

# FORUM

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HAIR TRANSPLANT FORUM INTERNATIONAL

## IN THIS ISSUE

Exploring Safe Donor Follicle Harvesting in Follicular Unit Excision: A Comprehensive Review

Three Simple Steps for a Refined Strip Harvesting (Follicular Unit Strip Excision)

How I Do It: Innovative Storage Device

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WITH  
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**ISHRS**  
HAIR RESTORATION SURGERY



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## Celebrating the Life and Legacy of ISHRS Founding Member, Sheldon Kabaker—A Mentor, A Friend, A Talented Surgeon—In the Words of Those Who Knew Him Best



Shelly and his beloved wife of over 30 years, Marcia.



Danny Rousso, who was ISHRS president at the time, presented the Manfred Lucas Award to Shelly at the 2000 Annual Scientific Meeting in Hawaii.

### Sheldon S. Kabaker, MD, FISHS

June 29, 1939 – December 8, 2023

In this issue we celebrate the life and work of Sheldon Kabaker who was one of the Founding members of the ISHRS. As one of the ten original Board Members, he helped to shape the society into what it stands for today. A leader, a teacher, and a man of great surgical talent from whom many of us learnt about the hairline lowering technique with trichophytic closure. With his wife, Marcia, he traveled the world to join in our many meetings and social events. Here we have a look back over his life through the words and pictures of his friends and colleagues.

—Nilofer Farjo, Chair, Past Presidents Committee



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Hair's the Question	Sara M. Wasserbauer, MD, FISHRS
Hear from the Assistants	Marwan Noureldin, MSc
How I Do It	Timothy Carman, MD, FISHRS
Literature Review	Guillermo A. Guerrero, MD
Meeting Review	Rachael Kay, MBChB
Message from 2024 ISHRS World Congress Program Chair	Henrique N. Radwanski, MD

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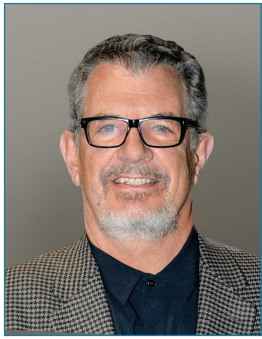
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## President's Message

Bradley R. Wolf, MD, FISHRS | Cincinnati, Ohio, USA | [president@ishrs.org](mailto:president@ishrs.org)

### **Education and Excitement Await: Details for the 32nd Annual ISHRS Congress**

The ISHRS is synonymous with excellence in the field of hair restoration surgery and stands on three pillars: research, education, and collegiality. Our most active pillar is education. An important key to success in life is taking advantage of educational opportunities at all levels to further one's knowledge. The ISHRS offers numerous educational opportunities including webinars (for CME credit), live surgery workshops, meetings in association with Global Council societies, an annual cadaver workshop, and the "Big One," our annual Congress. This year is the 32nd, scheduled for October 16-19 in Denver, Colorado.

For Denver, the Scientific Committee has been chosen, and Program Chair Henrique Radwanski, from Brazil, is fully engaged in finding featured speakers to accent the Scientific Program, which will be built on your submitted abstracts. Please see the Program Chair's message on page 29 to become acquainted with Henrique. His career is impressive and has certainly qualified him to lead us on the road to Denver. You should receive the call for abstracts by the time you read this message. It will last about three months. The more abstracts we have, the richer and more diverse our program will become.

There would be no annual meeting without the participation of our dedicated ISHRS members. Seasoned veterans who have proven to be hard workers and good communicators occupy prominent positions at our annual meetings. Some attendees complain that they always see the same members over and over. It's difficult to argue with success, but we are always looking for eager volunteers to fill entry-level positions. In the future, if you want to volunteer to help with the meeting, approach any member of the Board of Governors, ISHRS administration staff, and/or members involved with the meeting to let them know you would like to get involved. Submit an abstract, present a lecture, attend the Newcomer's breakfast and Welcome Reception to meet established members. We are always looking for and will recognize those who are dedicated to the values of the ISHRS and are interested in getting started on the path to leadership.

The average temperature in Denver in mid-October ranges from 37°-68°F (3°-20°C). Colorado has unique weather patterns due to the mountains, which can result in unseasonably warm or cold conditions just about any time during the year. It can snow as early as September 1, but temperatures in the 60s or higher can occur from October through March. Typically, however, the best weather can be found between May and October. In other words, the weather is unpredictable at this time of year near the Rocky Mountains. In addition to the usual city attractions (museums, parks, the zoo, capital building, restaurants, breweries), the mountains offer an array of unique opportunities including day trips by

bus or car to national parks, hiking, biking, spectacular golf courses, the Coors Brewery in Golden, and The Red Rocks Park and Amphitheater. So, check out the weather and all the activities in advance and plan your travel and activities accordingly.

Red Rocks Amphitheater, designated a National Historic Landmark by the National Park Service and Department of the Interior, offers an acoustically flawless experience amidst the breathtaking beauty of ochre sandstone.



Just a short drive from Denver, outdoor lovers can check the Rocky Mountains off their bucket list.



### **A Victory for Science**

In 1983, the United States Federal Drug Administration (U.S. FDA) banned prosthetic hair fibers, but they remain legal and used in some countries. In 2020, ISHRS member Konstantinos Anastassakis (FISHRS) had a lawsuit filed against him by a fiber manufacturer due to an opinion article he published. This article raised awareness by analyzing the serious effects of these fibers on the patient's scalp and health. He recently notified the ISHRS that he successfully defended himself against this lawsuit. Dr. Anastassakis was supported by many ISHRS members. Congratulations to him for his persistence and scientifically substantiated claims which led to his success. As he commented, this is "a great victory for science and the free spirit of expression of scientific opinion." It is indeed a victory for all of us. ■



## Co-Editors' Message

Natalie Kash, MD | *Bellevue, Washington, USA*;  
Luis A. Nader, MD, FISHRS | *Reynosa, Mexico* |  
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We wish you all a happy New Year and hope that the year ahead brings you all health, success, and happiness. We are excited for all that 2024 will bring for the ISHRS and the *Forum*.

This first issue of 2024 is a great reminder of the importance of upholding the pillars of the ISHRS in the past, present, and future.

The messages from many members honoring and celebrating the life of Dr. Sheldon Kabaker, founding member of the ISHRS, highlight the great legacy and impact he will leave through his advancements in the field of hair restoration, willingness to teach and mentor, and many connections he made within our community and beyond. He truly embodied the three pillars of the ISHRS: research, education, and collegiality. In his President's Message, Dr. Bradley Wolf discusses these pillars and focuses on the upcoming educational efforts of the society through the 32nd Annual World Congress, which will be held October 17-19, in Denver, Colorado. Dr. Henrique Radwanski provides his background and excitement on being the ISHRS 2024 World Congress Program Chair. As you plan conferences and workshops to attend this year, don't forget to consider the updates to the ISHRS Point System and Membership Requirements, which can be found on page 19.

This issue includes original articles on optimizing donor harvesting in follicular unit excision (FUE) and follicular unit strip excision (FUSE). Drs. Anil and Seema Garg review key concepts to consider for safe donor follicle harvesting in FUE. Drs. Blythe Ke and Damkerng Pathomvanich describe three steps for refined FUSE in those with high donor density, curly hair, or thick/firm skin, which is an update to the open/skin hook technique previously described by Dr. Pathomvanich. Additionally, Dr. Timothy Carman's How I Do It column provides details on an innovative graft storage device developed by Drs. Pradip and Kuldeepsinh Atodaria and colleagues.

Our regular features round out this issue. The Notable Articles Project provides valuable commentary on the 1995 article by Dr. Kabaker, "The Hair Transplant Surgeon Dealing with His Own Baldness." Dr. Luis Nader provides commentary on the often-overlooked practical consideration of the impact of a surgeon's appearance on some patients and how to appropriately address and discuss this. Dr. Guillermo Guerrero's Literature Review summarizes recent studies on hair transplant in primary scarring alopecias. Dr. Sara Wasserbauer's Hair's the Question reviews JAK-STAT inhib-



**Looking for inspiration? Check out past issues of the *Forum* dating back to its inception; these can be found on ePUB at <https://www.ishrs-htforum.org/>.**

itors. Dr. Steven Gabel's ABHRS President's Corner summarizes the important work of the organization and provides important information on upcoming examination dates.

As you plan for the year ahead, we encourage you to think about any new research, techniques, observations, or difficult cases that you have developed and encountered over the last year. We

invite you to share them with your hair surgery colleagues through the upcoming World Congress and by submitting an article to the *Forum*. There are multiple ways to contribute to this journal. In addition to sending in an original scientific article, you can also submit to any of our various columns: How I Do It, Complications and Difficult Cases, Letter to the Editor, and The Notable Articles Project (you pick the article and write the commentary). Looking for inspiration? Check out past issues of the *Forum* dating back to its inception; these can be found on ePUB at <https://www.ishrs-htforum.org/>. Search by keyword, author, or date of publication.

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**From Dr. Jeff Epstein**

With the passing of Dr. Sheldon Kabaker in December, the facial plastic surgery and hair restoration field lost a truly talented gentleman/surgeon, many ISHRS colleagues lost a dear friend, and I lost my mentor in the truest sense of the word. But of all these losses—which by all measures and accounting are truly special and unique—the greatest loss is that experienced by Marcia of the loss of her wonderful husband.

By the time I met “Shelly” (at that time “Dr. Kabaker,” of course) in 1993 as a motivated young surgeon seeking further training, he was well-established as one of the most respected facial plastic surgeons in northern California, a true master in rhinoplasty and aging face surgery, and unique in his embracing of hair restoration surgery as part of the aesthetic field. The opportunity to learn from this “giant” with his breadth of skills was why I flew out to Oakland to interview with him for a one-year AAFPRS fellowship, a day spent observing him perform a hair transplant in one room and a facelift in the adjacent operating room that convinced me that this is how I envision my future practice. Fortunately, he somehow felt I was worthy of serving as his very first fellow, perhaps a bond made over our vegan lunch in a Berkeley restaurant—a bond that was to evolve into a 30-plus year history of friendship, professional growth, and—while I imagine in typical modest fashion he would guffaw at the word—love for each other.

How can I speak more highly of this surgical icon? He was a true mentor for so many of his many AAFPRS fellows, but he would give just as much time to any colleague who approached him at a meeting wanting to learn from him.

He was a perfectionist but not neurotic, patient but appropriately paternalistic when necessary, supportive but brutally honest. He was adored by his office staff, his patients who sought out his unique expertise that culminated towards the last decade of his professional career with a focus on his hairline lowering/forehead reduction surgery, a natural evolution from his mastery of the TPO “Juri” flap, which was a surgery he brought to the United States, and his tissue expansion work. Recognizing the unsurpassed benefits of this single-stage forehead reduction surgery that could lower the overly high hairline by an inch or more, I returned to Shelly’s operating room in 2017 for several days to learn his tips for achieving such impressive results, along with the opportunity for my wife Gorana and I to spend some quality time with him and Marcia.

After receiving his MD degree from the University of Illinois College of Medicine in 1964, Dr. Kabaker served as a captain in Vietnam in the U.S. Army Medical Corps, and as such he was buried with military privileges. Otolaryngology training in Cleveland and USC Medical Center was followed by fellowship training in facial plastic surgery. In his nearly 50 years spent in private practice in the San Francisco area, he was an innovator, unafraid to incorporate a variety of subspecialties and new techniques—facelifting, open or external rhinoplasty, scalp flap surgery (after visiting the famous Dr. Juri in Argentina), and of course advancing refinements in hair transplantation that evolved from plugs to mini/micrografts to follicular unit grafts, harnessing his aesthetic skills for artistic hairline creation and keeping hair restoration relevant within the aesthetic surgery field. He



lectured and visited colleagues worldwide, authored seminal articles, and loved to share his passion and knowledge. Through his actions, he infused in his fellows such priceless attributes of honesty, respectful patient care, and most importantly, humbleness (at least he certainly tried to with me through his friendship and straightforward advice).

I mean, how could one realistically expect me to be humble after I had trained under a surgeon who went by one name: Shelly? Think about it: Cher. Madonna. Kanye. Clint. All so unique and well-known that they go under a single moniker. Sharing some of the sentiments I received from colleagues expresses what I lack in words:

*Shelly was everything a physician should be: kind, sharing, talented, modest, and more. He was both a mentor to me in all things hair and a cheerleader for many events. I was proud to be his friend. He contributed so much to our field and was a mentor to many besides myself. He will be missed by a legion of friends and colleagues*

*He was such an incredible person of the highest integrity and generosity. I always thought of him as one of my best friends, someone who would always have your back and help you!*

*A pillar of our society, a gentle giant, a wonderful colleague, true mentor, a kind and humble man, a shining example for all, brilliant, caring, a generous soul, giving, compassionate. The list of accolades goes on and on. The sadness of those involved in hair restoration surgery reflects the profound love we had for this man.*

All of us who had the fortune to call Shelly a friend and colleague can only begin to imagine the sense of loss that Marcia is experiencing, and our deepest condolences go out to her. Personally, I lost my second father, my career dad, and am a bit lost now. Not only was he someone from whom I could seek professional guidance, his greatest contributions to my life were two things: he would always tell me what he honestly thought, helping me to keep my integrity while I was focused on building a practice; and he was my biggest fan.

Just over a month ago, I received an email from Shelly in response to an email blast I had sent out reviewing my work in hairline lowering surgery where he wrote, simply:

*Very impressive. I am proud. Yours very truly, Shelly*

**From Dr. Sara Wasserbauer**

I was taught that the best thing to say when there is grieving is to be honest. And when I was encouraged to write something for Sheldon Kabaker, I just—honestly—did not know what to say.

I count myself lucky to have practiced my last 17 years about 12 miles from him, and even though I was not his fellow, we would share patients and staff and operate together.

I almost bought Shelly's practice in 2006 when he was thinking of retiring. He did not get around to retiring for another 10 years because he loved doing what he was doing so much. He also did not get around to selling me his practice. In a classic case of Shelly doing what he thought was best for people, HE talked ME out of buying HIS practice.

