

MANE ATTRACTION

Creating natural-looking results for hair restoration patients.

CHANGING A HAIRSTYLE—whether through cutting, dying or restyling—can dramatically change a person’s appearance. It is no wonder then that hair loss has such a profound effect on many patients. A receding hairline or the emergence of bald spots can significantly alter the way someone looks and, in some cases, how they feel about themselves. In fact, there has been a 64% increase in patients seeking hair restoration treatments worldwide since 2006, according to the International Society of Hair Restoration Surgery (ISHRS) 2015 Practice Census Results.

“Medical hair therapies are extremely important for those losing their hair,” says James Anthony Harris, MD, medical director of the Hair Sciences Center of Colorado in Greenwood Village. “Hair loss is a progressive condition. Once it starts there is virtually no chance that it will stop on its own.”

By Daniel Casciato

Surgical hair restoration—removing and grafting hair follicles from one location to another—remains the most effective treatment for hair loss. However, there is a limit to how much donor hair is available in any patient, warns Dr. Harris, who notes that in the advanced stages of hair loss there may not be enough donor hair to return all balding or thinned areas to a full, thick density. Instead, there will likely be a point at which a patient will have to choose between transplanting a smaller area with a higher density of follicles or transplanting a larger area with lower density.

“Most patients will likely have multiple surgeries over the course of their lifetimes,” says Dr. Harris. “These may be needed to either increase hair density from a prior procedure or to fill in new areas of thinness or baldness.”

Today, surgery is joined by other, less invasive treatments including topical scalp treatments, red light devices designed to stimulate follicles, and oral supplements. While most patients will not regrow a substantial amount of hair, these noninvasive hair restoration techniques are effective at slowing the loss process and can assist in supporting follicle health following transplantation.

strip of tissue is removed, scarring is minimal—typically with multiple tiny scars less than 1mm in size.

“The advantage of FUE is not that you get a better result or your hairs are more robust,” says Dr. Boden. “The advantage is that patients have the flexibility of wearing their hair in a shaved or low buzz cut because you don’t see a line where the hair was removed. You just see little dots.”

Michael Wolfeld, MD, a board certified plastic surgeon at Bernstein Medical Center for Hair Restoration in Manhattan, utilizes both techniques in his practice.

“There are indications for each type of procedure, but we perform all our FUE procedures utilizing the ARTAS robotic system,” he says. “In general, patients with tighter scalps, who are more physically active and want the option of keeping their hair short in the back, are better candidates for the FUE procedure. I have a full discussion with the patient and perform a comprehensive exam of their scalp prior to determining the appropriate type of procedure for that individual.”

In about 95% of cases, Dr. Harris performs the graft harvest FUE method. He uses either the ARTAS robotic

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FUT OR FUE?

At the Hair Restoration and Aesthetic Medicine Center in Wethersfield, Connecticut, Scott A. Boden, MD, offers both follicular unit transplantation (FUT, or strip method) and the follicular unit extraction (FUE) technique.

“With hair transplantation, the genetically stable hairs that are not going to fall out are the ones on the sides and the back,” says Dr. Boden. “Those hairs are removed and re-implanted into areas of hair loss. We situate them to create an aesthetically pleasing hairline that looks natural, blends in and stands the test of time.”

The FUT procedure involves removing a thin strip of tissue from the back of the head, about a centimeter wide. The donor hair follicles are then extracted and harvested one by one from this strip before being individually re-implanted in the scalp.

With the FUE procedure, each follicular unit is individually removed from the back and sides of the scalp in a random fashion by a manual, automatic or robotic device. Since no

system (Restoration Robotics) that he helped develop or the Surgically Advanced Follicular Extraction (SAFE) System—a handheld, motorized punch technology designed to reduce the risk of damage to the hair follicle—that he invented.

“For the remaining 5% I use the strip harvest technique,” says Dr. Harris. “I find that patients prefer the less invasive nature of FUE, the more rapid recovery and the flexibility of wearing their hair short without a visible linear scar.”

Though the ARTAS robotic system—which uses a mechanical arm to perform the follicle extractions—helps to reduce physician fatigue, many surgeons still prefer to harvest their own grafts with handheld devices. Barry DiBernardo, MD, medical director of New Jersey Plastic Surgery in Montclair, performs FUE with semiautomatic devices rather than robotic ones. He uses the SmartGraft (Vision Medical) and NeoGraft systems, because he finds that they offer greater control over the location, thickness and angle of the transplanted hair. Using an automated



Male patient before and after surgical hair restoration. Single grafts were placed at the front followed by progressively thicker grafts behind to create a natural-looking hairline.

tool, he removes hair follicles and places them into a harvesting canister, where they are carefully preserved until it is time to implant them into the scalp.

