Official Publication of the International Society of Hair Restoration Surgery

FORUM

HAIR TRANSPLANT FORUM INTERNATIONAL

VOLUME 28 | NUMBER 1
JANUARY/FEBRUARY
2018

IN THIS ISSUE

The Successful Treatment of Alopecia Areata with Platelet Rich Plasma in a Case of Twins with Genetic Risk for Autoimmune Disorders

Advances in Robotic FUE

Spotlight on the ISHRS Ethics Committee

Redefining the "E" in FUE: Excision = Incision + Extraction

Ricardo Mejia, MD | *Jupiter, Florida, USA* | www.skinandhairdoc@aol.com

Extraction in the purest form can be defined as "the action of taking out something, especially using effort or force." In 2013, Dr. Parsa Mohebi and the FUE Research Committee published a report in the *Forum* (Vol. 23, No. 5, pp. 165-168) entitled, "Standardization of the terminology used in FUE: part I." In it, they noted that the concept of FUE was first published in the tabloid newspaper "The Sun Herald" in Australia on October 15, 1995, in an advertisement for Dr. Woods & Dr. Campbell's top-up microsurgical technique where the donor extraction was done one follicular unit at a time. The advertisement described the concept of FUE as "Hair Follicle Single Unit Extraction." In 2002, Drs. Bill Rassman and Bob Bernstein published "Follicular Unit Extraction: Minimally Invasive Surgery for Hair Transplantation" (*Dermatol Surg.* 2002; 28(8): 720-727). They described the term FUE as "the removal of individual clusters of follicles from the donor area using a sharp dissecting punch or trephine." Drs. Rassman and Bernstein described the way 1mm-diameter punch incisions were made to separate the hair follicles and remove them.

In those early years, the key question for surgeons was: How do we remove the follicles? Hence, the word "extraction" was appropriately used. This term also provided a significant marketing advantage as

PAGE 5

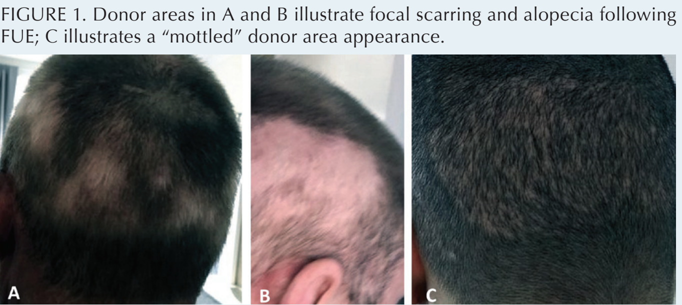
Determining Safe Excision Limits in FUE: Factors That Affect, and a Simple Way to Maintain, Aesthetic Donor Density

Sharon A. Keene, MD, FISHRS | *Tucson, Arizona, USA* | drkeene@hairrestore.com;
William R. Rassman, MD | *Los Angeles, California, USA*; James A. Harris, MD, FISHRS | *Denver, Colorado, USA*

Overharvesting and difficulties measuring variables affecting donor coverage

The explosive worldwide popularity of the Follicular Unit Extraction (FUE) method for donor harvesting (recently re-defined to reflect the more appropriate surgical description, Follicular Unit Excision) has contributed to an increase in patients affected by donor area overharvesting. This has resulted in serious cosmetic defects ranging from minor degrees of visibly moth-eaten donor areas to almost complete donor alopecia. A separate, but related, problem occurs when areas of focal donor necrosis are created by overly aggressive FUE. Figure 1 illustrates examples of various donor defects that have been seen post-FUE. Safe excision guidelines to educate doctors to avoid these complications do not currently exist. In an effort to guide medical practitioners toward safe limits of FUE, the Hair Diameter Index[1,2] and the Hair Coverage Value[3] have been proposed to aid in predicting FUE harvest limits based on hair shaft diameters and hair count/square centimeter.

FIGURE 1. Donor areas in A and B illustrate focal scarring and alopecia following FUE; C illustrates a "mottled" donor area appearance.



PAGE 7

FORUM
HAIR TRANSPLANT FORUM INTERNATIONAL

VOLUME 28 | NUMBER 1 | JANUARY/FEBRUARY
2018

TABLE OF CONTENTS

3 President's Message

4 Co-editors' Message

12 The Successful Treatment of Alopecia Areata with Platelet Rich Plasma in a Case of Twins with Genetic Risk for Autoimmune Disorders

14 How I Do It: Using Velcro to Assist with Non-Shaven FUE

17 Medical and Professional Ethics: Spotlight on the ISHRS Ethics Committee

18 Advances in Robotic FUE

20 Cyberspace Chat: Approach to Alopecia Areata

23 Hair's the Question: White/Gray Hair

25 Letters to the Editors

27 Literature Review

31 Message from the ISHRS 2018 World Congress Program Chair

32 Message from the ISHRS 2018 World Live Surgery Workshop Program Co-Chairs

34 Meeting Review: Review of the 17th Annual Meeting of the Russian Trichologists Union

35 In Loving Memory of Dr. Rajaratnam Sundarason

40 Classified Ads

41 Calendar of Events

The views expressed herein are those of the individual author and are not necessarily those of the International Society of Hair Restoration Surgery (ISHRS), its officers, directors, or staff. Information included herein is not medical advice and is not intended to replace the considered judgment of a practitioner with respect to particular patients, procedures, or practices. All authors have been asked to disclose any and all interests they have in an instrument, pharmaceutical, cosmeceutical, or similar device referenced in, or otherwise potentially impacted by, an article. ISHRS makes no attempt to validate the sufficiency of such disclosures and makes no warranty, guarantee, or other representation, express or implied, with respect to the accuracy or sufficiency of any information provided. To the extent permissible under applicable laws, ISHRS specifically disclaims responsibility for any injury and/or damage to persons or property as a result of an author's statements or materials or the use or operation of any ideas, instructions, procedures, products, methods, or dosages contained herein. Moreover, the publication of an advertisement does not constitute on the part of ISHRS a guaranty or endorsement of the quality or value of the advertised product or service or of any of the representations or claims made by the advertiser.

Hair Transplant Forum International is a privately published newsletter of the International Society of Hair Restoration Surgery. Its contents are solely the opinions of the authors and are not formally "peer reviewed" before publication. To facilitate the free exchange of information, a less stringent standard is employed to evaluate the scientific accuracy of the letters and articles published in the Forum. The standard of proof required for letters and articles is not to be compared with that of formal medical journals. The newsletter was designed to be and continues to be a printed forum where specialists and beginners in hair restoration techniques can exchange thoughts, experiences, opinions, and pilot studies on all matters relating to hair restoration. The contents of this publication are not to be quoted without the above disclaimer.

The material published in the Forum is copyrighted and may not be utilized in any form without the express written consent of the Editor(s).

HAIR TRANSPLANT FORUM INTERNATIONAL is published bi-monthly by the *International Society of Hair Restoration Surgery*

First-class postage paid Milwaukee, WI and additional mailing offices.

POSTMASTER Send address changes to:
Hair Transplant Forum International
International Society of Hair Restoration Surgery
303 West State Street
Geneva, IL 60134 USA
Telephone 1-630-262-5399
U.S. Domestic Toll Free 1-800-444-2737
Fax 1-630-262-1520

President	Sungjoo (Tommy) Hwang, MD, PhD, FISHRS president@ishrs.org
Executive Director	Victoria Ceh, MPA vceh@ishrs.org
Editors	Andreas M. Finner, MD, FISHRS Bradley R. Wolf, MD, FISHRS forumeditors@ishrs.org
Managing Editor & Advertising Sales	Cheryl Duckler, 1-262-643-4212 cduckler@ishrs.org
Controversies	Russell G. Knudsen, MBBS, FISHRS
Cyberspace Chat	Robin Unger, MD
Difficult Cases/ Complications	Marco Barusco, MD, FISHRS
Medical & Professional Ethics	Gregory Williams, MBBS, FISHRS
Hair's the Question	Sara M. Wasserbauer, MD, FISHRS
How I Do It	Timothy Carman, MD, FISHRS
Literature Review	Jeffrey Donovan, MD, PhD, FISHRS Nicole E. Rogers, MD, FISHRS
Meeting Reviews	Nina Otberg, MD

Copyright © 2018 by the
International Society of Hair Restoration Surgery,
303 West State Street,
Geneva, IL 60134 USA

Printed in the USA.

Official Publication of the
International Society of Hair Restoration Surgery

President's Message

Sungjoo (Tommy) Hwang, MD, PhD, FISHRS | *Seoul, South Korea* | president@ishrs.org

Greetings everyone! Wishing you all a happy New Year.

The ISHRS was founded in 1993 and has been around for 25 years. I would like to express my gratitude and thanks to our society's founders, Drs. Dow Stough and O'Tar Norwood. Also, I would like to extend my sincerest thanks to the former presidents, Board of Governors, committee members, and all staff who have contributed to the ISHRS's growth for the past 25 years.

Over the past 25 years, there have been many changes in the field of hair restoration surgery. There have been many developments in surgical skills such as FLAP, REDUCTION, PUNCH GRAFT, MINIGRAFT, FUT, and FUE. Furthermore, there has been advancement in medical treatment and research including finasteride, dutasteride, minoxidil, LLLT, PRP, and so on. I am looking forward to seeing how the field of hair restoration surgery will develop in the next 10 years.

Many ISHRS-sponsored academic conferences are scheduled for 2018. The main conferences include the ISHRS World Live Surgery Workshop scheduled for March 8-10 in Dubai, UAE, and the 26th World Congress of the ISHRS, which will take place October 10-14 in Hollywood, California. Again this year, the ISHRS World Live Surgery Workshop is taking place outside of the United States, offering a good opportunity to visit Dubai. I anticipate that the 26th World Congress in Hollywood will be the largest meeting in the history of the ISHRS. I ask for your active participation in these main events. The ISHRS also has a Pre-Congress on Hair Transplantation in conjunction with the 4th International Congress of the Aesthetic Academy of Egypt planned for September 12 in Cairo, Egypt. As far as I know, this would be the first ISHRS-related meeting in the African continent. I hope it is successful. Another ISHRS regional workshop on Scalp Micropigmentation will be held in Walnut Creek, California, after the Hollywood World Congress.

In addition, there are many academic conferences being held by Global Council members. HAIRCON 2018 will be in Mahabalipuram, off Chennai, India, February 16-18. The Present & Future of Hair Restoration Surgery and Medicine will be held by the British Association of Hair Restoration Surgery in London, UK, March 17. The 2nd SILATC Annual Meeting & Live Surgery Workshop, organized by the Ibero Latin American Society of Hair Transplantation (Sociedad Iberolatinoamericana de Trasplante de Cabello – SILATC), will take place May 2-3 in Cancun, Mexico. The 6th Asian Hair Restoration Surgery Meeting & Live Surgery Workshop, organized by the Asian Association of Hair Restoration Surgery in collaboration with the Chinese Association of Hair Restoration Surgery, will take place in Beijing, China, May 11-13. The 4th Latin American Workshop of FUE, organized by the Paraguayan Society of Hair Restoration Surgery, will take place in Guatemala City, Guatemala, May 25-27. The 8th International Congress of the Korean Society of Hair Restoration Surgery will be held in Seoul, Korea, June 9-10. Lastly, the 7th Congress of the ABCRC (Brazilian Society of Hair Restoration Surgery) will take place in Foz do Iguassu, Brazil, August 22-25. I hope that many of you will take the opportunity to experience, learn, and widen your collegiality through the various ISHRS meetings and other meetings held by Global Council member societies.

As announced at the Prague World Congress last year, volunteers are being recruited for various committees, and we have had a good response. Currently, we are in the process of arranging volunteers onto committees. I would like to thank all those who have actively taken part in and supported various committees.

Recently, there was a discussion to change the term FUE from FU Extraction to FU Excision. I am glad that Sharon's article and Ricardo's paper on FUE were published on the cover page, which gives the background on this change. I also believe that excision is a more appropriate word—medically and scientifically—than extraction.

Lastly, I would like to welcome the new 95 members who were approved for membership at our General Membership Business Meeting in Prague. Congratulations on your membership! Our society holds the highest standards of medical practice, medical ethics, and research in the field of hair restoration surgery. I have no doubt that our members will continue to strongly support the ISHRS's unlicensed practice policy and the work of our society.

I am looking forward to having a great year with you. Thank you! ■

Pardon the error…

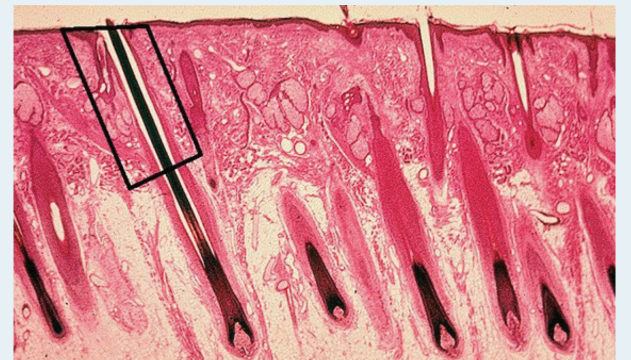
In the November/December 2017 issue of the *Forum* (Vol. 27, No. 6; p. 232), Figure 1 of Dr. Parsa Mohebi's article, "Dynamics of FUE," was inadvertently cropped. I sincerely apologize to Dr. Mohebi for not catching the error before going to press.

Shown on the right is the figure as it should have appeared.

An updated version of the November/December 2017 *Forum* has been posted to the Members Only section of the ISHRS website.

—Cheryl Duckler, Managing Editor

FIGURE 1. Scalp hair histology: anchor system in relation to hair follicles



Co-editors' Message

Andreas M. Finner, MD, FISHRS
Berlin, Germany
forumeditors@ishrs.org

Bradley R. Wolf, MD, FISHRS
Cincinnati, Ohio, USA
forumeditors@ishrs.org

BREAKING NEWS!

FUE = Follicular Unit EXCISION

Dear Colleagues:

Breaking news! The name of the most popular harvesting technique in the world is changing. As the front cover of this issue notes, FUE is now Follicular Unit Excision. Congratulations to Ricardo Mejia for authoring the article outlining this change. The support is widespread as evidenced by the accompanying comments. We also support this change and have edited the articles in this issue to reflect it. Up to this point, "extraction" summarized the entire technique, however, to be more accurate, this harvesting procedure now has been divided into two steps: the incision and the extraction. In the future, when discussing FUE, we encourage all authors to use the word "excision" to describe the removal of follicular units, and we encourage you to be very specific when using the terms incision and extraction. In addition to being more accurate, the updated term reflects something that surgeons do—excise tissue—and in doing so, also helps combat the burgeoning problem of unlicensed FUE surgery by subtlety reminding everyone that only licensed professionals are legally able to excise tissue.

Unlicensed FUE surgery is a common theme in this issue. Sharon Keene touches on the topic in her expansive and comprehensive review of the FUE donor area. She highlights the importance of maintaining an aesthetic donor area appearance and the many factors that contribute to potential overharvesting using FUE. She also points out that only licensed professionals should be making the myriad of decisions necessary to preserve precious follicles. FUE is not a simple harvesting technique but requires special knowledge and medical expertise. In his letter to the editors, Cagatay Sezgin comments on illegal surgeries and suggests steps to be taken to address this practice. The ISHRS has been the leading voice in exposing unlicensed surgery with our "Stand Proud, Be Loud" campaign. The ISHRS's position statement of qualifications for scalp surgery can be found at ishrs.org. A warning concerning societies not affiliated with the ISHRS that permit the unlicensed practice of medicine by their members is published on page 29 of this issue. This topic is very important and if not curtailed, unlicensed surgery will negatively affect our specialty for years to come.

