuction includes suction-assisted lipectomy, ultrasound-assisted, power-assisted, laser-assisted, water-assisted, and radiofrequency-assisted. The choice of technology and technique often depends on patient characteristics and surgeon preference.'

'Many of Illouz's principles have survived to this day. He introduced the concept of "favorable areas of liposuction" and "zones of adherence" that could not be suctioned, and he popularized the idea of wet techniques', he added.

Dr. Fodor, one of the leaders in body contouring advances from the very beginning, explains: 'Liposuction can be compared to microvascular surgery and to tissue expansion in magnitude. It rapidly rose to become the most commonly performed procedure in aesthetic surgery and has been the number one or number two procedure for more than a decade, along with breast augmentation,' he said.

The Lipoplasty Society of North America (LSNA) (that was eventually folded into ASAPS) was formed by a group of surgeons including Gregory Hetter, Richard Mladick, Fodor, Illouz, and others. 'There were all these patients coming back from Europe saying that they had liposuction, which was called lipolysis at the time. Surgeons didn't believe that it was even possible, until they were able to duplicate his results for the first time,' Fodor said. There were open negative letters published in peer reviewed journals about it.

## An American in Paris

I first heard about Illouz's miracle fat contouring technique when I began working in the field of plastic surgery. It truly sounded like every woman's dream come true; you go into surgery with a tummy or thigh bulge and wake up without it. In those days, liposuction was performed under general anesthesia, there was significant blood loss that necessitated transfusions, and patients were sore and bruised for weeks, and looked (and felt) like they were hit by a bus. It was light years away from the artful and minimally invasive procedure it has evolved into.

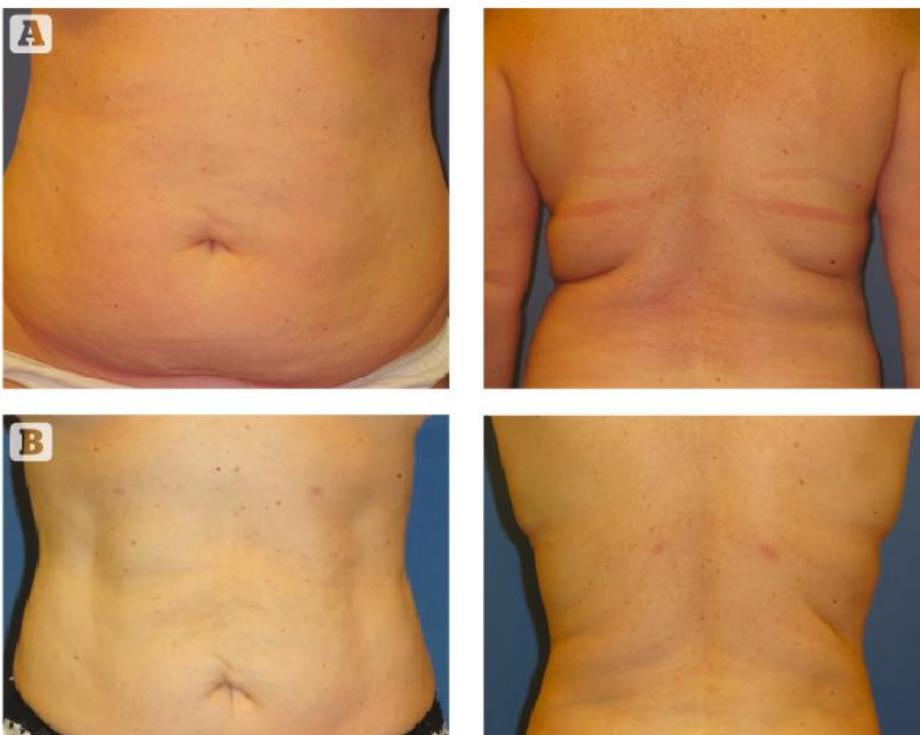
In the early 1990s, while I was managing a New York City plastic surgery practice, I planned a trip to Paris. I had attended many national meetings where Illouz presented his techniques. So I decided to go and visit him at his clinic on 68 bis Rue Spontini in the fashionable 16th arrondissement. I wrote him a letter asking to meet him, and he kindly replied. I brought him a gift from America of a pair of Tiffany & Co sterling cufflinks to thank him for receiving me. I was very excited to have the opportunity to observe the master himself, and it was my first experience watching surgery performed outside of the US. The patient was fully anesthetized before Illouz even entered the operating theatre by his trusty nurse anesthetist, and he suctioned away. When he finished taking as much fat as he deemed to be safe, he abruptly exited, leaving his staff to close the patient's incisions. Then it was time for lunch that included a bottle of red wine, and there was more fat suctioning to follow for the afternoon.

