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HAIR TRANSPLANT FORUM INTERNATIONAL

IN THIS ISSUE

A 15-Year Long-Term Survival Study of Leg Hair Transplanted to Scalp Scar

How I Do It: Using the Long Hair FUE Technique for Eyebrow Transplantation

In Loving Memory: Dr. Jung Chul Kim

Eyebrow Transplantation Using the Long Hair FUE Technique: A Case Report

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ABSTRACT

The eyebrows play an essential role in facial expression and frame the central portion of the face. The loss of eyebrows, seen in cases of frontal fibrosing alopecia (FFA) or due to other factors such as burns or trauma, can be addressed by hair transplantation. From the first procedures in 1939 to the evolution of techniques such as follicular unit excision (FUE) and long hair/non-shaven hair FUE (NS-FUE), hair transplantation has allowed for the restoration of natural, dense eyebrows. The most advanced technique, long hair FUE (LHF), introduced in 2016, combines the benefits of standard FUE and NS-FUE, eliminating the need for shaving and allowing a preview of the donor and recipient areas as well as the ability to see the curl of the hair. Here we present a successful case of eyebrow transplantation using the long hair FUE technique.

Keywords: eyebrow transplantation, follicular unit, long hair, non-shaven FUE

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INTRODUCTION

The eyebrows play an essential role in facial expression and frame the central portion of the face.¹ From an evolutionary perspective, the hair follicles of the forehead develop embryologically to protect the eyes from sweat, debris, and bright light.¹ The pattern of eyebrow hair growth is complex and varies between men and women.² With aging, eyebrow hair tends to become thinner and thinner.¹ Loss of eyebrows is a phenomenon observed in approximately 80% of cases of frontal fibrosing alopecia.³ In addition, eyebrow loss can also be caused by burns, surgery, or trauma resulting from constant eyebrow reshaping.⁴ Hair transplantation has established itself as an effective treatment to address eyebrow loss, achieving greater density or restoring facial aesthetics in cases of scarring. This procedure is especially relevant given the prominent role that eyebrows play on the face.⁵

The history of eyebrow transplantation dates to 1939 when Okuda performed the first procedures.⁶ Since the introduction of follicular unit transplantation (FUT) in the 1990s, natural, denser eyebrows have been restored.¹

Hair transplant techniques have evolved from FUT to follicular unit excision (FUE). The most advanced technique is long hair/non-shaven hair FUE (NS-FUE), which is used not only to treat androgenic alopecia (AGA) but also for eyebrows and beard. The demand for NS-FUE has increased, especially as some patients avoid shaving for social or occupational reasons.⁷ In 2006, Pitchon introduced long hair transplantation, allowing results to be visualized immediately and after one year postoperatively.⁷ In 2016, Boaventura introduced long hair FUE (LHF), highlighting the advantage of donor area preview. LHF combines the benefits of standard FUE with NS-FUE, eliminating the need for shaving and allowing grafts to be transplanted with long hair strands. This technique not only offers a preview of the donor and recipient areas, but also the ability to see the curl of the hair, which is crucial in this type of surgery.⁷

Since few cases are reported in the literature, we present the successful outcome of an eyebrow transplant using the long hair FUE technique.



TABLE OF CONTENTS

- 117 Eyebrow Transplantation Using the Long Hair FUE Technique: A Case Report
- 119 President's Message
- 120 Co-Editors' Message
- 121 Notes from the Editor Emeritus: Dr. Jeffrey Epstein
- 126 A 15-Year Long-Term Survival Study of Leg Hair Transplanted to Scalp Scar
- 128 How I Do It: Using the Long Hair FUE Technique for Eyebrow Transplantation
- 132 In Loving Memory: Dr. Jung Chul Kim
- 136 Literature Review: Hair Loss Associated with Minimally Invasive Cosmetic Procedures
- 138 The Notable Articles Project
- 142 Message from the ISHRS 2024 World Congress Program Chair
- 147 Meeting Reviews:
2024 ISHRS Europe Live Surgery Workshop
BAHRS Annual Conference 2024
- 152 Classified Ads
- 153 Calendar of Events

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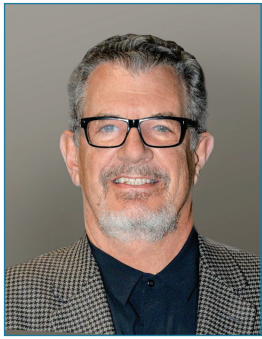
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President's Message

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ISHRS MEMBERSHIP UPDATE

I'd like to start with a thank-you to all members who have renewed their memberships and offer my congratulations to all new ISHRS members. Over 90% of members have renewed their membership

this year, our 32nd year. Our specialty and our society have grown significantly since 1993. We currently have more than 1,000 members from 74 countries. Our worldwide membership has expanded greatly thanks in part to the participation of the Global Council, which consists of associated societies from 23 countries. Worldwide expansion has also been facilitated by the popularity of hair restoration surgery. The ISHRS has been the leader in this expansion through its educational offerings and dedication to quality results from skilled and ethical surgeons around the world.

The February 2024 ISHRS Regional & Live Surgery Workshop in Islamabad, Pakistan, held in conjunction with ISHRS Global Council member the Hair Restoration Society of Pakistan (HRSP), was a great success. The June 2024 ISHRS-sponsored meeting in Hangzhou, China, had over 700 registered participants. Additionally, there were many veteran members of the ISHRS serving as faculty at this meeting.

The Membership Committee is the gatekeeper of the ISHRS; however, its job of vetting new applications to protect our society from threats has become progressively more difficult. To properly evaluate candidates, the committee now must review not only an applicant's credentials but also additional content such as advertising material and social media. Some potential member candidates participate in the Black Market and seek ISHRS membership as an attempt to add to their "credentials" for legitimacy and for advertising purposes. I commend the Membership Committee for its attention to detail in safeguarding the ISHRS.

The ISHRS is doing many great things to assist our membership in maintaining a thriving hair restoration practice. Some of the many benefits that accompany your membership include the following:

- ⇒ Reduced registration fees for ISHRS world congresses, live surgery workshops, online webinars, and other educational programs and products. This year our intention is to provide our congress virtually and in person, giving members the flexibility of attending remotely or joining us in person in Denver.
- ⇒ Subscription to the bimonthly newsletter, *Hair Transplant Forum International*, with access to the online FORUM ePUB, where all past issues and articles, by topic and/or author, can easily be found.
- ⇒ Access to the exclusive ISHRS Physicians WhatsApp Group that was started in June 2023. It currently has 462 members who participate daily in informative and lively discussions.

- ⇒ Eligibility for grants for the purpose of relevant clinical research directed toward the subject of hair restoration. These Research Grants are typically in amounts of \$1,200-\$2,600 USD each, but some may be higher.
- ⇒ Member-only access on ISHRS.org, our comprehensive, informational website on hair loss and restoration, which includes a free listing with Physician Profile for (full) Member and Fellow physician members, and a directory listing for Associate Members. Currently, the website is undergoing an extensive update by the Communications and Public Education Committee led by Chairman Sam Lam.

DENVER 2024

It's only four months until we meet in Denver. Denver's early economy was rooted in mining; it then grew by expanding its role in railroads, wholesale trade, manufacturing, food processing, and servicing the growing agricultural and ranching businesses. Denver had always attracted miners, workers, cowboys, and travelers. Saloons and gambling dens sprung up overnight in the 1800s.

Central to the myth and the reality of the West is the American cowboy. The life of a cowboy was difficult and revolved around two annual roundups, spring and fall, the subsequent drives to market, and the time off in the cattle towns spending their hard-earned money on food, clothing, firearms, and gambling. During winter, many cowboys hired themselves out to ranches near the cattle towns, where they repaired and maintained equipment and buildings. Over time, the cowboys developed a personal culture of their own, a blend of values that retained vestiges of chivalry. Such hazardous work in isolated conditions also bred a tradition of self-dependence and individualism, with great value put on personal honesty, which is exemplified in songs and cowboy poetry.

The legends, historical events, and folklore of the American frontier, known as the "frontier myth," have embedded themselves into U.S. culture so that the Old West, and the Western genre of media specifically, has become one of the defining features of American national identity.

Settling the frontier was a process that transformed Europeans into a new people, the Americans, whose values focused on equality, democracy, and optimism, as well as individualism and self-reliance. Many of us still believe in those values as we carry a part of the frontier myth within us.

CELEBRATING THE ISHRS AND OUR MEMBERS

The ISHRS continues to grow and thrive, with a dedicated Membership Committee safeguarding the society and numerous benefits offered to members. As we look forward to the congress in Denver, we celebrate the enduring spirit of individualism and self-reliance that is ingrained in American culture and the values shared by members of the society. ■



Co-Editors' Message

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Welcome to the July/August 2024 issue of the *Hair Transplant Forum International*. As we continue to advance in the field of hair restoration, it is an honor and a privilege to present this issue in which we include articles focused on eyebrow hair restoration, a study on leg to scalp scar hair transplant, meeting reviews, and a moving dedication to one of the most influential researchers and surgeons in our field, Dr. Jung Chul Kim, whose passing will leave a hole in the hearts of his many friends and colleagues.

Dr. Laura Caicedo Albarello and colleagues begin this issue with their pioneering article on eyebrow transplantation using the long hair FUE technique. The piece underscores the growing recognition of eyebrows as crucial to facial aesthetics and expression. The authors delve into the intricacies of the long hair FUE method, offering valuable insights and practical tips for surgeons looking to refine their technique. This article not only highlights the technical aspects but also emphasizes the artistic elements essential for achieving natural-looking results, thus bridging the gap between science and art in our practice. In Dr. Timothy Carman's How I Do It column, Dr. Lorena Visentainer and her colleagues describe their approach to eyebrow restoration utilizing their own "eyebrow long hair FUE technique." Dr. Carman notes that their approach offers a suggestion for addressing eyebrow transplantation in a manner the authors feel favors a high success rate technically and aesthetically.

A compelling study featured in this issue is Dr. Kazuhito Yamamoto's 15-year long-term survival analysis of his own leg hair transplanted to his frontal scalp scar. Although a single case, the study offers unique data on long-term survival of leg hair transplanted into scalp scar. The study has important implications including the importance of long-term follow-up and how outcomes besides hair density, such as hair diameter, can be crucial in assessing hair transplant success, especially in the case of body hair. This comprehensive study provides robust data and findings that could influence future approaches to donor hair selection and transplantation techniques. Additionally, the longitudinal nature of the study offers a rare glimpse into the long-term viability and success of such transplants, reinforcing the importance of rigorous follow-up and patient care in achieving optimal outcomes.

Dr. Brad Wolf's President's Message outlines the remarkable growth and achievements of the International Society of Hair Restoration Surgery, and he provides updates on membership and upcoming events that promise to be both

educational and engaging. As Editor Emeritus, Dr. Jeffrey Epstein shares his wisdom gleaned from years of practice. His reflections on the evolution of hair restoration surgery are nostalgic, and he offers his colleagues personal lessons and encouragement.

We hope you take a moment to appreciate the special tribute to Dr. Jung Chul Kim, a colleague who dedicated his life to pioneering new paths in hair transplantation and basic hair research and whose significant contributions to the field will leave an indelible mark. Dr. Kim was the recipient of the very first Platinum Follicle Award in 1994 and a member of the ISHRS Board of Governors. The in-memoriam piece is a poignant reminder of the lasting impact one can have through dedication, innovation, and a commitment to excellence.

We continue to explore the intersection of cosmetic procedures and hair restoration in Dr. Guillermo Guerrero's Literature Review. This issue he focuses on hair loss associated with minimally invasive cosmetic procedures. Dr. Guerrero's review is particularly relevant as it sheds light on the side effects that patients might not anticipate.

Take a moment to read reviews of the 2024 ISHRS Europe Live Surgery Workshop in Milan and the BAHRS Annual Conference in London; they provide insight into what you can learn by attending educational workshops and events. Further underscoring our commitment to fostering a global exchange of knowledge and expertise, Dr. Henrique Radwanski provides another glimpse into what you can expect at the 2024 ISHRS World Congress in Denver.

As you immerse yourself in this issue, we hope you find inspiration, knowledge, and a renewed sense of purpose in your practice. The journey of hair restoration is one of continuous learning and innovation, and it is our sincere hope that you share your work and inspiration with your colleagues within the pages of this journal. ■



Notes from the Editor Emeritus, 2020–2021

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In the course of my professional career, I have been visited by no fewer than 100 (usually) young physicians, eager to learn hair restoration. Between teaching my hair restoration techniques, I dispense advice on how to build a successful career, some of which I'd like to share here.

Thirty-one years ago, I started out in this specialty, fresh out of otolaryngology residency, beginning a facial plastic surgery fellowship with a focus on hair restoration surgery (HRS) thanks to the director, Dr. Shelly Kabaker. While at that time few plastic surgeons performed HRS, I correctly predicted that my surgical background would help open doors to success in the field. Lesson learned #1: Don't take short-cuts; rather, obtain as much formal training as possible.

I soon saw the potential in this burgeoning specialty that had only recently begun to deliver borderline aesthetic results with micro-/mini-grafts replacing plug grafts. It was a plastic surgery professor in residency who led me to Dr. Kabaker's fellowship with one word of advice (much like how Benjamin (played by Dustin Hoffman) in the 1960s movie *The Graduate* was advised "Plastics") and that was "Hair." This professor recognized that to achieve success in a city like Miami, which was overrun with plastic surgeons, I would need to forge ahead with a relatively little-acknowledged field. Lesson learned #2: Follow the advice of those who are wiser for their experiences.

Within two years, I opened my own practice. While offering the full scope of facial plastics, HRS was my specialty. An otology professor, who prior to entering academia had built a successful cochlear implant practice, advised me to become an expert in one procedure, noting that in doing so, others would assume that I was an expert in everything else I did. Thus, very early on I declared myself a hair specialist, providing the perceived expertise that parlayed into patients choosing me for rhinoplasty and face-lift work. Bolstering my "cred" with published articles, lectures, and countless hours building my website, I invested early in my reputation, and this has yielded dividends in the form of a steady flow of patients that does not waiver even through pandemics, market collapses, and the never-ending growth of competitors. Lesson learned #3: Become an expert in one procedure and you become recession-proof.

My assistants have been a major part of my success, and I never "skimp" in my thank-yous for their efforts. I also have found it best not to skimp in numbers, so there was always someone there to replace someone who left. There are critical steps to the hair restoration process where my skills are essential; however, I rely on my nurse practitioners to administer medical therapy and my patient consultants to answer many of my patients' questions. I may be "proud" of my professional skills, but I am humble enough to admit that at my age, my physical stamina and ability to avoid injury have diminished. Lesson #4: Surround yourself with outstanding people—and utilize them—and this will allow you to work most efficiently and enjoyably.

There is another component of my practice that brings me great satisfaction: the teaching of young surgeons. By exposing these visitors, most of whom are facial plastic surgeons in fellowship training, to my practice, they can develop a true appreciation of the artistry of HRS as well as lose all concept of this as a simple

turnkey add-on offering for their practice. As a result, they become genuine ambassadors who extol and appreciate the complexity of our field, with the occasional young surgeon, much like I did 31 years ago, choosing to make HRS their area of expertise. We should welcome these young colleagues and have empathy for the barriers of entry they might face in building their practice. Lesson learned #5: We should embrace the opportunity to nurture the career aspirations of those who perhaps one day will similarly grace these Editor Emeritus pages.