Another recurring topic in this issue is immune-mediated alopecia. Anastasios Vekris presents a case study of twins with Alopecia Areata (AA) successfully treated with platelet rich plasma (PRP) therapy, his second article for this journal discussing the treatment of AA with PRP.[1] In Cyberspace Chat, Robin Unger and colleagues chat about their preferred treatment regimens for AA including PRP. She surmises that practical experience is very important in treating this disease. In Literature Review, Nicole Rogers comments on the use of low dose naltrexone (LDN) to treat lichen planopilaris by reducing inflammation and Nutrafol®, a nutraceutical, to treat hair loss. In Clinical Rheumatology, they "review the evidence that LDN may operate as a novel anti-inflammatory agent in the central nervous system, via action on microglial cells."[2] In the lay press, there is much information on LDN, including The Low Dose Naltrexone Homepage (www.lowdosenaltrexone.org), that you may find interesting. Some tout it as a new wonder drug. Research into the mechanism of naltrexone and its effects on inflammation and immune-mediated alopecia will be interesting.

We are delighted to introduce a new column, Medical and Professional Ethics, written by Gregory Williams, Chairman of the ISHRS Ethics Committee. In each issue, he will discuss cases from the Ethics Committee. This will certainly be a great contribution for the members as we learn about this important committee.

This year, there are 13 meetings listed on the calendar of events (page 41), so there will be many options for us to learn about, present on, and discuss all aspects of hair restoration surgery. There is sure to be a meeting near you. If you'd like to report on a meeting you attend, please contact our Meeting Reviews editor, Nina Otberg. If you are presenting a lecture at one of these meetings, consider converting it into an article for submission to the *Forum*. Letters to the editors are also always welcome. We look forward to keeping you updated in 2018.

—Andreas & Bradley

References

1. Vekris, A., et al. Total regrowth in chronic severe alopecia areata treated with platelet rich plasma: a case report and literature review. *Hair Transplant Forum Int'l.* 2015; 25(5):190-191.
2. Younger, J., et al. The use of low-dose naltrexone (LDN) as a novel anti-inflammatory treatment for chronic pain. *Clin Rheumatol.* 2014; 33(4):451-459.

CONTINUED FROM FRONT PAGE

it did not imply surgery and was advertised in 1995 as it is today as "no scalpel, no stitches, no scar." However, as Dr. Mohebi and the Research Committee concluded, "In strict terminology, the term 'follicular unit extraction' is inappropriate and misleading because it is a histological term rather than an accurate anatomical surgical term."

So why do doctors continue to use the word extraction? The answer is simple. It's routine and accepted as the standard. It is very clear with simple mathematics what FUE surgeons do. We perform surgery to excise full-thickness skin grafts containing hair follicles. It all adds up, ½ + ½ = 1, or: Incision + Extraction = Excision.

Hence, a more appropriate and accurate term is **Follicular Unit Excision**. (The good news is that we can continue to refer to this procedure as "FUE," and it will always remain.)

Over the past 20+ years, there has been less focus on true extraction techniques and more focus on the incision aspect of the equation to minimize damage and transection rates and to obtain a better-quality graft. We have seen an explosion in the variety of "incision techniques" using handmade punches from 18- and 19-gauge needles, and sharp, serrated, non-serrated, dull, hybrid, Upunch, Trumpet punches, and more. A variety of automated devices also has evolved to assist with the speed of incisions, such as the S.A.F.E. System™, ARTAS®, NeoGraft®, SmartGraft®, Vortex, PCID, WAW system, Atera, 3 Step FUE, RotoCore, Mamba, and other international devices. These devices, as well as many manual punch handles, have the ability to limit the depth of incisions.

As we continue to evolve and develop better-quality incision techniques, why do we continue to use inappropriate or misleading language? Simply put, it's a bad habit. The ATOE (Cole Instruments)—or Aide to Extraction—is one instrument that is appropriately named. To be precise and accurate in our communication, we should use the term "extraction" only when we are using techniques to physically manipulate and handle the graft to remove it from the body AFTER the incision is made. This can be done by suction, ATOE, the one-handed or two-handed technique, wiping grafts out using gauze, or other techniques that safely avoid damage to the graft. I see conferences and workshops advertising "extraction techniques" when all they are discussing is the way to properly cut the skin with the above incision techniques.

We are in the habit of using this term—extraction—and it will not be easily forgotten or changed. However, to use language in a precise, technically accurate way, we are advocating the change to Follicular Unit Excision. Excision embodies the true aspect of what we do as surgeons in both the academic and clinical aspect as it focuses on the two aspects of the equation: incision and extraction.

In addition, we have a responsibility for truth in advertising. Over the past 15 years, the term extraction has been minimized by many across the world to imply a non-surgical procedure that only involves "extracting" hairs as if they were being plucked out of the scalp without surgery. We continue to see advertisements that promise "no scar" or that use phrases such as "harvesting grafts," which minimize the procedure as if we are non-surgically gathering crops from a field. Given the worldwide expansion of this technique by non-medical and unlicensed personnel, the term extraction often is used to falsely mislead individuals so the procedure can be performed by non-medical personnel and to justify these actions to the public and legislators.

This is why I have proposed that hair transplant surgeons adopt Follicular Unit Excision as the new medical term. In a recent personal communication regarding the name change, both Drs. Rassman and Bernstein agree. Dr. Bernstein noted, "Times have changed and it will give more clarity to the term FUE and hopefully it will be more respected for the surgical procedure that it is." Many international FUE surgeons with whom I have discussed this also agree.

So how should we define FUE? We should define it to reflect the accuracy of the surgical implications:

Follicular Unit Excision is the surgical technique that refers to circumferential incision of the skin around the follicular unit bundle or group of hair follicles for the purpose of extracting a full-thickness skin graft containing hair follicle(s), intradermal fat, dermis, and epidermis.

The ISHRS Board of Governors has reviewed this new terminology and agreed that the above definition more accurately reflects the true nature of the procedure. It also prevents any type of misleading or fraudulent information that may be conveyed to the public. We have heard from leading physicians and textbook authors across the world that this updated terminology "makes sense," and that they are already making plans to incorporate the new culture and terminology into future textbooks. The ISHRS is also on board with making this part of our communication dialogue. Consequently, we are suggesting that the membership adopt this new terminology. Follicular unit incision and extraction techniques will never go away, but at least we can be more academically and clinically precise with our language and communication. I hope that each of you will join us in this transition as we bring in the New Year with Follicular Unit Excision for 2018 and beyond.

On page 6, please see what your colleagues are saying about this change from Extraction to Excision.

PAGE 6

➤ CONTINUED FROM PAGE 5

Robert M. Bernstein and **William R. Rassman** began a chain of responses to this change of nomenclature:

This article on FUE name change adds significant clarity to the nomenclature of hair transplantation. Renaming Follicular Unit Extraction to Follicular Unit Excision acknowledges two distinct steps—incision and extraction—that will make communicating with our patients easier and more concise. It will also allow clinicians and researchers to think more clearly about the two steps of FUE, both separately and together, when addressing such issues as transection, suction injury, punch design, automation, and robotics. Although Shakespeare aptly pointed out that at times a name can be quite irrelevant: "What's in a name? That which we call a rose by any other name would smell as sweet" [Romeo and Juliet, II, ii, 1-2], in this case the important change in wording should have lasting significance.

Our current president:

Sungjoo (Tommy) Hwang, MD, PhD, FISHRS: I think it is a great idea. FU Excision is a more scientific and medical term.

Our past presidents:

Jerry E. Cooley, MD, FISHRS: I think it's excellent

Paul C. Cotterill, MD: I definitely agree with the name change to Follicular Unit Excision. This important step will help to control the ambiguity that has been perpetuated and exploited inappropriately by some physicians and companies in our field. This new terminology—FUE: excision = incision + extraction—more accurately reflects the technique.

Edwin S. Epstein, MD: Well written and timely.

Bessam K. Farjo, MBChB: Congratulations on the excellent document you put together, and certainly the term "excision" is far more logical and correctly describes the process. It would have been almost impossible to change the acronym FUE, and so it is great that the suggested new terminology slots in perfectly!

Vincenzo Gambino, MD, FISHRS: Your draft is an excellent piece of scientific writing and truly clarifies a very important distinction that FUE is a surgical procedure.

Marcelo Gandelman, MD: Definitely Follicular Unit Excision! The repeating pattern in relation to the term FUE is in fact damaging our communication with patients. Your idea is innovative with a practical solution surely necessary for our colleagues both in an academic or professional environment. With this article, you are bonding your experience with innovation and have found the solution to the problem. As Dr. Bernstein would say: "Why didn't I think of that?"

Robert S. Haber, MD: While it is almost impossible to change a term once it has entered the public lexicon, it is still a sensible plan; I applaud the idea. By the way, I've been using the term FU Excision in my verbal discussions with patients since the concept was presented, and it was very easy to make the switch.

Sheldon S. Kabaker, MD: "Excision" seems to be a more accurate term than "extraction." All this is appropriate academically, and I support this subtle but more proper definition.

Sharon A. Keene, MD, FISHRS: I like the latest version, and agree it encompasses the important aspects of the technique—including the fact that the extraction does not preclude excision—so when people read this it seems quite clear incising and excising of tissue is occurring… Agree with the need for a definition that describes the important surgical aspects of the technique and is sufficiently broad to cover many different devices—and indicates that more than one hair follicle is often being removed.

Robert T. Leonard, Jr., DO: I wholeheartedly support the Board's decision to change the definition of the "E" in FUE to Excision from Extraction. Hindsight is 20:20, isn't it? If this had been the initial definition from many years ago, our field would not be in the mess we find ourselves in today with unethical, inappropriate, and misleading advertising of this surgical harvesting technique coupled with the fact that non-surgeons are still excising tissue, i.e., performing surgery!

Jennifer H. Martinick, MBBS: The change to "excision" makes perfect sense as it encapsulates the total procedure; incise (a surgical procedure) plus extraction. Well done improving the nomenclature.

Mario Marzola, MBBS: I also agree that the name change better reflects the technique of FUE. It will be difficult to change an established name, but if we all band together, it will gain momentum. We are starting today!

James E. Vogel, MD: Of course this new terminology makes 100% logical sense. Certainly I support it!!

Kuniyoshi Yagyu, MD, FISHRS: I agree with the idea of FU Excision. It is an accurate term of the procedure.

Other comments

Konstantinos K. Anastassakis, MD, PhD: Good idea.

Marco N. Barusco, MD, FISHRS: I think that the nomenclature change is very appropriate and scientifically correct.

Michael L. Beehner, MD, FISHRS: I welcome this change in terminology, since for too long some of the proponents of Follicular Unit Extraction have tried to portray to the public the idea that the procedure is done without any surgery or cutting of tissue. I also agree the change helps label the procedure for what it is, namely, surgery, and that non-physicians should not be performing this.

Kanokwan Chantauppalee, MD: I agree about the new terminology.

Ekrem Civas, MD, FISHRS: I completely agree with this change to excision. Extraction only describes the act of pulling out something, as if a punch incision was not made beforehand. The use of the word extraction simplifies the perception of the procedure, that it can easily be done by anyone and not a hair surgeon; extraction is not a scientifically sufficient academic term.

Ivan S. Cohen, MD, FISHRS: Redefining the "E" in FUE to mean Excision rather than Extraction is a brilliant idea. It defines what we do more accurately, which will help the public understand that this is in fact a surgical procedure.

James A. Harris, MD, FISHRS: FUE as commonly performed is in fact an excision. Excision covers it all…whether rotary, oscillation, sharp or blunt, ultrasound or laser…partial or full depth.

Chiara Insalaco, MD, PhD: The new term synthesizes perfectly what technically happens during the FUE hair restoration. I hope it can be a start towards a big change in this, unfortunately, wild field.

Paul J. McAndrews, MD, FISHRS: For the public to be deceived that FUE is an extraction (not excision) with the implication that it is not really a surgery and only gives you "white dots" is wrong. I absolutely agree. The only difference between the punch excision done in the 1960s and FUE of today is the size of the punch. The total surface area of scar tissue created per follicular unit removed is actually greater for a 1mm FUE punch versus a 4mm punch. Unfortunately, that is not great for marketing.

Osman T. Oguzoglu, MD: I think it's very good idea. I will change all FUE extraction to FUE excision in my website, because patients will think it's a more complicated process and should be done by a doctor.

David Perez-Meza, MD, FISHRS: I agree and I support the proposal about FU Excision. I and others discussed the terminology "excision" with Dr. Crassas 18-19 years ago at the 1999-2000 Orlando Live Surgery Workshop.

Marcelo Pitchon, MD: I consider the change is pertinent and welcome. It is one of the elements necessary to make patients and the general public correctly informed that FUE is real surgery. And that it is not excision-free, nor sequelae-free, nor riskless, nor scarless.

Nicole E. Rogers, MD, FISHRS: Wow! What a great concept! I think this is very helpful and will definitely clarify the concept that FUE is still surgery, not just "extraction" (sounds simple, non-surgical?) of hair follicles.

Antonio Ruston, MD: My opinion is that you are absolutely right—excision is the correct terminology and defines better and more accurately the procedure (incision + extraction), and besides that, I agree that would prevent misleading or fraudulent information.

Arthur Tycosinski, MD, FISHRS: The name change is a master idea: Bingo! I totally support it.

Robin Unger, MD: I agree wholeheartedly. It is FU excision when the skin is cut. Extraction is removing them after the surgical aspect has been completed. And it does also clarify the need for the procedure to be done by trained medical personnel.

Michael W. Vories, MD: I agree that excision is a more precise term. If this at least has the possibility of defining the procedure as a surgical procedure, then I am all for it.

Sara M. Wasserbauer, MD, FISHRS: I am on board.

Ken L. Williams, DO, FISHRS: The nomenclature suggested by you I think is very good. It makes sense. As long as Bernstein, Rassman, and Rose are on board, I don't think there should be any problem in adopting this new language in our future FUE textbook. I like it.

Jerry Wong, MD: I agree that it is better defined as follicular unit excision.

CONTINUED FROM FRONT PAGE

While the above indices are cumbersome to measure manually, they do include the important factors of hair follicle density and hair shaft diameter. Consider, however, that hair shaft diameter is not uniform among hairs on the same head with neighboring hairs sometimes varying by a factor of 2, and variability occurs even within the same hair. Because of this variability, a sample size of at least 25 hairs must be measured for a reasonably meaningful average.[4-6] To further complicate these calculations, variable hair density between occipital and parietal areas necessitates several index measurements be obtained for a given patient during their first procedure.[7] This becomes even more complex for subsequent FUE surgeries as donor density becomes increasingly variable. More importantly, these parameters (Hair Diameter Index and the Hair Coverage Value) exclude a variety of other contributing factors and circumstances that at times may be more important to the cosmetic appearance of the donor area. A simpler approach described in this paper focuses on easily measured baseline follicular unit (FU) density, safe excision density, and residual donor FU density after FUE. Surgical judgment based on experience as well as knowledge and understanding of contributing cosmetic factors can be used to fine-tune maximum FU excision and residual FU donor density.