"The SmartGraft and NeoGraft help us tremendously in being able to provide more precise results," he says. "They allow for a better survival rate for harvested follicles, meaning that in many cases fewer need to be removed."

CREATING A NATURAL HAIRLINE

No matter the technique used to extract the healthy follicles during hair restoration surgery, it is up to the physician to place transplanted follicles in a way that is indistinguishable from the patient's naturally occurring hairline. In order to achieve a natural look, providers must understand the normal aging progression.

"A mature male hairline generally has the frontal edge one fingerbreadth above the upper forehead crease at the midline, and about two to three fingerbreadths of recession at the temples," says Dr. Wolfeld.

To mimic natural hairlines, which tend to be irregular, Dr. Wolfeld places the finer (one-hair) grafts at the front with a forward-pointing angle similar to the natural hair—not radial or to the side.

While physicians often speak of the artistic skill required to make the frontal hairline appear natural, Dr. Harris offers a different perspective. He asserts that the creation of a natural hairline requires the physician to follow basic principles that imitate nature, not to be "creative."

"The first step is the placement of the hairline at a position that is appropriate for the patient's age and accounting for the progression of hair loss," he explains. "In addition, it is important to adjust the hairline to the patient's facial shape and make adjustments for their sex and ethnicity.

"Finally, the location of specific grafts is critical," continues Dr. Harris. "For example, the finest or thinnest single hair grafts are placed near the anterior border of the hairline followed by thicker single hair grafts. As the placement of grafts moves posteriorly, two hair grafts are placed, then three and four hair grafts. We are creating a thinner transition zone at the front and moving to a more defined density zone behind the transition zone. Again, the idea is to mimic how nature creates hairlines."

While there are general aesthetic parameters in terms of where the hairline should be positioned, Dr. Boden says some of the challenges in creating a natural-looking result have to do with what is going to look most natural for each individual over time. "For a 40-year-old man who has frontal hair loss, the idea is to establish an aesthetic, natural appearance that is going to stand the test of time," he says. "Because even if the rest of his hair thins over time, that hairline is going to be permanent since we have taken that hair from the back of the head and re-implanted it. We're not trying to re-create a 15-year-old hairline on a 40-year-old guy; we're trying to do something that will look age appropriate over the course of his lifetime."

MALE VS. FEMALE HAIR LOSS

Though men make up the majority of hair restoration patients, hair loss is not limited by gender. Many women will also experience hair loss as they age, and more are seeking help. The ISHRS Practice Census noted that in 2014, 15.3% of all hair restoration surgery patients worldwide were female—an increase of 11% since 2006.

"Women are in a different situation," says Dr. Harris. "They are often not good candidates for surgical intervention, because the thinning occurs both in the scalp

and in the traditional donor areas.” The poor quality of the graft follicles cannot create a reasonable result in the transplanted area.

However, approximately 40% of women with female pattern hair loss are candidates for restoration surgery. “In women who simply have high hairlines or temple recessions, most are very good candidates for hair restoration surgery,” says Dr. Harris. “These patients could opt for either strip harvest or FUE.”

For men with androgenic hair loss, Dr. Wolfeld finds that the most effective medical options to maintain and thicken their hair are finasteride, platelet rich plasma (PRP) therapy and minoxidil. For women with hair loss due to genetic factors, he finds that minoxidil, PRP, low level laser therapy (LLLT) and spironolactone can be helpful.

“With women there can be other underlying factors that cause thinning or shedding of hair,” says Dr. Wolfeld. “These include changes in diet, iron deficiency, thyroid condition, the type of birth control or other oral medications they may be taking, and stress. These potential causes should be evaluated and any deficiencies corrected in order to improve hair thickness.”