Finally, there is a perspective—a wisdom so to speak—that one develops after years of practice and living life, reading, and learning that allows me to give this final piece of advice. Much like the advice attributed to Cato, one of the great Stoics of ancient Rome, who stated, "We cannot assure our success, we can only deserve it," I offer my lesson learned #6: Don't chase success, rather follow your passion and always take the high road.

Writing now, 31 years later, I look back and find a life that has been quite rewarding: I have my wife, Gorana, who I met 13 years ago at an ISHRS meeting and with whom I share two children; I recently sold my practice; and I have the comfort of knowing I've had a career indeed well spent. ■



Lesson #5: We should embrace the opportunity to nurture the career aspirations of those who perhaps one day will similarly grace these Editor Emeritus pages.

FUNDAMENTALS OF THE LONG HAIR FUE TECHNIQUE IN EYEBROW RESTORATION

Eyebrow Anatomy

The eyebrows play a crucial role as a defense for the eyes, protecting them from sweat, solar radiation, and external forces such as dust or wind.¹ They are divided into head, body, and tail, presenting an arch shape, and are located symmetrically over the supraorbital arch.² Asymmetry in the eyebrows is clinically insignificant. Women's eyebrows tend to be tall with a C-shaped arch, while men's are shorter, straighter, and T-shaped.² Eyebrow hair exhibits specific characteristics such as thinness, reduced diameter, complex direction, acute angle, and slow growth, which is essential knowledge for the hair surgeon when selecting follicular units (FUs) for eyebrow transplants.²

Donor and Recipient Area Assessment

In eyebrow transplantation, the correct choice of donor area is essential to achieve natural results.⁴ The temporal region (periauricular area) and the inferior occipital area are the most commonly used areas due to the delicacy and fineness of the hair.⁵ Before surgery, a thickness gauge micrometer is used to measure the hair diameter of the original eyebrow and donor area follicles, and the area with the hair diameter closest to that of the original eyebrow should be selected.⁹ A specific hair diameter of 0.04-0.08mm is chosen in cases of total eyebrow loss.⁹ The skin quality in the recipient area is also crucial, especially in patients with eyebrow loss due to trauma and scarring.⁹ A visual and tactile evaluation of scars that considers color, height, appearance, flexibility, and elasticity should be done. Trichoscopic assessment of the blood supply makes it possible to distinguish between hypertrophic or keloid scars, which is vital to know to ensure the viability of the graft in eyebrow transplantation.⁹

Calculation and Distribution of FUs

The calculation of FUs for eyebrow transplantation considers factors such as the area to be covered, the ratio (hairs/FU), density, and coverage value. In eyebrows, the recommended density varies from 30-70 FUs per square centimeter,^{1,4} being higher at the nasal end and decreasing towards the temporal area. Single-hair grafts are used at the edges, 2-hair grafts in the central area, and two lines of 1-hair grafts on the tail of the eyebrow.² Commonly, 200-300 FUs per eyebrow are implanted for reconstruction, with the density being higher at the nasal end and decreasing towards the temporal end.^{1,3,4,9} Consideration of hair type (e.g., African, Asian, Caucasian) is crucial, as each ethnic group exhibits specific shaft and follicle characteristics; for example, hair density is higher in Caucasians, with an upper limit of 100 FUs per square centimeter.¹

Estimating the number of hairs needed is essential to determine the size of the donor area and generate sufficient grafts, and a reserve of grafts should be maintained until the end of the procedure for adjustments and increased density if necessary.¹

Design

Eyebrow design is essential to obtain aesthetic and natural results. It begins with the patient's prior approval, and in

the prep room with the patient seated and stretched.^{1,2,9} A detailed comparison of both eyebrows is made, considering the patient's specific anatomical patterns.² The "Anastasia" form is preferred, with a vertical line from the medial end to the nostrils and an aligned arch from the center of the nose to the pupil.⁹ In women, a flat shape with higher arches is sought, while in men, a sword-shaped design is adopted. Attention should be paid to the head, body, and tail of the eyebrows, adapting the design according to the density and length of the hair in each area.⁹

Donor and Recipient Area Anesthesia

Hair transplant surgery involves the use of local anesthesia in the donor and recipient areas. Some surgeons suggest using sedation, but the main technique uses local anesthesia, analgesics, and oral benzodiazepines.² Various formulations of lidocaine are used, often combined with vasoconstrictors such as epinephrine.^{2-4,6,9} Tumescence is achieved with lidocaine, vasoconstrictor, saline, and sometimes triamcinolone to prevent post-operative edema.^{2,3,6} In eyebrow transplantation, anesthesia is divided into two stages: the first in the donor area and the second in the recipient area. Due to the aesthetic quality of the hair, the choice of the donor area includes regions such as the temporal, periauricular, and nape of the neck. Anesthesia is performed with lidocaine, using a ring block and tumescence in the central area.⁵ For the eyebrow area, regional infiltration with local anesthetic solution is used emphasizing subcutaneous application to the superficial dermis.⁶ Some surgeons prefer to use higher concentrations of vasoconstrictor to minimize bleeding.⁷ After injection, it is recommended to apply pressure, use ice packs or cold compresses, and duct tape under the eyebrow to prevent eyelid inflammation.⁵

Trivellini Multiphasic Extraction Technique

The Trivellini device represents a significant innovation in hair transplant technology.⁸ This device uses a "Smart Reaction" mechanism to control follicular extraction, eliminating the need for a foot pedal and automatically activating with the proper pressure.⁸ Its structured programmed movement, including oscillation and mamba settings, ensures precise and efficient extraction, preserving the integrity of the graft.¹⁰ It combines with the 0.95mm long hair punch to extract intact grafts without shaving the donor area. Key advantages include time efficiency, precise punch control, and preservation of graft integrity.¹⁰

FU Counting and Storage

The FU count in a hair transplant refers to the number of hairs that are transplanted in a single session. The number varies depending on the need and the area to be treated.¹¹ FUs are classified according to the number of hairs they contain, which can be 1, 2, 3, or even 4 hairs. This classification is carried out during the FU extraction phase to ensure a proper transplant and achieve a natural aesthetic result.¹¹ During the extraction phase, special preservation media containing balanced saline solutions and nutrients should be used to keep the FUs viable before they are transplanted,

thus ensuring the integrity of the hair follicles and preventing possible damage or dehydration.⁶ To preserve the viability of the FUs during hair transplantation, it is crucial to keep them at an appropriate temperature, usually between 4°-8° Celsius (39°-46° Fahrenheit), which helps preserve the hair follicles and thereby ensuring that they remain functional and suitable for transplantation.^{6,9}

Recipient Area Implantation

The sharp implanter method for hair transplantation is gaining popularity due to its simplicity and advantages over the pre-incision method.¹² In this technique, hair follicles are loaded onto a needle, which simultaneously pierces the skin and deposits the graft inside the incision before removing it. Benefits include ease of use, shorter operating time, and reduced risk of crush injuries compared to the forceps methods.¹² The angle of the incision can be precisely adjusted, and the doctor performs the procedure directly.¹² There are drawbacks, however, in patients who are prone to bleeding, and the procedure is labor-intensive.¹² Additionally, inexperienced practitioners may face problems, such as inadequate graft implantation, leading to lower survival rates.¹² Choosing the correct size implanter is crucial, with specific diameters being recommended for different FU transplants.¹² Generally, a 0.6mm diameter implanter tip is used for eyebrow and eyelash hair restoration.¹² For 1-hair FUs, diameters of 0.6, 0.7, and 0.8mm can be used; for 2-hair FUs, 0.9 or 1mm; and for 3- or 4-hair FUs, 1.0-1.2mm tips.¹² Despite its easy mastery, the sharp implanter method requires accumulated experience for skillful execution. Overall, when used properly, this technique ensures high graft survival and dense, natural hair.¹²

Results, Complications, and Care

Results of long hair FUE eyebrow transplantation are influenced by the patient's health, post-operative care, and the technique used. After the procedure, patients usually receive outpatient treatment and must follow specific post-operative care guidelines. This includes 2 days of antibiotics and analgesics, without bandages on the recipient areas, and application of Neosporin or Betadine to prevent drying of the grafts; the donor area is covered for 2 days, and saline spray is used to maintain moisture and cold compresses are used to reduce swelling.⁶ After 3 days, a gentle head bath and continuous application of Neosporin or Betadine is permitted. After 10 days, patients can touch and rub the grafts to facilitate scab removal.⁶ Hair loss can occur, and full growth is expected between 6 and 8 months, with visible results at 8 months.⁶

Complications are rare and include swelling, infection, and other problems, while the most common problems are related to the direction and density of graft growth.⁶ Patience and sometimes second sessions are recommended to improve density. In cases of alopecia scars, growth may be delayed.⁶ In 63 cases reviewed, 14% were corrected in one session, 77% required two, and 9% needed three sessions. Although the process is labor intensive, hair transplantation for eyebrow restoration offers rewarding results.

CASE REPORT

A 41-year-old woman consulted us because she experienced loss of thickness in both eyebrows due to excessive hair removal. She stated that she underwent microblading three years prior to coming to us, and recently, in July 2023, she underwent a nanofat procedure. She made it clear that she had no relevant pathological history and that she did not want to undergo shaving. We chose the long hair FUE technique for this patient because it allows the extraction and transplantation of FUs with long hair, which provides the advantage of obtaining an immediate view of the final result of the transplant. Additionally, it allows the surgeon to see the curl of the hair, which is a crucial advantage in eyebrow transplantation.

The surgery was divided into three stages: pre-operative, intra-operative, and post-operative. During the pre-operative period, the patient was instructed to take prophylactic antibiotic therapy, analgesia, proton pump inhibitors, and corticosteroids. The patient prepared for the day of surgery by taking omeprazole 20mg before breakfast, deflazacort 6mg, and ciprofloxacin 500mg and paracetamol 1g after breakfast. Dietary recommendations included abstinence from caffeine or theine on the day of the procedure. A complete blood panel was performed, and the patient's blood count, liver and kidney function tests, blood sugar, and prothrombin time were within normal limits, and viral markers were negative.

The surgical technique to be used based on her expectations and needs was discussed with her, and was fully accepted as noted by the signed informed consent. To start, photographs were taken of the work area prior to surgery to document and visually analyze the initial state (Figure 1).

During the intra-operative stage, the eyebrows were designed and marked with the patient in the supine position, and approval was obtained. The eyebrow design takes into account the gender of the patient, divisions and anatomical measurements, architecture of the eyebrow, and reference points for the anatomical design of the eyebrow. (Figures 2 and 3).

Trichoscopy evaluates the density in the donor area and rules out autoimmune or scarring alopecia. On the other

FIGURE 1. Pre-operative stage; 41-year-old woman with traumatic alopecia of both eyebrows due to repeated plucking. A: Frontal view; B: right eyebrow, lateral view; C: left eyebrow, lateral view.

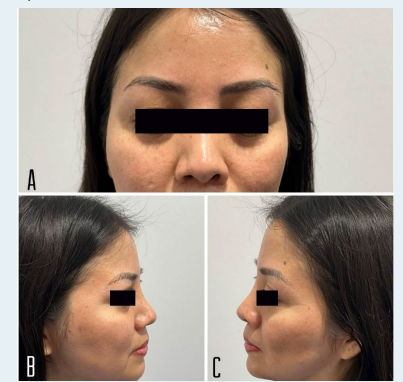


FIGURE 2. Intra-operative stage; design, marking of the eyebrows and anatomical points. A: Point of the internal canthus and nasal wing; B: mid-pupillary point; C: point of the external edge of the iris; D: point of union of the nasal wing and external canthus of the eye.

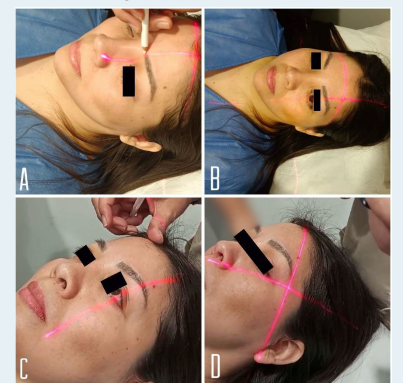


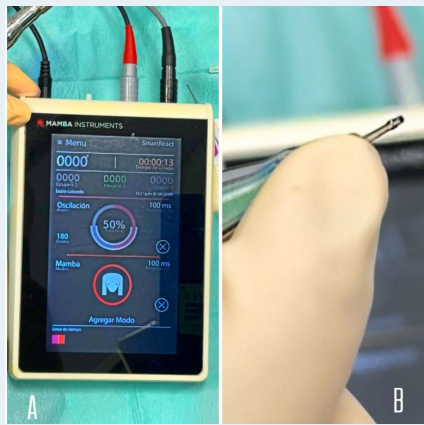
FIGURE 3. Intra-operative stage; measuring and checking eyebrow design. A: Laser design checking, B: eyebrow distance measurement.



FIGURE 4. Intra-operative stage; evaluation of the density of the donor area. A: Assessment of density in the donor area using a digital trichoscope, B: intra-operative marking of the donor area.



FIGURE 5. Multiphase motor and punch long hair ring. A: Mamba system long hair, B: Trivellini punch long hair ring.



be implanted was anesthetized followed by the other at the end. Anesthesia is first placed in the entry point at the head portion of the eyebrow, followed by infiltration using a 27G gauge cannula to minimize inflammation, putting no more than 1.5ml of 2% lidocaine with epinephrine mixture per eyebrow (Figure 8). The surgeon is seated contralateral to the eyebrow to be implanted to facilitate the process and better control of hair direction, curvature, and angulation.

hand, the calculation of the necessary FUs was carried out with the help of the trichoscope, considering the area to be covered, the ratio, the density, and the coverage value. (See Figure 4.) In this case, a total of 320 FUs were calculated. For extraction, the occipital and peri-auricular areas were selected because the hairs in these areas are softer and finer, which allows us to obtain an optimal aesthetic result. Anesthesia was performed using a ring block with lidocaine in the donor area (occipital region) and then tumescence. Extraction was done using the Trivellini device with mode 1 oscillation power at 50%, 180°, time 100 milliseconds, followed by mode 2 in mamba for 100 milliseconds, using a 0.9mm long hair punch ring (Figure 5). A total of 320 FUs were extracted. Once the FUs are extracted with forceps, leaving the hair approximately 3cm in length, they are counted and classified into 1 and 2 hairs for each eyebrow. (See Figures 6 and 7.)

After extracting and classifying the FUs, the patient was placed in the supine position and the first eyebrow to

There were 160 FUs transplanted into each eyebrow; a first demarcation of the edges was made with the implanter bevel of 0.64mm to prevent the implantation line from being lost, distributing them according to the pre-established design. There were 100 1-hair grafts that were placed along the edges, periphery, and tail; additionally, 62 2-hair grafts were implanted per eyebrow in areas to give greater density following the direction, curvature, and angulation of the FUs. For implantation, we used 0.8mm (red) and 0.64mm (green) implanters for the placement of the 1-hair grafts. The angle of implantation of the eyebrow used was 0°, so we managed to keep the curvature of the hair curl downwards. The long hairs were trimmed after implantation to achieve the normal length of eyebrow hair. (See Figures 9 and 10.)

In summary, the procedure consisted of the design, extraction and transplantation of FUs, with special attention paid to aesthetics and proper distribution in each eyebrow. After the procedure, post-operative care included regular hydration, targeted washing of the donor site, application of anti-inflammatory products, caution against sun exposure, and no need for antibiotics. The patient was provided information on the expected time for the growth of the new hairs and for the complete visualization of the final results. (See Figures 11 and 12.)

DISCUSSION

Autologous hair transplantation has become prevalent in eyebrow reconstruction, allowing natural results to be

FIGURE 6. Intra-operative stage; extraction and classification of long hair FUs. A: Extraction of the FUs with forceps, B: freshly extracted FUs, C: classification of the FUs.