Respecting the safe donor area

Experienced hair restoration surgeons know that the same factors that allow us to successfully restore density to the recipient area are relevant to the appearance of cosmetic coverage and fullness in the donor area. Furthermore, various circumstances can increase the importance of one factor over another. To maintain safe donor area (SDA) excision densities (FU/cm²) after FUE, we must first consider basic tenets imposed by donor area limitations. Permanent donor follicles are finite for all patients. Those patients destined for advanced patterns of hair loss are caught in a hair restoration conundrum: the larger the area of projected need, the smaller the donor area is to provide for it. To determine the safe excision density, we must first consider donor area limitations and avoid excising from areas likely to be affected by androgenetic alopecia (AGA). This usually means excluding the nape of the neck, superior lateral fringes, and the superior aspects of the occiput near the regions of the balding crown.

Predicting the SDA is influenced by the following: a patient's age at the time of assessment, the projected pattern of hair loss based on family history, whether the patient has or is likely to maintain a stable pattern, and whether a patient will progress to more advanced patterns of hair loss. Successful hair transplantation should be considered using a "master plan" that considers hair loss from natural causes as well as the potential loss of hair caused by the surgery. Patients presenting with advanced patterns of hair loss must be educated as to the limitations of donor supply prior to surgery or risk falling prey to those who promise to deliver more hair to the recipient area than the donor area can safely provide. These promises can be made by inexperienced or unscrupulous doctors, and in some cases by unlicensed technicians. When this occurs, what was previously a recipient site focus for the patient can become a donor area nightmare. Experienced surgeons respect the donor area and its follicles in the way they are harvested and managed. If not, both the recipient and donor areas can be adversely affected.

How follicular distribution affects cosmetic donor density

In addition to density and hair shaft diameter, other factors influence cosmetic coverage in the donor area. While each patient's donor density in their occipital or temporal areas is generally consistent, the follicular unit *distribution* within each square centimeter can be irregular. After excising FUs, it is important to attempt to leave the remaining density consistent in each square centimeter excised. Other factors impacting cosmetic density include hair/scalp color contrast and the three-dimensional properties impacting the appearance of volume, which include straight versus wavy or curly hair, the exit angle of the hair, and the patient's planned hair length. This article focuses on the importance of these additional factors in greater detail, and on the clinical situations in which one factor becomes more important than the others. We will introduce simple predictive methods including **safe single pass excision** density based on the preoperative FU density and **maximum excision density** based on the projected **minimum residual donor FU density** necessary for satisfactory donor area coverage. Minimum residual donor FU density depends on the hair characteristics described in this article.

The inability to predict cosmetic improvement on the basis of hair counts and hair shaft diameter alone is shown by the cosmetic limits of 4mm-diameter punch grafts in common use until the mid-1990s. Each graft contained 15-20 FUs placed in punch holes in the recipient area surrounded by bare scalp. This technique created 4mm-diameter punch scars in the donor area. Although a canopy of hair was created to cover the recipient area, short hair styles exposed a pluggy distribution of hair. The same unnatural pattern of hair distribution was seen in the donor area.[8] The pattern of distribution for hair numbers and hair shaft diameter must be considered when follicles are redistributed to the recipient area as well as in the donor area after the excision process.

Visible FUE donor area defects can occur if too many FUs are removed too close to each other. While small punches (<1mm) leave tiny donor scars, increases in excision density create larger spaces between follicular groupings. Jimenez et al. established that normal follicular spacing varies between

IMPORTANT VALUES

1. **Preoperative density (65-85)—measured prior to surgery**

Values below depend on the hair characteristics described in this article:

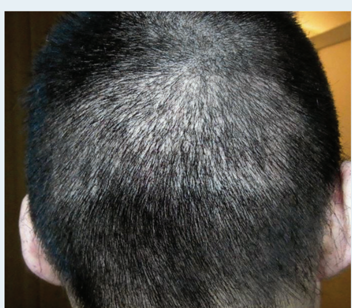
2. **Safe single pass excision density—FU/cm² that can be safely excised in one surgery (10-25)**
3. **Maximum excision density—FU/cm² that can be safely excised in multiple surgeries**
4. **Residual donor density—FU/cm² projected for minimum density necessary for satisfactory donor area coverage after one or more surgeries (40-50)**

PAGE 8

CONTINUED FROM PAGE 7

1-1.4mm[9] and excising follicular units doubles that distance. Large spaces between residual FUs can create a mottled appearance. Excision distribution must be irregularly uniform across the donor area—with all square centimeters roughly equal in excision density. If both hair and FU density in one area of scalp is not balanced with other harvested areas, a visible low-density cosmetic defect can be created that may be detectable upon casual observation. Figure 2 illustrates this problem in a young Asian man, whose preferred hairstyle and hair characteristics contribute to a visible and disturbing defect in density.

FIGURE 2. Young Asian male disturbed by pattern of donor scarring following a single session of FUE.



Other factors affecting donor coverage

In addition to the natural distribution of FUs, hair and scalp color contrast is an important cosmetic factor when considering donor coverage. Minimizing contrast between hair and scalp to effectively mask thinning underlies the premise and focus of scalp camouflage agents and techniques that color the scalp and reduce or eliminate the contrast.[10] A similar goal is achieved with scalp micropigmentation.[11] Patients with lighter hair color and fair scalp, or dark hair and dark scalp, have minimal contrast and can achieve acceptable aesthetic results with less density in the recipient area and can support a lower residual donor area density. However, the reverse is also true, referring again to Figure 2 where high contrast is a significant contributing factor to the visibility of donor area scarring. Had the patient's hair been blonde, gray, or salt and pepper, the area of visibly thinner hair would have been much less apparent or not detectable at all.

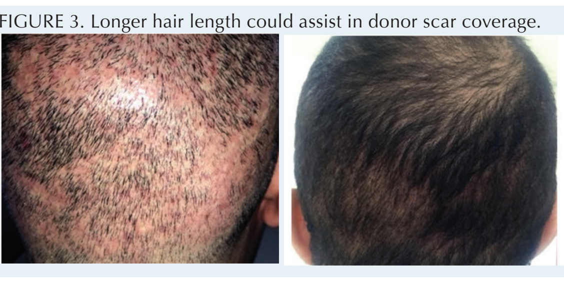
It is also known that wavy or curly hair covers the scalp better than straight hair. This advantage applies to the donor area appearance when hair is sufficiently long for the curl to manifest itself. In the case of tight curls, hairs can complete a circle, cover more scalp, and double or triple the visual impact of a single hair follicle. When this occurs, the effect of curl is more important than hair shaft diameter, making a coverage value or hair diameter index inapplicable.

Consider, for example, straight, black hair 80 microns in diameter compared to tightly curled, black hair of 60 microns, both grown to 1 inch. This length allows the curly hair to complete 360 degrees or even triple the strand on itself. The lower diameter, curly hair for the same numbers will appear more dense. Add to this scenario dark scalp with minimal contrast, and the resulting visual effect is more than a multiplier of the original hair diameter. For wavy hair, the greater the frequency of undulations, the greater the appearance of volume (fullness). Wave and curl improve the ability of the hair canopy to block light. Visual qualification of these hair characteristics is complex, with classification of curl and curvature described by De La Mettrie and others.[12] Complex mathematical equations are required to duplicate curl in computer software imaging, with no simple way to quantify the visual impact on density or donor area coverage.[13] This is particularly true given the greater or lesser impact that occurs as a function of hair length and layering. Regardless of the positive visual impact of a wave or curl, it should not be viewed as a reason to overharvest and reduce residual FU density. If a patient gets out of a swimming pool or is in a wind storm, or merely wishes to wear a short hair style, these valuable hair characteristics lose "coverage" value.

When the exit angle of the hair is more acute, it provides more effective "shingling," which improves the appearance of scalp coverage and cosmetic fullness. This acute angulation is a natural orientation of hair in the donor area for most patients, which generally layers over itself, maximizing light blocking. Harris observed that Asian patients, who have more obtuse exit angles, are at greater risk for visible donor thinning from FUE.

Postoperative hair length is a critical factor for determining cosmetic coverage in the donor area. For patients who plan to wear their hair short (3-6mm), also known as a #1-2 guard on clippers used by barbers, there will be no hair "canopy" and little or no layering benefit. The residual donor densities in these patients must be higher than for those who keep their donor area hair longer. Figure 3 illustrates donor defects that could be potentially less noticeable with longer hair styles. Very short hair in the donor area (also known as stubble) eliminates any contribution from wave or curl and strongly reduces the contribution of even coarse hair. Short or stubble hair will accentuate the "empty spaces" created by FUE, making FU distribution and their numbers per cm² more important than hair counts per cm². For example, if hair in the donor area is 3mm long at a residual donor density of 50 FUs averaging 1.5 hairs/FU vs 30 FUs averaging 2.5 hairs/FU, despite equal hair numbers, the higher FU density will reveal fewer and smaller bare spaces. In this situation, high contrast color differentials can also exacerbate any lower residual FU donor density present (e.g., black hair on light scalp).

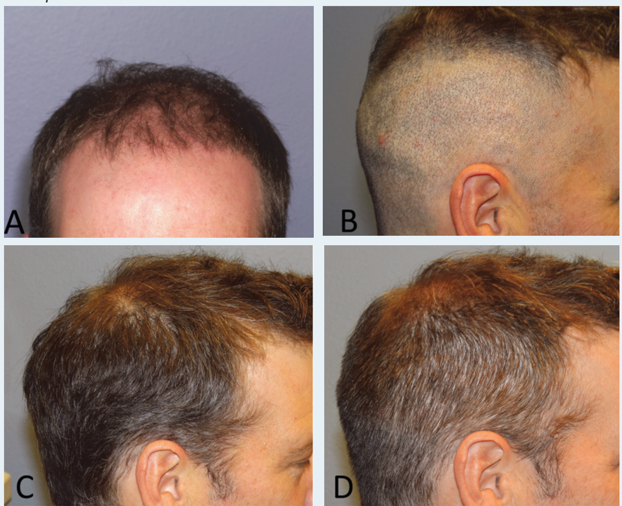
FIGURE 3. Longer hair length could assist in donor scar coverage.



Knowledgeable surgeons can integrate these hair characteristics to successfully excise large numbers of grafts with high excision densities while maintaining cosmetically adequate donor coverage. Figure 4 illustrates a successful excision of >6,000 FUs in a patient with favorable hair characteristics including hair/scalp color contrast, medium hair shaft diameter, and wavy hair. Comparison of before and after photos of his donor area reflects a visible decrease in overall donor volume; however, the donor area coverage remains aesthetically pleasing for the patient's hair style and hair characteristics.

Patients must be counseled and cautioned about donor limitations if they have less than favorable hair characteristics in the donor area, such as lower hair shaft diameter, straight hair, high color contrast between hair and scalp, an obtuse

FIGURE 4. Serial photos document cosmetic changes after 6,000 FUE grafts *(compliments J. Harris)*.



exit angle of donor hair, average or lower baseline FU or hair follicle densities, or length and style that exposes the scalp.

Donor area capacity

The donor area capacity for FUE can be calculated based on 1) the size of the donor area (in cm²), 2) baseline FU density per cm², 3) the maximum excision density per cm², and 4) residual donor FU density. For example, a safe donor area of 189cm² (27cm × 7cm) with baseline average density 65 could easily support an excision density of 10-15, yielding 1,890-2,835 grafts. This would leave a residual donor density of 50-55 in the donor area. This yield may be sufficient for patients with Class II-IV patterns of hair loss depending on the recipient area size and hair characteristics. However, the requirement for greater yields to achieve cosmetic goals in Class V-VII patients may risk overharvesting. Many of these patients will need 3,000-5,000 grafts (or possibly more), requiring excision densities of 16-26 in the above example, leaving residual densities less than 50 (39-49). Depending on other hair characteristics, the residual donor density in this range could begin to appear thin, see-through, and mottled. It is always important to be aware that meeting a patient's goal for recipient area density or coverage may not be achievable without creating visible donor area thinning including alopecia.

Maximum excision density without overharvesting

How can a surgeon determine a safe maximum excision density and avoid the complications of overharvesting? What factors contribute to focal necrosis? Currently no single algorithm integrates all the various factors to predict the minimum adequate donor area density after FUE. However, in every circumstance, FU donor density is a critical factor and this seems a reasonable variable to examine first when identifying safe levels of excision and residual donor density.

Baseline FU density, as a parameter, can be used by a surgeon to educate patients on how excising a particular number of grafts per square centimeter (excision density) will yield a particular number of grafts for transplantation. Furthermore, excision density can be used to explain the visual impact on donor area density (residual FU donor density) incorporating a surgeon's knowledge of the patient's hair characteristics and planned donor length.

Each patient's donor area should be examined and baseline FU density (FU/cm²) measured at the outset of every preliminary evaluation. FU density in both the occipital and temporal donor regions of the safe zone can be determined using a simple tool, the densitometer, as described by Boden (Figure 5).[14] Average density in the donor area reveals ethnic variation ranging from 65-85 in the central occipital donor area in Caucasians to 61-63 in Asians.[9,15] African hair density has the lowest FU density.[11] While absolute hair counts create the fullness of the canopy, residual FU density and its distribution within that area will determine the cosmetic appearance of the donor area after FUE, therefore, FU density provides a useful barometer until lower residual densities require the incorporation of other factors.

FIGURE 5. Densitometer is an easy tool to determine baseline FU density.

Normal hairline and temporal densities have been noted to average 40-50.[16] A residual donor area density of 40-50 can be expected to maintain adequate coverage for a patient with medium diameter hair that is straight or mildly wavy and has moderate contrast between hair and skin color. A lower residual density could be risky, especially in patients with less favorable hair characteristics such as fine, straight black hair and light scalp. Man-made density charts have been used to compare density of 20-40 when hair groupings are all 1's and 2's versus all 3's and 4's.[17] These charts, shown in Figures 6 and 7 (on page 10), were created by author Dr. Sharon Keene to illustrate the cosmetic importance of hair counts for a certain graft density, but they can also be used to illustrate density issues for the donor area. For example, surgeons must be aware how selectively excising larger FUs during FUE procedures can impact residual donor density, especially after aggressive excision has occurred. As the figures illustrate, residual densities of 20-30, especially when groupings are all 1-2 hairs, are "see-through," thin, and must be avoided. Alternatively, the density chart also illustrates that patients with above average numbers of 3- to 4-hair FUs, if left *in situ*, can tolerate lower residual density and still provide aesthetically pleasing coverage at longer hair lengths.

Most FUE experts recommend 10-15 excisions/cm² as a safe single pass density in a person with baseline average density of 65-75. Article co-author Dr. James Harris reports a routine use of higher excision density in the range of 20-25 without problems. In the case of a patient with an average baseline density of 70, an excision density of 10-15 leaves a residual FU donor density of 55-60. A second pass FUE surgery with the same excision density would further reduce

➤ PAGE 10

CONTINUED FROM PAGE 9

FIGURE 6. Man-made density charts, black hair, from 20-50 FU/cm². Top row illustrates "see-through" appearance at 20-30; bottom row cosmetic coverage at 40-50.

FIGURE 7. Top row illustrates "see-through" for both black and blonde hair at 20 FU, all 1- to 2-hair groupings. The bottom row compares blonde hair at 30 FU/cm² with all 1- to 2-hair groupings vs all 3- to 4-hair groupings.

residual density to 40-45, and a third pass to 25-30. Visible thinning may be expected in the latter case, but it could also appear at a residual density between 40-50, particularly when hair shaft diameter is low, contrast is high, hairs are straight, and the hairstyle is short.

