

## Body-Jet Modernizes Water-Assisted Liposuction

By Kevin A. Wilson, Contributing Editor

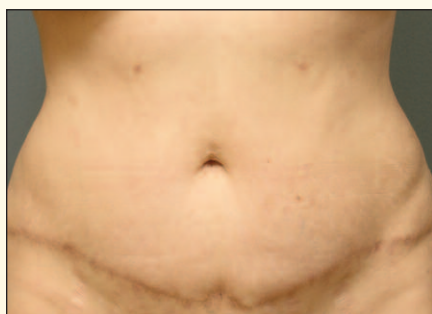
**B**ody-Jet from Eclipse, Ltd. (Dallas, Texas) combines irrigation and aspiration techniques to more effectively displace subcutaneous fat for removal by suction, resulting in a gentler, much less traumatic procedure. This device also features a fat collection system which experts say harvests injectable fat of unequalled quality.

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*"Body-Jet seems to loosen fat cells from each other, so the physician has a much easier time navigating and manipulating the cannula through the fatty tissue."*



Abdomen before Tx



Abdomen after Tx

Photos courtesy of Gordon H. Sasaki, M.D.



Before Tx



After Tx

Photos courtesy of Todd K. Malan, M.D., F.A.C.O.G.

According to Barry DiBernardo, M.D., F.A.C.S. founder of New Jersey Plastic Surgery in Montclair, N.J., Body-Jet was initially developed about a decade ago by human med AG (Schwerin, Germany). Eclipse recently partnered with human med to introduce Body-Jet to the U.S. market. "This is an entirely new addition to the armamentarium for fat removal. Traditional or laser-assisted liposuction is not as gentle on the fat cells. Body-Jet seems to loosen them from each other, so the physician has a much easier time navigating and manipulating the cannula through the fatty tissue. Furthermore, the water spray preserves nearby tissue structures."



Barry DiBernardo, M.D., F.A.C.S.  
New Jersey Plastic Surgery  
Montclair, NJ

Though the technique is known as water-assisted liposuction (WAL), the fluid used is actually a tumescent solution, according to Dr. DiBernardo. "The formula includes both lidocaine and epinephrine. This means the procedure can be done under local anesthesia and you won't see much bleeding, redness or post-operative ecchymosis," he noted. "The procedure involves an intermittent infusion of solution, more of a high pressure spray, through a fan-shaped cannula tip which simultaneously breaks up the cell clusters and suctions them out for either gentle removal or harvesting." Additionally, the procedure only requires about 25% of the volume of tumescent solution normally needed for liposuction. Minimal downtime and relatively rapid recovery are other benefits of WAL with Body-Jet.

Gordon H. Sasaki, M.D., a plastic surgeon in private practice in Pasadena, Calif., explained that the fundamental idea behind WAL is the use of a low pressure, fan-shaped laminar jet to anesthetize tissue at the cannula tip while rinsing out dislodged adipocytes, sparing surrounding functional structures. "The procedure reduces tissue bogginess with the tumescent solution for more efficient fat removal, improved assessment of fat reduction through reduced tissue turgidity, as well as significantly reduced fluid and drug retention."



Gordon H. Sasaki, M.D.  
Plastic Surgeon  
Pasadena, CA

In addition Body-Jet's AquaShape LipoCollector system is expected to revitalize the practice of fat grafting. "While this is not a new procedure, there are good reasons why large volume fat grafting hasn't been expeditious," explained Dr. DiBernardo. "One of the greatest obstacles of fat grafting was the difficulty we experienced in successful harvesting of sufficient quantities of usable, high quality fat. This system not only makes the process much easier, it allows us to collect plenty of usable fat. It won't replace dermal fillers but it's becoming a more viable alternative. Each vial of dermal filler costs a certain amount. Now, with the new AquaShape LipoCollector system, we anticipate a vast supply of autologous filler providing enhanced ease of use."

**Editor's Note:** In the following clinical roundtable, five top U.S. aesthetic practitioners share their knowledge, clinical expertise and insight while discussing treatment with Body-Jet. Collectively, these physicians have dozens of years of experience with fat removal and body contouring technologies.