We were sitting in his office with his wonderful dog, Bailey. He told me to take out a loan and start from scratch. He told me to focus on hair surgery alone. Then he lowered his voice, and, in a conspiratorial tone, he told me, "Do you want to know the secret to being happy and successful in your practice?"

"Please!" I answered, expecting him to tell me some platitude; something like "Always be kind to your patients" or "Always be open to new ideas and keep learning."

"Live within a 10-minute commute of your office," he said with the comedic timing of an actor and without a hint of irony. I now do, and he was right. I also have an office dog, just like he did. It calms everyone down. He was full of simple, brilliant ideas.

I will leave it to others to extol his virtues as a surgeon and educator but suffice it to say, everyone in this field has Dr. Sheldon Kabaker to thank. Inventions, innovations, not to mention being one of the first or a founder at everything ISHRS or hair surgery-related. He had a whole wall of awards. He could have had an Oscar on that bookcase, and I would have believed he deserved it (probably for

his comedic timing). Because of the gracious generosity of Marcia, I have a tiny pair of Golden Follicle earrings that I will always remember him by, like a tiny version of that bookcase, bringing him along to the meetings to learn and reconnect with his colleagues.

Shelly was always ready to help, to teach and to contribute dry humor. Early on, I emailed him a case that was a puzzle. A series of folds at the crown of the scalp. I ended up having several of these cases over years—all of them correctly diagnosed with Shelly's help as cutis verticis gyrata (CVG). After the fourth or fifth case, Shelly emailed me back, "Another one? What the heck are you putting in the water over there?"

Shelly was bald, and very tall, with a regal "David Niven" moustache that he carried off like a pro. He knew everyone. I once asked Shelly (when he was still "Dr. Kabaker" to me), why—with his vast international network of the best hair surgeons as his friends—he had never gotten a hair transplant himself. He looked at me straight on and with a sarcastic twinkle in his eye he said, "Well I never figured out how to do it in a mirror, so who could I get to do it?" We both laughed.

If you missed Shelly and Marcia, you missed one of the greatest love affairs you might ever see. Even an inveterate cynic would agree that while there are plenty of mismatched couples in the world, they were not those. I am convinced that Marcia and Shelly were in love until the last moment and will be even beyond. You felt it in the room when they were together. Tenderness. Respect. Love.

Thank you, Shelly and Marcia. I was taught that the best thing to say when there is grieving is to be honest. And—honestly—Shelly was one of the best people I ever met. I just don't know how else to say it.

**From Paul Rose**

I was able to attend Shelly's funeral. It was a simple and elegant service as you would expect with Shelly. He received wonderful heartfelt words from Jeff Epstein, Sara Wasserbauer, Jason Dudas, and others. Danny and Nancy Rousso flew in from Birmingham and provided comfort for Marcia and the family.

It was extremely touching to learn of the lives Shelly touched. He received a military salute for his service in Viet Nam.

We will miss him greatly.

**From Carlos J. Puig**

All who knew Shelly and interacted with him were better for it. I also spent a lot of time with Shelly, as many of you did including on the golf course! We went on a guys trip to Arizona. He also was my scalp advancement mentor etc., etc., etc. + the many wonderful memories we have all shared with him. Most importantly he was my friend.

**From Victoria Ceh**

Shelly was my president in 1999. I was new to the Society in 1998 (Russell was my first president, but only for a partial year). Shelly embraced me with open arms and welcomed me. He was a fair and strong president, and very intelligent. He was full of ideas and enthusiasm to grow the society. His

dry humor was hilarious. And he was so humble...the best and smartest surgeons always are. Shelly and Marcia were always so friendly and kind to me. I will miss him..

**From Jim Vogel**

Above all else, Shelly was a dear friend. He was also a trusted colleague, a mentor, and a real mensch. My history with Shelly goes way back. He was one of the only other facial plastic surgeons that was also very interested in hair replacement surgery back in 1985 when I started doing hair transplants. I began to do hair transplants over 38 years ago, and Shelly quickly became one of my "go to" references. When I started putting hair meetings on in Birmingham in 1990, Shelly was quick to offer to help. When Dow Stough and O'Tar Norwood asked me to help start the International Society of Hair Restoration Surgery and to put on the first meeting in 1993, Shelly was the first person I called to ask to help me put on the meeting. He was always there whenever I asked. But he was also one of the most humble surgeons I've ever known. He loved to teach and always had a great sense of humor, which made learning from him even more special. I think a lectureship in his honor would be very fitting.

We will miss him dearly.



**From Danny Rousso**

I met Shelly years before the ISHRS existed, at an AACCS meeting in Los Angeles. He was the first guest lecturer to come to a company meeting of the old Puig Medical Group in 1980. Although we never met there, we were both surprised to learn that we were both stationed at Letterman Army Hospital in 1970. Knowledgeable, kind, respectful of everyone, a man of immense integrity, never without a smile, and a wonderfully dry sense of humor. We considered partnering a few times in the early 1980s, but it never really came together, although we consulted often. I always felt blessed by his friendship. The world and our profession have been well served because he was with us.

Goodbye, dear friend.

**From Sharon Keene**

Dear Bulbs: It is with sadness that I share the news of our loss of an esteemed colleague, Dr. Shelly Kabaker. We were fortunate to have had him as a part of our group. His professionalism, generosity of knowledge, skill, spirit, and of course, his friendship, will be greatly missed.

**From Marcelo Gandelman**

It was with profound sorrow that I had to convey the news regarding Shelly's passing. He wasn't merely a fellow professional but a longstanding companion with whom I engaged in studies, surgical collaborations, and journeys.

Our final meeting took place in Guadalajara at the wedding of Arturo Sandoval's daughter in 2020. His absence will be deeply felt, and I will cherish the memories we shared.

**From E. Antonio Mangubat, MD**

Shelly was a special person, so generous with his knowledge and time. He was one of my early mentors in tissue expansion scalp reconstruction. He had a wealth of experience that he was willing to share with anyone.

The world is a better place for Shelly Kabaker having lived and shared his life with so many friends.

**From Damkerng Pathomvanich**

It is very sad news to know that we have lost our friend and our mentor. Shelly Kabaker you will be in our memories.

**From Tommy Hwang**

It's so sad to hear the news. When he visited Korea 22 years ago, he was a very kind Western man to me as a young man. He was a very generous man with a warm heart. He shared a photo of his male pattern hair loss progress with age. He was a kind man who allowed me to use it in my textbook.

We will continue to remember him. May he rest in peace in Heaven.

**From Vance Elliott**

Such sad news and a huge loss to our field and all our hearts. As with everyone, he was always friendly and kind to me from day one on. He set a shining example for all of us to follow. Rest in peace, Shelly.

I am grateful to know all of you.

**From Vincenzo Gambino**

Shelly was very professional, a gentleman and very good friend. We will miss him.

**From Tim Carman**

Many years ago, Shelly was generous enough to allow me to shadow and then assist him in a number of hairline lowering/forehead reductions/expander patients over a few weeks. He was always so much a professional and always available for my questions.

Thank you, Shelly!

**From Bill Rassman**

Sheldon and I spoke last week. He was helping me with some difficult patients for years. Not only was he brilliant and knowledgeable, but he was kind, giving, compassionate, and upbeat. His loss will be felt by all of us, especially me. He will live again through us, made better by his presence in our lives for those of us who knew him.

**From Lt Col David Perez-Meza**

It was very bad and sad news to learn of the passing of one of our pillars of the ISHRS, Dr. Shelly Kabaker. I remember meeting him in 1999 at the ISHRS San Francisco congress and then having a close relationship with him as Faculty of our OLSW from 2000 onwards, and I, as being part of the ISHRS BOG from 2010-2016 and Shelly was the past-President of the ISHRS too.

A great person, always willing to help, and giving that helpful and valuable advice when asked something. With

a lot of experience in scalp surgery. My condolences to his wife Marcia, family, friends, and colleagues of the ISHRS.

Shelly, you will be missed. Rest in Peace.

**From Jason Dudas**

The passing of Dr. Sheldon Kabaker is not only a significant professional loss to the hair restoration surgery community, but also a deep personal loss for his innumerable friends and devoted wife, Marcia. As one of Dr. Kabaker's many former facial plastic surgery fellows, I am grieving the absence of a mentor-become-friend.

I had the privilege of continuing to work with Shelly for several years following fellowship and eventually assisting him to transition his practice upon retirement. Not every fellowship director loves having their graduated fellows "linger" in the area, but that was not the case with Shelly. He genuinely wanted me to be happy and successful, even if it was right across the bridge from his practice. It was during that time that our friendship grew, and he and Marcia became like family to me and my husband. They attended many of the fellows' weddings, including ours, and we would see them regularly for casual dinners and milestone celebrations. The fellows were like Shelly and Marcia's adult children, and we are mourning the loss of our patriarch. The beauty of these relationships is that they allow his legacy to continue to live.

Of course, Dr. Kabaker will always be remembered for his extensive contributions to our specialty and by his many

awards (all with the utmost humility and absence of ego), but it is Shelly who will be remembered for the profound impact had on the lives of others.

**From Russell Knudsen**

I first met Shelly Kabaker in 1987 in Los Angeles at the Triennial World Congress. We had all just listened to a lecture from Richard Fleming about the success of the Mayer-Fleming rotation flaps (a variation on the Juri flap), and a fellow Aussie surgeon was expressing admiration for the results as we exited the conference room. Shelly overheard this and offered the following comment: "Yes, but they didn't show you any of their first 50 results...."

That was Shelly: a prescient, thoughtful observation that cut straight to the core truth of the issue. After that, I always listened carefully to any of Shelly's comments as he was extremely knowledgeable, candid, and polite, even as he demolished somebody's dubious assertions.

Very few people know that he enlisted a Spanish plastic surgeon friend, who was a gifted sculptor, to allow the ISHRS the right to use one of the sculptures as our Gold and Platinum Follicle Awards.

He was an absolute gentleman, modest and great company. Anne and I spent time in his home in Oakland, and he and Marcia were outstanding hosts and dear friends.

We will cherish his memory and admire his many contributions to our field and to the ISHRS. ■



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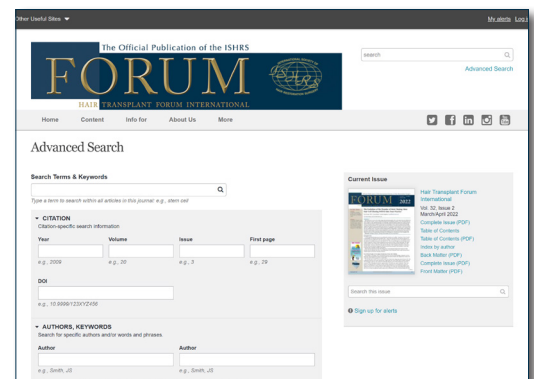
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# The Notable Articles Project

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

In this column, an important *Forum* article from the past is republished along with commentary from a respected expert. If you have a suggestion for an article that you'd like to see re-examined here, we invite you to send it along with your commentary to [forumeditors@ishrs.org](mailto:forumeditors@ishrs.org). As a reminder, you can find all previously published articles and all back issues of the *Forum* on ePUB at [www.ishrs-htforum.org](http://www.ishrs-htforum.org).

Commentary by Luis A. Nader, MD, FISHRS | Reynosa, Mexico

I was very saddened to hear about the passing of Dr. Sheldon Kabaker. Very few doctors give their time to teach others; Dr. Kabaker was among those individuals who would stand out as exemplary.

This issue I chose to review one of Dr. Kabaker's contributions to the *Forum* from November 1995 (Volume 5, Number 6; p. 19) entitled, "The Hair Transplant Surgeon Dealing with His Own Baldness." This article really hit close to home, as I still have old Kodak photos of my first transplant in my desk drawer. During consultations, I share my own journey of overcoming hair loss as I bring them out to show patients the results (and limitations) of a hair transplant procedure. It is also a good way to include the recommendation of medical therapy for hair loss, and that I have been taking oral finasteride for more than 20 years without any issues. It certainly lowers the patient's reluctance to hear that other people have had good results without fearing the side effects.

Dr. Kabaker's critiques of a well-performed procedure are also accurate. We often see attendees at ISHRS conferences with an incomplete or unnatural hair restoration. In the field of hair transplant surgery, it may seem irrelevant to suggest that a surgeon's own hair matters. Nevertheless, a hair transplant surgeon's personal grooming plays an important

role in not only projecting a professional image but also in enhancing patient confidence in a higher standard of care. Just as patients seek the expertise and proficiency of their surgeon, they also look for visual validation of the surgeon's credibility and reliability. The image of a surgeon with a successful hair transplant is a testament to the procedure's effectiveness. Likewise, in any medical profession, maintaining a professional and polished appearance is essential. Patients are more likely to feel reassured when their surgeon exemplifies the results they aspire to achieve.

As a hair transplant surgeon who has personally experienced hair loss and undergone a successful transplant procedure, I am able to empathize on a deeper level. Sharing my own struggle with hair loss promotes a sense of connection, which can ultimately help to create a stronger doctor-patient relationship, increase patient satisfaction, and improve communication during the consultation and recovery process.

While the primary focus of a hair transplant surgeon lies in providing exceptional medical care and delivering optimal results to their patients, the importance of the surgeon's personal appearance should not be underestimated. Caring about one's own hair is not just about vanity; it is a strategic investment in building credibility, trust, and empathy with patients. ■

# The Hair Transplant Surgeon Dealing With His Own Baldness

by Sheldon S. Kabaker, M.D.  
(Oakland, California)

I cannot count the times that I have been asked incredulously by young hair transplant surgeons or, for that matter, by non-bald lay people "How can you be the 'hair doctor' when you don't have hair?" or, to be more blunt "Why don't you practice what you preach?" I have many answers to those questions including one involving a digital extension. However, two out of three of those men reading this communication will eventually have to deal with these questions. When confronted by a patient, you must have a few well thought out, but honest and educational answers. The answers should center on a discussion of male pattern baldness as it applies to you versus the prospective patient or as part of the informed consent involving options to surgical hair replacement.