The importance of higher-than-average baseline density becomes apparent if we measure residual density in a patient with a baseline density of 100. If this patient undergoes excision at a density of 10-15, the residual donor density will go down to 85-90, resulting in a higher residual density than the baseline density of the previous patient. It is unlikely that a reduction of FU donor density as high as 50% for a patient with 100 will leave visible thinning as this will still provide a residual donor density of 50 regardless of other hair characteristics. In comparison, a maximum excision density of 30-35% for patients with an average density of 70 will leave a residual density of 46-49; the latter is <50, and cosmetic coverage will depend on other hair characteristics previously discussed. Higher maximum excision density can be safe when baseline donor FU densities are higher than average, leaving a higher residual donor FU density. These are relatively simple parameters to obtain in a first-time patient and require simple subtraction to make the calculations.

A more complex situation arises in repeat FUE cases, where excision density from the first surgery may not be uniform and baseline density is low. In such cases, any areas of visible thinning should be documented, measured, and avoided. The "new" baseline density may require measurements in several areas, with the goal to avoid creating more areas of "visible thinning" and to determine a safe excision density that will maintain a cosmetic residual density (40-50), modified based on hair characteristics and planned hair style. Density in the thinning areas can allow the surgeon to know cosmetic density limits for that patient's hair characteristics. ***The centimeter-by-centimeter examination that occurs during surgical FU excision to avoid overharvesting underscores the need for experienced and ethical professionals to make the medical decisions necessary for safe maximum excision density.***

While an average of 10-15 excisions/cm² is reportedly safe for a single pass in patients with at least average baseline densities, it also appears safe in avoiding focal necrosis. Contiguous FU excisions, where the punch holes merge with each other, must be avoided, not only to prevent areas of empty skin, which produces mottling, but also to reduce the risk of local devascularization, which could lead to scalp necrosis. Higher excision densities would seem to increase the risk of necrosis, but an exact maximum to avoid this complication has not been identified.

CONCLUSION

There are many factors that contribute to visual hair "fullness" in both the recipient and the donor areas. Avoiding the complications of visual overharvesting or focal necrosis from FUE requires that the surgeon pay attention to irregularly distributed, uniform levels of safe excision densities to maintain a residual density of 40-50. This should leave a donor area that does not appear thin for the patient's hair characteristics and hairstyle the patient prefers to wear. Conservative single pass excision density of 10-15 in virtually all patients who have normal baseline densities is safe. A higher single pass donor FUE density of 20-25 may be possible when the baseline donor densities are significantly higher than average. Hair characteristics, such as the thickness of the hair shafts, the degree of curl or wave, the color contrast between hair and scalp, the exit angle of hairs on the donor scalp, and whether hair will be worn short or long, allow the surgeon to then alter the residual donor FU density using his or her best judgment. While there is no single mathematical algorithm to incorporate all of the factors that contribute to donor area density, a weighted system may be possible to further enhance our ability to predict safe excision and residual donor densities.

References

1. Harris, J.A. Application of the Hair Diameter Index (HDI) in Obtaining a Target Hair Density. Poster presented at the 11th Annual Scientific Meeting of the International Society of Hair Restoration, New York, New York, October 2003.

2. Harris, J.A. Introduction of the Hair Volume Index (HVI) and Its Correlation to Subjective Visual Hair Density. Scientific Session presentation and poster presented at the 11th Annual Scientific Meeting of the International Society of Hair Restoration Surgery. New York, New York, October 2003.
3. Erdogan, K. Coverage Value and Graft Calculation. Presented at the World FUE Institute Meeting, 2015. https://youtu.be/O-gu9rJZhiY
4. Harris, J.A. Biodiversity of Hair Shaft Diameters: A Statistical Analysis. Poster presented at the 11th Annual Scientific Meeting of the International Society of Hair Restoration Surgery. New York, New York, October 2003.
5. Robbins, C.R. The Physical Properties of Hair Fibers. In: *Chemical and Physical Behavior of Human Hair*. Springer-Verlag Berlin Heidelberg, 2012; pp. 586, 597.
6. Ho, Y., et al. Variation and heritability in hair diameter and curvature in an Australian twin sample. *Twin Research and Human Genetics*. 2016(Aug); 19(4):351-358.
7. Vecchio, F., et al. Perception of baldness and hair density. *Dermatol*. 2002; 204(1):33-36.
8. Bernstein, R.M., and W.R. Rassman. The logic of follicular unit transplantation. *Dermatol Clin*. 1999(Apr); 17(2):277-295.
9. Jimeniz, F., and Ruifernández, J.M. Distribution of human hair in follicular units: a mathematical model for estimating the donor size in follicular unit transplantation. *Derm Surg*. 1999(Apr); 25(4):294-298.
10. Donovan, J.C., et al. A review of scalp camouflaging agents and prostheses for individuals with hair loss. D*ermatol Online J*. 2012(Aug); 18(8):1.
11. Rassman, W., et al. Combining follicular unit extraction and scalp micropigmentation for the cosmetic treatment of alopecia. *Plast Reconstr Surg Glob Open*. 7 Nov 2017; 1-6.
12. De la Mettrie, R., et al. Shape, variability & classification of human hair: a worldwide approach. *Human Biol*. 2007(Jun); 7(3):265-281.
13. Hadap, S., et al. Strands and Hair—Modeling, Simulation and Rendering. Presented at the 34th International Conference and Exhibition on Computer Graphics and Interactive Techniques, August 2007, San Diego, United States. Submitted 22 Sep 2010.
14. Boden, S. FUE Donor Evaluation and Surgical Planning. In: *Hair Transplant 360*, Volume 4: Follicular Unit Extraction. JP Medical Ltd., 2015(Nov), p. 114.
15. Ortega-Castillejos, D.K.A., and D. Pathomvanich. Retrospective assessment of follicular unit density in Asian men with androgenetic alopecia. *Dermatol Surg*. 2017(May); 43(5):672-683.
16. Keene, S. Natural hairline density in men: findings of a pilot survey. *Hair Transplant Forum Int'l*. 2009; 19(2):47-48.
17. Keene, S. Man-made density charts answer the question: Which is more important for density, graft counts or hair counts? Poster presented at the 2010 Annual Scientific Meeting of the ISHRS, Boston, Massachusetts, USA. ■

HypoThermosol®

THE OPTIMIZED GRAFT STORAGE SOLUTION TRUSTED BY LEADING HAIR RESTORATION PROFESSIONALS WORLDWIDE

Join the growing list of hair restoration professionals that trust *ex vivo* graft storage to HypoThermosol.

1.866.424.6543 BioLifeSolutions.com

info@biolifesolutions.com

The Successful Treatment of Alopecia Areata with Platelet Rich Plasma in a Case of Twins with Genetic Risk for Autoimmune Disorders

Anastasios Vekris, MD | *Athens, Greece* | anastasios.vekris@cosmeticdermamedicine.gr

ABSTRACT

Alopecia areata (AA) is a common autoimmune disease targeting the hair follicle and resulting in acute hair loss, partially or totally affecting the scalp and/or body. It usually affects young children and adults, causing severe psychological disorders and stress to the patients. There is still no definitive treatment for this disorder that can be persistent and recurrent. We present an interesting case of twins with genetic risk for autoimmune disorders who suffered from alopecia areata totalis. They had no significant response to conservative treatment with corticosteroids and were subsequently treated with platelet rich plasma (PRP) injections and showed noticeable and continuous hair growth simultaneously. We will discuss the potential of PRP as an alternative and trustworthy treatment for AA.

FIGURE 1. Twin 1 before PRP treatment (*left*) and after PRP treatment (*right*).

FIGURE 2. Twin 2 before PRP treatment (*left*) and after PRP treatment (*right*).

INTRODUCTION

AA is an autoimmune disease that targets the hair follicle, causing inflammation and, as a result, hair loss in several regions of the body. It is considered a genetic trait but may also be affected and/or triggered by environmental factors.[1,2] PRP therapy is used to rejuvenate areas in need, as platelets have the ability to produce growth factors that locate and correct tissue damage. In the case of hair follicles, PRP activates follicular stem cells and improves the function of the hair follicle by prolonging the anagen phase. We previously reported a case of AA treated with PRP leading to very promising results and demonstrating a safe and effective alternative treatment in recalcitrant cases.[6] Recently, we were presented with an even more intriguing case of AA with similar phenotype in dizygotic twins, who both also responded significantly to our PRP protocol.

Case Report

The 13-year-old male twins were referred to our clinic for hair loss that resulted in alopecia totalis. Four years ago, at the age of 9, one of the boys first presented with hair loss in his eyebrows and eyelashes. He remained stable for the next two years without any lesions on his scalp. According to his mother, he only used topical therapy based on corticosteroid lotions. Two years ago, the patient's clinical appearance started progressing rapidly from the loss of round patches of hair at the back of his scalp to involve almost all scalp hair (Figure 1, left). He was then treated with oral prednisolone for 1.5 months and corticosteroid injections afterwards, resulting in only partial regrowth and poor duration. The other boy presented with clinical scalp involvement from the beginning, two years earlier than his brother (Figure 2, left). Their pattern of hair loss and progression of the disease appeared quite similarly. It is also of interest to note that although the twins' medical histories revealed no comorbidities and no stress factors that could have contributed to the situation, their father reported suffering from vitiligo.

When the family consulted our clinic, they were introduced to our PRP protocol for AA, as the boys had already undergone all common treatment choices without noticing any significant and long-lasting improvement. The protocol involved 7 treatments of PRP with a one-month interval between treatments and the use of 5% minoxidil lotion once daily.

METHOD

The first step in PRP preparation is the collection of blood from the patient. We usually collected about 15-20ml from each of the twin brothers, depending on the session and the extent of the area to be treated. The vacutainers were then double centrifuged and, when ready, PRP was collected with a pipette from the tubes. After being activated with 0.05ml of 10% calcium chloride to each 1ml of PRP, 0.1ml/cm^2 of the activated plasma was then injected into the patients' scalp and/or eyebrows. To reinforce the results through trauma healing, at each treatment a Dermapen was also used for microneedling in some areas in combination with the injections.

RESULTS

The twins had a remarkable response to our treatment plan. Hair loss was diminished by the second session of PRP and hair regrowth started from the third session (Figure 1, right). Both patients presented with fully grown hair on the scalp and eyebrows one month after the last treatment, which is one of our quickest responses to PRP treatment for AA (Figure 2, right). Evaluation of the results was based on the patients' photos and clinical presentation, as well as a trichoscopic examination before and after treatments. Follow-up also included a reexamination at 3 and 6 months post-treatment.

DISCUSSION

The occurrence of AA in members of the same family, especially twins, supports the theory that patients with AA are genetically predisposed to acquiring the disease sometime in their life.[3] This assumption is supported by several twin studies, demonstrating the concordance rates in monozygotic as well as dizygotic twins.[1,7] Rodriguez et al. studied the role of genes and the environment in the pathogenesis of AA, reporting concordance rates among 58 sets of twins.[2] In the same study, AA was concordant in 42% of monozygotic and 10% of dizygotic twins, leading to the conclusion that the disease is not purely genetically determined because in such a case the rate in identical twins would be up to 100%.

Another interesting observation in our case is that the twins' father had a personal history of vitiligo, another skin disorder of autoimmune etiology. There have been a few reports in literature suggesting that AA and vitiligo may share a similar pathogenesis and not be that different after all. The histopathological profile of both diseases consists of infiltrates of CD8+ T-cells in the epidermis and CD4+ T-cells in the dermis, highlighting the fact that compared to other autoimmune diseases (infiltration of T-cells, neutrophils, dendritic cells, and others), AA and vitiligo are less inflammatory.[4] In addition, there have been reports of appearance of the two in family members due to shared genetic risk factors—direct overlap of associated genes and common gene categories (adaptive and innate immunity genes).[5,8] Supporting the above, there have also been cases of patients with existence of AA and vitiligo at the same time or even at the same anatomical site in the skin, presenting with lesional overlap.[4] Moreover, it is documented in other studies that patients with alopecia may present a higher risk for developing vitiligo compared to the general population.[9,10]

In our case, genetic risk certainly played a role in the appearance of AA in the twin brothers, and this hypothesis is further upheld by the fact that there was also another member in the family suffering from a similar autoimmune disease. Interestingly, our treatment plan proved remarkably successful given the background of the condition, enhancing the idea of PRP being one of the most promising therapies to date for AA. Although there have been many studies supporting the role of PRP in wound healing and teeth osteosynthesis as well as bone grafts, it is curious that published evidence about its efficacy in hair loss and certain types of alopecia appears quite poor.[11] Our study resulted in the twins experiencing significant regrowth of scalp hair that started in 3 months and resulted in a major increase in their hair thickness and density.

CONCLUSION

This case reflects the successful results of the use of PRP in alopecia areata, even in cases with genetic predisposition. It may not yet be settled as an official treatment option for autoimmune hair disorders, but it consists a very promising as well as safe alternative choice for recalcitrant cases that have not previously responded to common treatments.

References

1. Lortkipanidze, N., A. Zlotogorski, and Y. Ramot. Two episodes of simultaneous identical alopecia areata in identical twins. *Int J Trichology.* 2016(Jan-Mar); 8(1):47-48.
2. Rodriguez, T.A., et al. National Alopecia Areata Registry. Concordance rate of alopecia areata in identical twins supports both genetic and environmental factors. *J Am Acad Dermatol.* 2010(Mar); 62(3):525-527.
3. Dogra, D., A. Sood, and B.K. Khaitan. Alopecia areata in identical twins. *Indian J Dermatol Venereol Leprol.* 1996(May-Jun); 62(3):199.
4. Harris, J.E. Vitiligo and alopecia areata: apples and oranges? *Exp Dermatol.* 2013(Dec); 22(12):785-789.
5. Spritz, R.A. Six decades of vitiligo genetics: genome-wide studies provide insights into autoimmune pathogenesis. *J Invest Dermatol.* 2012; 132:268-273.
6. Vekris, A., et al. Total regrowth in chronic severe alopecia areata treated with platelet rich plasma: a case report and literature review. *Hair Transplant Forum Int'l.* 2015; 25(5)190-191.
7. Rodriguez, T.A., et al. National Alopecia Areata Registry Concordance rate of alopecia areata in identical twins supports both genetic and environmental factors. *J Am Acad Dermatol.* 2010; 62:525-527.
8. Petukhova, L., et al. Genome-wide association study in alopecia areata implicates both innate and adaptive immunity. *Nature.* 2010; 466:113-117.
9. Huang, K.P., et al. Autoimmune, atopic, and mental health comorbid conditions associated with alopecia areata in the United States. *JAMA Dermatol.* 2013; 149:789-794.
10. Chu, S.Y., et al. Comorbidity profiles among patients with alopecia areata: the importance of onset age, a nationwide population-based study. *J Am Acad Dermatol.* 2011; 65:949-956.
11. Ayatollahi, A., et al. Platelet rich plasma for treatment of non-scarring hair loss: a systematic review of literature. *J Dermatolog Treat.* 2017(Mar); 23:1-8. ■

How I Do It

Timothy Carman, MD, FISHRS | *La Jolla, California, USA* | tcarmanmd@mac.com

Non-shaven follicular unit excision (FUE) can have cosmetic advantages over the traditional method wherein the donor area is routinely shaved completely. Dr. Marie Andree Schambach de Bouscayrol shares with us a unique implementation of Velcro for assisting in this procedure. It's these "Aha!" moments that we each may experience that we can share with each other here in "How I Do It." Sharing our ideas with one another makes us clinically stronger as a collective group in the ISHRS. Please feel free to email me your ideas at tcarmanmd@mac.com for consideration.