*"Unlike traditional liposuction, you're not relying on the manual ripping and tearing to remove fat. Instead you're relying on the water to gently release the fat and suction it out at the same time."*

How is Body-Jet different from classic tumescent liposuction or other, relatively similar body contouring techniques currently available?

**Barry DiBernardo, M.D., F.A.C.S.** – Two things that stand out with Body-Jet are the post-operative appearance of the treated area and the harvesting component. By both visual and tactile inspection you can tell that the tissue doesn't go through the swelling or hardening stage and there is minimal ecchymosis. The AquaShape LipoCollector harvests fat extremely well for micro fat grafting.

As to the technique itself, a laser cannula is much smaller, so it can get into smaller areas than Body-Jet, such as the neck. Body-Jet, on the other hand, can handle a much larger volume. With laser-assisted treatment we must also consider the unique skin tightening component, which has been reported in literature. With Body-Jet we're observing skin contraction, which is different. Ultrasound-assisted body contouring is good at getting into thick, fibrous areas, but so is Body-Jet. I basically group these new fat devices into three categories: those for mild, medium or larger fat removal. Mild fat removal encompasses non-invasive machines, lasers are in the middle and Body-Jet would be in the large volume category.

**Todd K. Malan, M.D., F.A.C.O.G.** – Unlike traditional liposuction, you're not relying on the manual ripping and tearing to remove fat. Instead you're relying on the water to gently release the fat and suction it out at the same time. It's effective and safe. Results are excellent and recovery time is decreased. When blood vessels, lymphatics and other surrounding tissues aren't damaged, the body recovers much more rapidly. Body-Jet allows us to remove large quantities of fat without sabotaging the body's normal healing response as much, which is part of why the harvested fat is of such a high quality.



**Todd K. Malan, M.D., F.A.C.O.G.**  
Founder  
Innovative Cosmetic Surgery Center  
Scottsdale, AZ

**Jeffrey Caruth, M.D.** – As Dr. Malan once explained to patients; fat cells are like grapes on a vine beneath the skin. Under a microscope, each fat cell looks like a grape and the vine is the connective tissue. Lasers go through and pop each one of the grapes, thus releasing a liquid that we then remove via suction. Suctioning leaves a lot of dead cellular material which causes swelling as part of the body's natural waste removal process. Conversely, Body-Jet knocks the grapes off the vine, so we don't damage the blood vessels or the connective tissue. We see patients at three or four weeks post treatment that have minimal to no inflammatory response. This promotes better retraction so we observe much tighter skin and a much smoother result. We don't see the lumpiness that normally occurs with traditional, ultrasound or laser-assisted liposuction.



**Jeffrey Caruth, M.D.**  
Plano Aesthetics  
Midway Medical Center  
Plano, TX

**Robert H. Gotkin, M.D., F.A.C.S.** – The biggest single difference between Body-Jet and classic tumescent liposuction is that you don't need the traumatic negative pressure to remove the fat. Body-Jet uses pulsating tumescent solution that provides local anesthesia in



**Robert H. Gotkin, M.D., F.A.C.S.**  
Cosmetic Surgeon  
Manhattan, Greenvale and  
Long Island, NY



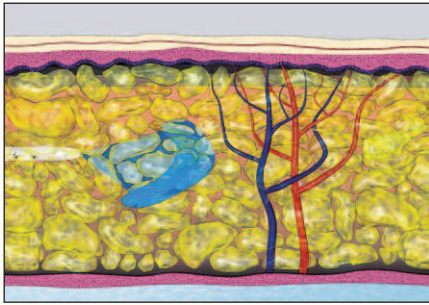
Inner and outer thighs before Tx



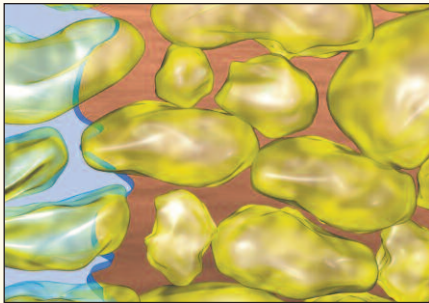
Inner and outer thighs after Tx

Photos courtesy of Gordon H. Sasaki, M.D.