You will also note that, with experience and exposure to the field, most patients are more concerned about their appearance and not yours. However, having a full head of natural hair gives the surgeon a powerful image, which will often influence a patient to go on with hair replacement surgery, even though there is no possibility that a similar result can be achieved.

Other advice I have to the bald or balding surgeon is: 1) have surgery done, but only if you are an ideal candidate for a significant, top-drawer result. Having a few micrografts put in front of a natural full head of hair does not count; 2) employ technicians, receptionists or counselors who you have personally operated upon so you can show what you have done, rather than what has been done to you; 3) consider wearing a high-grade, non-surgical hair replacement (hairpiece) about which you can chose to leave in or leave out of your pre-operative consultation with the patient.

Once again, it has been my experience from attending hair replacement surgery meetings for the past twenty-one years that, amongst the audience, there is an embarrassingly high number of poor surgical results, even amongst those done in the past five years. It appears the even experienced surgeons are not beyond trying to fulfill the fantasy of having a full head of hair when they are obviously going to be Norwood VI or VII baldness types.

No matter what the method used (grafts, flaps, reductions, scalp lifts,

*(Continued on next column)*

*"Surely you don't want to look like me all your life?"*



KABAKER (Continued)

expanders), the best results are due to patient selection, as much as surgical expertise. Space does not permit a detailed discussion of patient selection, but some of the undeniable criteria are: 1) experience and judgment of the surgeon, and; 2) the patient having a hair loss problem, which interferes with a well-groomed appearance. This applies to the doctor as well as the patient.

KNUDSEN (Continued)

The conference itself was a smorgasbord of delights; Jim Vogel prepared the menu, James Arnold and Sajjad Khan demonstrated new utensils and Martin Unger gave us his PATE recipe. Food for thought indeed.

Saw an interesting workshop that seemed to have more patients than attendees. Can't remember the surgeons name though ...

It was 109 degrees outside but if you attended the session on Lasers you probably felt was hotter **inside** the lecture room. Should we be surprised? Perhaps it just proves that Lasers generate more heat than light.

I guess in retrospect there was a certain symmetry about this conference, days spent working out how to get hair up on top of the head and nights spent letting our hair down.

**Viva Las Vegas!**

# Exploring Safe Donor Follicle Harvesting in Follicular Unit Excision: A Comprehensive Review

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## ABSTRACT

Follicular unit excision (FUE) is a safe procedure provided it is done by an ethical, experienced surgeon; when not, inadequate procedures may have detrimental effects on both the donor and the recipient areas. FUE requires a long learning curve and a thorough understanding of procedure mechanics, the vaso-elastic properties of skin, and proper donor area assessment including considering the concepts of the safe donor area, safe excision density, and residual density. Donor follicles harvested crossing the safe excision limit, beyond the safe donor area boundaries, and using a relatively large-size, poor-quality punch may produce various donor area aesthetic defects. In order to improve graft longevity, avoid compromising the donor aesthetic, and achieve optimal results with FUE, the surgeon must have high-quality instruments, adequate training, and an understanding of the concept of safe donor follicle harvesting (SDFH). Other important considerations in donor harvesting include ensuring the extraction of healthy hair follicles, selecting suitable punch sizes, taking patient factors and expectations into account, and considering the pattern of harvesting.

**Keywords:** coverage value, follicular unit excision, safe donor area, safe donor harvesting, safe excision limit

## INTRODUCTION

Follicular unit excision (FUE) is a method of harvesting donor hair follicles using a circular knife, also referred to as a punch, mounted on a device that may be manual or motorized.<sup>1-4</sup> The FUE technique has gained popularity over follicular unit transplant (FUT)/follicular unit strip excision (FUSE) because of the absence of a long linear scar, a sequel of FUT/FUSE. Of note, the FUE technique also produces scars over the donor area, but they are circular and may be small or they may be large enough to be noticed. The perception of FUE as an easy method of follicle harvesting is misleading as it requires a long learning curve and a thorough understanding of procedure mechanics, vaso-elastic properties of skin, donor area assessment, and the concepts of the safe donor area, safe excision density, and residual density. FUE is a safe procedure, provided it is done by an ethical, experienced surgeon; when not, inadequate procedures may have detrimental effects on both the donor and the recipient areas. Donor follicles harvested crossing the safe excision limit, beyond the safe donor area boundaries, and using a relatively large-size, poor-quality punch may produce various donor area aesthetic defects. The most common donor complications as a result of overharvesting include poor donor cosmetic density causing a “see-through effect,” a moth-eaten appearance, scarring because of necrosis, effluvium, and sometimes alopecia of the donor area.

There are many technical reasons for the compulsion to extract more grafts. The unqualified surgeon, causing a high transection rate, will harvest more grafts to achieve the target number to compensate for the transected follicles. Sometimes, patient expectations are unrealistic in desiring large-area coverage, high density, and/or an aggressively lowered hairline with a limited donor supply; this can lead the unqualified surgeon to attempt to meet the patient’s expectations and, in doing so, will result in overharvesting.

Additionally, using poor-quality punches or punches of relatively large size may create more prominent scars, which may be hypo- or hyperpigmented, causing scar visibility. In order to improve graft longevity, avoid compromising the donor aesthetic, and achieve optimum results, the FUE surgeon must use high-quality instruments, must have adequate

training, and must understand the concept of safe donor follicle harvesting (SDFH), which has three components:

1. Safe donor area
2. Safe excision density
3. Healthy hair follicle harvesting

## SAFE DONOR AREA

The safe donor area (SDA) of the scalp is the donor area from where the follicles when harvested and implanted remain unaffected by androgenetic factors.<sup>5-9</sup> Correctly evaluating SDA characteristics will help to define the surgical plan by identifying the limitations, cosmetic results, possible contraindications to the procedure, expected number of grafts, and possible coverages. The donor area evaluation includes calculating follicular unit density, hair shaft diameter, anagen-telogen ratio, hair and skin color, hair texture (such as curl), wave or frizz, scalp thickness and laxity, and retrograde alopecia.

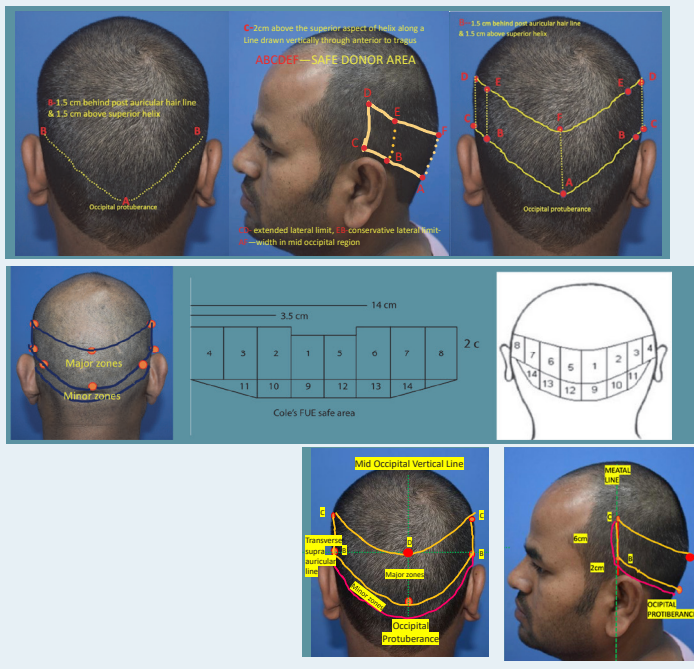
Donor hair follicles harvested outside of the “defined SDA limit” (Figure 1) are androgen sensitive. If implanted, these hair follicles will likely be lost from the recipient area. Often, a surgeon crosses the SDA limit to harvest more grafts; however, progressive hair loss from androgenetic alopecia (AGA) may expose the scars of grafts harvested from the unsafe zone.

The surgeon should define and mark the SDA limit and harvest from the SDA only. To prevent the accidental crossing of the SDA limit, the surgeon can consider shaving only the SDA or marking the limits of the SDA with medical-grade sterile tape.

## SAFE EXCISION DENSITY

Safe excision density (SED) is the number of grafts harvested per square centimeter without compromising the cosmetic density of the donor area.<sup>10-13</sup> Most FUE experts recommend 10-15 excisions/cm<sup>2</sup> as a safe single-pass density in a person with a baseline average density of 65-75 grafts/cm<sup>2</sup>. Generally, a rough estimate of 20-25% of graft excision of existing density can be done safely. However, every donor area differs in baseline density, presence of multi-follicular units, hair thickness, color contrast, hair

FIGURE 1. Safe donor area



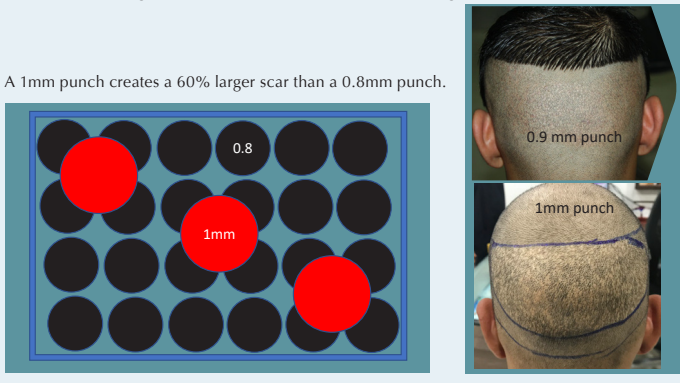
curl, exit angle, and shape and thickness variation of the hair shaft. Even within the same patient's donor area, these variables are often different throughout different portions of the donor area. The SED will depend on these factors. More grafts can be excised from a robust donor area than from a donor area that looks thin. Exceeding the SED limit will decrease the residual density and hair mass, causing

FIGURE 2. Significant donor scalp visibility



more scarring and resulting in increased scalp visibility and poor aesthetics of the donor area (Figure 2). Punch size is also an important consideration. Selecting the appropriate punch size will allow balancing obtaining good-quality grafts with avoiding unnecessarily large circular scars in the donor area. The use of poor-quality, relatively large punch sizes may create more prominent scars, which may be hypo- or hyperpigmented, resulting in increased scar visibility (Figure 3). The punch size used and expected resultant scar size should be considered when determining SED.

FIGURE 3. A larger punch size punch will create a larger, more visible scar.

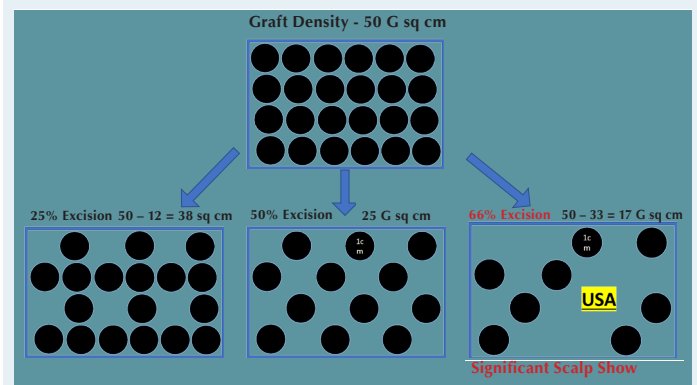


## Residual Density

The residual density is the hair follicle density left over in the donor area after graft harvesting. The cosmetic density of the donor area is typically significantly compromised if the residual density of the donor area is less than 35-40 grafts/cm<sup>2</sup>. Although other than the residual graft density, the donor cosmetic outcome depends on other factors including hair thickness, multiple follicular unit density, color contrast, and hair curl.

For example, suppose a surgeon harvests grafts from a donor area having a density of 70 grafts/cm<sup>2</sup>. He harvests 15 grafts/cm<sup>2</sup> in first-pass excision. The leftover residual density will be 70 - 15 = 55 grafts/cm<sup>2</sup>. Then, he again harvests 15 grafts/cm<sup>2</sup> during his second pass excision. The residual density will be 55 - 15 = 40 grafts/cm<sup>2</sup>. However, suppose the surgeon continues to harvest even 10 grafts/cm<sup>2</sup>; in that case, the final residual density will be 30 grafts/cm<sup>2</sup>, which will cause significant scalp thinning and poor cosmetic density of the donor area. Therefore, a residual density greater than 35-40 grafts/cm<sup>2</sup> should typically be left after the final harvesting of follicles over the donor area (Figure 4).

FIGURE 4. Residual density (USA = uncovered scalp area)



## Hair Coverage Value

The hair coverage value (HCV) of hair on the scalp depends on the hair's thickness and density per square centimeter. This can be calculated as the scalp area covered by hair mass unit = Hair density × Hair thickness in mm.

For example, if hair density is 170 cm<sup>2</sup> and the thickness of hair is 0.05 mm, then the HCV will be 170 × 0.05 = 8.5.

The coverage value can be used to help determine the number of hair follicles that can be safely excised from a given donor area or parieto-occipital donor area zone. The coverage value of different zones of the total donor area can differ because hair density, thickness, and other variables discussed above may vary in the different zones of the parieto-occipital donor area. It has been estimated that a minimum coverage value of 5.4 for the donor area should be left after the excision of grafts to prevent excess scalp showing. A lower coverage value limits the SED.

For example, to calculate how many hair follicles can be safely extracted from a donor area having a coverage value of 8.5, the equation is as follows: SED = (HCV - 5.4)/(hair thickness in mm) = (8.5 - 5.4)/0.05 = 62 hair follicles/cm<sup>2</sup>.

If we take as an average 2 hairs per graft, then the resultant graft excision density is as follows: 62/2 = 31 grafts/cm<sup>2</sup>. Therefore, a donor area that has a density of 170 hairs/cm<sup>2</sup> and a hair thickness of 0.05mm will have a safe graft excision area of 31 grafts/cm<sup>2</sup>. Thus, understanding these concepts and calculations including HCV and SED can help guide the safe excision of grafts/hair.