Using Velcro to Assist with Non-Shaven FUE

Marie A. Schambach, MD | *Guatemala City, Guatemala* | marieschambach@schambach.clinic

As a scientist, making a true discovery can be an amazing achievement. Accidental discoveries, however, have taken place throughout medicine's history and have resulted in some very important breakthroughs that have affected/enhanced human survival, with such examples as penicillin, Viagra, X-rays, and warfarin, to name a few.

In the case presented here, I accidentally figured out Velcro could take on an important and facilitating role during my surgeries after my own hair got tangled in a piece of Velcro while helping my son with a science project. How was it possible that such a little piece of fabric would remain so stuck in my hair? Yet, I found that, with patience, I could remove my hair, strand by strand, without it being torture (Figure 1).

FIGURE 1. Velcro attached to my own hair.

I have been trying to perform a faster version of the non-shaven FUE procedure, yet I needed something that would keep my patients' hair in place while extracting and also allow me to remove small strands of hair in "lines," so that I could have access to almost all available follicular units by just moving this "something" upward. I had thought of curved combs, headbands, and elastic bands, but could not come up with the solution. But then it happened! My hair accidentally got stuck—really stuck—on Velcro! So, I ran to a hardware store and saw two different types of Velcro: the dual lock and the hook and loop (Figure 2). I further realized that Velcro is available in many different design variabilities: thickness, tightness, long loops, and small loops. So, I bought one of each and tested them.

FIGURE 2. Types of Velcro: dual lock *(left)* and hook and loop *(right)*.

After testing them all, I found that medium-long loops work the best, holds the hair tight enough, and yet allows me to extract the small strands of hair as I need with the tail of a small comb. I found a brand of Velcro that has adhesive on the opposite surface, and this allows me to place the "soft loop" part of the Velcro to the forehead from temple to temple (Figure 3). I then secure the "hook" strip of the Velcro from one temple around the back of the head to the opposite temple. As I wrap the Velcro around the back of the head, I comb the hair upward, advancing the Velcro with the hook side facing towards the hair (Figure 4). I finish by attaching the hook end tip to the soft loop side at the other temple point.

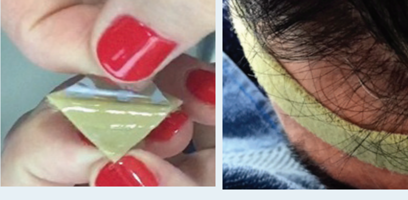
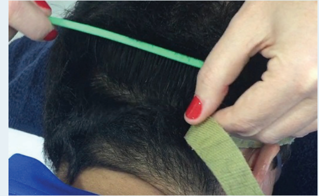


FIGURE 3. Remove cover from soft loop side as shown *(left)* and stick at forehead from temple to temple.



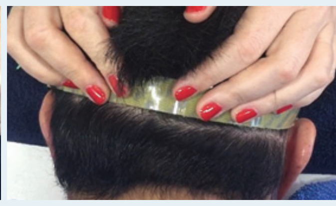


FIGURE 4. Velcro wraps around the back of the head with hook side facing towards hair.

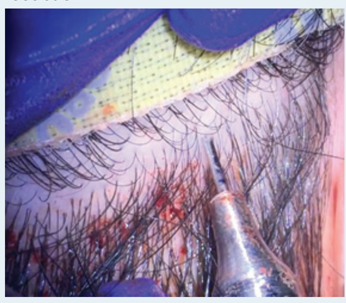
Now you can remove hair from under the Velcro with the thin tail of the comb and make sure it's a straight line where you can visualize the follicular units and their inclination (Figure 5). This allows you to visualize the exit angles of follicular units and start your excisions, moving along the whole Velcro border line, as your technician

FIGURE 5. Remove hair using thin tail of comb.

extracts right behind you, giving you feedback on the excision quality (Figure 6).

Once you've finished with the extractions in that particular line, just pull the Velcro a couple of millimeters towards the vertex, and remove small strands of hair from under the Velcro with the thin tail of your comb along the whole perimeter as described previously (Figure 7). Comb these strands of hair to see the natural exit angle of the follicular units. Start excisions again, moving along the lower Velcro border within the safe donor area (Figure 8).

FIGURE 6. Visualization of exit angles and technician extracting for immediate feedback



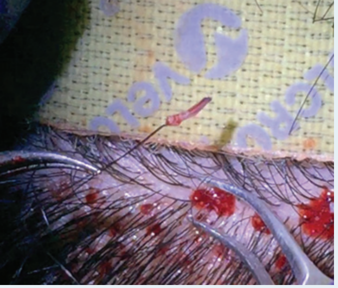
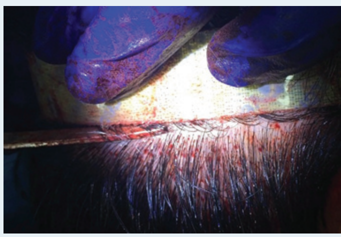


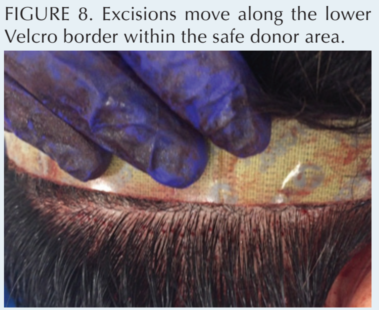
FIGURE 7. Remove small strands from under the Velcro along the perimeter.



Having perfected this trick, I can now perform non-shaven FUE surgeries more efficiently without "precutting" a larger amount of hair. This allows more styling options for my patients following surgery. Best of all, Velcro is an inexpensive and disposable!

Like Thomas Edison said, "Ideas of genius are 1% inspiration and 99% perspiration." ■

FIGURE 8. Excisions move along the lower Velcro border within the safe donor area.



Harris FUE Instruments

Harris S.A.F.E. Hex Blunt Punch — state-of-the-art for FUE.

The Harris S.A.F.E. System HEX™ for FUE is a revolutionary blunt dissection tip that combines speed, efficiency and accuracy.

- Ideal punch for beginners and experts
- Low transection rate: 2.8%*
- HEX Vibration separates follicles from the skin
- Proven for body hair
- 4 mm depth dissection which means less graft manipulation
- Single use disposable

Questions or to order:

Phone Veronica Melero at 877.265.9667

Email vmelero@harrisfueinstruments.com

Visit us online: harrisfueinstruments.com

*In a clinical study by Dr. Harris in over 150 patients and more than 100,000 harvested grafts. General user transection rates may differ.

MORE THAN LASERS

WE CATER OUR PRODUCTS TO OVERALL SCALP HEALTH

CALL CAPILLUS FOR PHYSICIAN PRICING

USA TOLL-FREE 1 (888) 272-9599 • OUTSIDE OF USA +1 (786) 888-6249 • WWW.CAPILLUS.COM

CAPILLUS, LLC - 1715 NW 82 AVE, MIAMI, FL 33126, USA +1 786 888-6249 - THE CAPILLUS NAME & LOGO ARE REGISTERED TRADEMARKS OF CAPILLUS, LLC. PATENT PENDING. ALL RIGHTS RESERVED. * CAPILLUS LASER THERAPY DEVICES ARE INTENDED FOR THE PROMOTION OF HAIR GROWTH IN FEMALES WITH ANDROGENIC ALOPECIA WHO HAVE LUDWIG-SAVIN CLASSIFICATIONS I – II, AND IN MALES WITH ANDROGENETIC ALOPECIA WHO HAVE NORWOOD HAMILTON CLASSIFICATIONS IIA-V; AND BOTH GENDERS HAVING FITZPATRICK CLASSIFICATION OF SKIN PHOTOTYPES I TO IV. EFFICACY DEMONSTRATED IN CAPILLUS CLINICAL TRIAL FOR CAPILLUSPRO. SEE CLINICALTRIALS.GOV FOR MORE INFORMATION. ALL CAPILLUS LASER DEVICES ARE MANUFACTURED IN THE USA BY CAPILLUS FROM FOREIGN SOURCE RAW MATERIALS.

Medical and Professional Ethics

Gregory Williams, MBBS, FISHRS | *London, England, UK* | dr.greg@farjo.com

Spotlight on the ISHRS Ethics Committee

When the ISHRS was founded in 1993, a Code of Ethics was created that established the principles of professional behaviour expected of the members. In a subsequent revision in 2014, a paragraph was added to the Code of Ethics that any violation of the Code shall be addressed in accordance with, and governed by, the ISHRS's Code of Ethics Disciplinary Procedures.

As changes to the Bylaws are no longer dealt with by this committee, the name was changed in 2017 from the Bylaws and Ethics Committee to the Ethics Committee. The Ethics Committee is now made up of 5 members including a Chair, all of whom have a fixed 3-year term of service that may be renewed.

Whilst the Bylaws are edited regularly, the original Code of Ethics has had only a few revisions; the most recent was in 2017 with the addition of a paragraph referring to the various policies and regulations to which members must adhere. These include (i) all applicable laws; (ii) ISHRS's policies, procedures, and governing documents including ISHRS's Bylaws, "Red Flags—Misleading & Inappropriate Messaging," "ISHRS Members Only Logo & ISHRS Meeting Logo Usage Policy," "ISHRS Membership Agreement," "ISHRS Position Statement on Qualifications for Scalp Surgery," and any other ISHRS governing documents including, without limitation, those hereafter adopted by ISHRS; (iii) the ethical codes of the medical societies, associations, and boards to which he/she belongs; and (iv) the medical staff bylaws, policies, and procedures of any facility or institution at which the member provides medical care. The foregoing compliance requirement applies to all amendments and addenda to said laws, policies, procedures, and ISHRS governing documents, and all policies, procedures, and governing documents hereafter adopted by the ISHRS from time to time.

In recent years, there have been an increasing number of complaints—both by ISHRS members and by members of the public—regarding the unethical behaviour or practice of ISHRS members. If it is thought by the Chair that there has been a violation of the Code of Ethics in these complaints, the Ethics Committee will examine the available evidence and come to a conclusion. In doing so, the Ethics Committee will follow the ISHRS's Code of Ethics Disciplinary Procedures and will work closely with the ISHRS's legal team.

Formal recommendations on how to deal with complaints and other ethical issues are made by the Ethics Committee to the Board of Governors, but it is the Board that makes the final decision on what action to take. Sanctions might include a warning, suspension, or expulsion from the ISHRS.

Paragraph VIII of the Code of Ethics states that "a member with knowledge of an illegal or improper act(s) by another physician should report such activity to the appropriate agency." This includes violations of the ISHRS Code of Ethics. There is a formal process that must be followed and this process can be found on a new Complaints page in the Members section of the ISHRS website. On this page, you will find links to the Code of Ethics and the Disciplinary Procedures, as well as to the Membership Agreement and Misleading and Inappropriate Messaging documents. There is also a link to the Complaint form that needs to be completed.

> Case Study: An ISHRS member alleged that another member had posted a derogatory comment about them on social media and that this breached paragraph VII of the Code that states: "Members will not denigrate their colleagues using false or misleading information with the intent of injuring the reputation or business of an ISHRS member." However, sufficient factual evidence was not submitted and the complaint was therefore dismissed by the Ethics Committee.

Complainants must have firsthand knowledge of the issue and should be aware that they must give permission for their complaint, and their identity, to be disclosed to the Respondent. Complaints also need to be filed within one year of the date the Complainant was aware of the facts giving rise to the alleged violation of the Code.

The ISHRS understands that it has a global membership and that there will be cultural and legal differences in medical practice that need to be taken into account.

It is not the job of the Ethics Committee or of the ISHRS to police matters that deal with medical licensing or clinical care—this is the remit of the member's regulatory or licensing body. However, ISHRS members are expected to adhere to the attestations they have signed, which includes a commitment to abide by the ISHRS's policies and tenets.

I hope you enjoy this new regular *Forum* column in which a variety of ethical topics will be discussed. We welcome letters to the editors from readers who would like to share their opinion on any of the issues that are raised here, or on any other ethical matters that might be of importance to the ISHRS. ■

Advances in Robotic FUE

Robert M. Bernstein, MD | *New York, New York, USA* | rbernstein@bernsteinmedical.com;
Michael B. Wolfeld, MD | *New York, New York, USA*

Disclosure: *Drs. Bernstein and Wolfeld hold equity interest in Restoration Robotics, Inc. Dr. Bernstein is on its medical advisory board.*

Since the publication of "What's New in Robotic Hair Transplantation" (*Hair Transplant Forum Int'l.* 2017; 27(3):100-101), there have been important improvements to the robotic system in both its incision and recipient site creation capabilities. These advances fall into four overlapping categories: increased speed, increased accuracy, increased functionality, and improved artificial intelligence (AI). The overlap occurs since improvements in functionality, accuracy, and AI can also increase the overall speed of the procedure. A faster procedure decreases the time grafts are outside the body and allows the physician to perform larger cases without placing additional oxidative stress on the follicles.

Increased Speed

The speed of the robot has increased through faster and more precise alignment with the hair in the follicular units. The robot also saves a significant amount of time by staying closer to the scalp (approximately 2mm) while moving from unit to unit, rather than retracting after each harvest. By shortening the distance the robotic arm moves between incisions, the dissection cycle has decreased to less than 2 seconds, giving the robot a raw speed over 2,000 grafts per hour. In a clinical setting, this enables harvesting of up to 1,300 grafts per hour.

Although the obvious way to increase speed is to simply make the robot go faster, there are limitations to this, as it would decrease the ability of physicians to make real-time adjustments to the system. The robot has an automatic feedback loop that makes intra-operative modifications as the harvesting proceeds, and this significantly decreases the need for human intervention. However, when there is scarring or other situations of excessive patient variability, it is necessary for occasional "tweaking" (particularly of punch depth) to achieve an optimal outcome. In these situations, faster robot speed may be counterproductive.

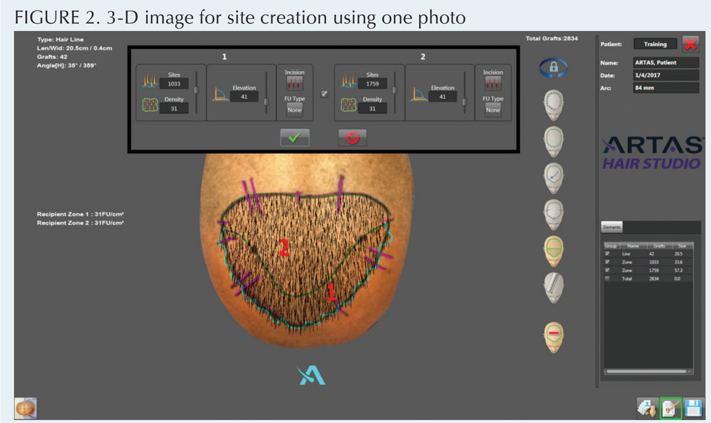
With this in mind, new ways have been found to speed up the procedure without limiting the operator's ability to respond. One has been to change the color of the light emitted by the optical system. In the past, a beam of red light illuminated the fiducials that the robot uses to guide the robotic arm, but the glare of this light is very difficult on the eyes. By enabling the optical system to read "eye-friendly" white light, the surgical team is now able to remove grafts as soon as they are separated from the surrounding tissue, rather than having to wait for an entire grid to be finished. This allows the two steps in follicular unit excision—the graft separation from surrounding tissue (incision) and the actual removal (extraction)—to proceed in parallel, rather than in series, in order to decrease operating time.