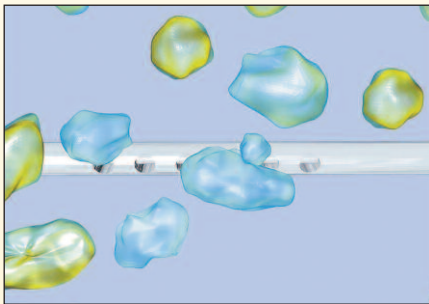




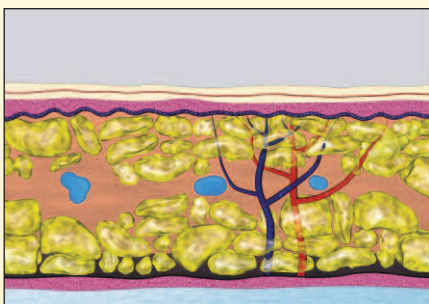
Infiltration



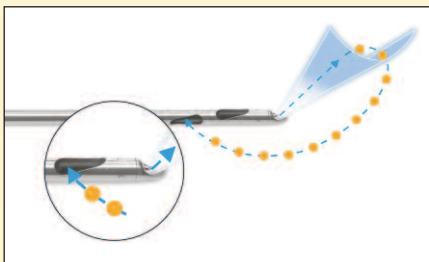
Fragmentation



Infiltration and Aspiration



Result of Liposuction



Principle of fan shaped water jet

*“WAL represents a new algorithm in the continuous development of liposuction technology.”*

the treatment area and also gently dislodges fat. You can aspirate while simultaneously using this pulsating spray of tumescent solution (or you can change to normal saline once you have adequate anesthesia), which allows us to use half the negative pressure. Another big difference between Body-Jet and energy-assisted techniques is that energy-assisted techniques require a much lower negative vacuum pressure to draw off the fat. Energy-assisted techniques destroy the fat, so it's not usable for anything else. Body-Jet preserves the integrity of the fat cell so the fat can be used for transplanting.

**Gordon H. Sasaki, M.D.** – WAL represents a new algorithm in the continuous development of liposuction technology, and requires physicians to rethink their previous conceptions of traditional or energy-assisted liposuction. Body-Jet technically belongs in the category of energy-assisted methods. It increases tissue tightening and elasticity while significantly shortening recovery time and morbidity for the patient.

What areas of the body can be treated with Body-Jet?

**Dr. Gotkin** – We're treating all the same areas with Body-Jet that we would with traditional liposuction, including abdomen, hips, flanks, thighs and arms. Body-Jet also works well for men with gynecomastia.

**Dr. Caruth** – As with any body contouring device, the abdomen is probably the most commonly treated area, but the lower back, thighs and arms can also be treated with Body-Jet.

**Dr. Malan** – Generally, for the vast majority of patients that are dealing with larger pockets of fat, such as abdominal fat, fat within their flank area or legs, the Body-Jet is truly a superior tool for dealing with those areas.

**Dr. Sasaki** – Body-Jet is useful for primary and secondary liposuction procedures, at both localized and generalized areas of adiposity as long as there isn't too much laxity, which would diminish retraction.

What are your pre- and post treatment protocols?

**Dr. Sasaki** – Pre-operative protocols are similar to those of any liposuction technique; however, Body-Jet is safe enough to be performed exclusively under local anesthesia in a clinical setting. Some physicians may wish to use general anesthesia which won't hurt the procedure. Post-operatively I will implant a passive quarter-inch Penrose drain into one of the dependent openings to facilitate drainage for the first 24 to 48 hours. I either close remaining openings with a single suture or leave them to heal themselves. Patients are dressed with a foam sponge insert and compression garment to be worn for two or three weeks, with standard antibiotics and pain medications given for three days. Most patients resume normal activities within one to three days.

**Dr. Gotkin** – I believe that with any kind of liposuction technique, whether it's traditional tumescence, energy-assisted, water-jet assisted, radiofrequency or ultrasound, the external compression you get from a garment is key for molding the results you seek post-operatively.

