

Surgical Aesthetics

The business of cosmetic plastic surgery

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Creating a Natural Contour:

Advances in
Abdominoplasty
Technique

Liposuction Moves Beyond De-Bulking

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Creating Contour

New advances in technology and technique are helping liposuction maintain its status as the gold standard for body contouring.

By Cindi Myers

THOUGH LIPOSUCTION HAS BEEN

in use in plastic surgery practices since the 1970s, it was not until Jeffrey Klein, MD, developed the tumescent technique in 1985 that the procedure gained widespread popularity. More than 25 years later, traditional tumescent liposuction continues to evolve with new technologies—such as power-assisted liposuction (PAL), ultrasonic devices and laser lipolysis systems—and new techniques, such as liposculpture and the use of fat grafting to create balance and reduce postprocedure irregularities.

“Liposuction is unlike any other surgery,” says David Amron, MD, of Spalding Drive Plastic Surgery and Dermatology in Beverly Hills, California. “It’s not cutting and sewing. It’s such a tactile procedure. It’s more of a blind yet precise sculpting procedure under the skin.”

Easier Fat Removal

Making fat easier to remove is the aim of most new liposuction technologies. Grant Stevens, MD, of Marina Plastic Surgery Associates in Marina del Rey, California, is a fan of PAL. He has been performing liposuction since 1983, and has experienced the evolution of technology from dry to wet to super-wet and tumescent, up to today's ultrasonic and laser-assisted devices. He has participated in clinical trials for several liposuction technologies.

"I love using power-assisted liposuction because it's much easier on me and on the patient," he says. He uses MicroAire's PAL LipoSculptor (microaire.com). The power-assisted cannula reciprocates at 400 strokes per minute, requiring much less physical force to manipulate. "It essentially cavitates itself," Dr. Stevens says. "There's less bruising for the patient, because you're not leaning into it."

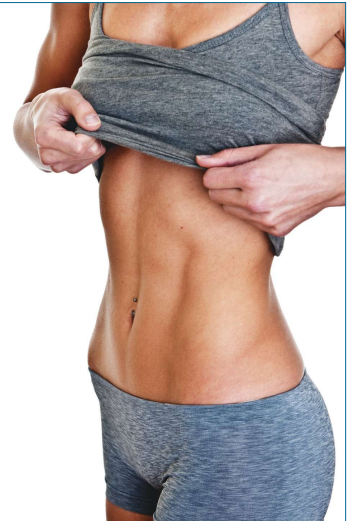
Adam Schaffner, MD, a New York City-based plastic surgeon, also uses PAL in his practice. "There is less pain, less swelling and less bruising for the patient and shorter operative times," he says.

Sharon Giese, MD, uses the Vaser ultrasound-assisted device (Sound Surgical Technologies, vaser.com). The ultrasound provides both heat and cavitation so the fat is released from the surrounding structures more easily, requiring less physical exertion from the doctor and resulting in less trauma to the patient. Additionally, the heat helps to tighten skin in the treated areas. "It makes what can be a rough operation a really smooth one," says Dr. Giese, who finds ultrasound especially useful in the face. "Ultrasound makes liposuction safer in the face, in the tighter planes of the neck or jawl. You're able to be more precise and work with more finesse. The heat from the ultrasound also stimulates collagen, so you get exceptional skin tightening. With no cutting, you can get a phenomenal amount of skin shrinkage," she says.

Some surgeons have found that ultrasound-assisted devices are valuable tools when working in fibrous areas. Dr. Stevens, for example, uses ultrasonic liposuction for gynecomastia and revision work.

The third new technology to gain widespread use among physicians is laser-assisted lipolysis, sold under multiple brand names, including SmartLipo by Cynosure (cynosure.com) and SlimLipo from

"It essentially cavitates itself. There is less bruising for the patient, because you're not leaning into it."



Palomar Medical (palomarmedical.com). The laser energy, emitted at the tip of the cannula, liquefies fat, making it easier to remove. The heat of the laser may also add skin-tightening benefits. The cannulas for SmartLipo measure 1mm to 2mm, necessitating a very small incision, and the treatment is popular in the face and neck. "I've gotten great results with SmartLipo," says Saul Lahijani, MD, of the Beverly Hills Institute of Plastic Surgery. "There's less bruising and better patient recovery time, which means happier patients. The addition of laser helps promote collagen production, resulting in tighter skin. If done correctly, you get 25% more skin tightening than with regular liposuction."

Dr. Amron, who typically uses the traditional tumescent technique, has also found SmartLipo useful in his practice. "The biggest benefit for me has not been in terms of removing fat," he says. "I prefer my older-fashioned way of debulking fat. But I like the laser's ability to work under the skin to get more retraction thermally. The laser is also able to release the fibrous scar tissue in revisions."