HCV can be calculated manually using a micrometer for measurement of hair thickness and dermoscopy or similar device for donor density calculation, or by using a software-based system such as Erdogan’s KE-BOT system.<sup>11</sup>

### HEALTHY HAIR FOLLICLE HARVESTING

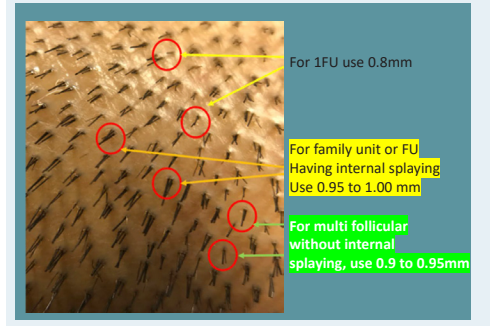
Graft harvesting in FUE is a blind procedure, and donor grafts may be injured or transected during excision. Transection can be complete or partial.<sup>14</sup> A higher transection rate will result in reduced recipient area coverage. If the surgeon notices a higher transection rate of hair follicles, they will harvest more grafts to obtain the required number of healthy donor hair follicles. A higher transection rate is likely a common cause of overharvesting donor hair follicles. Apart from hair follicle transection injuries, the grafts may also sustain other injuries during harvesting, such as de-capping, fracture of the hair follicle shaft, de-sheathing, and iatrogenic splaying (Figure 5).<sup>15,16</sup> It is advisable to learn FUE under the supervision of an experienced FUE surgeon, practice it, and then perform it. To reduce hair follicle transections, it is advisable to align the punch and full length of the FUE handle to the hair shaft angle and engage the punch to the epidermal blush of hair (Figure 6).

### PUNCH SIZE

The FUE harvesting of hair follicles leaves tiny circular scars. The size and quality of the FUE scars depend on the size and the quality of the punch. A 1mm punch will create a 60% larger scar than a 0.8mm punch (see Figure 3). Reducing the punch size will reduce the total scar, but at the same time, a higher transection rate is a possibility.<sup>1-3,17</sup> The surgeon should determine the punch size based on several factors including graft thickness, the patient’s hair and scalp characteristics, and the total number of grafts to be harvested. Using too large of a punch may create a moth-

eaten deformity.<sup>3,4</sup> Using a large punch size and harvesting more multi-follicular units (cherry-picking) will exhaust the donor and limit the excision of grafts in successive excision stages (see Figures 2 and 3). The author believes using the same punch size to harvest from the entire donor area is inappropriate and recommends using a range of punch sizes from 0.75mm to 0.95mm to match the size of the various grafts to be harvested.<sup>18</sup> This will result in reduced total scar size, fewer transections, and a greater number of grafts harvested (Figure 7).

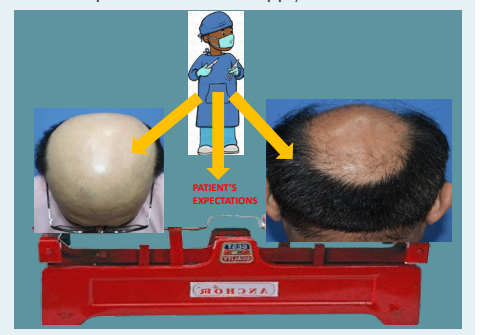
FIGURE 7. The surgeon should customize punch size to graft size.



### PATIENT FACTORS AND EXPECTATIONS

A number of patient factors such as age, degree of hair loss, comorbidities, and expectations should also be considered. A younger patient with advanced-grade baldness and positive family history of baldness asking for more coverage and a low hairline with good density is unrealistic. To meet their desired expectations, the surgeon often tends to harvest more grafts, potentially exceeding the safe excision limit and possibly extracting from the unsafe donor area. This can lead to potential overharvesting with cosmetic results such as a see-through effect or moth-eaten appearance over the donor area and exposed donor scar in the unsafe area in the long-term because of progressive baldness. Thus, it is important that the surgeon have a detailed understanding of the recipient area demand, donor hair supply, and any discrepancies between the patient’s expectations and what can be safely performed, and this should be discussed with the patient beforehand (Figure 8). The surgeon should avoid “overselling” and “overpromising” and offer a realistic approach to the situation based on the patient’s potential for progression and their own abilities.

FIGURE 8. There should be a balance between expectations of patient and donor supply.



In many cases, harvesting from non-scalp donor areas can be an excellent alternative to help cope with recipient area demand and donor supply.

### HARVESTING PATTERN

The pattern of graft harvesting also affects the cosmetic outcome of the donor area. Ununiform harvesting means harvesting too many grafts from one area and too few from another area; this will cause a moth-eaten deformity. Harvesting linearly or harvesting too close to an adjacent extraction may create a liner scar or skin necrosis (Figure 9).<sup>17,19</sup> To prevent a see-through donor area density, avoiding over-extraction

FIGURE 5. Various injuries to the hair follicle



FIGURE 6. The FUE handle and punch following the angle of the hair. The precise engagement of punch to the epidermal blush will reduce transection.

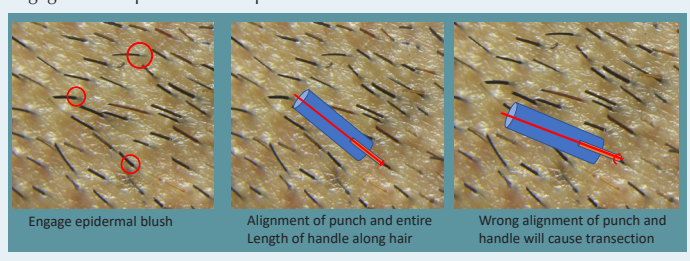
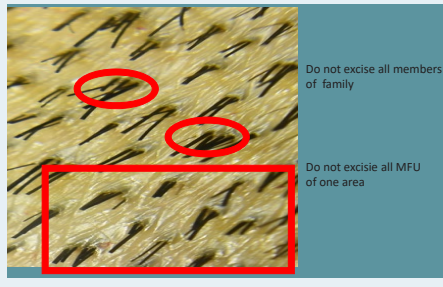


FIGURE 9. Pattern of excision of hair follicles



FIGURE 10. Do not excise all multi-follicular units and family members.



is excised, it will lead to an alopecic patch. It is advisable to harvest a follicle with a neighboring hair or that is covered by another hair, which the author calls “shadow hair” (Figure 11).

FIGURE 11. Concept of shadow and orphan hair to prevent an alopecic patch.



## DISCUSSION & CONCLUSION

As an experienced FUE surgeon, this author adheres to safe donor harvesting practices. We collected data from 2,896 patients operated on in our clinic over the past 10 years and recorded the complaints and complications. There were minor necrotic patches in the recipient area in 3 patients, keloid development in 1 patient, numbness in 18 cases, and hypersensitivity in the recipient and donor areas were also noted. In 1 case, donor area effluvium was seen, and 3 patients showed recipient area effluvium.<sup>19</sup> The results shown in Figure 12 indicate that by adhering to the principles of SDFH and considering relevant factors, the likelihood of complications in FUE procedures is significantly reduced.

The FUE procedure can be a safe procedure, provided it is performed by an ethical, well-trained, qualified surgeon. If FUE is performed by an inexperienced or untrained surgeon

of complete follicular families or multi-follicular units is advised (Figure 10). A uniform number of grafts should be harvested from each square inch area for optimal donor aesthetic.

The surgeon should visualize the alopecic area left after graft excision, especially during the second or third pass excision. Sometimes in a given skin area, only a single hair follicle is seen. The author calls this “orphan hair,” and the surgeon is tempted to excise this; however, if this

FIGURE 12. If safe donor FUE harvesting is followed, the donor aesthetic can be well maintained.



or technician, it can result in poor outcomes and potential disaster in both the donor and recipient areas. Donor follicles harvested crossing the SDA boundaries will likely eventually be lost from the recipient area or undergo significant thinning. Donor follicle harvesting done beyond the SED limit, uneven improperly spaced harvesting, and harvesting done with large-size or poor-quality punches, may lead to various donor site defects such as a “see-through effect,” a moth-eaten appearance, necrosis, effluvium, alopecia of donor area, and hypo- or hyperpigmentation. If an untrained or inexperienced surgeon or technician does excision in FUE, there can be higher transection rates and additional graft trauma, which may lead to poor growth of the transplanted hair and a depleted donor area.

It is paramount that the surgeon understands and continually utilizes the concepts of the SDA, SED, and healthy hair follicle harvesting. The surgeon must also consider such things as punch size, patient factors, and the pattern of excision of hair follicles while appropriately managing patient expectations. These concepts and considerations summarized herein are key to avoid poor aesthetic results in the donor area and for SDFH in FUE. Additionally, there are various factors that affect the outcome of hair transplants including the degree of follicle trauma sustained during other parts of the procedure including counting and implanting, graft out-of-body time, and graft storage.<sup>20</sup> Proper handling of extracted grafts; minimizing graft out-of-body time, using appropriate graft holding solution, such as plasma; and atraumatic hair follicle implantation are essential factors in hair transplant result optimization.<sup>21-24</sup>

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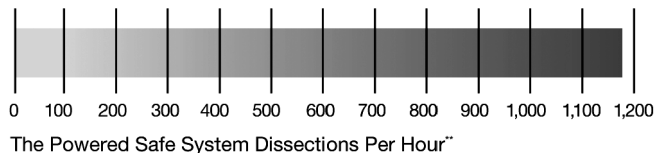
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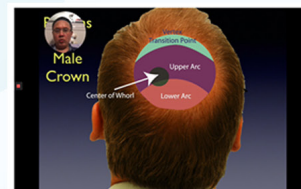
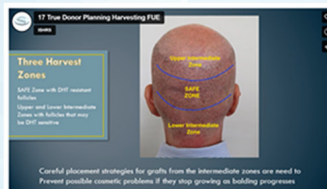


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# ISHRS Point System and Membership Requirements Update for 2024

The ISHRS Board of Governors is pleased to announce a new point system beginning immediately in January 2024, to provide more opportunities to full Members and Fellow Members for their member educational maintenance requirement.

## RULES

From January 1, 2024, to present, those in the membership categories of ISHRS full Member and Fellow Member are required to earn 3 points every 3 years, and there must be at least 3 points acquired at the World Congress in-person meeting every 6 years. The Points Menu is shown below.

To elevate from Associate Member to full Member, 5 points are required, of which 3 points must be acquired from the World Congress in person. Alternatively, to elevate from Resident Member to full Member or Associate Member to full Member, an ISHRS Fellowship Training Program must be completed successfully.

There is a different application process (Score Card) to apply for Fellow Member (FISHRS).

### **To maintain full Member and Fellow Member:**

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### **To elevate from Resident Member or Associate Member to full Member:**

An ISHRS Fellowship Training Program must be completed.

## POINTS MENU FOR 2024 EVENTS AND CERTIFICATION OPPORTUNITIES

**February 23-25, 2024**, ISHRS Regional Workshop & Live Surgery Workshop, Islamabad, Pakistan = 1 point

**May 26, 2024**, 2024 World Live Surgery Workshop: Milan, Organized by: ISHRS Europe and S.I.Tri, Milan, Italy = 1 point

**June 7-9, 2024**, 2024 Conjoint Annual Scientific Meeting of CAHRS, AAHRS, TSHRS, In collaboration with the ISHRS, Hangzhou, China = 1 point

**July 19-20, 2024**, 15th Annual Hair Transplant 360 Cadaver Workshop, Saint Louis University School of Medicine, Practical Anatomy & Surgical Education, In collaboration with the ISHRS, St. Louis, MO, USA = 2 points

**October 15, 2024**, ISHRS Live Surgery Workshop, Denver, CO, USA = 1 point

**October 17-19, 2024**, ISHRS 32nd World Congress, Denver, CO, USA (in-person) = 3 points

**October 17-19, 2024**, ISHRS 32nd World Congress, Denver, CO, USA (recorded meeting) = 1 point [can only claim for in-person or recorded, and not both]

**Certification by the American Board of Hair Restoration Surgery (ABHRS)** = 2 points (for the purpose of elevating to full Member only)

Resident and Associate Members who have met the requirement to elevate to full Member should send a completed application and supporting documents by the semi-annual deadlines. To fill out the application online, go to [https://ishrs.org/wp-content/uploads/2023/03/membership-application-ishrs\\_01-08-23\\_fillable.pdf](https://ishrs.org/wp-content/uploads/2023/03/membership-application-ishrs_01-08-23_fillable.pdf) If you have questions regarding your membership status, please contact Katie Masini, Membership Manager, at [kmasini@ishrs.org](mailto:kmasini@ishrs.org).

# Three Simple Steps for a Refined Strip Harvesting (Follicular Unit Strip Excision)

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## ABSTRACT

Follicular unit strip excision (FUSE) remains a useful technique for graft harvesting. Throughout the years, variations have been made to facilitate visualization and to minimize transections. Here, we demonstrate a refined version of the open, or skin hook, technique tailored for cases with higher hair density, tough/firm skin, and coiled/curly hair.

**Keywords:** alopecia, hair loss, hair transplantation, follicular unit strip excision (FUSE), follicular unit transplantation (FUT), linear strip excision (LSE)

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## INTRODUCTION

Hair transplantation roots date back to the late 1930s to early 1940s with Japanese dermatologists Drs. Okuda and Tamura working on cases of traumatic alopecia. In the 1950s, Dr. Norman Orentreich explored the use of hair transplantation in male pattern baldness, and eventually became known as the father of hair transplantation.<sup>1,2</sup> Since then, there have been developments and variations in the techniques that have led to today's well-known harvesting methods, namely follicular unit strip excision (FUSE) and follicular unit excision (FUE). FUSE is known by many names including follicular unit transplantation (FUT), strip harvesting, and linear strip excision (LSE).