The new optical system also enables the robot to recognize the tensioner from a distance. Previously, the physician had to manually bring the robot toward the scalp (a step called "forced drag"), until the robot was close enough to recognize the fiducials on a grey-colored tensioner. This now happens automatically, with the robot recognizing a yellow tensioner from a distance and then homing in on the fiducials as it moves closer to the scalp, eliminating the time needed for the extra step (Figure 1).

FIGURE 1. Yellow fiducials and white light guide incision.

Recipient site creation has been a significant new capability of the robotic system. The advantages of robotic site creation include the ability to avoid existing terminal hair (minimizing injury) and to create new recipient sites in a precise distribution that complements the existing hair. A limitation of this technology is that the physician needs to develop a 3-D computer-based model of each patient's scalp to communicate the transplant design to the robot. The old model required the fusion of 5 two-dimensional images, a process that required a significant amount of time. The newest iteration can build a three-dimensional model using only one image, greatly decreasing the time needed for this important step (Figure 2).

FIGURE 2. 3-D image for site creation using one photo



Increased Accuracy

There has been a recent trend in FUE towards using smaller punches. Although these authors feel that in many cases the increased risk of transection from smaller diameter punches outweighs the benefit of reduced wounding and concomitant smaller scars, it is important that the robot has this capability for physicians who prefer these punches.

FIGURE 3. 1.0, 0.9 and 0.8mm needles

The sharp/blunt system in the original robot (released in 2011) used a 1.0mm sharp pronged needle that penetrated the skin about 1mm and was immediately followed by a rotating, dull punch with a slightly larger diameter that went deeper into the scalp. The current system includes a 0.9mm needle that is the workhorse for most cases. With refinements in the optical system, the needle/punch diameter was able to be reduced further. The new needle option is 0.8mm.

The needle has also been redesigned so that the physician can choose between 2 and 4 prongs, with the former being preferable in softer tissue and the latter in firmer skin or scarred scalp (Figures 3 through 6).

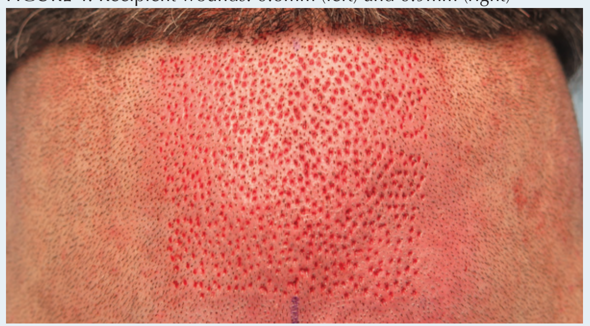


FIGURE 4. Recipient wounds: 0.8mm (left) and 0.9mm (right)

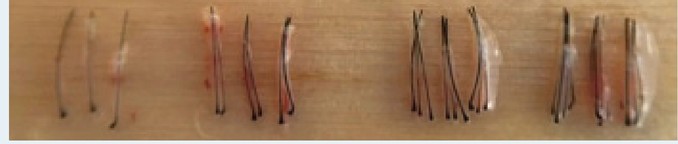


FIGURE 5. 0.8mm needle: 1-, 2-, 3- , and 4-hair follicular unit grafts

FIGURE 6. 0.9mm needle: 1-, 2-, 3- , and 4-hair follicular unit grafts

Increased Functionality

In prior iterations, when the robotic arm was in a position that was too cramped and from which it could not automatically recover, the user needed to go through a six-step manual process using a stand-alone pendant to guide the robot to a neutral "safe" position. The Arm Brake Release is a new functionality that places a single button on the arm that, when pressed, quickly moves the arm away, allowing the operator to readjust the patient's position.

Modifications of the robotic arm (which give it greater reach) and changes to the robotic head (which reduce its bulk) enable the robot to access a much greater area of the scalp without the need for repositioning the patient. This reduces a significant amount of procedural time as well. Another advantage of the smaller head is that the robotic arm can approach the patient at more acute angles without collision, adding more flexibility to both harvesting and site creation (harvesting to 35°, site making to 30°). The more acute angles required a redesign of the headrest so that the arm would have unimpeded access to the scalp (Figure 7).

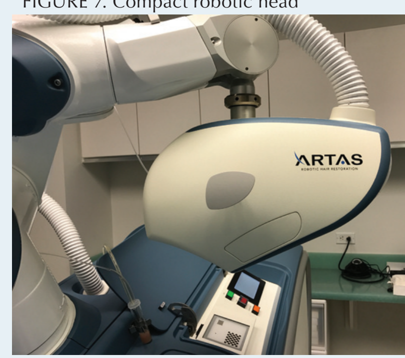


FIGURE 7. Compact robotic head

Prior iterations of the robotic system used hypodermic needles of varying sizes (18g-21g) for recipient site making. In response to the wide range of physician preferences, the robot now has a universal holder that can accommodate almost any type of site making tool. These include square-tipped blades, angled blades, and chisel and spear point blades, as well as the original hypodermic needles. These can be easily interchanged during the procedure (Figure 8).

FIGURE 8. Universal blade holder

Artificial intelligence

An automatic collision recovery system will automatically retract the robotic arm if the arm approaches the patient at an angle that is too acute, or cramped to operate, or if any part of the robot (other than the operating tip) inadvertently touches the patient. Once retracted, the patient can be repositioned so that the FUE session can proceed.

One of the frustrations of FUE is the occasional empty site that represents either a graft that was pushed too deeply into the scalp or one that was completely removed. The new empty site warning icons complement physician observation by using color-coded symbols (green, yellow, and red) to alert the doctor to the occurrence of empty sites.

Finally, the ARTAS software can now automatically detect regions with low (or no) hair density and block those areas from being harvested. This capability decreases human error and saves time by automatically performing a function that prevents creating zones with very little or no hair coverage (Figure 9).

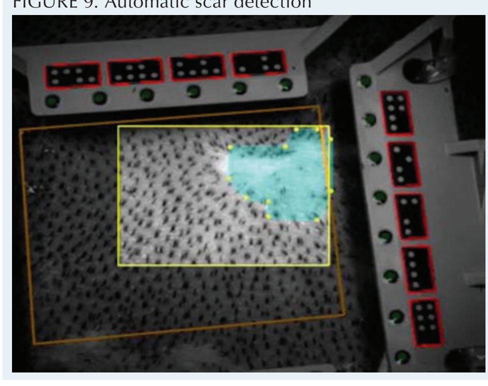


FIGURE 9. Automatic scar detection

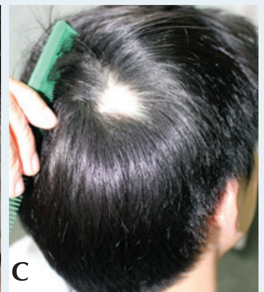
In sum, new improvements in the speed, functionality, accuracy, and artificial intelligence of the robotic system have significantly shortened the duration of the overall procedure. Besides being more convenient for patients and more expedient for the operating physician, the shortened operating time decreases the time grafts are outside the body, an important factor in ensuring optimal growth of the transplanted hair. ■

Cyberspace Chat

Robin Unger, MD | *New York, New York, USA* | drrobinunger@yahoo.com

Approach to Alopecia Areata

FIGURE 1. 36-year-old Asian male with alopecia areata. *A:* Original lesion located on the right lower parietal area. *B:* Hair regrowth at 6 months. *C:* New lesion found at check-up.



A very interesting discussion took place between those involved in an online dialogue. ***Damkerng Pathomvanich*** *started the chat with a question regarding one of his patients:*

I have a 36-year-old Asian male with alopecia areata (AA) and a 2 × 2.5 cm lesion located on the right lower parietal area (Figure 1A). He was treated with intralesional triamcinolone (10mg/ml) monthly for 3 months with slow response. It took 6 months to completely regrow his hair (Figure 1B).

One month after the first injection, he had another two small AA lesions, 0.5 × 1 cm each, near the first lesion. He was treated in the same fashion. However, every month he developed new AA lesions at different locations and again responded to the same injection, except for the 2 small lesions that seemed to persist.

He came back for a monthly checkup and we found another new 1.5 × 2 cm lesion on the crown (Figure 1C). At his first visit, he was given betamethasone cream and 5% minoxidil lotion to apply to AA.

I would appreciate your valuable advice on how to manage this patient.

DISCUSSION

Alopecia areata is an autoimmune condition that specifically targets the hair follicle. The lifetime prevalence is approximately 2%. Usually, the condition creates clearly demarcated patches of hair loss, but it can also occur in a diffuse form, called alopecia areata incognita. A simple dermoscopy exam is often enough to establish the diagnosis, revealing exclamation point hairs and yellow dots. Occasionally, a biopsy may be necessary to confirm the diagnosis. Approximately 50% of patients with AA will experience a spontaneous remission. Others respond well to first-line therapies such as intralesional steroid injections. However, some patients are very difficult to treat; the patches of alopecia do not respond to even second-line treatments and may continue to recur or progress to more extreme forms of the condition such as alopecia totalis or universalis. Before launching into the group discussion of Dr. Pathomvanich's interesting case, I encourage you to have a look at some of the more recent articles reviewing the treatment of alopecia areata. A thorough article, "Alopecia areata: a comprehensive review of pathogenesis and management," was written by Ralph M. Trüeb and Maria Fernanda Reis Gavazzoni Dias (*Clinical Reviews of Allergy and Immunology,* July 2017). It provides a detailed discussion of the pathogenesis, followed by a very thorough outline of therapies.

Another excellent article is by Solam Lee and Won-Soo Lee, "Management of alopecia areata: updates and algorithmic approach" (*Journal of Dermatology,* 2017; 44(11):1199–1211). In this article, there is an excellent algorithm clearly outlining the best researched approaches to the treatment of alopecia areata. The article discusses the strength of research regarding various treatment protocols, first-line therapies to third-line therapies. A discussion of potential negative side-effects associated with each therapy is also clearly outlined.

As an interesting side note, the treatment of AA with platelet-rich plasma (PRP) is actively being evaluated. Yours truly, Robin Unger, reported a case of a young woman with five years of chronic recurrences of AA despite appropriate treatment by three different physicians. Following three sessions of microneedling with PRP, spaced one month apart, she has been in remission now for four years without further treatment needed. In the Journal of Investigative Dermatology this year, there was a review of the use of PRP and microneedling in patients with AA, which suggests that the approach merits further research. (On page 12 of this issue, Dr. Anastasios Vekris presents a case of twins with AA treated with PRP.) One great benefit of PRP would be that patients would not need to worry about side effects that are associated with most of the currently accepted treatment modalities.

In searching articles on this topic, another relatively "new" association between vitamin D deficiency and AA was confirmed by several investigators. Given the widespread incidence of vitamin D deficiency in the population, supplementation should be considered as part of the therapy in individuals with AA and low vitamin D levels.

The discussion amongst the experts in the group reflects a range of opinions on the subject. There are journal articles and evidence-based algorithms, and then there is experience…

The responses from colleagues to Dr. Pathomvanich's query are based on the practical experience of the physi-

cians. One of the most comprehensive answers was presented by **Nicole Rogers**:

If you want to try to put him in remission, you could prescribe one of the following:

- Oral Cellcept (mycophenolate mofetil), my personal favorite, 500mg bid for 2-6 months. Dosage can be increased to 1,500mg bid. Be sure to check for latent tuberculosis (TB), hepatitis, draw CBC and CMP (Comphrehensive Metabolic Panel or Chem-12). Also avoid if history of malignancy.
- Hydroxychloroquine 200mg bid, which is a less immunosuppressive option (just need CMP, CBC, and baseline eye exam).
- Methotrexate (MTX) 5mg-20mg weekly, which Jerry Shapiro likes. Again check for latent TB and hepatitis, CBC, and CMP. In addition, give folic acid 1mg daily. Even if/when the hair regrows, he may have minor recurrences in the future. So taper him slowly from whichever drug works.
- Also, you can overlap Cellcept with hydroxychloroquine. If that doesn't work, then stop Cellcept and overlap hydroxychloroquine with MTX if need be. Very safe so long as patient is healthy and metabolizing drugs okay!

Brad Wolf also asked about the new "wonder drugs" being discussed for the treatment of AA: JAK (janus kinase) inhibitors: At conferences we hear a lot about JAK inhibitors such as ruxolitinib. Are these being used in the real world for AA or is it premature and more academic at this point?

Bob Haber commented: JAK inhibitors may be the future of AA treatment, but a safe topical formulation needs to be developed.

Marc Avram stated: I agree with Nicole's thoughts. I would only add tofacitinib (JAK inhibitor), marketed as Xeljanz in USA. Brett King at Yale has published remarkable data using it for treating AA. It's worth looking up the studies. I would only consider it for long-term, recalcitrant, widespread cases that have failed other treatments.

Sharon Keene brought up an interesting case: I had a patient with similar history of enlarging areas of AA, mostly in his beard, and his dermatologist suggested a thyroid test. It turned out he was hypothyroid, completely unexpected, and asymptomatic to him—though in hindsight he now thinks he was. Once he became euthyroid, all of his lesions disappeared and have not recurred. Is this a common association? He said the dermatologist who recommended it just looked at him and blurted out, "You need a thyroid test."

Bob Haber responded to Sharon Keene, cautioning that a full lab workup would likely be unnecessary unless there are other symptoms to suggest there is a systemic disorder: Way back in derm residency, we learn all the potential associations for AA, which include other autoimmune phenomena, thyroid disease, pernicious anemia, and so forth. For the first several years of practice, I worked up lots of these patients, and never found any abnormalities, so I stopped many years ago. I do ask about symptoms that might suggest hyper- or hypothyroidism. In spite of your patient's experience, I would not recommend routine lab workup of every AA patient. I guess I'm less aggressive than some of my colleagues. I reserve systemic treatments for aggressive, unresponsive, and widespread AA, not small areas that are apparently responding well to a very safe regimen of low potency intralesional steroids. Methotrexate, hydroxychloroquine, mycophenolate mofetil, and tofacitinib are not without risks.

Bill Parsley suggested the following protocol:

I have had good success with oral prednisone, which I only use when the AA activates: 20 mg TID × 1week; 20 mg BID × 2 weeks; 20 mg QD in am 1 week; 20 mg QOD in an × 1 week. Keep using the topicals.

Bill Rassman started another interesting thread pointing out how rare it was for him to see AA in patients who had hair transplantation. Richard Shiell speculated that hair transplantation may in fact have some protective role against AA due to its low incidence after hair transplants. There is, of course, no evidence for this, although I did have a case report of a patient who had a hair transplant and later developed alopecia areata incognita (diffuse type), which spared the transplanted hairs in the area. I had another case report of a patient with AA resistant to treatment who, after hair transplantation, experienced re-growth of the surrounding hair that had been affected by the AA and was resistant to all prior treatment. Maybe one day there will be evidence to add this to the algorithm of the treatment of AA. ■

Instruments, Inc.

State-of-the-art instrumentation for hair restoration surgery!