A new device called the HydraSolve Lipoplasty System (hydrasolve.com) was introduced in 2012. It aims to reduce damage to connective tissue and speed fat extraction with a pressurized stream of heated saline solution that circulates within the cannula. The cannula features rounded aperture edges to protect surrounding tissue, and thermal heat is warm enough to liquefy the fat as it enters the cannula, but not hot enough to cause burns.

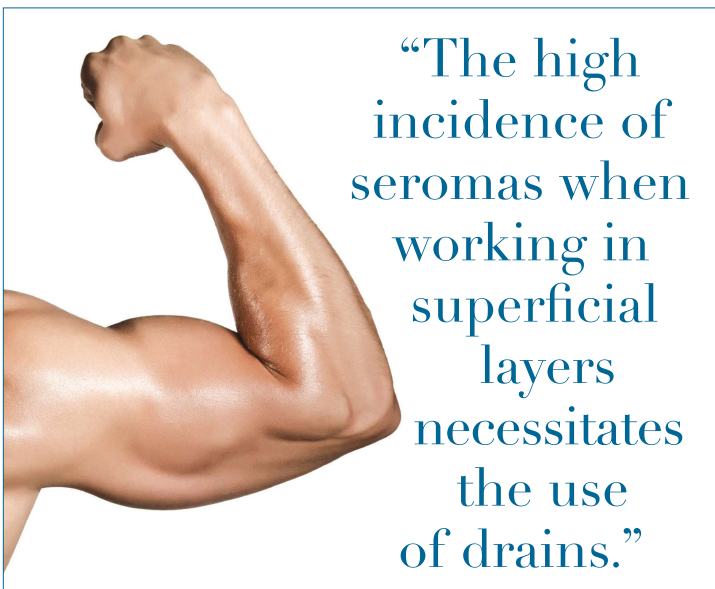
Hi-Definition Contouring

Commonly referred to by the branded names Vaser Hi-Def or 4D Liposuction, the practice of working in both the deep and superficial layers to fine-tune contouring results is gaining in

popularity. In these procedures, surgeons can sculpt six-pack abs or more defined triceps into the patient's body by removing and leaving fat in a specific pattern of hills and valleys. These procedures do require some special equipment. Dr. Amron, for example, uses a specially designed flat-tipped, double-ported 2½ mm spatula cannula just under the surface of the skin to fine-tune and smooth his liposuction results.

Alfredo Hoyos, MD, a Colombian plastic surgeon and international trainer for Vaser, uses a variety of cannulas for the different areas of fat removal and sculpting. "The cannulas that I use are smaller the more superficial I go into the skin," he says. "We can access the deep fat with a 3.7mm or even a 4.6mm cannula. We work in the superficial layer always with a 3mm cannula. The hole pattern is also a big factor. I like the small-hole Mercedes or SST-6 small hole. They are very efficient but also offer low trauma."

These procedures do present additional risks. The removal of the protective layer of fat just under the skin can cause wrinkling, and the high incidence of seroma when working in superficial layers necessitates the use of drains, says Dr. Hoyos. He notes that the best candidates for these procedures are those with a BMI less than 30 who have not undergone massive weight loss. He uses special garments—which he helped design—to reduce the risks of both seromas and wrinkling. "The special garments have different compression areas according to the anatomy, like low compression areas



Study Shows Liposuction Lowers Triglyceride Levels

Could liposuction do more than whittle waists and slim thighs? A study presented at the 2011 meeting of the American Society of Plastic Surgeons suggests it could lower the risk of heart disease. The study followed 322 patients (270 women and 52 men) who had liposuction—with and without abdominoplasty. Triglyceride levels in patients with normal pre-operative levels were unchanged. However, patients who had elevated levels (150 mg/dl or higher) prior to having liposuction performed showed a 43% drop in triglyceride levels.

The patients in the study experienced no decrease in cholesterol or glucose levels, and more research is needed to determine whether the beneficial effects of liposuction are long-standing and do, indeed, reduce the risk of heart disease. "Getting liposuction can provide cosmetic benefits as well as health benefits," says Adam Schaffner, MD, a New York City plastic surgeon. "I would not prescribe liposuction for someone as a method of lowering his/her triglyceride levels. But it's an added benefit." One physicians may want to share with their patients.

in the buttocks, pectoral area in males, and the deltoids," he says. "The main addition compared to traditional garments is what I call a foam vest, that is literally a foam corset that makes a more even compression over the trunk, diminishing the swelling and bruising, and increasing the pressure over the areas that need more pressure."