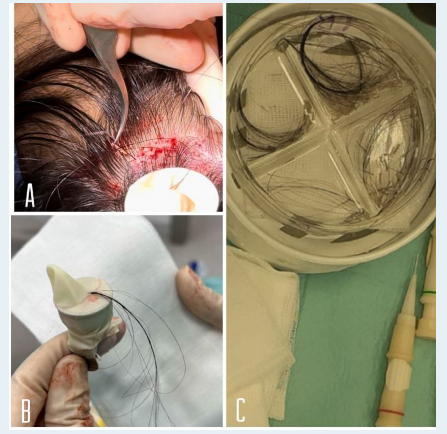


FIGURE 7. Classification of extracted FUs into 1 and 2 long hairs and kept in preservation storage.



FIGURE 8. Anesthesia of the recipient area using a 27G cannula.



FIGURE 9. Implantation of the extracted long hair FUs. A: Local anesthesia at entry point, B: anesthesia by cannula, C: implantation of FUs using the Lion implanter, D: trimming of eyebrow hairs.

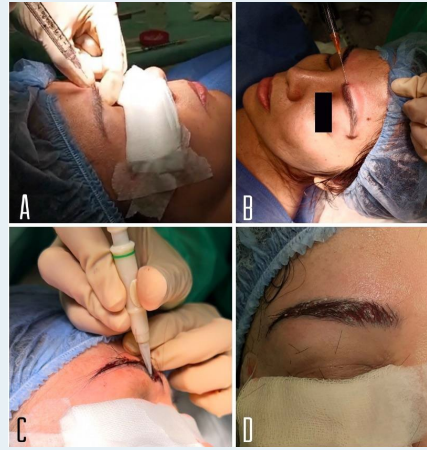


FIGURE 10. 0° implantation angle.



FIGURE 11. Post-operative stage; evolution of eyebrow transplant. Row A: Day 1, Row B: day 5, Row C: day 8.



clinical case supports the findings of the reviewed studies. It is suggested to conduct future studies with larger samples to better understand the procedure.

CONCLUSION

Due to the novelty of the long hair FUE technique and the fact that few professionals currently practice it, studies published on this technique in eyebrow transplantation are scarce. However, the research found shows satisfactory and natural results from the beginning of the intervention, allowing an immediate evaluation of the final result. On the other hand, based on our experience, the long hair FUE technique is the one that provides the best aesthetic results in eyebrow transplantation.

obtained by growing in the designed direction. The FUE technique has become popular due to its simplicity, less visible scarring, and shorter recovery period compared to FUT.⁵ The long hair FUE technique has gained in popularity because it doesn't require shaving the donor area and has additional advantages such as a less noticeable surgery and the possibility of visualizing immediate results by transplanting follicles with long strands.⁵ Although it benefits patients who prefer not to shave and keep their hair long, it does have its disadvantages, such as a longer surgical time, technical difficulty, and the need for specialized tools.⁵ For eyebrow transplantation, long hair FUE excels at equalizing the curl of the hair, which is not possible with the conventional FUE technique.⁵

Despite the limited literature available, the personal experience gained with the reported

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FIGURE 12. Post-operative stage; evolution of eyebrow transplant. Row A: Day 15, Row B: day 30, Row C: day 45.



A 15-Year Long-Term Survival Study of Leg Hair Transplanted to Scalp Scar

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ABSTRACT

In addition to beard hair, hair from other body areas can be used in follicular unit excision (FUE). Currently, there are no reports documenting the long-term characteristics and survival of these transplanted grafts, leaving their long-term survival unknown. Therefore, we conducted a long-term study in which this author's leg hair was transplanted to my frontal scar. Despite a high percentage of leg hairs being in the telogen phase, we observed a high survival rate of transplanted hairs from the lower leg to the scalp scar over an extended time frame. However, we noticed that the recipient site influenced hair caliber, and, after 10 years, all the leg donor hairs had miniaturized, making this procedure less effective. Hence, long-term observation is necessary to evaluate any changes in the characteristics of transplanted leg hairs over time when used for scalp scar transplantation.

Keywords: body hair transplantation (BHT), follicular unit excision (FUE), leg hair, long-term survival, recipient dominance

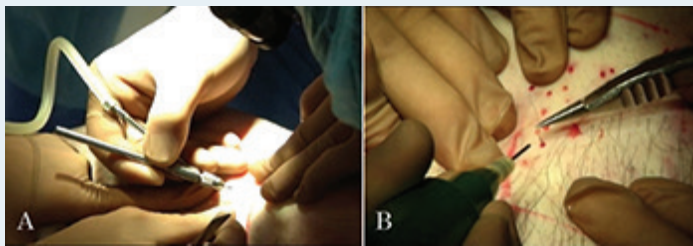
INTRODUCTION

The growth of follicular unit excision (FUE) and advancements in the field of hair transplant surgery have enabled us to use hair from other parts of the body, in addition to scalp hair, as donor hair for patients with androgenetic alopecia (AGA). While body hair, apart from beard hair, may not be suitable for many East Asian patients because of their many fine hairs, they could potentially be used as a source of donor hair for the hairline region and the wound scars caused by hair transplants. The body regions other than the beard and the scalp also have a high-rate telogen phase above 60%,¹ but we do not have data on the long-term survival rate and changes in hair diameter after transplanting. Therefore, I decided to transplant my leg hair to the linear scar in my frontal scalp.

MATERIALS AND METHODS

I began this study in 2008 when I was 41 years old. Grafts from my left lower leg were extracted using the two-step method and a 1mm sharp punch. The non-shaven FUE technique was selected and a self-made, modified, suction-assisted Versi handle was used for the manual technique and an automatic system for the mechanical technique (Figure 1).

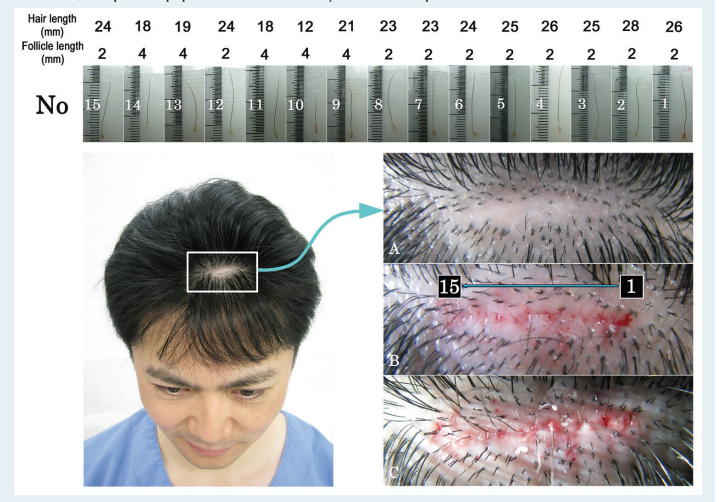
FIGURE 1. Non-shaven FUE. A: Modified suction assisted Versi handle; B: Omnigrift™.



The grafts were stored in chilled saline and 15 one-hair grafts were selected and linearly inserted into the frontal scar in a single row one hour after extraction. The average hair caliber and length of the 15 grafts were 79.6µm (60-100µm) and 22.5mm (12-28mm), respectively. The incisions were made sagittally using a 0.7mm cut-to-size blade (Figure 2).

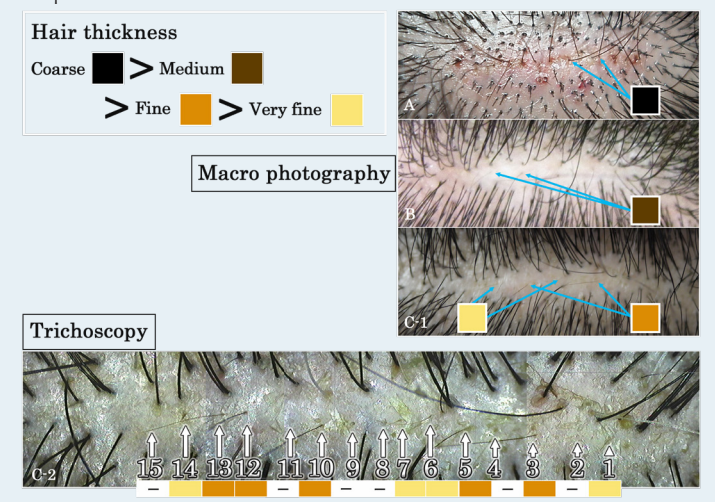
Post-operative evaluation was divided into four stages according to hair thickness by trichoscopy: 1) a coarse hair

FIGURE 2. A: Pre-op photo showing the linear scar on the frontal area; B: after incision; C: post-op photo immediately after transplantation.



was the same thickness as an original hair; 2) a medium hair was finer than an original hair; 3) a fine hair could be seen with the naked eye; and 4) a miniaturized hair, invisible to the naked eye, was defined as a very fine hair (Figure 3).

FIGURE 3. Photographic and trichoscopic evaluation method. A: The day after hair transplantation; B: 3 years after hair transplantation; C-1, 2: 15 years after hair transplantation.



The short-term judgment of survivability was done at 3, 4, 5, 6, 7, 9, 12, 13, and 16 months. I also performed a hair count every week from July 2018 to September 2020 to evaluate the hair cycle and true graft survival of the transplanted grafts. Trichoscopy was used to evaluate hair growth.

RESULTS

During observation, I noticed that the transplanted hair became thin in the early post-operative period; I calculated the non-miniaturized (= coarse) hair survival rate at the same time. The short-term post-operative graft survival rates at 3, 6, 9, 12, and 16 months were 93.3%, 66.7%, 80%, 73.3%, and 80%, respectively. The coarse hair survival rates at 3, 6, 9, 12, and 16 months were 60%, 40%, 53.3%, 53.3%, and 33.3%, respectively. At 16 months, the average caliber of eight coarse to medium hairs had decreased by 20µm (average: 59µm) (Figure 4).

FIGURE 4. Chart showing short-term survivability rates.

No	3M	4M	5M	6M	7M	9M	12M	13M	16M
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
Graft survival	93.3%	93.3%	80.0%	66.7%	73.3%	80.0%	73.3%	80.0%	80.0%
Coarse hair survival	60.0%	60.0%	60.0%	40.0%	26.7%	53.3%	53.3%	13.3%	33.3%

When looking at the long-term results, I noticed two tipping points for the survivability: at 2 years and at 10 years. From the second year onwards, the survival rate remained at about 50%, but the number of coarse hairs decreased significantly, and they disappeared after 10 years (Figure 5).

FIGURE 5. Chart showing long-term survivability rates.

No	Tipping Point														
	4M	1Y	1Y4M	2Y1M	2Y8M	3Y3M	4Y5M	10Y3M	11Y	12Y	13Y	14Y	15Y		
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
Graft survival	93.3%	73.3%	80.0%	73.3%	46.7%	53.3%	53.3%	53.3%	46.7%	33.3%	46.7%	53.3%	60.0%		
Coarse hair survival	60.0%	53.3%	33.3%	13.3%	13.3%	6.7%	6.7%	0	0	0	0	0	0		

The thickness of every transplanted hair was reduced, and the leg hair to scalp scar transplant was not effective at all beyond 10 years post-transplant. However, as leg hairs have a high-rate telogen phase, the graft may survive even when no hair growth is observed. Therefore, I observed weekly for 2 years (110 weeks) from year 10 onwards. The survival rate after 10 years was in the range of 33.3% to 73.3%, with an average of 49.2%. All of the coarse- to medium-hair survival rates during the 2-year weekly observation period were 0%. Assuming that they survived and they grew at once during the same period, since each transplanted hair has its own different hair cycle, we can determine that the graft survival rate was 86.7%. The duration without hair growth also ranged from 1 to 93 weeks; the duration with hair growth

ranged from 1 to 36 weeks. These durations varied from graft to graft, and some grafts may have contained more than one follicle.

DISCUSSION

The average follicle survival rate from 3 months through 16 months after transplanting was 80%, and the survivability from the second year on has remained stable at approximately 50%. However, the miniaturization in the grafted hair accelerated after a year, and all hairs changed to finer hair after 10 years and never returned to their original thickness. More surprisingly, they survived at an 86.7% rate. Thus, though leg hairs in this study have an excellent survival rate in the scalp scar even after the lapse of a long period, this procedure was not very effective because of the miniaturization. Important limitations of this study include that it is only a single procedure in a single individual. This case also involved transplanting into scar tissue, which may support lower survival than other types of recipient tissue. It is important to perform additional larger studies that track long-term follow-up.

Hwang reported that the recipient site could influence hair growth rate, hair cycle, and graft survival, though the hair caliber might not change accordingly.² In this study, all the transplanted leg hairs gradually miniaturized over time, and this detailed observation showed that most survived; however, it was just difficult to see them with the naked eye. The hair follicle cycling also varied from graft to graft, and it varied even within the same graft.

When performing body hair transplantation (BHT), the recipient site influence is likely to vary depending on the type of transplanted hairs and the recipient site. Therefore, long-term frequent observations are required. It has been noted that the survival rate of extremity hair grafts is low and unpredictable,¹ so we should at least be prudent in choosing leg hair as a candidate for the donor area.

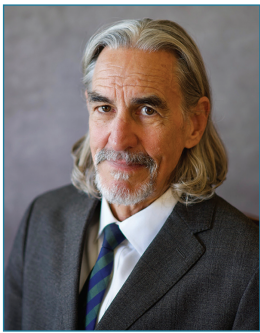
CONCLUSION

Taking the high-rate telogen phase into consideration, the long-term follicle survival rate of transplanted leg hair into scar was very high in this single case. However, all the leg hairs had miniaturized by 10 years post-transplant, so this procedure was not effective. According to the above results, BHT could be affected by recipient dominance, although there may be ethnic differences.

Larger studies are still needed on long-term survival in BHT, including studies on leg hair into other recipient tissue types. The results of this single case highlight that when transplanting leg hairs into scalp scar, long-term surveillance of greater than two years is required.

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How I Do It

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In this column, Dr. Lorena Visentainer and her colleagues describe their approach to eyebrow restoration utilizing their “eyebrow long hair FUE technique.” Eyebrow reconstruction can be a technically challenging procedure, and successful results are rooted in proper global shape, attention to FU angulation, and orientation of the natural curl of the implanted hairs. Their approach offers a suggestion for addressing these issues in a manner they feel favors a high success rate technically and aesthetically.

Sharing our ideas with one another makes us clinically stronger as a collective group in the ISHRS. If you have a suggestion or tip you employ in your practice that you would like to share with your ISHRS colleagues, please email me at tcarmanmd@mac.com for consideration of publication.