*"When suctioning with Body-Jet, the fluid load is minimal so you have a much better feel for the results you're achieving while the patient is right there on the table in front of you."*

**Dr. Caruth** – My patients wear a compression device for at least two weeks, which is probably adequate for most patients and shorter than what's recommended for other devices by several weeks, if not months. It's different for a heavier patient who requires three to four weeks of compression.

What benefits have you observed for both the physician and patient with Body-Jet?

**Dr. Caruth** – Patients have less pain and recovery time is much shorter. In a week or two, patients look like those who are two to three months out of regular liposuction. Since this technique doesn't damage connective tissue, the skin can retract and create smoother contours with fewer irregularities. You're using more fluid to perform the procedure, but you're leaving behind a very small percentage of fluid compared to traditional or laser-assisted liposuction. Therefore, it's very easy to assess the patient intraoperatively for contours and irregularities.

**Dr. Malan** – Patients don't have to wait several months. Body-Jet achieves results within one month with a touch-up rate of less than 1%. Also, Body-Jet uses significantly less lidocaine than traditional liposuction and laser procedures, so one of the largest liposuction risks is eliminated, which is something everyone should be concerned about.

**Dr. Sasaki** – For the physician, the procedure is much less labor intensive than some other techniques. It is also safer in terms of the tumescent fluid load and drug load due to the way the technique is performed. Blood loss is almost imperceptible.

Please share your specific experience of how this water-jet method enables a more effective result for your patients.

**Dr. Caruth** – Patients get great results. There's no damage to the connective tissue so skin retracts very well. Instead of taking three months to heal, many people see good results in four to six weeks.

**Dr. Sasaki** – When suctioning with Body-Jet, the fluid load is minimal so you have a much better feel for the results you're achieving while the patient is right there on the table in front of you. This means you're much more likely to provide the patient with the best result the first time; therefore, retreatment rates are much lower.

**Dr. Gotkin** – Body-Jet is simply a less invasive liposuction technique. There are three game changers that I think this technique has brought to the table. First, you don't have to use the classic tumescent technique. Second, you can use low negative pressure and aspiration just like the energy-assisted techniques without destroying the fat cells, which makes it a less traumatic procedure, thus recovery easier. And third, the fat harvesting enables fast, efficient and easy collection of autologous fat for transplantation.

Please discuss the safest maximum volume removal with WAL.

**Dr. Malan** – Most physicians are following the standard five liters of aspirated fat as the maximum volume that can be removed. I think this is very prudent. I am sure that removing more would be possible because the concerns associated with removing more than five liters of fat with regular liposuction, would probably not occur with Body-Jet. Nevertheless, we still tend to abide by those standards.



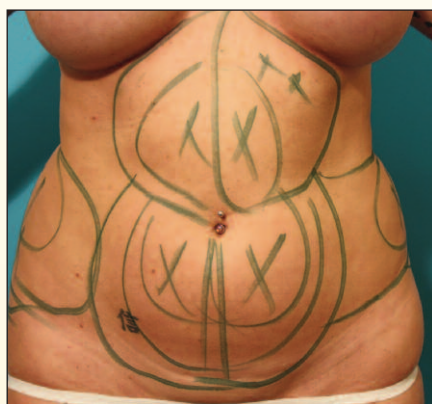
Before Tx



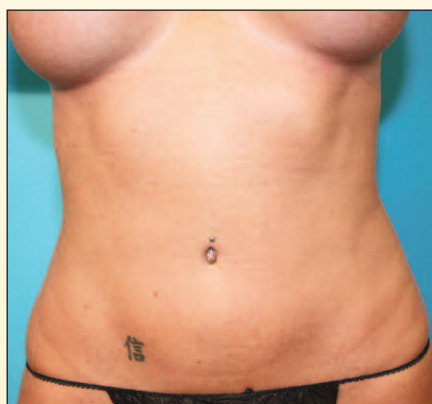
After Tx

Photos courtesy of Jeffrey Caruth, M.D.

*"Patients who have previously been through classic tumescent liposuction say that recovery is much easier with Body-Jet and there is less bruising."*



Before Tx



After Tx

Photos courtesy of Todd K. Malan, M.D., F.A.C.O.G.