Postoperatively, he encourages the use of external ultrasound and manual drainage massage every day, for at least 10 days. "We observe that this therapy diminishes the incidence of complications like seromas, fibrosis and contour irregularities, while decreasing the time of recovery," he says.

Lipo + Fat Transfer

Particularly effective in patients who are seeking revision of previous liposuction procedures due to rippling or other irregularities, fat transfer is becoming a popular adjunct to liposuction. Simeon Wall, Jr., MD, of the Wall Center for Plastic Surgery in Shreveport, Louisiana, developed the SAFELipo procedure that combines liposuction and fat transfer. He presented his technique at the American Society of Plastic Surgeons meeting in New Orleans in October 2012. The procedure involves using an exploded cannula without suction to gently disrupt fat prior to aspiration, followed by "fat equalization," which involves transferring fat to correct deformities

in revision surgeries and to create a more equal, balanced look in first-time patients.

Improving Patient Satisfaction

Liposuction has a revision rate of 20% to 25% in the United States, though these rates vary widely from physician to physician. "The biggest risk with liposuction is needing a second surgery because too much or too little fat was taken out," says Dr. Giese.

Avoiding adverse outcomes and achieving high patient satisfaction rates begins with proper patient selection and management of patient expectations. "I'm in this to make the patient happy and have return patients," says Dr. Lahijani. "There are many people I turn away. This is not a magic wand I wave over you." He finds that some patients may be better candidates for other procedures, such as abdominoplasty.

The location of the fat also determines whether or not a patient is a good candidate for liposuction. "A typical example I see a lot is a man with a beer belly who comes in and says he wants liposuction," says Dr. Stevens. "I tell him that liposuction is for fat just underneath the skin, not internal fat. He needs to lose weight and exercise."

While liposuction removes fat, it is typically a method of body contouring, not a weight-loss program, and it is most effective for relatively thin people who have stubborn pockets of fat that can be targeted with liposuction, says Dr. Amron. He looks for areas of disproportion, rather than

Cellulite Reduction

After decades of lotions and noninvasive mechanical attempts to break up stubborn cellulite, new liposuction-related devices have been developed to attack the root causes of this common concern. Cynosure's Cellulaze (cellulaze.com), a 1440nm side-firing laser that cuts the tough fibers that contribute to the cottage cheese appearance of cellulite, was approved by the FDA in January 2012 for the treatment of cellulite. In addition to releasing the fibers that cause irregularities, the laser energy liquefies and removes fat and stimulates collagen production to thicken the dermis. "It's the biggest game-changing technology in the last decade," says Grant Stevens, MD, of Marina Plastic Surgery in Marina del Rey, California. "It's the first treatment for cellulite that really works." A typical treatment takes one to two hours under local anesthesia and patients see smooth results right away.

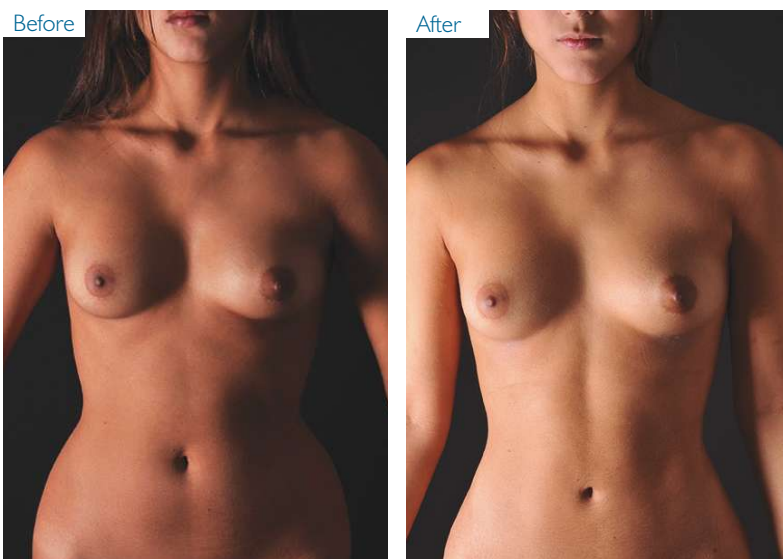
Sound Surgical Technologies offers VASERsmooth probes that are designed to emulsify superficial fatty tissue and cut through hardened fibrous septae that can create the dimpling appearance of cellulite using ultrasound energy. The probes feature a fragmentation edge that can be used during liposuction to selectively cut septae responsible for skin irregularities.

someone who is well proportioned physically but simply overweight. For him, the ideal liposuction candidate would be someone who, for instance, has disproportionately large thighs and who can point to a mother and grandmother with this same tendency. "Liposuction should only be used to create balance and proportion," he says.