Using the Long Hair FUE Technique for Eyebrow Transplantation

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INTRODUCTION

Regardless of culture, socioeconomic status, gender, or age, eyebrows play a fundamental role in facial aesthetics. Whatever the most current shape or style, eyebrows will always be highlighted on the face as they are elements that make up facial expression, in addition to being, like hair, a form of expression of the individual’s culture and beauty. No less important is the functional role of the eyebrows that are present on the face to protect the eyes from liquids that run down the forehead, such as sweat or rain.^{1,2} Because of this, and with the advancement and excellence of the modern era of hair transplantation, eyebrow restoration is gaining in prominence. Surgeons and patients alike have become enthusiastic about the natural results that long hair follicular unit excision (FUE) transplantation can provide.^{3,4}

Among the causes that lead patients to seek eyebrow transplantation are the absence of hair caused by repeated waxing of the eyebrows for long periods, sometimes associated with micropigmentation or scars after laser therapy to remove unwanted micropigmentation; the absence or reduction of hair since birth (e.g., atrichia or congenital hypotrichosis of the eyebrows); local trauma such as cuts or burns; and diseases such as alopecia areata, cicatricial alopecia (such as frontal fibrosing), trichotillomania, hypothyroidism, or leprosy.⁵⁻⁷ Before an eyebrow transplant is performed, when there is suspicion of disease associated with the loss of eyebrow hairs, a careful and comprehensive medical evaluation is necessary to ensure that there are no signs of disease activity.^{1,8}

Here, we present our eyebrow long hair FUE technique, which is performed using Trivellini’s preview long hair FUE technique⁹ with Speranzini’s DNI (dull needle implanter) implantation technique,¹⁰ with pre-incision followed by insertion with implanters. We describe our choice of materials, how to select single-hair follicular units (FUs) with appropriate hair characteristics, and the long hair punch extraction technique, as well as how to determine the correct angle, direction, and arrangement of the implanted grafts. When aligned

with the patient’s expectations, the surgeon and patient can be assured of a successful final result. To start, however, the surgeon must know how to perform surgical marking in addition to other important aspects of eyebrow design.

THE EYEBROWS

The eyebrow is made up of three anatomical segments, from medial to lateral: head (15%), body (60%), and tail (25%). Its hairs are generally shorter, thinner, and less flexible, with a slight curvature along the body, and its shape tends to be slightly thin towards the tail (Figure 1).¹¹ Eyebrows tend to be less dense laterally than medially; thus, loss of eyebrow hair from any cause is easily noticeable on the lateral portion. It is worth remembering the importance of history and physical examination to rule out pathological causes of eyebrow loss such as syphilis, leprosy, cicatricial alopecia and alopecia areata, among others.

The number of FUs required for complete eyebrow reconstruction varies between 70-300 grafts for each eyebrow, depending on the desired design, the patient’s gender (normally female eyebrows tend to be more delicate), and also the thickness and curvature of the patient’s hair (thicker and more curved hair requires fewer grafts for a dense appearance).

Regarding the orientation of the hairs, each segment presents its particularities, being more vertical on the head and horizontal towards the tail of the eyebrow.³

Traditionally, eyebrow implantation techniques have been guided by the crossed eyebrow model (Figure 2).⁹ It

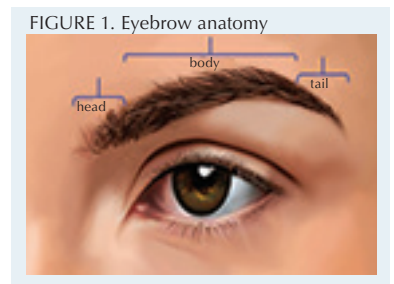


FIGURE 1. Eyebrow anatomy

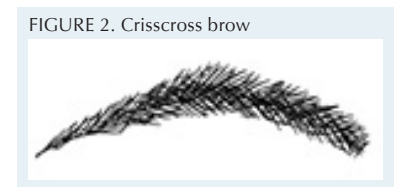


FIGURE 2. Crisscross brow

FIGURE 3. Eyebrow flow style; more vertical positioning of the strands elevates the look naturally.



more vertical positioning of the hairs is a current trend, and it is very popular with female patients as it elevates the look naturally, called “flow style” (Figure 3).

Designing the Eyebrow

We start the procedure with local asepsis with 2% aqueous chlorhexidine and separation of the necessary materials: skin marking line, dermatograph pencil, eyebrow brush, cotton swab or toothpick, followed by marking. To mark, the medial point of the eyebrow head is selected, and the glabellar point is marked. A vertical line on each side of the nasal dorsum is drawn. The distance from the glabellar point to the lateral lines is measured and must be equidistant.

Other points are the following:

- **Definition of the most lateral part of the eyebrow, the endpoint of the tail:** A line should be drawn between the nasal wing and the lateral epicanthus.
- **Marking the highest point of the eyebrow (apex):** A straight line passes through the supra-alar crease of the nose, and the pupil line is drawn.
- **The lowest and highest points of the eyebrow head:** The distance between these two points determines the width of the eyebrow head and allows one eyebrow to be at the same height as the other. Two horizontal and parallel lines are drawn, determining the lowest and highest point of the eyebrow head. You can use the native hair to guide you or define a new design if there is no hair in that region.
- **Double crochet height:** A line is drawn connecting the straight lines of the previously determined high point. The drawing is completed by connecting all previously determined points. After connecting the dots, the apex of the eyebrow is rounded to avoid “corners.” The clean, straight lines drawn are erased so that only the outline of the eyebrows appears. Next, the marking is reinforced with a fine-tipped surgical pen.

SURGICAL TECHNIQUE

Definition of the Donor Area

Thinner single FUs are the ideal grafts for performing eyebrow transplantation and can be extracted from the low occipital area bilaterally, preferably below the occipital protuberance or even in the nape region. Among the few limitations for the extraction of grafts in this region are cases of reverse baldness in men, patients with a tendency for hypertrophic scars that could be exposed on the back of the

neck, and women who may be uncomfortable tying their hair in a bun or ponytail, thus exposing the donor area. In general, extraction with the long hair FUE technique results in scars that are often imperceptible.

neck, and women who may be uncomfortable tying their hair in a bun or ponytail, thus exposing the donor area. In general, extraction with the long hair FUE technique results in scars that are often imperceptible.

Long Hair FUE Technique

For this technique, we position the patient in the prone position, and the hair remains long or, to facilitate handling, it can be cut but leaving it at least 1-2cm long. The upper hair must be pulled upwards, ensuring that hair does not obstruct the surgeon’s field of vision (Figure 4).

Local asepsis is performed with 2% aqueous chlorhexidine; for anesthesia of the donor area, an equal parts solution of 2% lidocaine with epinephrine and 1% ropivacaine is used. It is also necessary to inject tumescent solution, which consists of a mixture of 100mL 0.9% saline solution to 1mg/mL of epinephrine, to help with vasoconstriction of the area and superficialize the follicles, in addition to protecting the blood vessels. We prefer to use the Trivellini 0.9mm-diameter long hair ring punch, with device settings on 180-degree oscillation (200ms) followed by Mamba mode (200ms). We suggest the surgeon extract primarily 1-hair FUs, and when few are present, we suggest splitting 2- or 3-hair FUs into singles. When reconstructing denser eyebrows or when the strands are very thin, it is possible to use 2-hair FUs on the body and center of the eyebrows with very natural results.

All grafts must be inspected under a microscope so that questionable, transected, or damaged grafts are discarded. Following this, all are carefully prepared, removing as much of the epidermis as possible (Figure 5). Thorough dissection of grafts is essential to improve the healing process, avoid the accumulation of crusts, and help guarantee the correct direction of and curvature of the FUs, as it reduces the chance of the FU rotating on its axis and changing the direction of the hair in the healing process.

It is important to pay attention to the surgical timeline while FUs are in the holding solution so that the follicles spend the minimum time outside the body, which helps to ensure survival rates. To support graft integrity and maximize integration of the FUs, our team has found that grafts should be minimally and carefully manipulated, stored in lactated Ringer’s solution, and cooled between 4°-8°Celsius.

FIGURE 4. A: Donor area for extraction follicular units in the nape region with long hairs; B: donor area for extraction follicular units in the nape region with the hairs cut at 2cm.

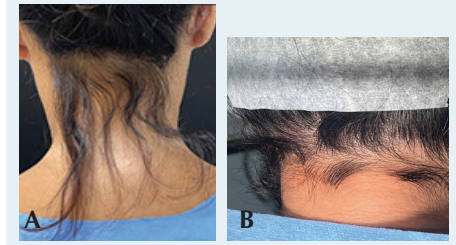
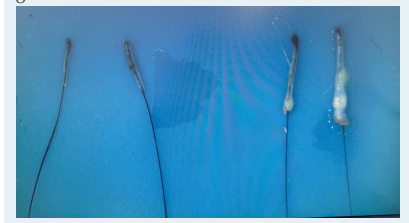


FIGURE 5. Difference between cut and uncut grafts.



Pre-Incision Followed by Implantation of FUs

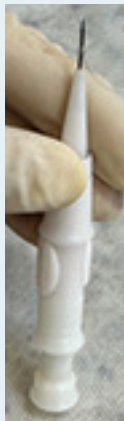
With the patient in the supine position, we perform local asepsis using 2% aqueous chlorhexidine and administer local anesthesia with equal parts solution of 2% lidocaine with epinephrine and 1% ropivacaine intradermally via cannulation at the end of the eyebrow tail. Using a 21G needle, we create an opening port. Then, with a 22G cannula, we administer anesthesia into the superficial subcutaneous tissue along the region to be implanted. Next, we use interrupted 0.1cc intradermal injections of anesthetic to reduce local bleeding. To avoid the risk of local edema, we use the minimum amount of anesthetic and avoid tumescent solution. After anesthesia, the application of platelet-rich plasma (PRP), and stem cells obtained from extracted FUs can be used, which we feel can optimize the healing process and the integration of the FUs.

FIGURE 6. A: The needle tip is bent with the help of a needle holder; B: carrying out pre-incisions with a needle, with the tip bent and the bevel facing downwards, ensuring adequate angulation.



In our practice, we prefer coronal incisions according to the intended direction of the hairs, with an acute angle almost parallel to the skin. After measuring the size of the FU, pre-incisions are made using 22G needles with a bent tip, and bending the needle with the help of a needle holder (Figure 6). To better visualize the pre-incisions, we use methylene blue dye.

FIGURE 7. Implant with the graft placed on the needle.



We insert the grafts with a 0.65mm implanter (Figure 7). The implanter bevel should always face downwards, ensuring that the grafts are level with the skin. After implanting each FU, we use forceps to delicately correct the direction and curvature of the hair.

We implant 1-hair FUs in the head, tail, and upper and lower edges of the eyebrow. If available, we only place 2-hair FUs in the center of the eyebrow. Once we finish placement, we trim the hairs to the desired length (Figure 8).

Post-Operative Care

We recommend that the region be hydrated by applying thermal water every hour after the procedure for at least one day. After 24 hours, we advise for careful and delicate cleaning with a moist gauze. Bandages are not necessary during the recovery period.

We prescribe prophylactic antibiotics for 7 days (such as cefadroxil, with a dose of 500mg every 12 hours) and deflazacort, 30mg every 12 hours for 5 days (to reduce local edema). If necessary, an analgesic such as dipyrone 1g every 6 hours can be used for pain; an

FIGURE 8. At the end of the implantation, excess wires are cut, if necessary.



antihistamine such as levocetirizine 5mg daily may be taken to lessen symptoms of itching. In case of hematoma, *Arnica montana* + Vitamin D2 every 8 hours may be used completely healed. Topical minoxidil or low doses of oral minoxidil can also be used to stimulate hair growth after the procedure.

The most common complications of the eyebrow long hair FUE technique are similar to those for hair transplantation, namely, folliculitis and local transient erythema, which can be treated with topical corticosteroids. We instruct patients to avoid direct sun exposure for the first four weeks.

RESULTS

Transplanted follicles grow at different speeds as they are in different phases of the hair cycle. Three to 4 months after the procedure, a partial result (on average 50%) is expected. Final results with complete restoration of the eyebrows are usually observed after an 8-9 month period. Figure 9 shows the results of eyebrow transplantation at different stages of evolution after the eyebrow long hair FUE technique.

FIGURE 9. Eyebrow transplant results at different stages of evolution after the eyebrow FUE long hair technique.



The strategic distribution of FUs is directly related to the success of eyebrow transplantation, so care in surgical planning and placement is extremely important. When implanting the FUs, it is important to maintain the most acute angle possible to the skin, following the direction of pre-existing hairs (when they are present) or according to the planned surgical design.

Once grown in, the patient will need to trim the new hairs frequently. This is because the anagen phase of the scalp follicles (donor area) is longer than that of native eyebrow hair, and transplanted hairs follow their original pattern even though they are in a new region.

CONCLUSION

Eyebrows play an important role in facial aesthetics and facial expression, so patient demand for this procedure is increasing. It is important to respect the individuality of each patient when selecting the style and direction of the hair, rather than adhering to a fixed pattern.

There are many advantages to using the long hair FUE technique in eyebrow transplantation. It is a minimally invasive surgery that involves often imperceptible millimetric scars, and it does not require the patient to shave the donor area. Long hair FUE allows the surgeon to select the hairs

most compatible with the eyebrows because it is easy to visualize the color, thickness, and curvature of the hair shaft at the time of extraction. The length of the hair also facilitates correct orientation of the hair curvature and direction at the time of implantation. When performed by an experienced surgeon, the long hair FUE eyebrow transplant can provide excellent results.

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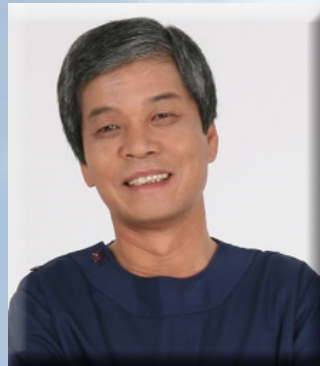
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In Loving Memory Jung Chul Kim, MD, PhD



NILOFER FARJO, CHAIR OF THE PAST PRESIDENTS COMMITTEE

Past president Sungjoo (Tommy) Hwang informed the ISHRS of the passing of one of the most influential researchers and surgeons in our field. Jung Chul Kim was the very first recipient of the Platinum Follicle Award in 1994 and a member of the ISHRS Board of Governors. His groundbreaking research into hair biology and genetics as well as his development of instruments continued until his recent illness. I was often baffled when he gave lectures on genetics as it was so complicated. He was a very serious and reserved man but had a wild side after a few shots of whiskey when he exposed his party trick of long scalp hairs growing on his leg many years after they were implanted.

Below, some of his ISHRS family speak about Dr. Kim's life and enduring legacy.

Moonkyu Kim

Prof. Jung-Chul Kim passed away on June 30, 2024, at the age of 67, just two months before his scheduled retirement. Diagnosed with esophageal cancer in January of this year, he succumbed just six months later. He has a daughter and a son from his 42 years of marriage to his beloved wife, Ok-jin Lee. He dedicated his life to pioneering new paths in hair transplantation and basic hair research.

Since graduating from medical school, I have worked with Prof. Kim for 35 years in the Department of Immunology and Hair Transplant Center. When I first met him in 1989, he had a background in basic medical science, majoring in biochemistry, and was serving as a military doctor. At that time, he was developing hair transplantation methods with Dr. Choi who worked in Seoul, Korea. He ventured into what was then the unfamiliar field of "hair transplantation" because, at that time, governmental research funding in basic medical science in Korea was so inadequate that he planned to earn money through patient practice to support his research.

While punch grafts and mini-grafts were popular at that time, he developed a method using a device to transplant hairs in follicular units. The device he developed in the early 1990s, though not initially receiving much attention, has been widely adopted by many hair transplant doctors in the past decade due to the convenience and high survival rate of follicles with the FUE technique.

In the early 1990s, Prof. Kim discovered that dividing hairs into the upper and lower parts by cutting follicles at the level of lower one-third of the hair root and transplanting them into his own leg resulted in new follicle formation and hair growth in both the upper and lower parts. He showed the components and locations of hair stem cells and presented these findings at the ISHRS meeting, earning the first Platinum Follicle Award in 1994. The hair he transplanted into his own leg became his trademark and always a topic of interest wherever he went.