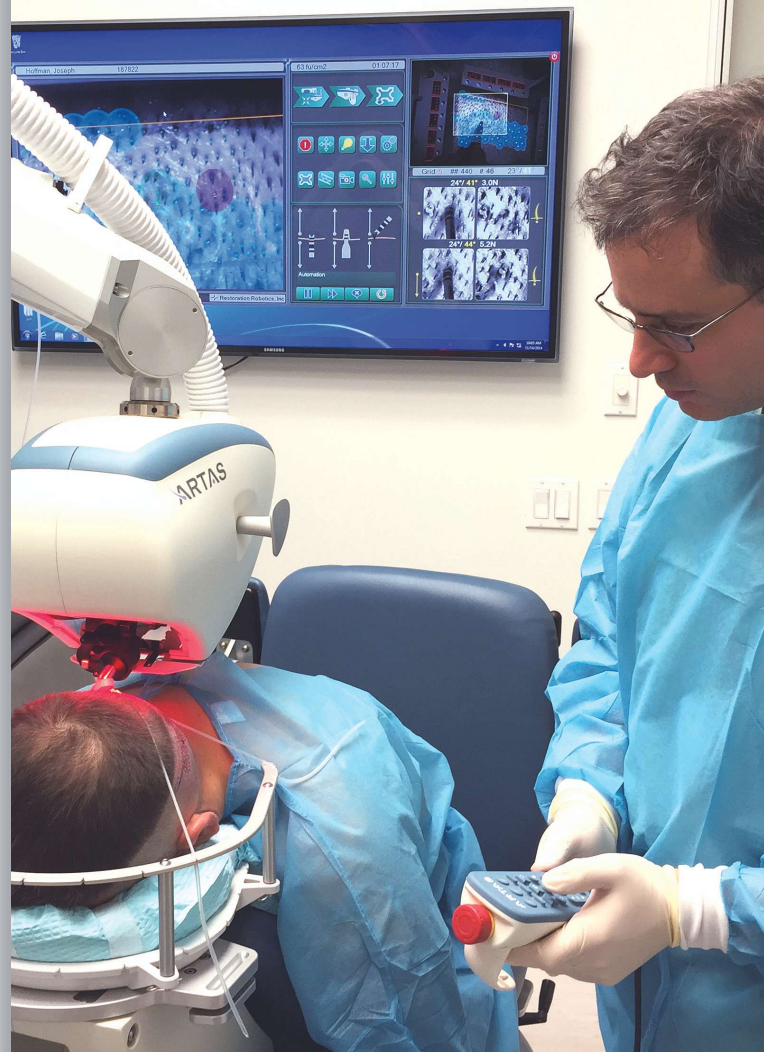
“If there are medical reasons for the hair loss, you then have to decide what medical treatments are appropriate before you jump into surgery,” says Dr. Boden.

He also advocates doing everything that is medically valuable to help patients retain and potentially enhance existing hair. “In terms of topical hair therapy, I support minoxidil, which is useful for both men and women,” he says. “There are also various supportive studies regarding the benefits of LLLT, used at a wavelength of about 660nm.”

Dr. DiBernardo often recommends oral supplements, such as Viviscal or NutraFol, PRP therapy or LLLT for women. On occasion, he may recommend female patients for hair transplant surgery. One of the hair restoration vitamins he favors is NutraFol because there are male and female formulas available.

“Expectations are different for women,” he says. “When you’re treating a male patient who has little to no hair and they get some hair as a result, they’re very happy with that. Some women are used to long, flowing hair and it could take a year or two to grow to a length with which they are happy.”

To achieve the best outcomes, Dr. Harris takes multi-modal approach to both slow and reverse hair loss in his patients. “These treatments include topical minoxidil, finasteride for men, Nizoral shampoo, LLLT and PRP,” he says.



The ARTAS Robotic System helps to reduce physician fatigue during hair follicle extraction.

ADVANCES ON THE HORIZON

The most recent breakthrough in hair restoration surgery is robotic hair transplantation, available through the ARTAS system. “We are now able to perform the repetitive action of FUE in a consistent fashion while minimizing trauma to the follicular unit grafts—as may be seen when performing FUE by hand,” says Dr. Wolfeld.

One of the most exciting treatments currently in the research phase is hair cloning. “Hair cloning is a promising treatment for androgenic alopecia that is being actively researched in our office in conjunction with Columbia University,” says Dr. Wolfeld. “In hair cloning, a sample of a person’s germinative hair follicle cells are multiplied outside the body and then re-implanted into the scalp, where they may grow new hair follicles and, thus, new permanent hair. The hope is that this may be a definitive, permanent solution for hair loss.”

“Another possibility would be the injection of certain growth factors that could stimulate new follicle growth from stem cells or precursor cells in the skin,” says Dr. Harris. “These treatments would allow as much hair growth as an individual might want—and they are probably 10 to 15 years away.” **ME**

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