Dr. Giese, on the other hand, has successfully used liposuction as part of a weight loss program for patients. She urges her patients to do a detox program prior to liposuction surgery. "Fat is where toxins are stored, so before liposuction is the perfect opportunity to detox," she says. She notes that this detox can result in as much as five pounds of weight loss, after which the patient could lose another seven or eight pounds with liposuction. "Some patients experience appetite suppression after liposuction because their leptin levels are altered," she says, an effect that further enhances her weight loss program.

A Safe Surgical Setting

Another way physicians control the outcome of liposuction is in the choices they make regarding anesthesia, aftercare and the surgical



New technologies allow surgeons to fine-tune their results by working in both the deep and superficial layers.

facility. Though liposuction can be performed under general or local anesthesia, several of the doctors surveyed for this article expressed a preference for local anesthesia when possible.

Local anesthesia offers a faster recovery time, with the patient up and moving around 15 to 30 minutes after surgery, which helps prevent blood clots. It also helps to reduce the risk of another potential complication of liposuction:

perforation of organs. "If a surgeon goes outside the plane of the local anesthesia, the patient lets you know right away," says Dr. Amron. "So there should be no chance of going too deep and perforating organs or major blood vessels."

Local anesthesia also enables better positioning of the patient. Under general anesthesia, the patient is prone and the muscles are flaccid. Local anesthesia allows you to have the patient move to tense or relax muscles as necessary to create a flat plane.

Local anesthesia does have limitations, however. Dr. Amron notes that he can do legs and hips at the same time, or a whole torso, but if a patient wants liposuction on the torso and legs, it requires two surgeries, performed two days apart under local anesthesia to avoid over-saturation with lidocaine. He does not exceed a lidocaine level of 55 mg per kilogram of body weight.

The physicians surveyed favored performing

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liposuction procedures in on-site surgical suites over hospitals. "Hospitals are for sick people, not healthy patients," says Dr. Giese. She has had her own operating room since 2006. "Because it's my own place, I control every aspect of the patient's experience. In the hospital, I lose that control."

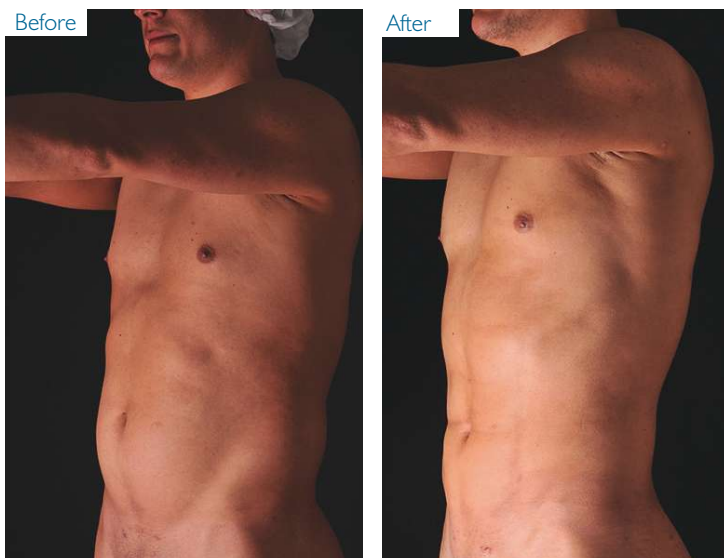
Dr. Schaffner notes that an office surgical suite greatly reduces the risk of infection and patient exposure to hospital-borne MRSA. Dr. Lahijani likes the convenience of a suite for both patients and the doctor. "You can hire the people you want to work with," he notes.

Compression garments are a traditional part of aftercare for liposuction. Dr. Schaffner also prescribes the natural remedies arnica and bromelain to help reduce swelling and bruising. Dr. Amron encourages patients to go for a two-mile walk the day after their procedure, and to incorporate exercise as soon as they feel capable.

New techniques and protocols in the field of liposuction are helping to keep it in the forefront of cosmetic procedures. "We could have done liposuction pretty much anywhere before," Dr. Stevens says. "But we didn't do it as well. The quality of results today is so much better. The new technology gives you more control and finesse."

Despite these advances, the surgeon's skill—and the personal touch he offers his patients—will determine ultimate patient satisfaction, says Dr. Amron: "No tool can guarantee you great results. The skill of the person behind the tool is more important than the technology." ❖

Cindi Myers is a Colorado-based freelance writer who specializes in business and healthcare topics.



The Vaser Hi-Def liposuction procedure allows surgeons to sculpt muscle tone and definition into the body.