**Dr. Caruth** – Body-Jet is not limited to a liter or two. You could probably safely remove ten liters, but that's subject to your state's regulations. Since you're not using large volumes of fluid to infuse tumescent solutions, you're infiltrating very small amounts of medication for anesthesia in the beginning and then using more fluid during the procedure. However, you're removing 90% of that suction fluid, which is much greater than with traditional techniques. You're not causing fluid shift problems, or absorption of high amounts of medication that could occur with tumescent techniques. Personally, I perform all treatments under local anesthesia, thus eliminating the risks associated with general anesthesia.

**Dr. DiBernardo** – We still go by the American Society of Plastic Surgeon's (ASPS) guideline of 5,000 cc of fat. However, this device has completely different fluid dynamics. Although we're injecting a lot of fluid, we're removing a lot of fluid. Studies have been initiated that will soon refine the lidocaine/epinephrine levels for this device.

#### Have your patients been satisfied with their Body-Jet treatments?

**Dr. Gotkin** – Patients who have previously been through classic tumescent liposuction say that recovery is much easier with Body-Jet and there is less bruising.

**Dr. DiBernardo** – Patients who have had previous treatment with traditional liposuction comment that recovery, downtime, the treatment experience and the result seem to be more favorable.

**Dr. Malan** – Body-Jet is so gentle that even in patients who had a lot of scar tissue and trauma from previous liposuction procedures, we were able to clean up that old trauma and damage to provide the result they weren't able to get the first time.

**Dr. Sasaki** – Patients are generally very satisfied with Body-Jet. Treatment time is somewhat reduced for a variety of reasons, including that at some point you are simultaneously infiltrating with fluid as well as aspirating both fluid and fat. Based on our patient tracking, the amount of medication patients need after the procedure is almost nothing in the first 24 hours. They're back to work or normal activity in one to three days. The results tend to be better, with much less need for revision.

#### How does the AquaShape LipoCollector differ from fat harvesting methods of the past?

**Dr. Sasaki** – Fat harvesting is superior with the AquaShape LipoCollector because the stem cells' pre-adipocyte and mature adipocyte populations are more likely to be collected in a viable form. Cells are less exposed to mechanical stress, local anesthetic and cellular edema. The testing we've performed using blue dye has shown viability levels as high as 90%. Also, the device is fully autoclavable, allowing cells to be easily collected and processed automatically during liposuction without centrifugation.

**Dr. Caruth** – Older fat harvesting methods required an additional technique to separate out the healthy fat cells. With this new technology, you take the sterile fat from the lipocollector, draw it up through a syringe and inject it. You get a very high rate of fat cell survival versus older methods where 50% or less may survive. We're observing upwards of about 80% autologous fat survival with the AquaShape Lipocollector.



*"The device causes minimal damage to the patient and minimal damage to the fat, so we are seeing far better quality and quantity of fat, with much better fat cell survival."*

**Dr. DiBernardo** – The fat cells are washed, leaving them with fewer oils and particulates. Mechanical liposuction pulls out clumps of cells, but this device pulls out much smaller particles. So there are fewer air spaces and therefore a more compact aspirate, which is an advantage when you start talking about micro fat grafting.

**Dr. Gotkin** – Virtually nothing has to be done to process the fat. The device gathers the fat in a chamber within the collection device and routes the tumescent fluid elsewhere, separating the fat from the tumescent fluid. Therefore, what you're collecting is basically pure autologous fat.

#### How has this fat harvesting feature influenced your fat injection practice?

**Dr. Malan** – I began using the Body-Jet machine for the sole purpose of harvesting fat. I tested the fat's quality and it was truly remarkable. The device causes minimal damage to the patient and minimal damage to the fat, so we are seeing far better quality and quantity of fat, with much better fat cell survival. When I realized that my patients were experiencing no inflammation or swelling at one month and seeing great skin retraction, I began to use it on every patient. I'm one of the few in the country who uses the fat for breast augmentation.

**Dr. Caruth** – Body-Jet is the best technique available right now to harvest fat for transfer to other areas. I'm currently using it for fat transfer in many body areas, including the face, hands and buttocks. I'm getting ready to start doing breast augmentations with fat as well.

