



The First and Only Robotic Hair Transplant System

The ARTAS® Robotic System brings a new level of precision to hair transplantation

By Wendy Lewis



More than 35 million men in the United States experience hair loss, and until recently, their options for hair restoration surgery included concern with an unnatural-looking outcome, pain, and a visible linear scar across the back of the head.

The ARTAS® Robotic System is the first and only system to offer a minimally invasive robotic outpatient hair transplant procedure. This physician-assisted hair transplant procedure utilizes intelligent algorithms and advanced digital imaging to select the most viable individual hairs from the back of the patient's head to transplant to the thinning



Before ARTAS Procedure / 12 Months After ARTAS Procedure
Photos courtesy of the New Horizons Center for Cosmetic Surgery, Gregory A. Turowski, MD

areas. The unique two-step dissection system produces healthy grafts while avoiding a linear scar and maintaining the natural appearance of the patient's donor area.

SPEED AND PRECISION BEYOND MANUAL TECHNIQUES

Using image-guided robotics, the physician-assisted ARTAS Robotic System precisely dissects follicular units thousands of times in a single session. Developed to extend the capabilities of the physician, the ARTAS Robotic System enables consistently better, reproducible outcomes.

Physicians can harvest follicular units with speed and precision far beyond manual techniques with great efficiency, and eliminate variables associated with human fatigue.

According to plastic surgeon Gregory Turowski, MD, FACS, in Chicago, "As a plastic surgeon for almost 20 years, I didn't get into hair restoration until about 7 years ago with FUE. This new technology allowed us to create grafts without long scars. Then the ARTAS System came on the scene, and I believed that it was going to be the future of hair restoration. We have treated several hundred patients over 3 years, and can now harvest about 1,000 grafts per hour. Our average case is 2,000 grafts and takes 8 to 10 hours. The speed of harvesting has increased significantly with the experience we have gained."

There is definitely a trend to do more modern hair restoration surgery and to avoid the strip procedure, Turowski says. "It reminds me of my years as an intern in general surgery when laparoscopy came around, which was entirely new. Now, it has replaced open surgery in many areas. This is exactly what is happening now with hair restoration."

There is a learning curve with new instruments, but the ARTAS System is straightforward to adopt in clinical practice. According to Craig L. Ziering, DO, founder and medical director, Ziering Medical in Beverly Hills, Calif, "The entire robotic procedure is extremely efficient once you are competent at using the complete ARTAS System with all of its features and benefits, including the newly

available ARTAS Hair Studio." He goes on to explain that, "The more experienced you are in hair restoration surgery, the shorter the learning curve."

"With the ARTAS Robotic Procedure, the doctor designs and directs the whole plan and procedure, from the harvesting phase to recipient site creation," Ziering continues. "During the harvesting phase, the doctor determines the appropriate spacing to use, and the robot makes automated adjustments for the angle and puncture depth for each of the grafts. At any time during this process, the physician can choose to override what the robot is doing and adjust the appropriate angle based on ethnic or hair quality variation."

The robotic procedure is widely considered state of the art in hair restoration, because it offers the doctor many advantages. "It gives the physician the most precise method for extracting grafts and the ability to reproduce precision extraction of high-quality grafts over and over again without experiencing fatigue," Ziering says.

Dermatologist David Berman of the Berman Gladstone Institute in Palo Alto, Calif, also stresses that human fatigue during a long procedure is a definite concern. "The robot can continue to do procedures all day long without the problems of carpal tunnel syndrome and backaches," he says.

THE ARTAS HAIR STUDIO™ APPLICATION

The ARTAS Hair Studio™ application (AHS) is designed to be used interactively with patients during their consultation. It provides various simulated hair pattern design options to allow the physician and the patient to strategize together and develop the optimal hair design. The design can then be transferred to the ARTAS Robotic System, where it will be delivered under physician supervision.

According to Ziering, "The new ARTAS Hair Studio adds considerable value to the consultation process by helping patients actually visualize their future results. For patients who are not sure about what hair transplants can offer them or for those who have unrealistic expectations, the surgeon can illustrate the new hairline through this virtual 3D representation."

“Patients often point to their forehead saying, ‘I want my hairline here,’ but they have trouble visualizing what it actually will look like. For example, it may be too feminine or not age appropriate. ARTAS Hair Studio eliminates much of that uncertainty. It also educates prospective patients on possible graft numbers needed to achieve the results they are expecting. We can show them what 1,000 or 2,000 grafts will look like. Up until now, there hasn’t been a reference point for patients as to what that means to them specifically.”

He continues, “It is a valuable aid for the surgeon to establish the hairline pattern for a patient, the necessary number of follicular units, and to evaluate if the plan is realistic based on an evaluation of their donor area. All of that data is uploaded into the robot to develop recipient site designs guided by the physician.”

“Some patients have unrealistic expectations; they want more hair than they ever had. You are essentially taking a smaller amount of hair from the ‘safe donor zone’ at the back of the scalp and placing it over a much larger area,” Ziering says. “If a patient wants to wear his hair short, he won’t want a linear scar, so those patients are better candidates for procedures with the ARTAS System.”

Berman recently introduced the ARTAS Hair Studio into his practice. “It is a nice adjunct during our consultation with patients. It is a tool that allows us to interface with the patient, and in real time plan a hair design that both the doctor and patient agree is optimal, and which can be uploaded to the robotic system and used to trigger the recipient site making by the robot. This enhances the procedure and allows the patient to provide rapid input throughout the design process, and allows us to make aesthetic changes prior to the procedure.”