Starting with a background in biochemistry and molecular biology, he focused on basic research on hair. In the early 1990s, the atmosphere in Korea was dismissive towards research on hair, considering it less critical compared to diseases like cancer or AIDS. However, after meeting Dr. Victor McKusick (see note below), a founder of modern genetics, from Johns Hopkins School of Medicine in the summer of 1994, Prof. Kim was inspired to dedicate his life to studying hair.

Dr. Kim, I have both good news and bad news for. The bad news that since baldness is not caused by a single gene but by multiple genes, it may be difficult to identify all of them even with a lifetime of research. The good news, however, is that just as is difficult for you, it is difficult for others as well, so you may enjoy your research journey for a lifetime.

—Dr. Victor McKusick, Johns Hopkins University, School of Medicine (Aug. 1994)



His research questioned why the same male hormones that cause hair loss on the scalp do the opposite to enhance growth of body hair, such as for beards. To address this, he separated beard hairs, frontal hairs, and occipital hairs, cultured dermal papilla cells, created a cDNA library, and conducted EST sequencing to build a hair-specific gene database. He explored genes related to male pattern baldness using differential display PCR, subtractive library, cDNA library, and Affimatrix chip, ultimately discovering that the gene DKK-1 played a role in male pattern baldness.

Prof. Kim served as a BOG member at the ISHRS from 2000 to 2006 and was a founding member of the AAHRS; in 2011, he established the Korean Society of Hair Restoration Surgery (KSHRS) and served as its first president, playing a pivotal role in advancing hair transplantation in Korea. He viewed his mission as developing new hair transplantation tools and techniques and elucidating the mechanisms of male pattern baldness. As an educator, he enthusiastically trained countless doctors from around the world who wanted to learn about hair transplantation.

Prof. Kim loved golf dearly. He was on the golf course almost every weekend, and every evening after work, he enjoyed playing screen golf. Although not particularly large or muscular, he had a considerable drive distance and was a single handicapper, often envied by others. He continuously studied the mechanics of the golf swing and had his own unique backswing routine.

Prof. Kim was a very quiet and deliberate person, but he enjoyed socializing with people over drinks. He left behind a witty toast as a hair transplant doctor; "Eonje Kkajina" translates to "Forever," which also puns on "When will you become bald?" and this was always a hit at gatherings. He did not shy away from offering drinks and always kept the mood upbeat until the end of the gathering. In 2001, he hosted the ISHRS Traveling live surgery workshop in Daegu, South Korea, inviting about 20 leading members of the ISHRS for an international workshop. The late-night drinking and karaoke singing left lasting memories, earning him the nickname, "Karaoke Kim."

Looking back, I have cherished memories with Prof. Kim. He was my mentor and colleague. As a team, we published over 100 international research papers related to hair. He was always focused on research, eager to evaluate various surgical techniques and methods, and to scientifically assess their outcomes and results.

It feels so unreal to write an obituary for the person who worked with me for over 35 years. Although we can no longer see him, the achievements and human warmth he left behind will remain with us for a long time.

Lt Col David Perez-Meza

It was very sad to learn of the passing of one of our well-respected ISHRS colleagues, Dr. Jung Chul Kim.

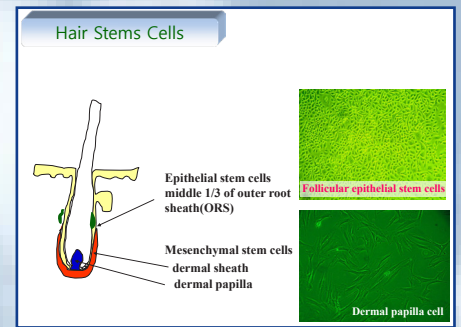
I remember meeting him in 1998 at the Orlando Live Surgery Workshop (OLSW) where he was invited faculty. He continued his participation for several years, and I talked with him at several ISHRS meetings too. He always came to the OLSW and ISHRS meetings surrounded by his fellows and nurses. He was a very quiet person but very knowledgeable about hair restoration and hair research, and he was always helping and teaching us about his techniques and his current hair research studies.

Several of the points he made while participating at the OLSWs (1998-2000s) include the following:

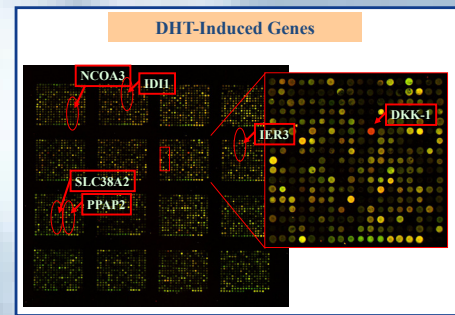
- Donor strip slivering: We were always impressed by his techs who put slivers on a sterile piece of wood and cut great quality grafts with the naked eye.
- In a case study in 1998 with Dr. Matt Leavitt, he compared different instruments for making recipient sites: needles vs blades vs Choi implanter. Dr. Kim demonstrated what I believe was the first use of the implanter at a workshop. See photo in the collage.
- In a case study on follicular hair regeneration, with Drs. Mel Mayer and Jennifer Martinick, the use of bisected hairs in the frontal hairline was presented. Dr. Kim bisected near the bulge 50 1-hair follicular units (100 total grafts) under 40x microscope that were implanted in the right hairline vs 50 intact 1-hair follicular units in the left hairline. Dr. Kim pointed out the recipient sites must be made very carefully at a minimal depth for optimal hair growth. This study was presented at the OLSW and ISHRS meetings and published in 2001.

Some of his presentations based on his hair research and clinical experience include:

- Asians have thick, coarse, straight black hair with low density vs Caucasians. In the occipital area, he found 45%-48% of single-hair FUs, 42%-45% of 2-hair FUs, and 7% of 3- to 4-hair FUs. This was very important information for hair surgeons.
- His studies indicated that for the first six hours there is no advantage to chilling the hair grafts.



- He presented studies indicating that hydrogen peroxide 1.5% was not damaging to the hair grafts and scalp and has been shown to stimulate angiogenesis. He motivated Drs. Sara Wasserbauer, Ron Chao, and me to do a research paper entitled, “Hydrogen Peroxide and Wound Healing: A Theoretical and Practical Review for Hair Transplant Surgeons” (*Dermatol Surg.* 2008 Jul;34(6):745-50).
- The 3K Trichogene Chip for Baldness Research: Dr. Kim created a # K trichogene using dermal papilla cell DNA to analyze gene expressions in



Bessam Farjo

I served on the BOG at the same time as Dr. Kim. He was very quiet during meetings and very courteous and respectful to all. I too fondly remember his “party side” at what might have been the first AAHRS meeting in Seoul. May he rest in peace.

Jerzy Kolasinski

I am very sorry to hear such bad news. Dr. Jung-Chul Kim was one of the most experienced hair restoration surgeons. I had the opportunity to meet him many times at our conferences and workshops. I will remember his vast knowledge, and above all, his exceptional personal culture and charm. We will miss him greatly.

Damkerng Pathomvanich

I was so sorry to hear this tragic news. I send my condolences to the family of Dr. Jung-Chul Kim. He was a kind man and deserving of recognition. I knew him very well.

Jerry Wong

I was so sorry to hear of Dr. Jung-Chul Kim’s passing. He was an impressive academic and an even more impressive party animal. So much fun. I thank him for the memories.

Melvin L. Mayer

So sorry to hear of Dr. Jung-Chul Kim’s passing. He was such a great person and surgeon. I enjoyed working with him on several projects at the Orlando Live Surgery Workshops as well as participating on the faculty of the First Traveling Workshop of the ISHRS in April of 2001.

I have memories of the workshop in Daegu, Korea: all cases were done with the Choi Implanter and one scalp reduction done by Patrick Frechet with implantation of his extender. Dr. Kim and his colleagues hosted the most memorable reception party at one of the local Karaoke bars. We had an evening that extended well into the night, sitting on the floor eating, drinking, and singing. Wow, thank God we had two buses to drive us back to the hotel. It was an evening of unforgettable bonding and fun! Dr. Kim was a phenomenal performer and singer among his many other talents.

I send my love and respect.

Mario Marzola

The program we had in Daegu with Dr. Jung-Chul Kim was our first ISHRS Traveling Workshop. I remember encouraging Victoria and the ISHRS office holders at the time to start workshops in distant parts before others did.

Jung-Chul had impressed us with his research presentations, so Korea was an ideal country to host our first. As others have stated, the presentations were impressive, especially in research.

He was hard working during the day, and very enjoyable company after hours.

So sorry to hear of Jung-Chul’s passing; we send our sincere condolences to his family.

Kapil Dua

I got a chance to meet Dr. Kim when I visited Seoul last year for the KSHRS meeting and even published a picture with all the Platinum Follicle winners from Korea in the *Forum* last year. He was nice man who contributed a lot to our field

Ron Shapiro

I remember fondly when he hosted a meeting in Korea in Daegu. He was quiet and very nice; 67 is too young...

Paul Cotterill

I was with Ron [Shapiro] at that meeting in Daegu, South Korea. It was an excellent meeting, and we got to see Dr. Kim’s research facilities. Afterwards, we had a very nice formal dinner where again he was typically refined and quiet; however, afterwards he took us to his private karaoke bar where, let’s just say the fun, engaging side of Dr. Kim really shone through. It was interesting to see him in his element and enjoying himself so thoroughly.

Paul T. Rose

This is such sad news. He had so much more to offer to our community. Although I did not know him well, I appreciate the contributions he made to our field.

Bob Haber

I also did not know him well, but his contributions preceded the ISHRS formation, as he was the first recipient of the Platinum Follicle award.

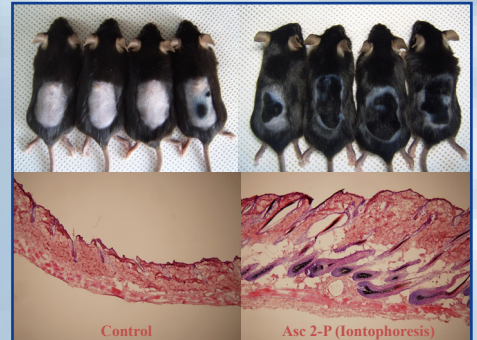
Sharon Keene

Dr. Kim was the well-deserving recipient of the Platinum Follicle Award for his work in hair biology. It is a loss for our field that he is gone, and I am sure a tragic loss for his family. I share my sincere condolences.

Tim Carman

Masa Nagai (Japan) has four 1cm areas on his left forearm with multiple hair FUs growing very nicely!

I did not personally know Jung-Chul either, yet I did read up on his contributions to the field and indeed what a gifted soul and a wonderful life he contributed while on the planet!





Literature Review

Guillermo A. Guerrero, MD | Monterrey, Mexico | guillermoguerrerog@gmail.com

Hair Loss Associated with Minimally Invasive Cosmetic Procedures

The rising popularity of cosmetic procedures such as face lifts and hyaluronic acid fillers has led to an increasing amount of evidence showing hair loss as a rare complication of these interventions. This literature review provides a brief summary of the latest articles addressing this specific issue.

Corona-Rodarte E, Cano-Aguilar LE, Baldassarri-Ortego LF, et al. Pressure alopecias: A review. *J Am Acad Dermatol.* 2024 Jan;90(1):125-132. doi: 10.1016/j.jaad.2023.07.009

The authors of this study divide pressure alopecia into two categories, with type 1 being caused by external pressure (e.g., in bedridden patients) and type 2 related to cosmetic procedures. They describe the different types of procedures related to pressure alopecia, with hyaluronic acid injection in the temporal fossa being the most common. While not related to pressure, other procedures that were described were deoxycholic acid injection (probably due to fat necrosis and temporary vascular impairment), calcium hydroxyapatite injection (related to a granulomatous inflammatory reaction, and fat grafting (only one case reported and related to vascular compromise). Additionally, they summarize several cases of alopecia occurring after mesotherapy using different ingredients. Of all the reviewed cases, none resulted in permanent alopecia.

Novice M, Shapiro J, Lo Sicco KI. Response to Corona-Rodarte et al.'s "Pressure alopecias: a review." *J Am Acad Dermatol.* 2023 Dec;89(6):e285-e287. doi: 10.1016/j.jaad.2023.08.062.

Complementing the previous article, the authors add thread lifting with subsequent tension-induced ischemia and face lifts as procedures that can cause both scarring and non-scarring alopecia. Of interest, they comment on how a study of 60 patients published in 2002 found a lower incidence of hair loss after face-lift surgery compared to other case series with a 2-week use of topical minoxidil before the procedure.

Pulumati A, Algarin Y, Jaalouk D, et al. Fillers impacting follicles: the emerging complication of filler-induced alopecia. *Int J Dermatol.* 2024 Apr 14. doi: 10.1111/ijd.17169.

This in-depth review explores how fillers (hyaluronic acid, calcium hydroxyapatite, or fat) may cause alopecia and proposes pressure or intravascular injection into the superficial temporal artery as possible mechanisms. Of all reviewed cases, the use of hyaluronidase injections seems to relieve symptoms and prevent further damage, and while not preventing hair loss, all the patients recovered after 3-4 months. While not directly affecting calcium hydroxyapatite, using hyaluronidase may dissolve some of its components and be useful in these cases. Adjuvant therapies, including topical minoxidil and platelet-rich plasma, were reported. While their efficacy in preventing complications is arguable, the authors recommend aspiration before injecting, avoiding large boluses, preferring sequential treatment sessions, using blunt cannulas, and being aware that fillers with a greater density may carry a higher risk.

COLUMNIST'S COMMENTS

Given the increasing frequency of cosmetic procedures, it is likely that cases of pressure alopecia will also become more prevalent. Understanding the diverse etiologies and risk factors warrants more studies on preventative measures and appropriate treatment protocols. Additional treatment options that may be beneficial include the use of steroids, antibiotics, and hyperbaric oxygen chamber. ■

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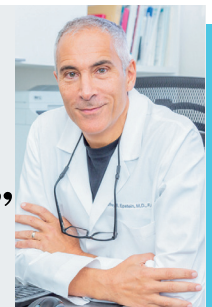
Without a doubt, the single greatest advancement in FUE in the past 5 years has been the WAW cordless and wireless system. From the consistently low transection rate that I personally tracked, to an increase in my speed of graft extraction, a WAW system is enough to make even a die-hard linear-only surgeon enjoy and endorse FUE for their patients.”

Dr. Sara Wasserbauer,
California Hair Surgeon, USA

“97% of hairs are destined to grow... which is exceedingly HIGH!


In my 30 years of specializing in hair restoration surgery, FUE represents the greatest advancement in the field, and Dr Devroye's WAW DUO system is the technological tool that optimizes the results of FUE, in a relatively simple yet truly innovative package. And the punch essentially has sharp external edges and smooth inner edges, so we're able to harvest the hairs with the lowest rate of transection, typically under 3%, which means 97% of the hairs are destined to grow which is EXCEEDINGLY HIGH.”

Dr. Jeffrey Epstein,
Foundation for Hair Restoration, USA



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The Notable Articles Project

The *Forum* in Review, 1990–2020: Revisiting the Articles That Helped Shape the Specialty

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Commentary by René Rodríguez, MD | Bogota, Colombia

When my career in hair restoration began in 2005, eyebrow transplantation caught my attention. Very few doctors were doing this procedure at the time, including Dr. Jeffrey Epstein, author of the 2006 article, "Eyebrow Transplantation." In this article, Dr. Epstein described his technique, which is an advanced hair restoration procedure that significantly impacts the patient's quality of life. I chose to comment on this article because it marked my path in eyebrow restoration, as this article is one of the first ones I read, and it gave me more knowledge about this procedure.