For more information, contact:

21 Cook Avenue
Madison, New Jersey 07940 USA

Phone: 800-218-9082 • 973-593-9222
Fax: 973-593-9277

Email: ellisinstruments.cellis@gmail.com

www.ellisinstruments.com

Now Hiring: hair restoration Doctors and Physician Assistants

RESTORE
www.RestoreHair.com

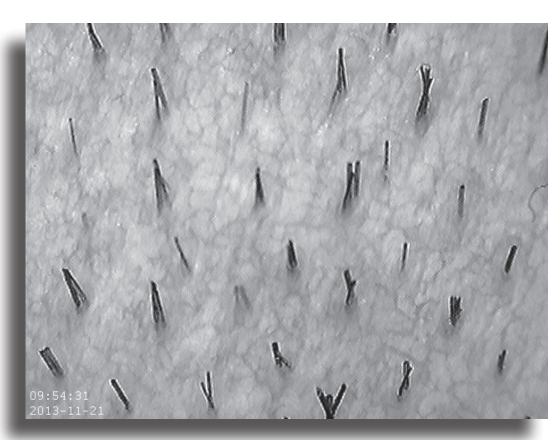
Wireless Follicular Dermatoscope

Wirelessly Capture Pictures:
Twelve distinct levels of polarization. Observes and records in real time (30 FPS). Transmits within a range up to 20ft. Built-in snapshot button. 126-FS-1

$349.00*

**When you mention this Forum ad.*

New
Catalog available.
Call/email today!



Kenny Moriarty
Vice President

Cell: 516.849.3936
Kenny@georgetiemann.com
www.atozsurgical.com

www.atozsurgical.com

Hair's the Question

Sara Wasserbauer, MD, FISHRS | *Walnut Creek, California, USA* |
drwasserbauer@californiahairsurgeon.com

*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.

A set of unusual cases prompted me to investigate hair coloring—starting with a patient who presented with white/gray hair. She had an experience where all of her pigmented hair shed, leaving her with a completely white-haired appearance, and no one could tell her why. The episode was related to stress, and eventually her pigmented (mostly darker gray) hair returned, but biopsies were inconclusive and she wanted to know if it could happen again. I never found a definitive diagnosis (although my research has led me to suspect diffuse alopecia areata in her case) but I did get a column out of it! Test your knowledge of this hair-raising phenomenon that many of us will face.

White/Gray Hair

1. Hair pigmentation occurs only during which of the following phases?
   A. Anagen
   B. Telogen
   C. Catagen
   D. Exogen

2. Pigments in both hair and skin are manufactured by specific cell types known as:
   A. Pigmentocytes
   B. Inkocytes
   C. Melanocytes
   D. Melanomas

3. Which of the following causes the appearance of gray hair?
   A. Absence of pigment
   B. Dilution of pigment and white hair
   C. Gray pigment production
   D. Marriage

4. Which of the following diagnoses/disorders may cause hair to gray?
   A. Thyroid and Anemia
   B. Cancer and HIV/AIDS
   C. Hepatitis A and Hepatitis C
   D. Schizophrenia and Pica

5. A single shock of white hair at the frontal forelock is:
   A. A genetic trait known as "Bride of Frankenstein" Syndrome
   B. Caused by extreme stress
   C. A result of alopecia areata during the re-growth phase
   D. Piebaldism

6. An area of white hair occurring either on the scalp or on other parts of the body is known as:
   A. Badluck
   B. Piebaldism
   C. Cakebaldism
   D. Poliosis

7. Which of the following is a true statement about gray or white hair?
   A. It grows more slowly.
   B. It often is thinner than pigmented hair.
   C. It often has a greater diameter than pigmented hair.
   D. It is caused by the same genetics that cause androgenetic alopecia.

8. Oxidative damage to the hair follicle can cause hair graying.
   A. True
   B. False

9. Which of the following racial subtypes has less gray hair?
   A. Caucasian
   B. Asian and African
   C. Native American (North and South)
   D. None (50% of all people are 50% gray by the age of 50)

➤ ANSWERS PAGE 24

CONTINUED FROM PAGE 23

Answers

1. **A.** I tried to make this question harder, but I couldn't because anagen is really the only answer that makes sense when you think about it. Telogen is the "resting" phase and catagen/exogen are the "regression/shedding" phases.
2. **C.** The difference seems to be that the melanocytes are constantly producing pigment in the skin, whereas in the hair follicles the pigment production relates to the cycle of the hair.
3. **B.** Absence of pigment causes white hair. Gray hair is a dilution. The other optional answers for D were "children" and "owning your own hair transplant practice," but I digress…
4. **A.** I honestly did not know this one until I started researching this column. To my knowledge, none of the others do.
5. **D.** This is a tricky question. Alopecia areata can cause white hair during the re-growth phase, but it is more random in its location whereas piebaldism occurs at the frontal forelock. Stress is an associated factor, but the association is a weak one and not necessarily a causal relationship. If you would like to develop piebaldism, read the original book, "Frankenstein," by Mary Shelley.
6. **D.** Poliosis is distinct from piebaldism since piebaldism occurs at the frontal forelock and is a genetic trait.
7. **C.** This increased thickness often means that hair that is less pigmented may give a better aesthetic result when transplanted.
8. **A.** Yep, this statement is true. However, it is not proven that taking anti-oxidants can delay or reverse graying of hair, either.
9. **B.** Again, until I looked into it, I never knew this fact, but it makes sense. D is often taught as a mnemonic in medical schools and residencies, but actual numbers tend to be lower than the 50%.

Bibliography

1. Commo, S., O. Gaillard, and B.A. Bernard. Human hair greying is linked to a specific depletion of hair follicle melanocytes affecting both the bulb and the outer root sheath. *Br J Dermatol.* 2004; 150(3):435-443.
2. Kaplan, P.D., et al. Grey hair: clinical investigation into changes in hair fibres with loss of pigmentation in a photoprotected population. *Int J Cosmet Sci.* 2011; 33(2):171-182.
3. Price, V.H., et al. Histology and hormonal activity in senescent thinning in males. Presented at the Annual Meeting of the Society for Investigative Dermatology, Washington DC, May 2001.
4. Shi, Y., et al. Premature graying as a consequence of compromised antioxidant activity in hair bulb melanocytes and their precursors. *PloS ONE.* 2014; 9(4):e93589.
5. Tobin, D.J. Aging of the hair follicle pigmentation system. *Int J Trichol.* 2009; 1(2):83-93.
6. Trueb, R.M. Aging of hair. *J Cosmet Dermatol.* 2005; 4(2):60-72.
7. Van Neste, D. Thickness, medullation and growth rate of female scalp hair are subject to significant variation according to pigmentation and scalp location during ageing. *Eur J Dermatol.* 2004; 14(1):28-32.
8. Wood, J.M., et al. Senile hair graying: H_2O_2-mediated oxidative stress affects human hair color by blunting methionine sulfoxide repair. *FASEB J.* 2009; 23(7):2065-2075.
9. https://health.usnews.com/health-news/articles/2012/08/23/gray-hair-at-25-yes-heres-what-you-can-do
10. https://www.healthline.com/health/poliosis
11. https://emedicine.medscape.com/article/1113248-overview

Small punch size with funnel shape and perpendicular cutting edge for deeper dissection.

Lower speed and oscillatory motion that mimic manual work for:
• Fewer missing grafts
• Much lower transection rate
• Higher number of hairs per graft

Fast return on investment.

+32 2 880 70 64
info@waw-fue.com
www.waw-fue.com

*Results vary based on experience of user.

Letters to the Editors

Re: "Controversies" and reflecting on FUE

Alan S. Feller, DO | *Great Neck, New York, USA* |
nexteller@hotmail.com

I wanted to thank you very much for publishing the "Controversies" column by Dr. Russell Knudsen in the July/August edition of the *Forum* (2017; 27(4):153). It really nailed the issues and articulated them very well.

I dove into FUE very deep and heavy when it was first introduced into North America in 2002. But it didn't take me long to see that even after I became proficient at the procedure, it was still brutal on the grafts when compared to strip. So I made sure not to do cases above 1,500 FUE grafts as the lifetime total for any patient. My reasons? Because the grafts don't grow as well and reliably as strip grafts do, and sessions above even just 500 FUE tend to fibrose the entire useful donor area thus limiting available grafts for future procedures.

It is beyond me how other doctors simply ignore this absolute reality. Even more so that several doctors would get together to form an organization to advance the legitimacy and acceptance of FUE as a stand-alone technique. I know the pretense of these FUE organizations is the "advancement" of FUE technology. But in reality there have been no significant advances since the day Dr. Rob Jones and I performed the very first live FUE ISHRS surgery workshop in Arkansas in 2003.

FUE-only clinics have been popping up all over the place in the past few years and they have indeed produced some of the most dissatisfying results I have seen since the "plug" days. And all in the name of "the most advanced hair transplant technology available." Really?

The almost religiously zealous support of FUE and unrestrained hatred for strip on the part of "FUE-only" clinics does indeed, as written in the article, deprive them of being able to offer their patients all options. And now these FUE-only clinics are openly rationalizing this behavior by getting together in their own organizations whose only real substantive basis for existence is that they don't offer strip.

My concern is why more doctors aren't speaking out against FUE, particularly megasessions. I have seen FUE doctors online literally deny that FUE grafts go through any greater trauma than FUT grafts. Even after I post a photo of a skeletonized graft! Remember the old days where graft mishandling was considered a big no-no?! How many *Forum* articles were written about that?! But now it is commonplace to traumatize grafts and almost nobody says a word about it! Encouraging "FUE-only" doctors to learn the tenets and benefits of strip surgery, instead of blindly attacking it as an "old" procedure, may just shift their allegiance in a positive direction for everyone, especially their patients. ■

Re: Regulating the unlicensed practice of HT

Cagatay Sezgin, MD | *Dubai, UAE*

Hair transplantation is one of the fastest growing medical markets in the world. The development of the Follicular Unit Excision (FUE) method has made hair transplantation much simpler and an easily accessible office procedure by eliminating general and sedative anesthesia. Unfortunately, there has never been a thorough medical and legal standardization covering all aspects of hair transplantation procedures anywhere. In some countries, insufficient legal regulation and official control triggers illegal surgeries by unlicensed medical personnel. Today, unfortunately, in some places, the volume of illegal surgeries is greater than that of legal surgeries. We call ourselves the largest hair restoration society in the world, so our responsibility should accordingly be that large! To combat these illegal surgeries here are my suggestions and plan of action. As a society:

1. We need to standardize every aspect of hair transplantation and then urge medical boards to accept hair transplantation as part of medical training. For that, we need to prepare an updated hair transplant curriculum for medical training.
2. We need to invite the chairmen of the most well-known "Plastic Surgery" and "Dermatology" societies worldwide to our annual meetings to inform them about the most recent medical and governmental regulations of hair transplantation since there is an ongoing debate in most of the countries regarding which specialty is legally authorized to perform HT surgery. According to this debate, specialties are trying to legally ban each other from performing HT surgery. This dueling among colleagues helps fuel illegal surgeries.
3. We need to invite officials, consulates, and even ministers of health from all of the countries, which may help to accelerate their future medical and legal standardization efforts.
4. We need to prepare a detailed report concerning these ongoing unlicensed HT operations that could result in serious injuries and submit it to the foreign ministries of countries so that they can then warn their citizens, who might be planning to travel for HT surgery, accordingly.
5. We need to use social media much more actively in order to warn patients about the risks of undergoing HT surgery in unlicensed clinics.
6. We need to identify countries where these unlicensed HT surgeries take place and contract with at least one lawyer to give legal advice, before, during, and after the surgery, to patients who plan to travel to these countries for HT surgeries. We should also post such news through social media that the ISHRS has local legal advisors in these countries and would like to inform, guide, and protect prospective patients from any kind of illegal HT surgeries. We need to mention that these patients are not alone and that they can contact an ISHRS lawyer, who is expert in HT surgeries, and would be willing to assist free of charge.
7. We need to get in touch with all hair loss forums (especially Middle Eastern forums using their mother languages) to inform and notify them of how serious the issue is, and to ask them to act with the ISHRS. They may post warnings and allow the society to post warnings throughout their forum.
8. We need every member's opinion and plan of action about the issue. ■

ARTAS™
ROBOTIC HAIR RESTORATION

POWERED BY 9x™

9x: AN ARTAS™ SYSTEM LIKE NO OTHER

INCREASED PERFORMANCE

20% Faster Operating Speed.[1] Harvest Up to 1,500 Grafts Per Hour![2]

INCREASED ACCURACY

- New 0.8mm Needle Size

ADVANCED VISION SYSTEM

- Automated Tensioner Acquisition with the ARTAS Color Recognition Vision
- Photonic Illuminated Graft Selection & Dissection
- Decreased Operator Eye Fatigue
- Real-time Auto Scar Detection

IMPROVED SITE MAKING

- New One Photo Dome Model
- New Blade Incision Option

ONE TOUCH ARM POSITIONING

- Push of a Button to Pause & Resume a Case

ENHANCED ERGONOMIC DESIGN

- Extended Reach to Access Acute Angles & All Regions of the Donor Area
- Easy Access for Pre- and Post-op Setup

Request More Information: +1.408.883.6888 • ARTAShair.com

The ARTAS™ System is indicated for harvesting hair follicles from the scalp of men diagnosed with androgenetic alopecia (male pattern hair loss) who have black or brown straight hair. It is also indicated for creating recipient sites for subsequent manual implantation of harvested follicles. © 2017 Restoration Robotics, Inc. All rights reserved. Restoration Robotics, ARTAS, 9x and the stylized logos are among the trademarks and/or registered trademarks of Restoration Robotics, Inc. in the United States and other countries. 1: Compared to ARTAS 8x. Data on file. 2: Data on file. MK-0839 Rev A (10/17)

Literature Review

Nicole E. Rogers, MD, FISHRS | *Metairie, Louisiana, USA* | nicolerogers11@yahoo.com

Naltrexone: New Use for an Old Drug

Strazzula, L.C., et al. Novel treatment using low-dose naltrexone for lichen planopilaris. *Journal of Drugs in Dermatol.* 2017; 16:1140-1142.

Recently, the drug naltrexone (an opiate antagonist that is used to help treat those who are dependent on alcohol and opiates) has resurfaced in the dermatology literature. It was presented in the Archives of Dermatology to treat Hailey-Hailey disease (a rare autoimmune blistering disorder) and in the November 2017 issue of the Journal of Drugs in Dermatology, it was suggested as a treatment for lichen planopilaris (LPP), a variant of lichen planus that affects the scalp causing scarring hair loss. Its mechanism as an opioid antagonist (with greatest affinity for mu receptors) has been postulated to also have an effect in treating autoimmune diseases. Dr. Jerry Shapiro at NYU described four case reports using low dose naltrexone (3mg po daily) as an adjunctive therapy for recalcitrant lichen planopilaris. Two patients were male, two were female, and all had been on oral doxycycline and topical clobetasol solution prior to the addition of low dose naltrexone. In all four cases, the patients reported an improvement in symptoms within 1-2 months of starting the drug. They remained on it alone or in combination with oral pioglitazone (p-par gamma agonist) 15mg daily. Side effects may include vivid dreams, nightmares, headache, or increased anxiety, but all four patients tolerated the medication well without any reported side effects.

Comment: Perhaps the greatest difficulty in treating LPP is the chronicity and tenacity of inflammation even after years of therapy. There is still no drug that is FDA approved LPP. The use of an old drug for a new purpose with minimal side effects is quite exciting. My local pharmacy has been able to compound 3mg naltrexone in a Loxoral (inactive capsule filler) base. ■

Nutrafol® vs. Microinflammation

Farris, P.K., et al. A novel multi-targeting approach to treating hair loss, using standardized nutraceuticals. *Journal of Drugs in Dermatol.* 2017; 16:s141-s148.