In the late 1980s and early 1990s, Drs. Bobby Limmer (USA) and Carlos Uebel (Brazil) introduced strip harvesting to replace round grafts and noted it yielded a large number of grafts in one session with less scar tissue formation. FUSE has been a major part of the standard practice in hair transplantation since 1990. Different techniques have been employed to aid in harvesting the strip: single-/double-/multi-blade scalpels, hemostats, skin hooks, spreaders, etc. These instruments facilitated cutting of the scalp and/or improved visualization of the surgical field to limit follicle transections.

The blade technique has a relatively higher risk of transection; however, this is minimized by using a gentle drag-and-pull motion rather than forceful pushing and with the injection of tumescent solution at a consistent level. Hemostat or mosquito forceps were later used by Dr. Arturo Sandoval to spread the tissue, allowing separation along a natural plane of dissection. This, however, requires strong finger muscles in an opening motion and, when done repeatedly, may cause tissue damage as well as pain and fatigue to the fingers. In 2005, Dr. Robert Haber introduced the use of tissue spreaders, which resolved the ergonomic issue of the hemostat. With the tissue spreader, a closing motion is done using strong hand muscles.<sup>3</sup> In addition, Dr. Muhammad Ahmad shared his personal technique in 2016 using sharp pointed scissors to separate the incision margins. This enabled better visualization of the hair bulbs, vessels, and nerves.<sup>4</sup> However, the scoring must be deep enough to allow the scissors or spreader to enter the incision. Because follicle stem cells are located at a depth between 1.0-1.8mm from the epidermis, they are at risk of damage by deep scoring. The open, or skin hook, technique described by

author Dr. Damkerng Pathomvanich in 2001, involves a superficial 1mm deep scoring, subsequently placing of one- or two-pronged skin hooks on either side of the incision for skin retraction.<sup>5</sup> This is followed by a deeper dissection to separate the skin from the rest of the scalp under direct visualization. The surgical time for harvesting the strip might be extended, but follicular transection and neurovascular damage are minimized. In this paper, we propose a modification to Pathomvanich's skin hook method that involves a three-step dissection technique that can be used in specific patients, such as those with high donor density, tough/firm skin, and extremely curly hair.

## METHOD

This study was done at a hair transplantation clinic in Bangkok, Thailand, in 2023 with patients scheduled for FUSE. After consultation and hairline design, the donor strip was outlined with Gentian violet ink and shaved, leaving 3mm length of hair. Along the strip, a digital microscope was used to capture images of the patient's hair, taking images at five points along the planned strip to obtain the average follicular density. Two patients were selected to undergo the refined three-step skin hook technique because they possessed one of the following qualities: high donor density (>80 follicular units/cm<sup>2</sup>) or tough/firm scalp skin. The three-step dissection technique and knotless closure were performed for both patients.

## RESULTS AND DISCUSSION

Despite the rise of FUE in recent years, FUSE remains steadfast in the world of hair restoration. According to the 2022 International Society of Hair Restoration Surgery (ISHRS) Practice Census, 21.3% and 41.7% of hair transplant procedures in males and females, respectively, were with the FUSE method.<sup>6</sup> This highlights the pervasive need to improve existing strip excision techniques for donor harvesting.

### *The Skin Hook/Open Technique*

The original skin hook/open technique starts with scoring the skin to a 1mm depth, maintaining a superficial level to avoid damage to stem cells located 1.0-1.8mm under the skin's surface. Alternatively, some surgeons score the skin at 2mm in depth.<sup>7</sup> Skin hooks (single or double-pronged) are placed on either side of the incision at the level of the mid-dermis and then retracted gently. This exposes a

portion of the dermis, allowing the use of a no. 15 blade to dissect the tissue between hair follicles. Occasionally, if the skin is soft, the weight of the scalpel can help cut the tissue apart without adding unnecessary force. The skin is then cut deeper past the lower third of the follicle, just above the fascia; this is continued until all edges of the strip section are freed from the rest of the scalp. Finally, with the aid of towel clamps to approximate wound edges, the incision is closed using a nylon 4-0 suture.<sup>5</sup>

Pathomvanich's strip harvesting technique with skin hooks was reported to have a 1.25% transection rate, which included surgical transection (0.18%), damage from slivering (0.28%), and damage from graft preparation (0.79%).<sup>8</sup> In one randomized, double-blind study, three different techniques/tools were compared: tissue spreader technique, skin hook technique, and sharp scissor technique. The study revealed that the skin hook technique had the lowest transection rate but the longest operation time, while the tissue spreader technique had a slightly higher transection rate. The sharp scissor technique had a similar transection rate as the skin hook technique but with a shorter operation time.<sup>9</sup>

### THE THREE-STEP DISSECTION TECHNIQUE: MODIFICATION TO THE SKIN HOOK/OPEN TECHNIQUE

The three-step dissection technique was created as an adaptation of the skin hook/open technique to be used in patients with certain scalp or hair qualities. The donor area is first shaved to expose the planned strip location; the occipital arteries on both sides are then palpated and marked using Gentian violet as a precaution. The strip is likewise marked to a permissible width based on scalp laxity, followed by painting with povidone-iodine solution. Local anesthesia and tumescent solution are injected.

The strip is typically harvested in thirds, with the surgeon completing one-third of the strip at a time to ensure ergonomic ease and comfort. The first step is to score the skin superficially at a 1mm depth, gliding the belly of the blade along the outlined edges of the first third of the strip (Figure 1). This allows the placement of four skin hooks, with two

FIGURE 1. Skin is marked, painted with povidone-iodine, and superficially scored.



on each side positioned about 1cm apart. Skin hooks must be placed at the level of the infundibulum to avoid injuring the bulge area at the isthmus immediately underneath.

Once the skin hooks are gently retracted, the field becomes more visible for the second step, which involves dissection. This is performed using a no. 15 blade with a gentle downward pressing motion, allowing the sharp belly of the blade to sink into the mid-follicular level or at the level of the isthmus, once again cautiously avoiding trauma to the bulge area (Figure 2). This superficial dissection is performed on the first third of the strip. The third and last step includes retracting the skin hooks with additional upward pull to help the surgeon visualize the deeper dermis. The surgeon then dissects deeper into the plane of the subcutaneous tissue just below the dermal papilla (Figure 3) and

continues to dissect the base of the strip away from the scalp, thereby freeing the first third of the strip. The levels of dissection are summarized in Figure 4.

Once the first third of the strip is removed (Figure 5), closure is done using clamps to align the skin edges, followed by continuous running suture using nylon 4-0. Pathomvanich uses his novel knotless approach to closure to decrease skin tension and post-operative pain.<sup>10</sup> The same three steps are repeated for the remaining two-thirds of the strip.

FIGURE 2. Superficial dissection with placement of skin hooks aids visualization.

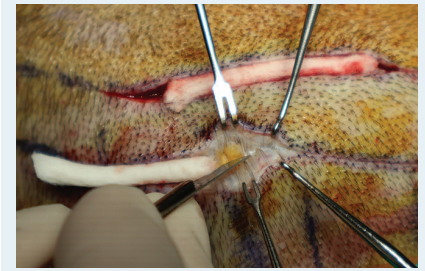


FIGURE 3. Hair bulbs are exposed after deeper dissection.

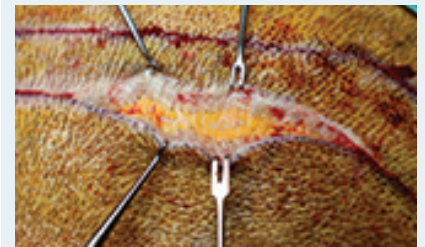
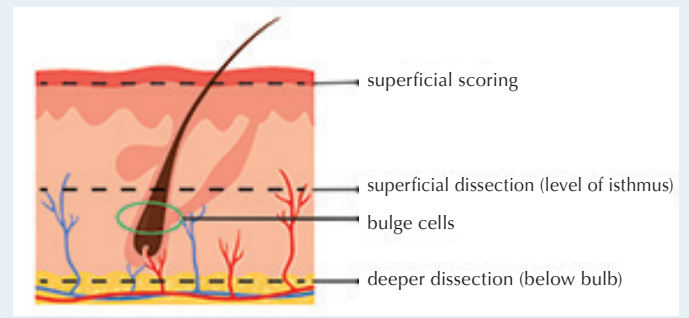


FIGURE 4. The three-step dissection technique: step 1: superficial scoring of the strip (1mm); step 2: superficial dissection to the level of the isthmus; and step 3: deeper dissection below the dermal papilla/bulb.



### WHEN TO USE THE THREE-STEP DISSECTION TECHNIQUE

The three-step dissection technique is a tailored method that is highly effective in reducing transection rates in a number of cases.

#### High Density at the Donor Area

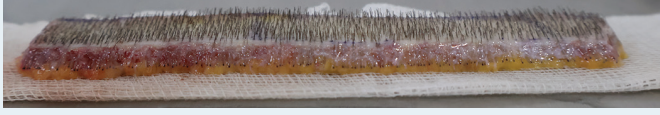
The human hair is grouped into three basic groups according to ethnicity: Caucasian, Asian, and African hair. This categorization recognizes their differences in terms of hair caliber, density, and shape.<sup>11</sup> Caucasians have the highest density at around 70–100 follicular units (FU)/cm<sup>2</sup> (260 ± 30 hairs/cm<sup>2</sup>), while Asians and Africans usually have lower donor density.<sup>12,13</sup> Within the Asian population, minimal difference is seen in hair density. When measured at 5 points on the scalp (central occipital, right and left temporal, right and left parietal), the average density is 61.1 FU/cm<sup>2</sup> (111.2 hairs/cm<sup>2</sup>) in East and Southeast Asians, 63.6 FU/cm<sup>2</sup> (126.8 hairs/cm<sup>2</sup>) in West Asians, and 63.5 FU/cm<sup>2</sup> (126.8 hairs/cm<sup>2</sup>) in South Asians.<sup>14</sup> At the clinic, we see a variety of ethnic-

FIGURE 5. After the three-step dissection, the rest of the strip is separated from the scalp.



ities and occasionally encounter patients with high donor density  $\geq 80$  FU/cm<sup>2</sup>. Figure 6 shows a patient with a high density of 92 FU/cm<sup>2</sup> benefiting from the 3-step dissection technique, with only 6 hairs being transected during harvesting of the 21cm-long strip.

FIGURE 6. A strip section excised from a patient shows closely packed follicles with a high average density of 92 FU/cm<sup>2</sup>. The highest density was seen at the mid-occiput at 120 FU/cm<sup>2</sup>.



### Thick/Firm Scalp Skin

While viscoelastic characteristics of the scalp skin, such as firmness and thickness, are important contributors to graft attrition rate in FUE,<sup>15</sup> they may also affect ease of incision during FUSE. Scalp thickness normally ranges from 3-8mm, with the thickest part observed at the occiput.<sup>16</sup> The scalp may be naturally thicker and tougher in some patients than others, and multiple deeper incisions for FUSE may be required in such cases.

Moreover, patients who have had a previous FUSE or FUE procedures may exhibit fibrosis in certain areas of the scalp, creating a thick, tough layer that can easily dull blades during cutting. Other complications from hair transplants mentioned in the literature are cobblestoning, raised donor scar, varying degrees of fibrosis, and keloids.<sup>17</sup> For example, thick, white fibrotic tissue is seen beneath the skin in this patient with multiple follicular unit strip excisions, creating a tough layer for incision (Figure 7). Hair follicles may penetrate through the dense scar tissue and may be transected if care is not taken during cutting. Hence, the modified open technique is very suitable for cases with scarring from previous harvests since scar tissue is difficult to dissect by any blunt dissection.

FIGURE 7. Thick, white fibrous tissue from a patient who had undergone three prior follicular unit strip excisions is shown.



### Extremely Curly Hair/African Hair

Africans typically have hair that is of lower density and caliber, and it is tightly coiled and elliptical when viewed in cross-section; Noreldin termed these hair characteristics "highly textured." The curl seen in Africans can range from being moderate to tightly coiled, and these coiled hair follicles can continue to have an unpredictable path underneath the skin's surface and have a tendency for splaying.<sup>18</sup> Therefore, hair shaft transection may occur more often in this population, and extra caution should be exercised during donor harvesting.

We should take note that there is no one correct or best technique for FUSE. The decision to use the FUSE technique and any assisting tools should be based on the skill and experience of the surgical team and the resources that are available to them.

## CONCLUSION

Decreasing hair transection is of primary importance in the success of FUSE. While there are a number of methods and tools that assist in FUSE harvesting, admittedly, there is no single best method. Here, we presented a new version of the open/skin hook technique specifically adapted for high donor density, thick tough skin, and extremely curly or African hair.

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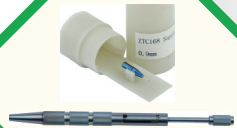


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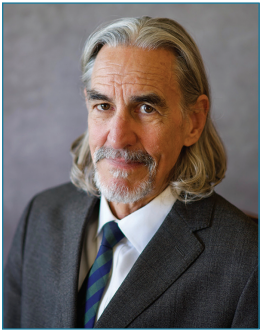
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## How I Do It

Timothy Carman, MD, FISHRS | La Jolla, California, USA | [tcarmanmd@mac.com](mailto:tcarmanmd@mac.com)

In this edition, Dr. Pradip Atodaria and colleagues describe their idea for a method of sorting and holding grafts that proposes less graft handling/manipulation as compared with other systems commonly in use. Please note that the perspectives and observations made in this article are based upon the author's evaluations. The ideas presented offer a rich background upon which further discussions hopefully encourage additional learning and communication.

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 peers in the ISHRS, please email me at [tcarmanmd@mac.com](mailto:tcarmanmd@mac.com) for consideration of publication.

## Innovative Storage Device: Segregate, Sort, Count, and Track Grafts while Minimizing Handling

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\*Disclosure: The authors hold a patent on the device reviewed in the article under the Intellectual Property Act in India.