My first contact with eyebrow restoration was in Colombia in 2005 with patients with madarosis due to Leprosy sequelae. Although not all the patients at the center initially were convinced to undergo the procedure, little by little, they began to realize the impact it had on other patients on both an aesthetic and a psychosocial level. I also confirmed it: eyebrows are highly detailed structures, significant in aesthetics and facial expression, and their loss considerably impacts a patient's quality of life. Therefore, since 2005, I have dedicated myself to improving my eyebrow transplant technique and this allows me to provide patients with what I consider to be the best options necessary to guarantee a natural, long-lasting, and aesthetic result.

After almost 20 years of experience, I have witnessed some changes in eyebrow transplantation since this 2006 article:

1. It is an increasingly requested procedure. Patients have more access to information and resources to explore these options for treating eyebrow loss.
2. In my experience, the leading cause of eyebrow loss is no longer congenital hypotrichosis. It is excessive plucking. Until the end of the 1990s, the stereotype of the ideal eyebrow was a thin and short eyebrow that led to excessive plucking. Today, patients come to my consultations wanting to improve the shape and have a thicker eyebrow.
3. The design is more precise. Today, design is the first step in achieving a natural result, and it must be based on each patient's facial features and desired outcome. This will increase the probability of success.
4. Since the use of face masks after the 2020 COVID-19 pandemic, I have noticed a significant increase in awareness of the importance of the gaze (of the upper third of the face) both aesthetically and in non-verbal language, and I believe this has resulted in people looking for options to recover their eyebrows.

5. Social networks have many positive aspects but have also generated an erroneous perception of beauty: perfection and beauty filters. This has generated an increase in patients with unrealistic expectations about the transplant (not only in eyebrows but also in hair, beard, and eyelash transplants), and there has also been a significant increase in patients with body dysmorphic disorder. It is still a challenge to handle these patients.
6. It is still an advanced hair transplant technique. However, with increasing demand from patients requesting it, the black market for eyebrow transplants has also increased, which can affect a patient even more than madarosis.

My take-home message to all readers is that this procedure generates a lot of satisfaction for both the doctor and the patient because it impacts the patient's quality of life. I agree with Dr. Epstein when he notes that "eyebrow transplant patients are among the most grateful." However, it is important to keep in mind that this is a technique that requires a significant learning curve and a highly trained team (both the surgeon and the technicians). It is important to give the best to your patient to avoid negatively and even irreversibly impacting their psychosocial sphere. ■

Eyebrow Transplantation

Jeffrey S. Epstein, MD *Miami, Florida*

The refinement in follicular unit micrografting techniques has enhanced the ability to restore hair to non-scalp areas. Next to eyelash restoration, a procedure I limit to those with a complete absence of all or a section of eyelashes, no procedure has benefited more from these technical advancements than eyebrow restoration. Using all 1- and 2-hair grafts, it is possible to restore essentially natural appearing eyebrows to patients who are, as a whole, the most grateful of my patients, as they no longer have to live with the psychological toll due to thinning or absent eyebrows. Eyebrows, of course, play an essential role in facial aesthetics, serving to complement the most important component of the face—the eyes—that serves as a vital non-verbal communicator of emotions, intelligence, and, especially, beauty.

Loss of eyebrows may be due to several factors. For many patients, the condition may have been self-inflicted, as a result of voluntary plucking when tapered fine eyebrows were in fashion, or it may be attributed to trichotillomania. Other causes of loss of eyebrow hair include trauma, medical conditions, and genetics. When due to trauma, such as burns, skin avulsion, or prior surgery, the loss of hair is made more noticeable because of the typical hypopigmentation of the skin. Approximately one-third of patients I see attribute the thin eyebrows to their heredity. While important to identify any potentially treatable etiologies so as to slow down or stop the further progression of hair loss, nearly all patients with an absence or thinness of the eyebrows can be successfully treated with transplants.

Demographically, approximately two-thirds of my patients are women and one-third men. Asians, who make up almost 15% of my patients, tend to have hair that grows very straight and is somewhat more difficult to transplant, because the lack of curl to the hair makes it even more important that the recipient sites have an acute angle to the skin. While a slight curl of the scalp hairs is desirable, an extensive amount of curl can be a contraindication. While reluctant at first due to the extreme curl of the hair, I have now performed procedures on several African-American patients, and have achieved good results, especially for those with a soft curl of the hair.

The following is a description of my technique for eyebrow restoration. It is based upon performing over 104 of these procedures over the past 3 years. Assisted by my “eyebrow team,” I have developed a technique of single procedure eyebrow restoration where as many as 375 grafts, but most commonly 225 to 250 grafts, are transplanted into each eyebrow.

Technique

In consultation, patients are evaluated to determine if they are candidates and then educated about the pluses and minuses of the procedure. It is explained that the goal of the procedure is not to create “perfect” eyebrows, but rather to significantly improve their appearance, making the pluses greater than the negatives. Typically, of the hairs transplanted, 70% will grow, and of these hairs that grow, 10–15% of them

will grow in an aberrant direction (either too vertical or not flat enough to the skin) despite being planted in an aesthetic direction. These “rogue” hairs can be either cut short or simply plucked out, and have not been enough of a deterrent to having the transplant for my patients. Because the hairs usually come from the scalp, they will need to be trimmed monthly. Sometimes the application of hair gel may also be of benefit to control the direction of hair growth.

Prior permanent makeup is not a contraindication to the procedure (Figure 1). If the patient plans on having the dye removed, it should be performed prior to the transplants. In several patients who had permanent tattoo placed in an unaesthetic position, I have done a direct excision and primary closure of the tattooed skin, resulting in a fine line that can be easily concealed with transplants six months later.

In young men in whom there is a risk of the development of male pattern hair loss, it is explained that, although quite small in number and obtained from a small donor strip, fewer hairs will be available for potential future scalp transplants, and that there will be a small donor scar. When trauma was the etiology of the hair loss, a waiting period of at least 12 months before transplanting is recommended to both ensure that no further original hairs will grow, and to attain reasonably mature scar tissue into which to transplant (Figure 2).



Figure 1. Before (A) and 10 months after (B) 450 grafts to eyebrows in a female with a prior history of permanent eyeliner.

Marking Out the Eyebrows

Because most patients, especially females, have a definite idea of what they are looking for, I find it useful to have them pencil in their eyebrows to demonstrate what they want. Any original hairs can serve as a guide to the natural shape, as well as the direction of hair growth. While the skin where the eyebrows once existed typically appears slightly thicker and more porous than the surrounding skin, it must be recognized that, especially in older patients, a slightly higher (more cephalic) location is desirable to overcome the effect of brow ptosis with aging. Because the transplanted hairs will

continued on page 122

Eyebrow Transplantation

continued from page 121

extend beyond the borders of the markings, I have found it beneficial to draw the superior, and sometimes the inferior, borders slightly closer together than intended.

The eyebrow can be divided into three parts: medially is the **head**, centrally the **body**, and laterally the **tail**. While subtle variations exist, especially between women and men, certain generalities can be made about the shape and size of each part. In general, the eyebrow is 4.5–5.5cm in length, arcing to some degree in women, minimally or not at all in men. Aesthetic guidelines dictate that in women, the peak of the arch (which correlates to the junction of the body and tail portions) occurs along a vertical line drawn somewhere between the lateral limbus and lateral canthus, with some women desiring the tail to continue in a horizontal direction at the same height as the peak of the arch (Figure 1).

The head portion is perhaps the most critically defining portion of the eyebrows. Measuring 0.5–1cm in length, it generally has a square to somewhat rounded medial border located 1–1.5cm lateral and cephalic to the central glabella. A more medial border creates an “older” appearance, and with aging, the action of the corrugator muscles will tend to pull the eyebrows even closer together. The approximately 2.5cm-long body is the area of maximal density and, for the most prominent appearance, is usually the widest portion of the eyebrows. A heavier and more dramatic appearance is provided by a flat horizontal caudal border along the medial half of the body (along with the lateral half of the head), which then changes to a slightly cephalic direction correlating with the narrowing of width that typically occurs, especially in women. Note that, in some men, this narrowing of the lateral half of the body and along the medial aspect of the tail does not occur, and in fact, in some men, this area is the widest portion

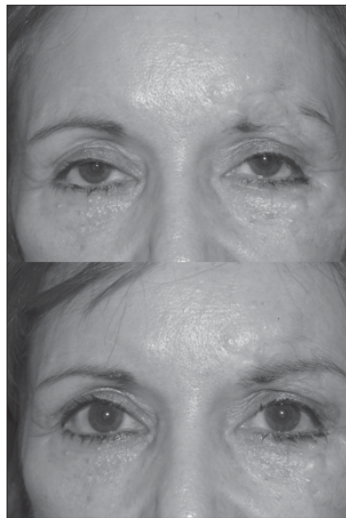


Figure 2. Before and after grafting into eyebrow scar.



Figure 3. Before and immediately after 550 grafts to male eyebrows that were previously tattooed.

(Figure 3). Finally, the approximately 1cm-long tail is the narrowest portion, and has the lowest density of hairs, especially extending laterally. It usually extends in a slightly downward, caudal direction as it descends from the peak of the arch, but as mentioned earlier, some patients prefer it to continue on a flatter, horizontal position.

Harvesting and Dissecting the Grafts

Most procedures are performed under mild oral sedation and local anesthesia. Once anesthetized, the donor strip is excised and the defect reapproximated, which recently has involved the use of the trichophytic technique whereby the lower edge of the donor site defect is deepithelialized to promote hair growth through the scar. A donor strip 1cm in width by 3–4cm in length can usually provide 350–450 1 and 2-hair grafts, while allowing for the discarding of any gray or less than perfect hairs. Larger procedures of as many as 700 grafts require a longer donor strip. The donor area usually extends from above one ear to the lateral occipital region, because the hairs in this area tend to be the last to turn gray, and they tend to provide variation in their caliber and curl that allows for the achievement of subtle variations along different portions of the brows, as explained below.

I have experimented using body hair for donor grafts, including from the toes and legs. In the three cases to date I have performed, the hairs seem to grow, and do not need to be trimmed. However, the small number of cases does not afford enough feedback to allow me to recommend this yet.

The grafts are dissected under binocular microscopic visualization. The majority consists of single hairs, but 2-hair grafts are used for patients with medium to finer hairs to achieve greater density when desired, especially in the central aspect of the body.

Recipient Site Creation

In the medial-most aspect of the approximately 1cm-long head, the hairs tend to grow vertically, and the grafts are placed sparsely to accentuate the “feathering” for the most natural appearance. The hairs then rapidly change from a vertical to a horizontal direction of growth as one proceeds laterally along the head into the body. Along the entire length of the body, the cephalic-most hairs tend to grow at a slightly downward, caudal angle, while the caudal-most hairs tend to grow at a slightly upward, cephalic angle, resulting in a cross-hatching, thus enhancing the density (Figure 4).

The direction of hair growth tends to be horizontal to a slightly caudal direction. In the lateral-most portion of the tail, a second “feathering” zone is created by the use of the finest single-hair grafts placed in a progressively sparse distribution. Finer single-hair grafts are also placed all along the cephalic border of the entire portion of the brows to produce a soft natural appearance.

Meticulous attention to the three-dimensional direction of natural hair growth is essential. In addition to the vertical and horizontal axes, the angle of the recipient sites should be as shallow to the skin as possible to allow for the hairs to grow in a flat position relative to the forehead, so the grafted hairs do not “stick out.” The recipient sites are made using Personna® blades cut to 0.5mm in size, with a 0.6mm blade required in those occasional patients with extremely thick hairs. These tiny blades have several advantages: they al-

low for the closest possible placement of the hairs to each other; they minimize the risk of damage to already existing hairs; and they allow for greater control of the direction and angle of hair growth. The sites are made in a “sagittal” orientation (parallel to the direction of natural hair growth). This allows for a slightly wider opening to place the grafts.

Placing the Grafts

Because of the small size of the recipient sites, the grafts can sometimes be difficult to place, and good counter-traction facilitates graft placement. Because of the relatively small number of grafts typically placed, every hair counts, so the emphasis must be on minimizing trauma to ensure the highest percentage of hair growth. The finest single-hair grafts are placed along the periphery, with any 2-hair grafts going in the central areas when indicated. This achieves a peripheral thinning, as well as greater central density, for what is usually the most aesthetic appearance. It is in achieving the ideal direction of hair growth that the natural curl of the transplanted hairs can be used to

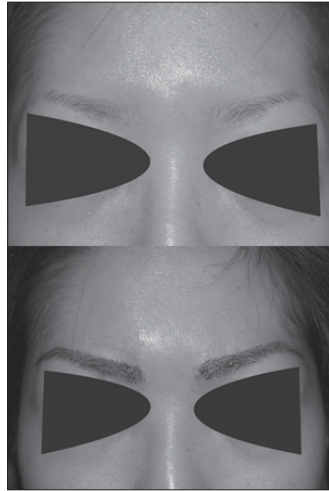


Figure 4. Before and immediately after 425 grafts placed into eyebrows.

their advantage. While trimmed short to the length of natural eyebrow hairs, the curl of the donor hairs should be assessed, then the grafts placed so that the direction of curl complements the direction of the recipient site, so that the hairs curl into the skin as well as in the slight cephalic or caudal direction as desired.

At the end of the initial placing of grafts into all of the recipient sites, every patient is provided the opportunity to look at the eyebrows and provide feedback. In all but a few cases, some revisions are required, typically the placing of more grafts in certain areas. Several patients have required four or five revisions prior to leaving the procedure area to achieve that “perfect” appearance.

Post-procedure Care

Post procedure care is quite simple. Using GraftCyte® spray, the transplanted area is kept moist for the first 72 hours with hourly spraying. Careful face washing is permitted on the third post-procedure day, and normal face washing as well as full resumption of exercise, is permitted on the fifth day. Crusting in the area is usually gone by the fifth day, leaving only mild pinkness and the short transplanted hairs. Like scalp hairs, these hairs will fall out, starting to regrow in as soon as two months when minoxidil is applied.

Conclusion

Eyebrow transplantation has become one of the most challenging yet rewarding parts of my practice. These patients are amongst the most grateful of my transplant patients. Having patients thank me for allowing them to “wake up without having to run to the mirror to make up their eyebrows” makes this a wonderful part of my practice. ♦



Message from the ISHRS 2024 World Congress Program Chair

Henrique N. Radwanski, MD | Rio de Janeiro, Brazil | hnradwanski@hotmail.com

Designing the Scientific Program for the 32nd Congress is in its final stages, and it feels like juggling several objects at the same time. It has been quite a challenge to select

the most interesting abstracts and then to group them in sessions that hold together as a unit; posters will be designated according to themes. Moderators have to be picked; they will introduce the topics and then guide discussions. Throughout the program, panels will be arranged to allow for more debate on specific areas. Additionally, keynote speakers will bring new concepts and give us a peek into the future.

Throughout this process as chair of the 2024 World Congress, I have had the guiding hand of ISHRS Programs Director, Melanie Stancampiano. She gives me suggestions without any hint of imposition, and if I need to refresh my memory of any colleague, she has them on the tip of her tongue. For anyone who has been at an ISHRS annual meeting, Melanie is the first to arrive in the auditorium. She has been sitting at the front table of every meeting for the past 15 years, listening and taking notes, as if she were a young apprentice. She has tirelessly worked on multiple Live Surgery Workshops, regional workshops, webinars, initiatives, and committees. In her words: *"The ISHRS is very intentional about holding programs around the world and providing high-quality education that is accessible to members, no matter where they live and practice. I expect these offerings will continue to expand in the years to come. I look forward to continuing to do my part in advancing the mission and goals of the society."* My heartfelt thanks to you, Melanie!