What struck me was how efficiently the clinic ran, and how fortunate he was to have a team that did all the heavy lifting for him. They set up the patient, did the markings, provided anesthesia, and his skills were reserved for the actual body contouring. It was a very different era in cosmetic surgery, especially in Europe, when patients rarely questioned the authority of the surgeon.

As it turns out, Illouz performed his surgeries at that clinic from 1975–1988. During that period, he must surely have recontoured thousands of women's bodies from all over the world. In 2003, it became known as the Paris Aesthetic Clinique Spontini and a plaque was hung in the waiting room in his honor. It is now the Clinique Nescens Paris Spontini ([nescens.com](http://nescens.com)), a hotel and private surgical suite owned and operated by this Swiss anti-aging brand.

### The current state of liposuction

According to ASAPS, liposuction was the number one most popular surgical procedure for both men and women combined in 2014, with 342,494 procedures reported. The procedures that showed the largest growth in volume on a year-over-year basis were all about the body. Buttock augmentation was up 86%, labiaplasty was up 49%, and nonsurgical fat reduction rose by 42%.



*Figure 1 (A) female patient pre-treatment with suction-assisted liposuction (SAL), (B) Patient 6 months post-op*

Las Vegas plastic surgeon and President of ASAPS, Michael Edwards, reflects on the contributions made by Illouz. ‘The concept that “We stand on the shoulder of giants” is so true in surgery. To have the guts to do something and do it for the first time must be commended. It is not like Illouz was a cowboy, but he had the guts to do it,’ he said.

Dr. Edwards explains that liposuction has evolved towards a safer procedure that provides better aesthetic results in the hands of properly trained surgeons. ‘Today there are minimal complications. Contour irregularities are the main kind of typical adverse events we see now,’ he said.

According to New York City plastic surgeon David Hidalgo, ‘It’s hard to imagine the practice of plastic surgery today without Illouz’s contribution. What began as a crude and limited means of body contouring 35 years ago, has become a refined method with ubiquitous applications in both aesthetic and reconstructive surgery. Plastic surgeons today employ it as a tool almost as commonly as scissors and sutures. The failure of imagination on everyone else’s part attests to Illouz’s concept as a genius contribution. Like many significant and successful contributions in other fields, Illouz simply adapted an existing tool to a different problem, opening up vast new possibilities.’

He continued, ‘Like the current revolution of fat grafting today, early pioneers in liposuction were thought of as fringe players until it became clear that liposuction dramatically expanded the scope of what was possible and wasn’t going away. It opened up a wide new territory of treatment options, literally from head to toe,’ said Hidalgo.

Another by-product of the fat removal movement, is the global rise of fat replacement. ‘Many of us routinely offer patients the option to put fat into their face, especially into the nasolabial folds. Fat injection techniques have come light years ahead. Fat grafting has become a standard technique as an adjunct to facelifts in many surgeons’ hands,’ said Dr. Edwards.

According to Santa Monica, California plastic surgeon Steven Teitelbaum the field of body shaping has certainly evolved over the past four decades. ‘New developments have led to improvements in liposuction techniques so that fat can now be removed more safely, and with less pain, blood loss and other associated complications. From the early introduction of liposuction to modern techniques, we are continuously refining the way in which the procedure is performed,’ he said.

## **Fat melting**

‘The holy grail for body-sculpting technology is non-invasive technologies or a type of liposuction that simultaneously removes fat, lessens the need for lengthy scars of skin excision associated with surgical intervention,’ said Dr. Matarasso.

Undoubtedly, the two most significant recent advances in non-surgical fat reduction are considered to be cryolipolysis and the external application of high-intensity focused ultrasound (HIFU).

‘Today, non-surgical technologies offer patients an alternative to surgical body contouring, such as UltraShape® (Syneron Candela). With Ultrashape we have a nearly painless, non-invasive, no downtime body contouring option that gives durable results,’ said Dr. Teitelbaum.

New Orleans, Louisiana dermatologic surgeon Lisa Donofrio says, 'Fat reduction is and will always be a desirable means of weight elimination. The key is selecting the patient that fits best for local anesthesia fat elimination via tumescent liposuction or non-invasive fat elimination via Coolsculpting® (Zeltiq). Most patients elect the Coolsculpting. Its proven results have made a great impact on the outcome of non-invasive fat sculpting.'

But new advances have surely not eliminated the role of liposuction. When doing liposuction, if I can have only one instrumentation in the OR, it still would be traditional liposuction. In my OR I have the luxury of having every technology available. In reality the gold standard is still liposuction, yet non-invasive non-surgical approaches have some benefits. You cannot sculpt with non-surgical devices. You can just take an area that patients don't like and debulk it,' said Fodor. 'The future will continue to bring exciting new technologies for the non-surgical modification of subcutaneous fat.'