### INTRODUCTION

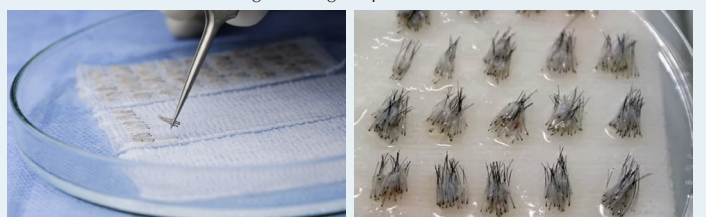
Hair transplantation is often a lengthy and tiring procedure for both the transplant team and the patient. There is a substantial body of literature on follicular unit excision (FUE) hair transplants and graft quality,<sup>1-4</sup> including avoiding handling of the lower two-thirds during implantation by “no touch to root technique”<sup>5</sup> and minimizing damage to scalp vascularity in premade slits for improving the result of hair transplants.<sup>6</sup> Additionally, there are previously published articles that focus on time reduction and increasing slit-making precision.<sup>7-9</sup>

Less importance is given to the steps between harvesting and implantation as they are considered passive steps involving the storage and preservation of grafts. However, this step notably consists of segregating grafts according to the number of hairs they contain, counting total and individual grafts, and arranging grafts ergonomically and in a first-out, first-in order to help increase placing speed while keeping grafts hydrated. Because the harvested grafts are handled multiple times during these steps, the principle of handling the grafts from the top or upper one-third may not be strictly followed. Proper handling, storage, and arrangement of grafts, however, can increase the speed and efficiency of implantation, which promotes optimal growth and quality of transplanted hair.

### Review of Existing Devices

The most common way to store grafts is by placing them over gauze or Telfa pads in glass petri dishes, with or without partitions, that are filled with storage solution of the surgeon's choice (Figure 1). The harvested grafts are segregated by the

FIGURE 1. Grafts stored over gauze in glass petri dish.

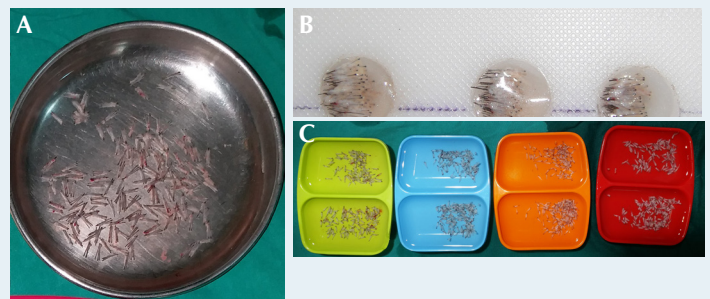


number of hairs they contain, put in groups of 10 or 20, and are arranged in a similar direction, preferably in the chronological order by which they were harvested. The advantage of this technique is that it helps reduce ischemia time by following the first-out, first-in protocol. It also helps increase the speed of implantation because all the grafts are arranged in the same direction.

Unintentional catching of a tiny thread by a forceps blade is a frequently occurring issue that poses challenges in removal, which can reduce the speed of implantation. Traditionally, technicians rely on manual tally counting using a sterile pencil and paper to perform the task of counting both total and segregated hair grafts, a process that is tiresome and error prone. This can be avoided if the technician segregating verbally communicates the number of hairs in the graft to a second technician who can do the counting as described above or by using an electronic device. But this increases the need for a second technician. Other devices used for storage to follow the principle of first out, first in are stainless steel dishes (Figure 2A), wooden spatula, stainless steel, Teflon, or similar material plates with depressions (Figure 2B), and different color-coded dishes (Figure 2C). Storage devices with cooling mechanisms are also available.

As hair transplant costs decrease globally, many hair restoration clinics are compelled to streamline their procedures by reducing the number of personnel required to perform the transplant procedure.

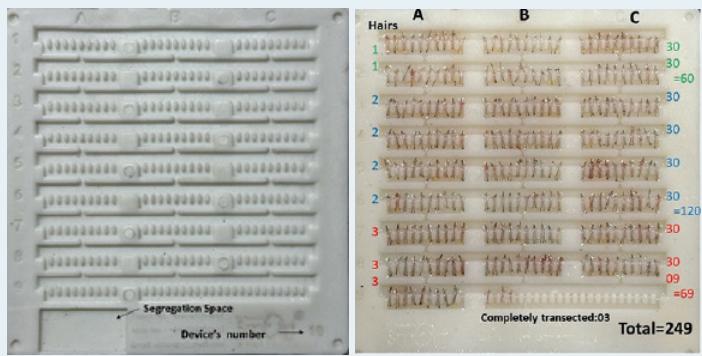
FIGURE 2. Storage devices that follow the principle of first out, first in



## INNOVATIVE STORAGE DEVICE

The authors designed an innovative storage device that can segregate, sort, count, and track grafts while minimizing handling (Figure 3). The authors made this device from autoclavable Teflon, but it can also be made from other autoclavable materials such as stainless steel, titanium, and the like. This device includes multiple numbered depressed spaces with sufficient depth to submerge the entire graft in holding solution. Each space has 10 narrow troughs separated by 9 partitions to accommodate 10 grafts in the same direction that are separated by a small distance. The harvested grafts are put separately in different rows segregated by the number of hairs they contain, and placed in the chronological order in which they were harvested. The authors suggest storing completely transected grafts in 7C, from right-to-left order and chronological order of harvesting. Similarly, partially transected grafts are stored in the respective column C of each row in right-to-left order in chronological order of harvesting. This allows the surgeon to precisely observe the partially and fully transected grafts from right to left, facilitating an accurate assessment of their technique and identifying areas that need improvement. The intact and partially transected graft counts are written on the right portion of the device, in each row (e.g., 24/06), while fully transected grafts are written on the right-side portion in row 7. This helps the surgeon improve with each area, and also in each case.

FIGURE 3. Spaces in rows 1 and 2 are for 1-hair grafts; spaces in rows 3, 4, and 5 are for 2-hair grafts; and spaces in row 6, 7A, and 7B are for 3- and 4-hair grafts. Space 7C is for transected grafts. Depending on the count of hairs in the harvested grafts, the use of spaces can be modified.



The upper part of the space is wide enough to allow the forceps to pick up the grafts from the upper third, while the partition between the troughs will prevent damage to the lower two-thirds of the graft. These arrangements also allow the grafts to be picked up individually or in a group of 3 or 4 held slightly apart, which can then be put ergonomically near the recipient site without the need for further handling. All the spaces are interconnected so that all grafts remain hydrated. The number of implanted and remaining grafts can be easily and accurately counted. In the case of FUT, each cutting technician is allocated a separate plate to be filled with grafts prepared by them, which will allow the surgeon to inspect the grafts individually and aid in the total and individual count of grafts so that the surgeon can instruct the technician accordingly. The surgeon can show the patient the harvested grafts arranged in the device, offering a clear and transparent view of the process. Keeping photographs of the filled trays is also a good idea as these pictures can be used down the road for hair transplant result evaluation or

TABLE 1. Advantages and Disadvantages of Various Storage Devices

Devices/ Characteristics	Petri-Dish/ Stainless Steel Dish + Gauze	Petri/Stainless Steel/Plastic Dish without Gauze	Wooden spatula + Gauze	Teflon or similar Plate with depressions	Innovative Smart Storage Device
Segregation of the grafts	Yes	Yes	Yes	Yes	Yes
Easy simultaneous total & individual counting	No	No	No	No	Yes
Arrangement in the same direction	Yes	No	Yes	Yes	Yes
Precise inspection of individual grafts	No	No	Yes	No	Yes
Spacing between grafts	No	No	Yes	No	Yes
Ease of pick-up of grafts	No	No	No	No	Yes
Graft holding only from upper 1/3 <sup>rd</sup>	No	No	No	No	Yes
Handling of graft	Multiple	Multiple	Single	Multiple	Single
Prevention of dehydration	Very Good	Very Good	Moderate to Good	Very Good	Very Good
Chronology of First out- first in	Perfect	Imperfect	Perfect	Imperfect	Perfect
Exact Count of implanted & remaining grafts	Little difficult	Difficult	Perfect	Difficult	Perfect
Number of staff required	Two	Two	Two	Two	One
Tiny thread of gauze/Telfa in forceps	Yes	No	Yes	No	No
Helps in increasing speed of implantation	Yes +	No	Yes +	Yes +	Yes ++
Quality control in FUT	Yes +	Difficult	Yes ++	Yes +	Yes ++
Cooling Possible?	Yes	Yes	No	No	Yes/No
Transparency of number of hairs/grafts	Little difficult	Imperfect	Little difficult	Imperfect	Perfect

for academic and research purposes. The results of different technicians can also be compared by taking photographs of the device with grafts and the areas they implanted. What makes this storage device useful in studies and research is the fact that only one staff member is involved, eliminating variations in technique between technicians.

The advantages and disadvantages of different storage devices in our experience are compared in Table 1.

The proposed device can also be made from stainless steel, titanium, glass, or similar material, which can be cooled if the surgeon requires it. ■



## Literature Review

Guillermo A. Guerrero, MD | Monterrey, Mexico | [guillermoguerrerog@gmail.com](mailto:guillermoguerrerog@gmail.com)

### An Update on Hair Restoration Surgery on Primary Cicatricial Alopecias

In recent years, awareness of primary cicatricial alopecias (PCAs) has risen. With more cases diagnosed, the usefulness and pros and cons of hair restoration surgery on such patients must be studied. I resolved to dedicate this issue's column to hair transplant as a therapeutic tool in patients with different kinds of PCA.

**Vañó-Galván S, Villodres E, Pigem R, et al. Hair transplant in frontal fibrosing alopecia: a multicenter review of 51 patients. *J Am Acad Dermatol.* 2019 Sep;81(3):865-866.**

This is the biggest case series on hair transplant in patients with frontal fibrosing alopecia (FFA) published to date. The authors report a mean graft survival rate of 87% at 1 year that lowers to 41% after 5 years. Of note, a longer inactivity period before surgery did not influence the survival rate, and no specific treatment increased the survival rate. Though somewhat temporary, the results of a hair transplant in patients with FFA produced a significant patient satisfaction level in the subjects included in this study.

**Singh S, Muthuvel K. Role of hair transplantation in scarring alopecia-to do or not to do. *Indian J Plast Surg.* 2021 Dec 27;54(4):501-506.**

The authors offer a guide on considerations that should be taken in patients with primary cicatricial alopecias such as scar location, thickness, vascularity, follicular unit selection, site making, and adjuvant therapies. Depending on scar characteristics, the recommended density varies from 15 to 30 follicular units/cm<sup>2</sup>.

**Gómez-Zubiaur A, Valenzuela C, Andrés-Lencina JJ, et al. Algorithm proposal for hair transplantation in fibrosing alopecia pattern distribution. *J Cosmet Dermatol.* 2022 Nov;21(11):5543-5545.**

The authors first emphasize the importance of recognizing this usually underdiagnosed condition and then propose a two-path algorithm, preferring a "test" surgery of 400 to 500 grafts in patients with signs of inflammation or fibrosis and a "normal" approach in patients with scarce signs of activity or scarring. A 2- to 5-year follow-up is recommended for patients who undergo a test surgery before deciding to do another procedure.

**Elariny AF, Ghozlan N, Wasief S, et al. Evaluation of efficacy of follicular unit extraction versus follicular unit extraction with platelet rich plasma in treatment of cicatricial alopecia. *J Cosmet Dermatol.* 2022 Nov; 21(11):5931-5937.**

This interesting study compared the outcome of a hair transplant in patients with cicatricial alopecias, either alone

or in combination with PRP done one week before surgery and then monthly for three months. Both groups showed a good result without difference between them. At least in this small (20 patients) study, PRP did not significantly affect the survival rate of hair grafts.

#### Columnist's Comments

We are slowly but steadily getting more and more publications on this controversial topic. On the one hand, we have studies showing hair transplant results that are often at least partially temporary, but then on the other, we have distressed patients eager to get at least a little relief from the psychological burden that a cicatricial alopecia can bring. I believe that when little to no signs of inflammation are present, and in a patient who truly understands the short-, medium-, and long-term risks and benefits, a hair restoration surgery can be included in the treatment arsenal we have available, always making use of adjuvant medical therapy to at least try to reduce the risk of a flare-up. ■



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## Hair's the Question

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*The questions presented by the author are not taken from the ABHRS item pool and accordingly will not be found on the ABHRS Certifying Examination.*

While hair surgery is our mainstay, the medical therapies available for treating our patients are expanding. Since 2018, JAK-STAT inhibitors have been one of the most exciting new therapies for our patients who have "severe" alopecia areata. "JAK" inhibitors (as they are sometimes referred to) are just beginning to show how they will impact our surgical practice for hair loss, but it is certain that the lives of formerly hopeless patients are being improved. Test your knowledge of these medications and always keep in mind that the National Alopecia Areata Foundation and the American Hair Research Society are terrific resources if you want to learn more.

## JAK-STAT Inhibitors

- Which of the following is the clue that the drug is a JAK inhibitor?
  - Word ending in "-stat"
  - Word starting with "Jak-"
  - Word ending in "-citinib"
  - Word starting with "Sara-"
- What is one of the greatest drawbacks of treatment with JAK inhibitors?
  - Unable to be used in combination with other therapies for areata
  - Increased depression in patients treated over 6-12 months
  - Relapse within 2-3 months of therapy cessation
  - Unable to be used with patchy alopecia areata
- Which of the following formulations of JAK inhibitors is the most effective for alopecia areata?
  - Topical foam
  - Topical cream
  - Sublingual
  - Oral JAK with oral minoxidil
- Which of the following is a significant side effect of JAK-STAT inhibitors?
  - Headache
  - Acne/folliculitis
  - Stimulation of the immune system
  - Reactivation of latent bacterial infection (TB or Varicella Zoster, etc.)
- If your patient with Areata is NOT having a response to JAK inhibitors after a full year, which of the following would you expect to find on their laboratory results?
  - Elevated IgE levels
  - Low white cell count
  - Elevated liver enzymes
  - SALT score greater than or equal to 50%
- Which of the following co-morbidities makes alopecia areata harder to treat with JAKs?
  - Pregnancy
  - Tuberculosis
  - Atopic dermatitis
  - Hypercholesterolemia/Hyperlipidemia
- Which of the following blood tests should be completed 6 months after starting treatment with a JAK inhibitor?
  - Pregnancy testing
  - Liver function tests
  - Hepatitis C virus, Hep B core antibody and surface antigen
  - Baseline Immunoglobulin levels including IgE, IgA, and IgM
- Which of the following tests would NOT be useful prior to starting treatment with a JAK inhibitor?
  - Pregnancy testing
  - Tuberculosis skin test (PPD)
  - Immunoglobulin levels including IgE, IgA, and IgM
  - Tuberculosis blood test (QuantiFERON Gold test or other)
- Which of the following treatments have demonstrated sustained remission in alopecia areata?
  - JAK inhibitors (e.g., Tofacitinib (Xeljanz) 5mg TID)
  - Intralesional corticosteroids (e.g., injected intralesional triamcinolone 2.5%-10% Q 4-6 weeks)
  - Systemic steroids (e.g., prednisone 40-60mg tapered over 6 weeks or pulsed 300mg prednisone monthly)
  - Dr. Sara Wasserbauer is trying to trick me; there are no alopecia areata treatments that have shown sustained remission.