**Dr. Gotkin** – The fat harvesting aspect facilitates the procedure so much that I am routinely offering it to just about every patient that has liposuction now. They often jump at the opportunity.

#### How else has Body-Jet transformed your practice?

**Dr. DiBernardo** – It's still early, but each week we get more calls about it. The big thing it will do for my practice is open up the plus/minus system. For the last 15 years, we could only subtract fat from the body. We did a little fat grafting, but this device is going to really open up that part of the practice.

**Dr. Malan** – Our motto is under promise, over deliver, and because of that, I used to have to turn away probably one-third of my patients for surgery. Now, I'm able to bring them back into my practice and say I've got a tool that can help them.

#### What tips would you give to other physicians considering Body-Jet?

**Dr. Caruth** – Like anything else, there needs to be some basic liposuction training prior to using Body-Jet. However, the risk of burning or causing other serious injury to the patient is far less compared to other types of liposuction.

**Dr. Malan** – If you're new to liposuction, being trained on how to use the Body-Jet is easy because you'll have no preconceived notions of how the procedure should be done. The experienced liposuction surgeon will need to spend time with an experienced Body-Jet physician for the opposite reason, but once you learn to slow down and let the machine work, you'll see it does an amazing job.



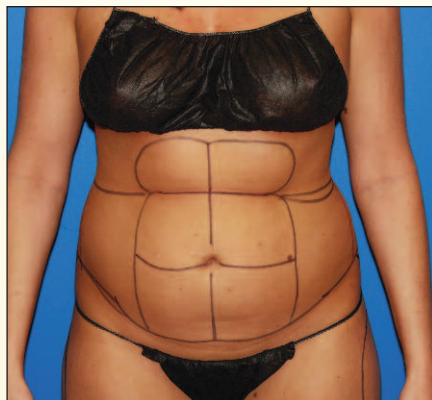
Before Tx



After Tx

Photos courtesy of Todd K. Malan, M.D., F.A.C.O.G.

*"The AquaShape LipoCollector is without a doubt the best, most efficient method of collecting high quality autologous fat that I've seen over the last 20 years of plastic surgery."*



Before Tx



After Tx

Photos courtesy of Jeffrey Caruth, M.D.

**Dr. DiBernardo** – Body-Jet requires a completely different thought process because it's a whole new category in the fat removal department. Be open minded, give it a try and when you see what patients look like after treatment, you will have a better idea of the advantages.

**Dr. Gotkin** – If you're considering this device, one huge advantage over other devices is that it gives you the ability to add on the autologous fat transfer procedure. It may be more costly than going out and buying equipment for classic liposuction, but patients are looking for 21st century technology. They're looking for quick, more comfortable recovery, minimal downtime and less bruising.

**Dr. Sasaki** – One thing we do to reduce the chance of toxicity problems is eliminate the Xylocaine from the procedure during the second and third phases of treatment. After the initial application you just don't need the anesthesia in later phases. Also, it's critical that the spray has a 30° angle to it. We first work in the deep level against the fascia with the spray turned upward, moving slowly so you have enough time for both infiltration and aspiration. As you work up underneath the skin toward the surface, usually within about 5 mm of the dermis, you have to turn the cannula away from the skin so you leave some fat there. Controlling the direction of the spray in this manner promotes the most efficient removal of fat.

What final thoughts would you like to share?

**Dr. Caruth** – Body-Jet is a very useful tool for body contouring compared to the other options out there. About 90% of my cases get Body-Jet because it's so effective. I like lasers for skin tightening, but I prefer Body-Jet for body contouring.

**Dr. Gotkin** –The AquaShape LipoCollector is without a doubt the best, most efficient method of collecting high quality autologous fat that I've seen over the last 20 years of plastic surgery.

**Dr. Malan** – Even in tough economic times having a tool that provides great results in every patient with minimal downtime and minimal touch-up, that's what's really going to help you build your practice rapidly.

**Dr. DiBernardo** – Dealing with fat in the future will be comprised of multi-modalities for the different requirements of each patient. My suggestion is expand the breadth of your body contouring treatment practice. I'm not saying buy everything you can get your hands on, but at least investigate one technology from each category because unique technologies, such as Body-Jet, are available and can provide an advantage to your patients and practice.