2024 Live Surgery Workshop

The chair of the 2024 Live Surgery Workshop (LSW), Dr. Jim Harris, warmly invites World Congress attendees to this exceptional event, which will take place on Tuesday, October 15, at Dr. Harris's clinic. Together with co-chair Dr. Sara Wasserbauer, Dr. Harris designed the workshop to complement the educational offerings of the general meeting, providing participants with the unique opportunity to observe world-renowned experts demonstrating state-of-the-art techniques and instrumentation.

"Our program includes four surgery demonstrations, showcasing a variety of methods in anesthetic administration, graft harvesting techniques, site-making methodologies, and graft implantation devices," says Dr. Harris. *"Attendees will have the chance to observe these techniques applied to a range of cases, including scalp, beard, and eyebrow transplants; body hair harvest; no-shave FUE; combination strip harvest/FUE; and long hair harvest and implantation."*

One of the highlights of the workshop is that it will include live demonstrations of the Mamba, WAW, and Zeus devices, as well as strip harvest and trichophytic closure techniques.

As you contemplate the surgical demonstrations, you'll be treated to stunning views of the Rocky Mountains from the operating room windows



Additionally, numerous graft implantation devices, such as sharp and blunt implanters and inserters, will be showcased. Moderators will facilitate Q&A sessions, allowing attendees to engage directly with the operating surgeons. Vendor booths will also be available, offering the chance to purchase surgical equipment demonstrated during the LSW.

Free Half-Day Course on Afro Hair Restoration

Dr. Luis Nader is the director of the half-day course, and Dr. Marta Zollinger co-director, which will be offered free of charge the afternoon of Wednesday, October 16. *"There is no question that this ISHRS World Congress will be unique in what it offers,"* says Dr. Nader, *"and for the very first time, we will include a half-day course dedicated to Afro hair. Unlike other hair types, Afro hair presents unique challenges due to its distinct curl patterns, density, and scalp characteristics."* As a hair restoration surgeon with more than 25 years of experience, Dr. Nader has witnessed the transformative impact that successful hair transplantation can have on individuals of African descent. *"The very top leaders in the field of Afro hair restoration will be presenting their experience, and we have provided a comprehensive combination of lectures with hopes of comparing different devices for graft harvesting and standards of care for androgenetic alopecia in Afro patients."*

The Learning Starts Before the Congress Begins

Join us in Denver this October for the ISHRS 2024 World Congress and pre-meeting activities, where you can immerse yourself in a world of knowledge and connection with industry leaders. From the informative LSW and half-day course to engaging with experts in the field, the stage will be set for a meeting filled with learning and networking opportunities. All of this against the stunning backdrop of Denver, ensuring a truly memorable experience. Don't miss out on this chance to make the most of your ISHRS membership and everything it has to offer. ■

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Three-Day Surgical Assistant Program at the 2024 ISHRS World Congress | Denver

WE NEED YOU!

The upcoming ISHRS World Congress is shaping up to be a great one. We are excited to announce that our Surgical Assistant's Program will span three days (October 17-19), featuring a diverse array of topics, engaging presentations, practical experiences, and interactive discussions. This program will provide a valuable opportunity for participants to collaborate, expand their knowledge, and foster innovation collectively.

We need your participation in the following ways:

- Share a topic you're eager to explore
- Suggest certain staff members to take a more active role
- Offer to present something groundbreaking, captivating, or educational
- Bring your staff to Denver! Not only is it an excellent learning opportunity, but it also fosters a sense of belonging to a larger, global community, potentially boosting job satisfaction and awareness.



Please email Kathryn Morgan, Surgical Assistants Chair, at kathryn@primehair.ca with your ideas, questions, and to find out more about being faculty in the Surgical Assistants Program.



Call for Nominations for Awards

Deadline for nominations: July 31, 2024

This is your chance to nominate a deserving peer for one of these prestigious ISHRS awards:

Platinum Follicle Award • Golden Follicle Award

Awards will be presented on Saturday, October 19, 2024, during the 32nd World Congress Gala Dinner & Awards Ceremony.

Members in good standing may complete an online form, found at <https://www.registration123.com/ishrs/NOMINATION2024/>, to nominate individuals for the Platinum and Golden Follicle Awards. Specific information and accomplishments should be included in an explanation of why the person is deserving of the award (specify which award). **Nominations are due by July 31, 2024.**

All nominees will be reviewed and voted on by the Scientific Research, Grants, & Awards Committee. The awards will be presented on Saturday, October 19, 2024, during the 32nd World Congress in Denver, Colorado.



Platinum Follicle Award Criteria

- Outstanding achievement in basic scientific or clinically-related research in hair pathophysiology or anatomy as it relates to hair restoration.
- The recipient must have been the principal investigator involved in basic scientific or clinically-related research related to hair restoration.
- The results of the research must represent significant advancement the science of hair restoration.
- The recipient may not have been awarded the Golden or Platinum Follicle Awards within the previous 5 years. (Exceptions may be made in the event of extraordinary circumstances regarding new work conducted by the nominee.)
- The recipient will preferably be a member of the ISHRS, however, non-members whose work has been significant may be considered.

Golden Follicle Award Criteria

- Outstanding and significant clinical contributions related to hair restoration surgery.
- The recipient must have been the principal person involved in clinical research or in developing innovations or made a significant contribution furthering the advancement of hair restoration.
- The work of the recipient must have resulted in demonstrated improved patient outcomes.
- The recipient may not have been awarded the Golden or Platinum Follicle Awards within the previous 5 years. (Exceptions may be made in the event of extraordinary circumstances regarding new work conducted by the nominee.)
- The recipient will preferably be a member of the ISHRS, however, non-members whose work has been significant may be considered.

ISHRS Call for Committee Volunteers

We are inviting ISHRS members to apply for openings in several committees. We are seeking dedicated individuals with knowledge and experience within the field of hair restoration surgery and a desire to contribute.

Terms will begin at the conclusion of the upcoming World Congress (October 19, 2024) and typically will run for 3 years.

COMMITTEES

World Congress Scientific Planning Committee	CME Committee	Forum Columnist
AMA House of Delegates Representative	CME Webinars Subcommittee	Guidelines Oversight Committee
Audit Committee	Regional Workshops Subcommittee	ISHRS Europe Council
C&PE Committee	Ethics Committee	Membership Committee
FTF Subcommittee	Exhibits & Advertising Review Committee	Pro Bono Committee
ISHRS Ambassadors for Patient Safety Subcommittee	Fellowship Training Committee	Surgical Assistants Committee

Deadline: September 5, 2024

To apply, go to
<http://registrationreports.com/ishrs/committees/>



Call for *Forum* Columnists

Are you passionate about sharing knowledge and keeping up to date with the latest developments in our field? Do you enjoy collaborating with colleagues and contributing to the medical community? Our medical journal, *Hair Transplant Forum International (Forum)*, is looking for dedicated volunteers to head our columns and reach out to colleagues to gather material for publication. This is a great opportunity to showcase your expertise, build connections within the hair restoration community, and make a valuable contribution to our publication.

As a column head, you will have the opportunity to shape the content of the journal, engage with leading expert colleagues in our field, and make a lasting impact on the ISHRS community. Whether you are a seasoned professional or a newcomer to the field, we welcome your enthusiasm and expertise. We welcome suggestions for new columns and have upcoming openings for the following current columns:

Notable Articles Project: Do you enjoy reading past articles to see how they have stood the test of time? Join our team as the Notable Articles Project editor. In this role, you or an ISHRS colleague will choose an article that was published in a past *Forum* and write an up to 800-word review that provides insightful updates or developments on the topic reviewed: Is the information provided still relevant? Have we had major breakthroughs since its introduction to the field? Where do you think it's heading in the coming years? This position offers a unique opportunity to contribute to our newsletter and engage with our audience in a meaningful way while showcasing your analytical skills and those of your contributing colleagues. To facilitate this role, all past articles dating back to the very first issue of the *Forum* can be found on the FORUM ePUB site at: <https://www.ishrs-htforum.org/>. Search by author or by topic; there's plenty of ways to find something to spark your interest or a conversation. If you are looking for a rewarding and intellectually stimulating role, we encourage you to apply for this position today.

Meeting Review: Do you have a passion for attending hair restoration meetings and synthesizing summaries of key learnings? Do you enjoy sharing insights and perspectives with your peers? If so, we have the perfect opportunity for you! Become our Meeting Review columnist and lead the way in gathering key takeaways from meetings. Join us in keeping our members informed and engaged with the latest developments in the field and creating excitement for the sharing of knowledge that permeates our meetings.

Literature Review: Are you a voracious reader with a keen eye for spotting trends and emerging research in medicine? If so, we have an exciting opportunity for you. Join us as our literature review columnist and delve into the latest articles on a topic of your choosing. Share your insights with our members and spark discussions on cutting-edge research in the medical community.

Have an idea for a column? Let us know and we'll work with you to see if we can make it happen.

If you are interested in becoming a columnist, please reach out to us at forumeditors@ishrs.org. We look forward to working with you to create engaging and informative content for our readers.



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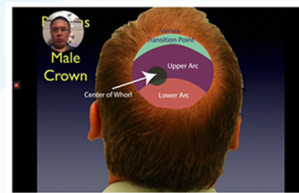


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Meeting Reviews

Review of the 2024 ISHRS Europe Live Surgery Workshop May 26, 2024 | Milan, Italy

Georgios Zontos, MD, MSc, PhD, FISHRS | Copenhagen, Denmark; Piero Tesauro, MD | Milan, Italy



I am pleased to report that the 2024 ISHRS Europe Live Surgery Workshop was a monumental success, marking a significant milestone in the field of hair restoration surgery. Along with my co-chair, Dr. Piero Tesauro, we had the honour of overseeing this prestigious workshop and are proud to share the highlights and achievements of this event with you.

The workshop, which was held immediately following the 46th International S.I.Tri. Congress, saw an overwhelming interest from participants worldwide, demonstrating the global commitment to advancing hair restoration techniques. This year's workshop was not just a showcase of cutting-edge techniques but also a testament to the collaborative spirit and dedication of the hair restoration community. The organization was impeccable, ensuring a seamless and enriching experience for all attendees.

We opened the event with a focus on the objectives of fostering continuous learning and integrating innovative techniques in hair restoration surgery. The workshop, hosted at the renowned San Raffaele Hospital, featured three state-of-the-art operating theaters where live surgical procedures were demonstrated.

STATE-OF-THE-ART SURGICAL DEMONSTRATIONS

Operating Room 1: This room focused on shallow FUT harvesting and shaven FUE procedures, utilizing advanced devices like the WAW DUO and Zeus, along with precision tools such as the Robopen and Lion implanters. Dr. Marcelo Pitchon showcased the shallow FUT harvesting technique, while Dr. Alex Gonzalez demonstrated the use of Zeus, resulting in high-quality grafts. Dr. Asim Shahmala used the WAW tool for efficient harvesting. The latest techniques in placing and implanting with sharp implanters were demonstrated by Dr. Conradin von Albertini using Lion implanters and Dr. Levent Acar using the Robopen.

Operating Room 2: Dedicated to long hair FUE eyebrow restoration, this room highlighted techniques for eyebrow drawing, long hair harvesting, and follicular unit insertion. Dr. Laura Caicedo Albariello, assisted by Dr. Leoncio Moncada, demonstrated harvesting long hair using Trivellini's machine. The placing procedure was expertly handled by Dr. Felipe Pittella using sharp Lion implanters. The curvature of the angle and direction of the grafts was significantly enhanced using long hair.

Operating Room 3: The potential of regenerative medicine in hair restoration was explored through specialty

treatments including platelet-rich plasma (PRP) Plasma X, TRICOPAT procedures, and SEFFIHAIR with adipose stem cells. Professor Santo Raffaele Mercuri, Director of the Department of Dermatology at San Raffaele, provided an in-depth look into PRP Plasma X with preactivation of platelets using a new LED light system. Professor Alessandro Gennai performed the SEFFIHAIR procedure with adipose stem cells, demonstrating its remarkable therapeutic potential. Dr. Elisa Francesconi elucidated the TRICOPAT machine procedure and the conveyance of exosomes.

INTERACTIVE LEARNING

Participants were divided into teams to maximize the learning experience, allowing them to observe and interact with the different procedures in all theaters. Each operating theater had two moderators overseeing the sessions alternately, ensuring a thorough and interactive learning experience. In the main amphitheater, moderators Drs. Bessam Farjo and Paul Rose facilitated discussions and addressed numerous questions from the audience, ensuring that no query or concern remained unresolved. This led to a comprehensive exchange of knowledge and expertise among participants.

RECOGNIZING EXCELLENCE

The workshop concluded with a ceremony recognizing the active participation and contributions of the hair surgeons. Awards were presented to honour their dedication and achievements, reinforcing the collaborative spirit and commitment to advancing the field of hair restoration surgery.

A LANDMARK EVENT

The 2024 ISHRS Europe Live Surgery Workshop was a resounding success. It showcased the latest innovations and techniques in hair restoration surgery, provided invaluable hands-on learning experiences, and fostered a collaborative environment for advancing the field. The collective expertise of the top-notch hair surgeons from around the world, along with the enthusiastic participation of attendees, set a new benchmark for excellence in hair restoration surgery.

I extend my heartfelt thanks to the ISHRS and S.I.Tri., my co-chair Dr. Piero Tesauro, and all the esteemed colleagues who actively participated in this workshop. ■

Review of the BAHRS Annual Conference 2024: Managing the Hair Loss Patient Holistically

May 11, 2024 | Olympia, London

In association with Aesthetic Medicine Live, Olympia, London

Rachael Kay, MB, ChB | Manchester, England, UK

The Annual Conference of the British Association of Hair Restoration Surgery was expertly chaired by Dr. Greg Williams and included many interesting sessions. We thank Dr. Williams for arranging such a varied and highly educational programme.

Non-surgical Options for Treating Genetic Pattern Hair Loss; Moderator: Dr. Greg Williams

Gustavo Torres gave a presentation on how genetic testing for specific genome sequences can provide valuable information to direct hair loss treatments. For example, genomes that are altered in the SULT1A1 enzyme may indicate whether or not minoxidil is likely to be of benefit. Similarly, if there is an altered genotype for the 5-alpha reductase type 1 or 2, it might suggest whether dutasteride would be most likely to induce an improvement in the clinical picture.

Dr. Nicole Chiang spoke in detail about the benefits of utilising platelet-rich plasma (PRP), looking at the evolution of PRP. Dr. Chiang spoke about how the release of various growth factors is thought to prolong anagen, and optimal results are achieved with combination therapies. PRP is thought to have greater impact when the patient presents earlier on the Sinclair scale, that is, when there is hair present on which the PRP can act as a scaffold. Managing expectation is key, and patients are advised they may experience a mild improvement, which might not be noticeable until the fourth session. Typically, Dr. Chiang schedules PRP injections one month apart for six consecutive months. Overall, PRP studies have demonstrated an improvement in thickness and density in female patients and density only in male patients.

Dr. Xavier Goodarzian introduced the concept of polynucleotides in the field of hair restoration. The product is derived from salmon trout gonads and undergoes a DNA purification process ensuring the end product does not contain any fish protein. Mastellis PN HPT suggests it is a 100% resorbable and biodegradable product. Polynucleotides are thought to increase fibroblast activity and contribute to the formation of new fibroblasts. The neovascularisation assists with improved healing and reduced inflammation.

Hubert Lacki enthusiastically demonstrated the Trichopat device, which is based on five technologies. The device can easily differentiate areas that are miniaturising. It is a drug delivery device aiming to penetrate 2-3mm depth. The technologies include 1) incision making, 2) acoustic waves, 3) iontophoresis and electrostimulation, and 5) LED light therapy.