## Answers

- C.** Baricitinib (trade name: Olumiant) was the first in May 2018 and is oral. The other names include tofacitinib, ruxolitinib, delgocitinib, ritlectinib, and deucravacitinib (forgive me if I missed any). Practitioners should be aware of the high cost and difficulty getting these drugs. Lack of access is leading to patients going to other countries to obtain them, with both good and poor results. Note that some counterfeit drugs have also been reported, so warn your patients!
- C.** These medications need to be taken **FOREVER** in order to maintain their efficacy. It may take up to a YEAR for a patient to respond and start regrowing their hair and effective adjunctive therapies include low dose oral minoxidil and photobiomodulation (low level light therapy). Even with these seeming difficulties in treatment, patients are surprisingly compliant. Acneiform eruptions is another complication with both regrowth and cessation of treatment. It should be treated just as acne is treated normally.
- D.** Oral formulations are the way to go for improved efficacy and combination therapy using oral minoxidil is well-established. Minoxidil works better in combination with a JAK than JAK treatment alone.<sup>1</sup> It is worth noting that other than formulation (oral vs. topical) and price, there is very little difference among the JAK inhibitors currently available on the market as of the writing of this column.
- B.** Acne/folliculitis is so common that some have gone so far as to call it “JAK-ne.” **Depression** of the immune system with reactivation of latent **VIRAL** (not bacterial) infection (TB or Varicella Zoster etc.) are the most significant. Minoxidil is often paired with JAK treatment to increase efficacy, and since headache is a common side effect of minoxidil, most believe that headache is the result of the minoxidil, not the JAK.
- A!** Elevated IgE levels is the correct answer. Unless you are on the cutting edge of providing this treatment, this is a tough one so give yourself double points if you got it. High tissue levels of eosinophils may also be seen. SALT score greater than or equal to 50% is one of the indications for starting a JAK inhibitor, not a lab result. You would likely monitor white cell count and liver enzymes during treatment, but it is not what you would expect to find in a JAK non-responder so B and C are not correct.
- C.** I guess an argument could be made that pregnancy complicates everything, but C is the correct answer. Patients who are concurrently diagnosed with atopic dermatitis are commonly resistant to treatment. TB is an absolute contraindication to treatment. Hypercholesterolemia and hyperlipidemia should be managed before initiating JAK inhibitors.
- B.** Liver function tests is the correct answer. Pregnancy testing, hepatitis testing, liver function baseline tests, and baseline immunoglobulin levels should be completed **before** treatment is started.<sup>2</sup> However, while monitoring liver function on an ongoing basis is currently recommended by practitioners experienced with JAKs, the rest

are not necessary to repeat unless it is specifically indicated with your patient.

- B.** A tuberculosis skin test is NOT useful. I know it is poor test-question writing to ask you to choose the WRONG test, but I could not figure out how else to ask this, and it is important because I had to re-educate myself. TB skin tests show if a patient has had exposure to TB, but they do not show if a patient has it, and recall that TB infection can be latent! TB blood tests (like QuantiferonGOLD) show if a person has active or latent TB. So, order the TB blood test, the pregnancy test, and the immunoglobulin levels, but leave the TB skin test out of it.
- D.** As far as we have come, there is more work to do.

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## Additional Resources and Reading

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- Shawky AM, et al. A comprehensive overview of globally approved JAK inhibitors. *Pharmaceutics.* 2022 May 6;14(5):1001.
- <http://www.naaf.org>; The National Alopecia Areata Foundation
- <https://americanhairresearchsociety.org>; The American Hair Research Society, especially the “Journey to JAKs” webinar
- Wyrwich KW, et al. Development of clinician-reported outcome (ClinRO) and patient-reported outcome (PRO) measures for eyebrow, eyelash and nail assessment in alopecia areata. *Am J Clin Dermatol.* 2020 Oct;21(5):725-732. ■



# Message from the ISHRS 2024 World Congress Program Chair

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Hello and greetings from my hometown, Rio de Janeiro, Brazil! I wish everyone a successful and peaceful New Year.

It was a big surprise to receive a message—out of the blue—from our president, Brad Wolf, inviting me to be the Chair of the next World Congress. I asked for a few days to digest such an honorable proposal, and, of course, I said yes! I know this will be one of my most significant challenges, and I am very excited to jump on board. When I see the roster of names of Chairs that preceded me, I see friends and colleagues who I admire the most. I will single out the immediate past-Chair, Greg Williams, who set the bar so much higher. He has extended his generous hand to me, and, of course, I will accept it.

Let me share with you a short summary of my life. My father was a public servant in the Brazilian Ministry of Foreign Relations, and as a diplomat, he served in different countries almost all his career. I had the privilege to be born and raised overseas. My timeline starts in Canberra, Australia (1961), and goes on to Rio, then Denmark, South Africa, again Rio, Holland, and, finally, Panama. As my education was done in international schools, English was—academically—my first language. When I was 20, I returned to Brazil for my medical studies (Federal University of Santa Maria, in the south). I then moved back to Rio, where I did my residency in general surgery and then my post-graduation in plastic surgery. This was done in the 38th Ward of the Santa Casa General Hospital (a charity institution founded in the 16th century by Portuguese missionaries) headed by world-famous plastic surgeon, Ivo Pitanguy. My class (1990-92) had 14 surgeons, and we represented a microcosm of a truly international institution: five were Brazilian (from different regions), one French, two Italians, two Colombians, one Peruvian, one Greek, and two Spaniards.

Prof. Pitanguy invited me to stay on as an instructor, working with the residents in surgery and organizing the out-patient department at Santa Casa. It was suggested, among the teaching staff, that I select one area where I could develop clinical research, and I chose scalp reconstruction. As a complement to flap rotation and tissue expanders, I began using micro- and minigrafts to correct scars along the hairline and eyebrows. In time, I felt comfortable doing this procedure in aesthetic cases. Next came the use of microscopes to dissect follicular units, and—by necessity—a team of competent technicians. I also became an assistant of the Ivo Pitanguy Clinic, where I took care of the hair restoration sector.

A significant game-changer occurred when I attended my first ISHRS Meeting in Chicago (2002). This was where the FUE procedure (described as the FOX technique by Bill Rassman) was first presented! I was initially skeptical that there would be enough material for a 3-day event, and, of course, I returned from my travel with many more doubts than I began. I became a member of the Society the next

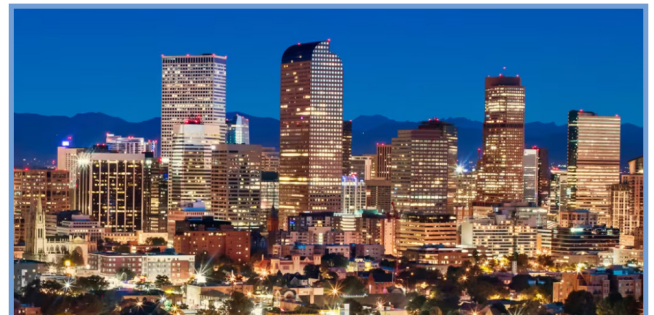
year and have been a regular participant ever since. The same year (2003) saw the beginning of the Brazilian Association of Hair Restoration Surgery (ABCRC). One of the founding members (and a dear friend) was Marcelo Gandelman, a past president of the ISHRS. This group of plastic surgeons and dermatologists (of which I am currently president) has actively promoted the study and teaching of hair restoration. Over these 20 years, we have hosted a national congress every two years, and in between we organize workshops. It has been a source of great pride to see so many Brazilian colleagues from ABCRC in leadership positions in the society: Carlos Uebel (platinum follicle awardee), Marcelo Pitchon, Arthur Tykocinski, Mauro Speranzini, Fernando Basto, Márcio Crisóstomo, Octávio Boaventura, and Luciana Takata, among others.

I have been happily married to Alessandra (a psychologist) for 23 years. We have twins, Helena and Gabriel, who recently graduated from a German high school here in Rio. They are fluent in three languages and are following the family tradition: they are applying for Universities in Europe.

So it is with great pleasure that I will dedicate a significant part of my working (and family) time organizing the 32nd ISHRS World Congress, to be held October 17-19 in Denver, Colorado. This task will be made much easier with the guidance and wisdom of Victoria and Melanie, who together with Brad, I call **Team Denver**.

In the next issue, I will be describing our plans for this great event! ■

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## ABHRS President's Corner

Steven Gabel, MD, FISHRS | Tigard, Oregon, USA | [drgabel@gabelcenter.com](mailto:drgabel@gabelcenter.com)

Now entering its 28th year since the American Board of Hair Restoration Surgery (ABHRS) was founded, the organization's mission is to act for the benefit of the public in establishing specialty

standards and examine surgeons' knowledge, skills, and aesthetic judgment in the field of hair restoration surgery. The cornerstone of the ABHRS is the high ethical standards that our diplomates are required to maintain. As important as that statement was in 1996, the mission holds even more credence today as the field expands and the number of hair restoration procedures continues to rise each year. As the incoming president of the ABHRS, I am truly honored to help steer the organization in continuing to fulfill its mission, and I certainly have large shoes to fill. I am aware of the significant responsibility that comes with this esteemed position, while recognizing the legacy left by my predecessors.

One of the goals of the ABHRS is to make the certification process readily available for candidates. The written examination is 100% computer based, and as such, is administered at testing centers throughout the world. The written examination is scheduled for August 10, 2024. The oral examination, on the other hand, requires the candidate to be examined in person and will be given twice in 2024. The first exam will be held in Milan, Italy, in conjunction with the 46th S.I.Tri. International Congress on May 23, 2024; the second oral exam will take place during the October 2024 World Congress in Denver, Colorado.

I want to acknowledge and thank our 2023 President, Dr. Ken L. Williams, Jr, who spent countless hours working to advance the organization. Under his leadership, among the many items navigated in 2023, Dr. Williams helped to establish guidelines for hair restoration surgery in other countries and formed specific committees to continue the outreach of the ABHRS. I also want to thank our 2022 president, Dr. Timothy Carman, who provided the Executive Committee (EC) and Board of Directors (BOD) with guidance from his many years of service, and outgoing board member, Dr. Shalini Malhotra, for her dedication and commitment as the Awareness Committee Chair. Additionally, Drs. Carman and Malhotra will be heading up important committees in the coming year.

I want to welcome the incoming 2024 EC: Vice President, Dr. Rana Irfan (Pakistan); Secretary, Dr. Christopher D'Souza (United Kingdom); and the newest member of the EC, Treasurer, Dr. Shady El-Maghraby (Egypt) who was recently elected by his peers to the position. These are the individuals who I will be leaning on frequently this next year as we do our best to advance the mission and goals of the ABHRS. I want to welcome our newest BOD members, Drs. Mayank Singh (India) and David Perez-Meza (Mexico), who bring to the Board a wealth of knowledge and experience in hair restoration organizations. Drs. Kapil Dua (India), Robert Haber (USA), Karl Hekimian (USA), Sharon Keene (USA), Daniel Lee (USA), Parsa Mohebi (USA), Luciano Sciacca (United

Kingdom), Greg Williams (United Kingdom), and Georgios Zontos (Greece) make up the remaining positions.

Behind the scenes, there is an enormous amount of work required to run this organization. In her second year as the Executive Director, Emily Valerius, MBA, is extremely passionate and dedicated to ensuring the ABHRS runs smoothly and efficiently. She is assisted by the helpful Colette Elbaor and Monica Fritz. Lastly, our legal counsel, Michael Brady, is doing his best to keep us legally sound. Both Emily and Michael will be attending the meetings in Milan and Denver. Please stop by our table to meet them.

As the year progresses, I look forward to sharing the activities and accomplishments of the ABHRS. It is a true honor to serve with all the amazing individuals involved with this organization. ■

# ABHRS

American Board Of  
Hair Restoration Surgery

## Congratulations!

The following doctors recently passed the written and oral examinations conducted by the ABHRS. We would like to congratulate each of them on their accomplishment:

**Dr. Haitham Abdelhamid**

**Dr. Aparna Acharya**

**Dr. Akanxa Bhatti**

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### UPCOMING EXAMS—2024

**Written Exam: August 10, 2024**, using Pearson Vue online testing.

**Oral Exam:** In person on **May 23, 2024**, in Milan, Italy, in conjunction with the 46th S.I.Tri. International Congress; or **October 15, 2024**, in conjunction with the 32nd World Congress of the ISHRS in Denver, Colorado.

<https://abh.rs.org/certification/certification-exam-dates/>

## Join the ABHRS

### Written Exam:

August 10, 2024, at a Pearson Vue test center.

### Oral Exam:

October 15, 2024, in conjunction with the 32nd World Congress of the ISHRS in Denver, Colorado.