In addition to making sure the patient has a positive experience, Berman says, ARTAS Hair Studio overcomes some consultation challenges, such as optimum number of grafts, impact of different numbers of grafts, graft placement, and hair density in the area to be treated. “The key question we get is whether it will give them the outcome they desire. By using interactive software during the consultation process prior to surgery, we can give

ARTAS® Robotic System Advantages:

- Enhanced precision and speed;
- Permanent, natural results;
- Little to no downtime;
- A virtually pain-free experience;
- No linear scarring across the back of the head or stitches are required;
- Men are able to wear their hair in any length or style without concern about concealing scarring; and
- Minimally invasive harvesting preserves the natural look of the donor area.

patients a simulated realistic idea of what their ultimate outcome will be. Some patients have too high expectations and don’t realize how many grafts are required to create the density they desire. This software application is a unique tool to give patients a realistic picture of their potential outcome,” according to Berman.

By designing the implantation angle and direction of hairline, hair surgeons can meet patients’ requests for proper parting of the hair and the optimal direction of the hair. Berman explains, “Recipient site-making technology has arrived, and we have been telling patients that this was coming. Patients will be knocking down our door to have this tool. One of the other benefits is the ability to prevent damage to healthy hair.”

“One of the big benefits of the procedure is that it doesn’t result in a gaping wound on the back of the head that needs sutures, and does not require multiple procedures increasing the width of the scar over time,” Berman continues.

“ARTAS is definitely something that attracts men who are interested in technology,” Turowski says. “They research online and find out that this is the most advanced and reliable technology, and that it will be the best for them. About 20% of patients we see are men who have had previous strip surgery but don’t want another strip procedure to avoid widening the scars. They are terrified of the pain and downtime of the strip procedure, so they want a painless procedure with the robot. Most patients do not even take pain medications with the robotic system. They can go back to work within about 3 days.”

According to Dallas plastic surgeon Mark Bishara, “We have had the device since 2012. It has been very fruitful for plastic surgeons who have some knowledge of hair restora-



ARTAS Hair Studio is an interactive 3D patient consultation tool.



Before ARTAS Procedure / 10 Months After ARTAS Procedure
Photos courtesy of the Hair Sciences Center of Colorado, James A. Harris, MD, FACS

tion to facilitate the workflow by allowing us to do multiple cases in one day because we can delegate the work to the robot. So far, we have done up to four cases in one day. The robot allows us to stagger multiple procedures at certain times, so that we can use the robotic portion throughout the same day on different people.”

“One of the main advantages of this system is that it is going to allow you to produce grafts that can be transplanted with very little external dissection and little trimming of the grafts,” Bishara says.

PRACTICE GROWTH DRIVER

According to Berman, “There is no question that the robot is driving patients of all ages to our practice. Patients we may have turned down before are now better candidates for the robotic procedure. This rapid healing approach has widened the appeal to patients, and a younger population is knocking down our door asking for the ARTAS procedure. In Silicon Valley, patients are informed, and if we do not offer this, they will go somewhere else to get it.”

“We have 60 lasers in our practice, but I have never had such a sophisticated piece of medical equipment in 21 years of practicing dermatology,” he continues. “This is the first time ever a fully automated robot has been used in any field of medicine. This is different from other technologies that require the doctor to be triggering the device. You push the ‘go’ button, but the intelligent algorithms on the robot make it a fully automated procedure.”

Bishara agrees. “At first we did some AdWord campaigns, but we don’t need to pay for advertising anymore. Now, a large majority of patients are coming through the ARTASHair.com website,” he says.

The ARTAS procedure is also well suited for younger patients just starting to do their research. They may investigate their options, start by taking medication, but are worried about long-term loss. As Berman says, “I have less concern performing procedures in a younger population in whom we can harvest 1,500 grafts and not be as limited in the donor area as we would with a strip technique. We can expand the donor area, so we can

treat people at a younger age who have better inventory.”

“Another group of patients who are attracted to the robotic technology are those who have had prior procedures. They are better candidates for further procedures with ARTAS because it does not require closure of an incision site which may restrict what the surgeon can do on the back of the scalp. We harvest with impunity on the sides of the scalp without delivering a linear scar.”

“You get what you pay for,” Berman continues. “Although it is more expensive for patients, the ARTAS robotic procedure delivers better outcomes than anything I have ever seen. It is the most effective, sophisticated, and advanced piece of medical equipment I have ever used in my practice, which is heavily device oriented.”

“We are thrilled with the device, and patient satisfaction has skyrocketed where the vast majority have their hair procedure done with the robot. Eighty-five percent of our patients are asking for FUE, and of those patients, 90% are asking for the robot,” he says.

THE FUTURE OF HAIR RESTORATION

The evolution of the ARTAS Robotic System has occurred in phases. According to Bishara, “First was dissection and harvesting of grafts. Next is recipient site making, which is a precursor to implantation. Making the site by automating the process of creating a hole where transplants will ultimately end up is the Holy Grail. This is where the art comes into play.”

There is a lot of excitement among surgeons over the future of this technology. “Being able to create sites is a very interesting part of the ARTAS Robotic System procedure. It seems very promising and an excellent addition for patients. ARTAS Hair Studio will offer the opportunity to design the hairlines and create the sites,” Turowski says. ■

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