Gerry Barrett concluded the first session with a clear message regarding the insurance of non-medically trained practitioners noting that the insurance is only valid if these staff members are working under the supervision of a doctor and that incision making into the skin and injecting local anaesthetics is not permitted.

Managing Female Hair Loss Holistically; Moderator: Dr. Epameinodas Bonaros

To begin this second session, Emma Furlong spoke enthusiastically about the necessity to have a basic qualification in hair science and hair loss conditions. She noted that it is imperative to be able to have informed conversations with our patients with accuracy and integrity.

Dr. Rachael Kay next spoke about the challenges within the field of General Practice and establishing accurate diagnoses for hair loss conditions, in particular with the differential diagnoses of female hair loss disorders.

Oren Ne'eman gave a novel lecture demonstrating the new generation of prosthetic hair fibres, which could potentially offer candidates an alternative option to surgery and medication.

Chloe Howe spoke about her experiences with scalp micropigmentation (SMP) and the incredible artistry involved to create a natural result with SMP, creating an illusion of greater density, reducing the contrast between the scalp and hair follicle. Chloe emphasised the importance of appropriate pigment dilution and that it is more appropriate to have multiple smaller sessions to assess the pigment response rather than one or two sessions involving greater deposition of pigment to create the "wow" factor, a practice that is motivated by dramatic social media posts at the cost of ethical practice.

Thiago Muffo spoke about driving success and using Pabau software to empower your business with CRM analytical tools. The aim would be to boost marketing efficiency, increase sales and revenue, and improve operational metrics.

Male Hair Loss Holistically; Moderator Dr. Rachael Kay


Bandna Rekhi, psychologist and clinical director of Questa, discussed the psychological impact of hair loss in men. Dr. Rekhi described how we ought to emphasise patient engagement for research purposes to try and prevent further mental health crises in younger men in relation to their hair loss. Robbie Rushton followed with a talk on the management of seborrheic eczema, emphasising how there is a need for structured treatment algorithms and imperative connections with other health professionals to provide a



multi-faceted approach. Dr. Nicola Clayton discussed fibrosing alopecia in a patterned distribution, which is a relatively new diagnosis and closely mimics androgenetic alopecia. Dr. Clayton emphasised the necessity for accurate dermatoscopy and often biopsy in these cases where subtle perifollicular hyperkeratosis may be evident. Mark Smith created a video that opened with some alarming social media images of live beard pigmentation/tattooing, which thankfully were followed by demonstrations of how micropigmentation can be used in a more subtle, patient friendly addition to the beard area. Sunil Kochhar presented a thoroughly informative presentation reflecting on the integral principles of formulating an effective topical treatment, such as molecular weight, the vehicle in which the product is formulated, including its pH and its influence on absorption through the epidermis.

Managing the Ethnic Patient Holistically; Moderator: Dr. Chris D' Souza


Iain Sallis started this fourth session by sharing his honest and insightful perspective on managing patients with Afro-texture hair from a psychosocial perspective. Marta Teixeira gave a thoroughly engaging presentation regarding popular misconceptions about hair loss and tested our knowledge with a quiz. Stephanie Sey discussed the presentation of central centrifugal cicatricial alopecia in Afro-textured hair in a trichological context. Dr. Geoffrey Ibe gave an insightful talk into hairline design expectations in patients with Afro-texture hair and showed some examples of highly effective hairline hair restoration. The last lecture was a video from Dr. Jean Devroye that demonstrated valuable tips and tricks using the WAW DUO FUE system. ■



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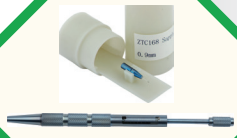
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Help advance the specialty!

Proper research is extremely important in advancing the field. A pillar of the ISHRS is to promote and encourage research.

As such, the ISHRS offers research grants for the purpose of relevant clinical research directed toward the subject of hair restoration. Research that focuses on clinical problems or has applications to clinical problems will receive preferential consideration.

Grant submission deadlines are quarterly: February 10, April 10, July 10, and November 10.

**ISHRS
RESEARCH GRANTS**



Next deadline: November 10, 2024

The ISHRS Scientific Research, Grants & Awards Committee oversees the ISHRS research grant process including rating the proposals and determining the awardees. Research grant recipients are recognized at the Annual Business Meeting at the next World Congress of the ISHRS.



On-Demand Basics Bundle

The online On-Demand Basics Bundle contains more than 80 lectures for a combined 24 hours of education.

The On-Demand Basics Bundle provides more than 80 lectures for a combined 24 hours of education. It is a self-paced, online learning program for those who are new to the field of Hair Restoration Surgery as well as for those who are interested in a refresher course. The On-Demand Basics Bundle is the perfect way to learn about all aspects of hair restoration from the comfort of your home or office. The bundle includes:

- Four days of recorded Zoom lectures with the Q&A and discussions from the August 2021 online Basics Course (total of 65 lectures)
- Full Basics Lecture Series online learning product developed by the ISHRS CME Committee (24 lectures)
- Bonus: full bibliography and emergency preparedness supplemental handouts

The On-Demand Basics Bundle can be taken alone, though we highly encourage newcomers to pair it with the Basics Hands-On Course offered at each ISHRS World Congress.



To register, go to <https://ishrs.org/ishrs-on-demand-basics-bundle-registration/>



ISHRS 2024 CME WEBINAR SERIES

Live and On Demand

The current webinar schedule, registration information, and additional details may be found at the following link:

<https://ISHRS.org/ishrs-2024-cme-webinars>

Upcoming Live Webinars

Newest Technology Available

Wednesday, August 14, 2024 | 12:00PM CDT (Chicago)

Moderators: Nicole E. Rogers, MD, FISHRS | USA

Otavio Boaventura, MD | Brazil

Available On Demand

Diagnosing Challenges and New Techniques

Moderators: Vance W. Elliott, MD, FISHRS | Canada

Ratchathorn Panchaprateep, MD, PhD, FISHRS | Thailand

July 10, 2024

Emergencies and Complications: Prevention and Treatment

Moderators: Robin Unger, MD | USA

Shady El-Maghraby, MD, MSc, FISHRS | Egypt

March 6, 2024

Regenerative and New Allopathic Medicine for Hair Loss

Moderators: Guillermo Guerrero, MD | Mexico

Chiara Insalaco, MD, PhD | Italy

May 15, 2024

Best CSI Presentations and Video Tips

Moderators: Jennifer Krejci, MD | USA

Steven P. Gabel, MD, FISHRS | USA

April 10, 2024

Patient Selection: Yes or No to Hair Restoration Surgery?

Moderators: David S. Josephitis, DO, FISHRS | USA

Miriam Scheel, MD | Guatemala

January 17, 2024

Registration Fees per Webinar

- Physician Attendee of ISHRS 2023 World Congress, \$0 USD
- ISHRS Physician Member, Non-Attendee of ISHRS 2023 World Congress, \$75.00 USD
- ISHRS Physician Pending-Member, Non-Attendee of ISHRS 2023 World Congress, \$100.00 USD
- Physician Non-Member, Non-Attendee of ISHRS 2023 World Congress, \$125.00 USD

The International Society of Hair Restoration Surgery is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The International Society of Hair Restoration Surgery designates this Other Activity (blended synchronous and enduring) for a maximum of 2.00AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Note: CME Credit may only be claimed one time for each webinar.



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Seeking Hair Restoration Physicians & HT Team Members

Our company is seeking experienced Hair Restoration Surgeons, RNs, PAs, and techs for our offices in **Kansas City (MO)**, **Scottsdale**, and **Chicago**. We specialize in FUE manual extraction and provide everything from space, supplies, and management to each team. Opportunity to make \$500,000–\$1,000,000/year as a physician. Relocation and competitive pay for staff depending on skill level. Relocation packages available.

Please send résumés to Tu.Tran@advancedhair.com.

For Sale—ARTAS iXi Robotic Hair Restoration System

For sale: ARTAS iXi Robotic Hair Restoration System – Large Discount – Like New – Call **1-407-502-2101**.

For Sale—ARTAS Robot

This is the 2023 i9 version (purchased brand new in May of 2023 from Venus Concepts). Very gently used, basically in NEW condition. Chair included (required for the system to work properly). Still has warranty for the next year.

Will sell disposable kits (if any remaining) with the system. Asking \$190,000. Will consider covering shipping cost.

Please reach out to Emily Jiles at **1-941-867-7682** or via email at drjilesmktg@gmail.com.

SAVE
THE DATE!
Oct. 23-25, 2025

World Congress 2025 Berlin

Save the date and mark your calendars!

We are pleased to announce the dates and city for the ISHRS 2025 World Congress.



Calendar of Hair Restoration Surgery Events

<http://www.ishrs.org/content/upcoming-events>

DATES	EVENT/VENUE	SPONSORING ORGANIZATION(S)	CONTACT/INFORMATION
AUG 10, 2024	ABHRS Written Exam <i>(online)</i>	American Board of Hair Restoration Surgery www.abhrs.org	https://abhrs.org/certification/certification-exam-dates/
AUG 14, 2024 12PM Central Time/ Chicago	CME Webinar: Newest Technology Available	International Society of Hair Restoration Surgery	https://ISHRS.org/ishrs-2024-cme-webinars
OCT 15, 2024	ABHRS Oral Exam <i>(in person)</i> In conjunction with the 32nd World Congress of the ISHRS <i>Denver, Colorado</i>	American Board of Hair Restoration Surgery www.abhrs.org	https://abhrs.org/certification/certification-exam-dates/
OCT 15, 2024	Live Surgery Workshop <i>Denver, Colorado, USA</i>	International Society of Hair Restoration Surgery www.ishrs.org	www.32ndannual.org
OCT 17-19, 2024	32nd World Congress of the ISHRS <i>Denver, Colorado, USA</i>	International Society of Hair Restoration Surgery www.ishrs.org	www.32ndannual.org
NOV 11, 2024	11.11 ISHRS World Hair Transplant Repair Day Fight The FIGHT Public Awareness Campaign	International Society of Hair Restoration Surgery www.ishrs.org	https://fightthefight.ishrs.org/hair-transplant-repair-day/
OCT 23-25, 2025	33rd World Congress of the ISHRS <i>Berlin, Germany</i>	International Society of Hair Restoration Surgery www.ishrs.org	

Educational Maintenance Requirements for Full Members and Fellow Members

Beginning in January 2024, a new POINT SYSTEM was introduced to allow more choices for full Members and Fellows Members to meet the requirements. Details can be found at:

<https://ishrs.org/physicians/list-ishrs-approved-meetings-meet-additional-minimum-educational-requirement/>



Mission: A global hair restoration medical society committed to improving patient outcomes by promoting member education, collegiality, research, innovation, ethics, and public awareness.

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Global Council of Hair Restoration Surgery Societies

Membership proudly includes:

American Board of Hair Restoration Surgery
 American Society of Hair Restoration Surgery
 Arab Association of Hair Transplantation
 Argentine Society of Hair Recovery
 Asian Association of Hair Restoration Surgeons
 Association of Hair Restoration Surgeons-India
 Australasian Society of Hair Restoration Surgery
 Brazilian Association of Hair Restoration Surgery
 British Association of Hair Restoration Surgery
 China Association of Hair Restoration Surgery
 German Society of Hair Restoration
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 Korean Society of Hair Restoration Surgery
 Mexican Association of Trichology and Hair Transplantation
 Paraguayan Society of Hair Restoration Surgery
 Polish Society of Hair Restoration Surgery
 Swiss Society for Hair Restoration Surgery
 Thai Society of Hair Restoration Surgeons



Editorial Guidelines for Submission and Acceptance of Articles for the *Forum* Publication

- Articles should be written with the intent of sharing scientific information with the purpose of advancing the art and science of hair restoration and improving patient outcomes.
- If results are presented, the medical regimen or surgical techniques that were used to obtain the results should be disclosed in detail. If intra-operative or immediate post-operative photos are presented, please submit photos that show results (at least 6 months after surgery) of the procedure being presented.
- Articles submitted with the sole purpose of promotion or marketing will not be accepted.
- Authors should acknowledge all funding sources that supported their work as well as any relevant corporate affiliation.
- Trademarked names should not be used to refer to devices or techniques, when possible.
- Although we encourage submission of articles that may only contain the author's opinion for the purpose of stimulating thought, the editors may present such articles to colleagues with experience in the area in question for the purpose of obtaining further opinions to be published alongside the original article. Occasionally, a manuscript might be sent to an external reviewer who will judge the manuscript in a blind fashion to make recommendations about its acceptance, further revision, or rejection.
- Once the manuscript is accepted, it will be published as soon as possible, depending on space availability.
- All manuscripts should be submitted to forumeditors@ishrs.org.
- An Author Authorization and Release form must be individually completed by every author listed on the byline and the Word document (not a fax) submitted at the time of article submission. The form can be obtained in the Members Only section of the ISHRS website at www.ishrs.org. This release is meant to be signed electronically directly in the Word document. Simply open on your computer, fill in the highlighted fields, and return the Word document with your submission.
- All figures and tables should be sized down to no greater than 6 inches in width and sent as separate attachments to your email.
- 11-17. For the complete list of instructions and downloadable *Article Submission Guidelines Checklist* and *Author Authorization and Release Form*, go to: <https://www.ishrs-htforum.org/content/authors>.

Submission deadlines:

August 5 for September/October issue
 October 5 for November/December issue
 December 5 for January/February issue

Classified Advertising Guidelines for Submission

To place a Classified Ad in the *Forum*, email ishrsduckler@gmail.com. In your email, include the text of what you'd like your ad to read. You should include specifics in the ad, such as what you offer, the qualities you're looking for, and how to respond to you.

Classified Ads cost \$125 per insertion for up to 75 words. You will be invoiced for each issue in which your ad runs. The *Forum* Advertising Rate Card can be found at the following link:

<https://ishrs.org/media/advertising-and-sponsorship/>

Submit your Classified Ad to:
ishrsduckler@gmail.com





ISHRS World Hair Transplant Repair Day: 11.11.24

Save the date and plan to participate!

Visit the media kit page in the link below for all resources so you can start planning:

<https://fightthefight.ishrs.org/media-kit/>

PARTICIPATE IN HAIR TRANSPLANT REPAIR DAY: NOVEMBER 11, 2024

How Hair Transplant Repair Day Works

- ISHRS Physician Members or members of a Global Council Society who wish to participate may request to have their name added to the [HairTransplantRepairDay.org](https://fightthefight.ishrs.org) page.
- Potential patients may reach out individually, as they choose, to listed physicians.
- Some individuals may already have a reparative case scheduled for 11/11.

Do you have a case study to share?

We encourage you to submit your case in your preferred language for inclusion on the website. This not only helps us reach a wider audience through our paid ads program and journalist outreach efforts, but also gives you the chance to gain global exposure by sharing your story.

For questions, email bmejia@ishrs.org.



HAIR TRANSPLANT FORUM INTERNATIONAL

International Society of Hair Restoration Surgery

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SAVE THE DATE



DENVER2024

**32ND WORLD CONGRESS OCT 17-19
WITH LIVE SURGERY WORKSHOP OCT 15**

32NDANNUAL.ORG

Join us for a Live Surgery Workshop on October 15
and the World Congress from October 17-19.

The ISHRS World Congress provides the
highest quality education for hair restoration surgeons.

TUESDAY 15	WEDNESDAY 16	THURSDAY 17	FRIDAY 18	SATURDAY 19
Live Surgery Workshop	Pre-Courses	ISHRS World Congress		