### Benefits Include:

- Increasing your visibility through ABHRS website listings.
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Apply by May 10, 2024: [ABHRS.org/certification](https://www.abhrs.org/certification)



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# ISHRS Regional Workshop Islamabad, Pakistan



## Conference Highlights

- Live surgery workshop
- State-of-the-art lectures given by national and international experts
- Interactive Q&A sessions
- Case-based discussions
- Exhibition of pharma & electro = medical equipment
- Social programs



**Conference Host**  
Rana Irfan,  
MBBS, FISHRS



**Conference Chair**  
Shady El-Maghraby,  
MD, MSc, FISHRS

*With full support of the Hair Restoration Society of Pakistan*

**Serena Hotel, Islamabad | 23-25 FEB 2024**



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# International Society of Hair Restoration Surgery



# 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

### **Emergencies and Complications: Prevention and Treatment**

Wednesday, March 6, 2024 | 12:00PM CST (Chicago)

Moderators: Robin Unger, MD | USA

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

### **Diagnosing Challenges and New Techniques**

Wednesday, July 10, 2024 | 9:00AM CDT (Chicago)

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

Ratchathorn Panchaprateep, MD, PhD, FISHRS | Thailand

### **Best CSI Presentations and Video Tips**

Wednesday, April 10, 2024 | 9:00AM CDT (Chicago)

Moderators: Jennifer Krejci, MD | USA

Steven P. Gabel, MD, FISHRS | USA

### **Newest Technology Available**

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

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

Otavio Boaventura, MD | Brazil

### **Regenerative and New Allopathic Medicine for Hair Loss**

Wednesday, May 15, 2024 | 12:00PM CDT (Chicago)

Moderator: Guillermo Guerrero, MD | Mexico

## Available On Demand

### **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.**



# ISHRS Europe & S.I.Tri

2024 World Live Surgery Workshop: Milan  
May 26, 2024



**Georgios Zontos, MD,  
MSc, PhD, FISHS, Chair**



**Piero Tesauo, MD,  
PhD, Co-Chair**



ISHRS Europe and the Italian Society for Hair Science and Restoration (S.I.Tri.) welcome you to the 2024 World Live Surgery Workshop: Milan, on Sunday, May 26, 2024 –the day after the 46th Congress of S.I.Tri.

**For more information:**

S.I.Tri: [Sitri.It](http://Sitri.It)

ISHRS: [ISHRS.org/Europe-LSW-2024](http://ISHRS.org/Europe-LSW-2024)

**Save the date and plan to attend!**

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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](mailto:Tu.Tran@advancedhair.com).



## Foster Collegiality and Engage with Your Colleagues on a Daily Basis

Join the ISHRS Physician Members Only **WhatsApp** Group



- **Immediate Advice:** Engage in valuable real-time help in situations where expert advice on surgical procedures or patient cases is needed quickly.
- **Peer Support:** Find guidance and solutions with colleagues who understand and can help you navigate through professional challenges.
- **Ideas & Collaboration Hub:** Leverage the platform to exchange ideas, discuss research findings, and collaborate on ongoing studies.
- **Real-Time Updates:** Stay ahead with firsthand information on the latest ISHRS events, webinars, and activities.



Scan to Join

# Calendar of Hair Restoration Surgery Events

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

DATES	EVENT/VENUE	SPONSORING ORGANIZATION(S)	CONTACT/INFORMATION
FEB 23-25, 2024	ISHRS Regional Workshop & Live Surgery Workshop <i>Islamabad, Pakistan</i>	International Society of Hair Restoration Surgery Hosted by Rana Irfan, MBBS, FISHRS	info@ishrslswpk.com
MAR 6, 2024 12PM Central Time/ Chicago	CME Webinar: Emergencies and Complications: Prevention and Treatment	International Society of Hair Restoration Surgery	<a href="https://ISHRS.org/ishrs-2024-cme-webinars">https://ISHRS.org/ishrs-2024-cme-webinars</a>
APR 10, 2024 9AM Central Time/ Chicago	CME Webinar: Best CSI Presentations and Video Tips	International Society of Hair Restoration Surgery	<a href="https://ISHRS.org/ishrs-2024-cme-webinars">https://ISHRS.org/ishrs-2024-cme-webinars</a>
MAY 15, 2024 12PM Central Time/ Chicago	CME Webinar: Regenerative and New Allopathic Medicine for Hair Loss	International Society of Hair Restoration Surgery	<a href="https://ISHRS.org/ishrs-2024-cme-webinars">https://ISHRS.org/ishrs-2024-cme-webinars</a>
MAY 23, 2024	ABHRS Oral Exam ( <i>in person</i> ) In conjunction with the 46th Congress of S.I.Tri. <i>Milan, Italy</i>	American Board of Hair Restoration Surgery <a href="http://www.abhrs.org">www.abhrs.org</a>	<a href="https://abhrs.org/certification/certification-exam-dates/">https://abhrs.org/certification/certification-exam-dates/</a>
MAY 23-25, 2024	46th Congress of S.I.Tri. <i>Milan, Italy</i>	Italian Society for Hair Science and Restoration (S.I.Tri.) <a href="http://www.sitri.it">http://www.sitri.it</a>	segreteria@sitri.it
MAY 26, 2024	2024 World Live Surgery Workshop: Milan <i>Milan, Spain</i> <i>Held the day after the 46th Congress of the Italian Society for Hair Science and Restoration</i>	International Society of Hair Restoration Surgery (ISHRS) Europe & Italian Society for Hair Science and Restoration (S.I.Tri.) <a href="https://eventi.sitri.it/en/event/live-surgery-workshop/">https://eventi.sitri.it/en/event/live-surgery-workshop/</a>	<a href="http://ishrs.org/Europe-LSW-2024">ishrs.org/Europe-LSW-2024</a>
JUN 7-9, 2024	2024 Conjoint Annual Scientific Meeting of CAHRS, AAHRS, TSHRS <i>Grand Parkray Hanzhou Hotel   Hangzhou, China</i>	China Association of Hair Restoration Surgery, Asian Association of Hair Restoration Surgery, and Thai Society of Hair Restoration Surgery	<a href="https://aahrs-asia.com/flora9682@yahoo.com.hk">https://aahrs-asia.com/flora9682@yahoo.com.hk</a>
JUL 10, 2024 9AM Central Time/ Chicago	CME Webinar: Diagnosing Challenges and New Techniques	International Society of Hair Restoration Surgery	<a href="https://ISHRS.org/ishrs-2024-cme-webinars">https://ISHRS.org/ishrs-2024-cme-webinars</a>
JUL 19-20, 2024	15th Annual Hair Transplant 360 Cadaver Workshop <i>St. Louis, Missouri, USA</i>	Saint Louis University School of Medicine, Practical Anatomy & Surgical Education In collaboration with the International Society of Hair Restoration Surgery	<a href="http://slu.edu/medicine/pase">slu.edu/medicine/pase</a>
JUL 24-27, 2024	9th Brazilian Congress of Hair Surgery <i>Campinas, São Paulo, Brazil</i>	Brazilian Society of Hair Restoration Surgery (ABCRC) (Associação Brasileira de Cirurgia de Restauração Capilar)	secretaria@abcrc.com.br
AUG 10, 2024	ABHRS Written Exam ( <i>online</i> )	American Board of Hair Restoration Surgery <a href="http://www.abhrs.org">www.abhrs.org</a>	<a href="https://abhrs.org/certification/certification-exam-dates/">https://abhrs.org/certification/certification-exam-dates/</a>
AUG 14, 2024 12PM Central Time/ Chicago	CME Webinar: Newest Technology Available	International Society of Hair Restoration Surgery	<a href="https://ISHRS.org/ishrs-2024-cme-webinars">https://ISHRS.org/ishrs-2024-cme-webinars</a>
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 <a href="http://www.abhrs.org">www.abhrs.org</a>	<a href="https://abhrs.org/certification/certification-exam-dates/">https://abhrs.org/certification/certification-exam-dates/</a>
OCT 15, 2024	Live Surgery Workshop <i>Denver, Colorado, USA</i>	International Society of Hair Restoration Surgery <a href="http://www.ishrs.org">www.ishrs.org</a>	<a href="http://www.32ndannual.org">www.32ndannual.org</a>
OCT 17-19, 2024	32nd World Congress of the ISHRS <i>Denver, Colorado, USA</i>	International Society of Hair Restoration Surgery <a href="http://www.ishrs.org">www.ishrs.org</a>	<a href="http://www.32ndannual.org">www.32ndannual.org</a>
NOV 11, 2024	11.11 ISHRS World Hair Transplant Repair Day Fight The FIGHT Public Awareness Campaign	International Society of Hair Restoration Surgery <a href="http://www.ishrs.org">www.ishrs.org</a>	<a href="https://fightthefight.ishrs.org/hair-transplant-repair-day/">https://fightthefight.ishrs.org/hair-transplant-repair-day/</a>

## CHANGES FOR 2024 IN THE MEMBER EDUCATIONAL MAINTENANCE REQUIREMENT

As per the Bylaws, ISHRS full Members and Fellow Members are required to adhere to educational maintenance requirements to retain their member category. Previously, the criteria were to attend 1 ISHRS-approved meeting every 3 years.

### NEW!

The ISHRS Board of Governors changed the criteria to a POINT SYSTEM and expanded it to include more "ISHRS-approved meetings" including a path for regional meetings of Global Council member societies. See page 19 for details on the new system.



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

## 2023–24 Board of Governors

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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  
 Hair Restoration Society of Pakistan  
 Hellenic Academy of Hair Restoration Surgery  
 Ibero Latin American Society of Hair Transplantation  
 International Society of Hair Restoration Surgery  
 Italian Society for Hair Science and Restoration  
 Japanese Society of Clinical Hair Restoration  
 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](mailto: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](http://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.
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:*

April 5 for May/June 2024 issue  
 June 5 for July/August issue  
 August 5 for September/October issue

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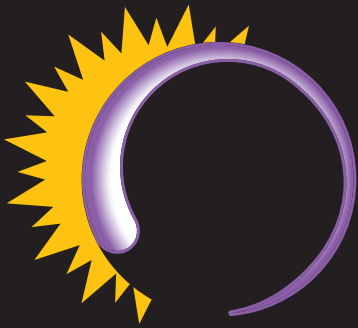
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## 13TH WORLD CONGRESS FOR HAIR RESEARCH

Be Enlightened by the Total Eclipse of Hair Science  
DALLAS, TEXAS, USA • APRIL 6-9, 2024

[www.hair2024.org](http://www.hair2024.org)

### DATES

Saturday-Tuesday  
April 6-9, 2024

### LOCATION

The Fairmont Hotel  
Dallas, Texas, USA

### ATTENDEES

We anticipate 500-600+ clinicians, scientists, and hair researchers.

### CORPORATE

There are multiple opportunities for corporate participation and commercial exposure, including exhibits, satellite symposia, advertising and branding, and journal supplement support.

### A UNIQUE EXPERIENCE

This special location on these specific dates was selected to coincide with the total solar eclipse that will occur on April 8, 2024, across the Americas.

To view first hand a total solar eclipse is a special and unique experience. Dallas, Texas, is one of the major cities in the path of totality, with the eclipse to occur around lunch time, and will have one of the longest totality durations of all cities with 3 minutes and 46 seconds of totality.

We have selected an amazing viewing area at an excellent venue so we may all experience this moment together!



L to R: Amy McMichael, MD, Rodney Sinclair, MBBS, MD, Ken Washenik, MD, PhD, Jerry Shapiro, MD, Isaac Brownell, MD, PhD, Maria Hordinsky, MD, Wilma Bergfeld, MD, Elise Olsen, MD, Lynn Drake, MD, George Cotsarelis, MD, Dow Stough, MD, Maryanne Senna, MD, Victoria Ceh, MPA, Ronda Farah, MD. Photo credit: Jed Smith Photography - Canfield Scientific, Inc.

**ABOUT AHRS** The American Hair Research Society (AHRS) is a non-profit, 501(c)(3) organization of 300 clinical and basic science researchers who are committed to unraveling the biochemical mechanisms of hair growth and hair loss as well as developing effective treatments for hair related disorders. A critical component of AHRS' vision is the need to serve as an educational resource or translational communicator between the lay public and scientists, physicians and industry on the interplay of hair biology, pathophysiology, and treatment.



<https://www.americanhairresearchsociety.org/>

### INTERNATIONAL FEDERATION OF HAIR RESEARCH SOCIETIES

American Hair Research Society  
Australasian Hair and Wool Research Society  
Chinese Hair Research Society  
European Hair Research Society  
Korean Hair Research Society  
Russian Hair Research Society  
Society for Hair Science and Research  
Ukrainian Hair Research Society



IFHRS  
International Federation of Hair Research Societies

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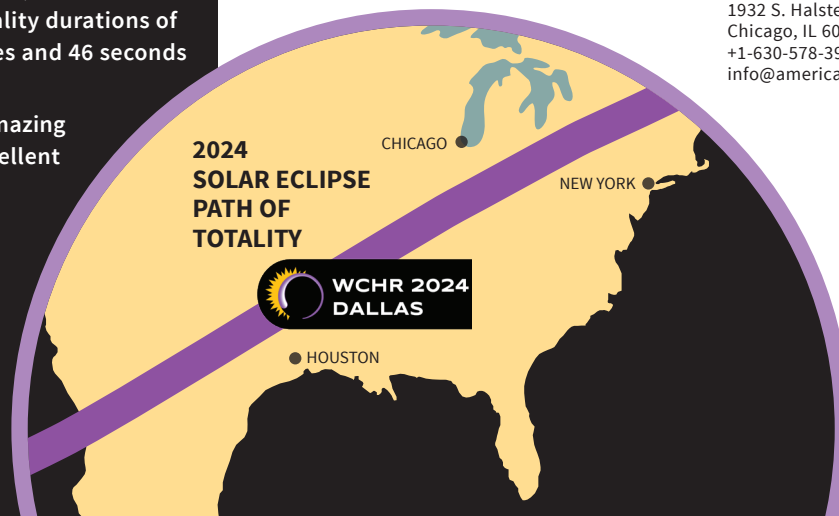
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WITH LIVE SURGERY WORKSHOP OCT 15**

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**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		