A recent proof of concept article, spearheaded by my former dermatology partner and nutraceutical expert Dr. Patricia Farris, outlined the role of various botanical ingredients contained in the hair supplement Nutrafol. Specifically, Nutrafol contains curcumin (made from turmeric), which is a potent anti-inflammatory and free radical scavenger. It also inhibits transcription factor TNF-kB, decreasing pro-apoptotic cytokines TNF-alpa and IL-1 that can cause follicular regression. Curcumin also has natural anti-androgen effects, and has been shown to inhibit androgen receptor expression. Because the absorption is typically poor, it is here co-administered with black pepper (Piper nigrum), which slows the metabolism and increases its bioavailability. Ashwaghandha is another ingredient known as an adaptogen, a botanical known for lowering stress cortisol levels and increasing endogenous antioxidants. Saw palmetto is a natural plant-based 5-AR inhibitor, which has been shown to have 38% efficacy in treating MPHL vs 68% efficacy for finasteride. Nutrafol also contains tocopherols (members of the vitamin E family) and marine based collagen hydrolysates. In the article, four case studies of patients using Nutrafol and their before and after photos are provided.

Comment: The paucity of medical treatments for hair loss makes any new treatment option quite attractive. There is indeed data summarized in this article supporting the role of these supplements at a molecular level to help mitigate inflammatory factors that may be causing or contributing to hair loss. Additionally, the concerns about sexual side effects (associated with finasteride) and frustration with topical minoxidil (mess, risk of contact allergy) and overall movement toward more natural botanical options may open the door for Nutrafol to have a more relevant role in treating our patients. Although it is marketed toward androgenetic alopecia and recent stress-induced hair loss, there may also be a role in treating cicatricial alopecia as well. We do not have placebo controlled clinical studies with hair weight counts or standardized before and after photos to confirm the efficacy of this supplement. More data is needed. ■

MYCO MEDICAL

TheSharpChoice®

NMSDC Certified Diversity Supplier

Technocut® Premium Surgical Blades

The new Technocut® brand surgical blade line from MYCO Medical provides new innovative premium surgical blades that offer the best of both worlds: high-precision sharpness that lasts longer than traditional blades.

Available in sterile sizes: 10, 11, 12, 15, 20, 21, 22, 23 & 25

To receive more information about this new premium product and request samples, please visit:

TechnocutPremium.com

Pictured: Technocut® Plus Disposable Safety Scalpel, #10 Blade

Technocut® Plus Disposable Safety Scalpels

- Transparent handle for blade visibility at all times
- Top activation allows for ambidextrous use
- Fully extended blade enables clear line of sight
- Non-slip, ergonomic handle with integrated metric ruler
- Scalpels manufactured in facilities that conform to ISO-13485
- Final lock for safe handling and disposal

Available in sterile sizes: 10, 11, 12, 15, and 20
Available in non-sterile sizes: 10, 11, 15, and 20

On contract with HealthTrust, Premier and Vizient group purchasing organizations and distributed thru most regional and national distributors.

TO ORDER, LEARN MORE OR RECEIVE COMPLIMENTARY EVALUATION SAMPLES:

Please call **(800) 454-6926**, visit us at **www.mycomedical.com** or email us at **info@mycomedical.com**

© 2017 MYCO Medical, Inc. All rights reserved.
Some medical devices are not licensed for sale in Canada.

Bringing Reliability, Innovation and Value to Healthcare®

Warning of Societies Unaffiliated with the ISHRS, Especially Those Permissive of the Unlicensed Practice of Medicine

Background

We continue to hear of cases where hair restoration surgery patients were operated on and harmed by non-doctors. Preventing these occurrences is of paramount importance in our public education campaign. We are gratified to learn that some governments and regulators are taking action to curb this dangerous paradigm. For example, prosecutions for the unlicensed practice of medicine by non-doctors is now occurring in some countries. The ISHRS has issued what it believes are best practices in hair restoration surgery, and has prioritized educating its members and the public on the dangers posed by physician delegation to non-licensed personnel, and the risk that such delegation may constitute practicing medicine without a license under applicable laws.

Unfortunately, the ISHRS's efforts to educate the public on these dangers have not been universally accepted, and some organizations have developed to oppose our efforts. The organizers of some of these meetings are themselves inappropriately delegating surgery to their technicians.

Further, new pseudo-societies have developed that are not bona fide non-profit groups, but rather, corporate entities masking as non-profits, which deceive patients and meeting attendees. It is harmful to patients and new physicians in the field to have a limited, skewed viewpoint without full disclosure. The attendees do not realize that what is being taught is not comprehensive. Oftentimes, the content only presents a limited viewpoint or technique and attendees walk away with incomplete information and are ill-informed. In addition, there are often misleading and fraudulent messages such as "scarless surgery," "pain free," "no incision," etc.

Recommendation

As such, the ISHRS recommends to physicians to do due diligence when selecting which hair restoration surgery meetings to attend and speak at.

The ISHRS supports hair restoration surgery meetings of member societies of the Global Council of Hair Restoration Surgery Societies.

The ISHRS supports meetings listed on the following calendar of events:

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

Plan your 2018 meeting schedule!

2018 Qualifying Meetings for Member Educational Maintenance Requirement

As a reminder, there is an educational maintenance requirement for the membership categories "**Member**" and "**Fellow Member**." This does not apply to membership categories Associate Member, Resident Member, Emeritus Member, or Surgical Assistant Member.

Educational Maintenance Requirements

ISHRS Member and ISHRS Fellow Member membership categories must attend one ISHRS-approved meeting every 3 years, otherwise that member will be changed to Associate Member. The impacted member may revert back to their previous category after attendance at an ISHRS-approved meeting.

2018 Qualifying Meetings

March 8-10, 2018	August 2-5, 2018	October 10-13, 2018
ISHRS World Live Surgery Workshop: Dubai Dubai, UAE **www.2018wlswdubai.org**	Hair Transplant 360 Cadaver Workshop & FUE Hands-On Workshop St. Louis, Missouri, USA **http://pa.slu.edu**	26th World Congress of the ISHRS Hollywood, California, USA **www.26thannual.org**

The qualifying meetings are also listed at http://www.ishrs.org/content/list-ishrs-approved-meetings-meet-additional-minimum-educational-requirement.

ERTIP®
Hair Transplant Instruments

For the past 12 years, Ertip Medical has been a leading company for hair transplant and surgical instruments. Our FUE Motorised System helps improve FUE technique. We are CE certified and produce Sharp/Dull FUE motorised or manual punches. We aim to provide our customers with excellent service.

Check out our full product line online!

Ertip Medical instruments are
- Made using the latest technology,
- Of the highest quality, and
- Budget-friendly.

Ertip offers a basic Must Need Set or a Full Set for hair transplantation and specials for wholesalers.We offer fast, worldwide delivery service.

For more details about our instruments,
Halide Edip Adıvar Mah. Akar Cad. No:38
Sisli 34382 ISTANBUL TURKEY

call us at **+90 212 210 3220** & GSM **+90 507765 6095**

or visit our website at **www.ertipmedical.com**

Message from the ISHRS 2018 World Congress Program Chair

Parsa Mohebi, MD, FISHRS | *Encino, California, USA* | info@parsamohebi.com;

It was a pleasure to see so many of our colleagues in Prague during the World Congress. I would also like to say thank you to my good friend, Dr. Jean Devroye, for organizing this wonderful meeting. It is my distinct pleasure to invite the members of our society and the new hair transplant doctors to the next Word Congress in sunny and scenic Hollywood, California.

Our industry continues to evolve at a fast pace. It is imperative that every hair transplant surgeon, if they want to stay competitive, keep up with the most advanced technology in hair restoration. Our specialty is unlike many other major branches of medicine where textbooks are plentiful and updated frequently. One way we can keep up with the rapid changes in our field is to follow the few publications we have available to us. In addition, for the majority of us, attending meetings has always been the best method to stay updated on new technology. Among all of the meetings offered, the World Congress of the International Society of Hair Restoration Surgery, however, is the one that every hair transplant surgeon should attend to get the most up-to-date information pertaining to all aspects of our ever-changing field. I personally have never missed an annual meeting since I joined the ISHRS. This is our once a year event where we get to meet almost every prominent hair transplant surgeon. The ISHRS and its staff have done a great job organizing these meetings, and we have witnessed an increasing number of attendees every year.

I have been constantly involved in many scientific activities such as studies, committee membership, and publications regarding hair loss and hair restoration since I became a hair transplant surgeon. I have collaborated with many leaders in our field and learned a great deal from them in the process. However, one of my best sources of information has always been the annual meeting of our society. Our World Congress has always challenged me to go one step further by evolving, advancing, and rethinking the way I run my practice.

One of my tasks every time I return home from our annual meeting is to review my notes and create a "To-Do" list. The list includes the changes I must make when I go back. I am not exaggerating when I say I have changed at least 10% of my practice every year after returning from one of these meetings. My evolution and education come from many sources:

- Lectures from leading doctors who have always pushed the envelope in our field
- Innovative ideas from new doctors I have not met before
- Heated discussions among the thought leaders in the meeting sessions and workshops
- Hallway chats and debates, since this is the time you can talk to other doctors and share ideas without any formality

The ISHRS team and I are committed to give you all of the above, and more, during our next World Congress in Hollywood. We plan to provide one of the most comprehensive educational packages ever assembled to both beginners in our field and advanced hair transplant surgeons. We also plan to make the Hollywood World Congress an event to remember. The city of Los Angeles is the "Mecca of Cosmetic Medicine." It is also the home of the greatest movies and movie stars. We are working on taking advantage of this occasion and want every attendee to experience how it is to feel and look like a superstar. Be sure to bring your sunglasses to enjoy the California sun and fun in Hollywood!

I am grateful that I have already been personally contacted by many of our colleagues offering a helping hand to enrich our next program. Furthermore, I would like to invite all of our members to participate in this great meeting. Science does not evolve in labs or the halls of academia in the field of hair restoration. The source of most of our scientific achievements has been novel ideas from our colleagues and the dedication of great doctors who chose to share the innovations evolved in their private practices.

I would like to thank the pioneers who have helped move our field forward by openly sharing their thoughts while inviting new doctors to follow in their footsteps. Our full agenda will be announced by the ISHRS team soon. I cannot wait to review your great ideas and learn about your inventions when the abstract submission process starts.

I would like to invite all my friends and colleagues to the city of Angels for our 2018 World Congress in Hollywood, California. ■

Dr. von Albertini

Dr. Farjo

Message from the ISHRS 2018 World Live Surgery Workshop Program Co-Chairs

Conradin von Albertini, MD, FISHRS, Chair | *Zurich, Switzerland*
Bessam K. Farjo, MBChB, FISHRS, Co-Chair | *London, United Kingdom*

In just a few weeks from now, on March 8-10, the World Live Surgery Workshop will take place in Dubai. It promises a comprehensive learning experience combined with debates and an impressive range of live surgeries—all delivered by a top-notch faculty that comes from all over the world.

A comprehensive teaching experience

FUE will be an important topic as it is now the most popular harvesting method. However, we will look at the entire hair transplant procedure including the principles for building natural looks and cosmesis, donor zone and recipient areas, modern implantation devices, updates on non-surgical treatments, and how to manage complex cases.

Live demonstrations by more than 20 surgeons

The centerpiece of our workshop will be the intense observational teaching. No less than 20+ surgeons will demonstrate live the entire spectrum of FUE methods, explain the essence of FUT, apply all kinds of implantation techniques, and share their tips and tricks. A complete listing is provided below.

A unique and accessible location

With WLSW 2018 in Dubai, the ISHRS will for the first time bring its live surgery format to the bubbling business center of the Middle East, less than an 8-hour flight away for a majority of our members. Last, but not least, Dubai, with its pools, desert adventures, and tradition of hospitality, is also perfect for the most important learning experience of all: Having fun.

Register now and attend the WLSW in Dubai. It will be worth the trip!

Dubai Faculty

Chair: Conradin von Albertini MD, FISHRS | Switzerland
Co-Chair: Bessam K. Farjo, MBChB, FISHRS | UK

Guest Operating Faculty
Conradin von Albertini, MD, FISHRS | Switzerland
Arika Bansal, MD | India
Otavio Augusto Boaventura Lima, MD | Brazil
Jean Devroye, MD, FISHRS | Belgium
Kapil Dua, MBBS, MS, FISHRS | India
Bessam K. Farjo, MBChB, FISHRS | UK
Robert S. Haber, MD, FISHRS | USA
James A. Harris, MD, FISHRS | USA
Tommy Hwang, MD, PhD, FISHRS | South Korea
Dae-Young Kim, MD, PhD, FISHRS | Korea
Russell Knudsen, MBBS, FISHRS | Australia
Emorane Lupanzula, MD | Belgium
Parsa Mohebi, MD, FISHRS | USA
Damkerng Pathomvanich, MD, FISHRS | Thailand
Marie-Andrée Schambach, MD | Guatemala
Piero Tesauro, MD | Italy
Arthur Tykocinski, MD, FISHRS | Brazil
Sanusi Umar, MD, FISHRS | USA
Gregory Williams, MBBS, FISHRS | UK
Georgios Zontos, MD, MSc, PhD, FISHRS | Denmark

Dubai Surgeons
Local Liaison: M. Humayun Mohmand, MD, FISHRS | UAE
Hanieh Erdmann, MD | UAE
Cagatay Sezgin, MD | UAE
Zulifqar H. Tunio, MD | UAE

Faculty
Gholamali Abbasi, MD, FISHRS | Iran
Konstantinos K. Anastassakis, MD, PhD | Greece
Vincenzo Gambino MD, PhD, FISHRS | Italy
Anil Garg, MBBS, MS, MCh, FISHRS | India
Aditya Gupta, MD, PhD, FISHRS | Canada
Francisco Jimenez, MD, FISHRS | Spain
Melike Kulahci, MD | Turkey
Jennifer Martinick, MBBS | Australia
Ahmed Adel Noreldin, MD | Egypt
Ratchathorn Panchaprateep, MD, PhD | Thailand
Muhammad N. Rashid, MD | Pakistan
Tseng-Kuo Shiao, MD, FISHRS | USA
Akaki Tsilosani, MD, PhD | Georgia
Bradley R. Wolf, MD, FISHRS | USA
Kuniyoshi Yagyu, MD, FISHRS | Japan

The workshop is located in a dedicated medical office district, close to airport, metro station, and major hotels.

Don't miss your chance to participate in the most intense hair transplant workshop of the year. The World Live Surgery Workshop is geared to all levels, from those who are new to the field or who only do a few cases a year to those who dedicate greater than 50% of their practices to hair restoration surgery.

ADVANCE YOUR SKILLS WHILE LEARNING FROM TOP-NOTCH FACULTY

- Basic Principles Lectures on Day 1
- Lectures & Panel Discussions on Day 2 and 3
- Intense Live Surgery Observational on two days!
- Daily lunch included
- Welcome Cocktail & Conclusion Party included
- World Class Faculty

INTERACT WITH 20+ SURGEONS AS THEY DEMONSTRATE THEIR TECHNIQUES

- FUE Sharp – Manual and Different Motorized
- FUE Smart
- FUE Blunt
- FUE Trumpet
- FUE Robotic
- FUE Mamba
- FUT
- Dull & Sharp Implanters

EXPERIENCE FIRSTHAND A VARIETY OF PATIENT CASES

- Male & Female Patients
- Beard
- Eyebrows
- Repair
- Shaven FUE
- Unshaven FUE
- Preview Long Hair FUE
- FUT
- Various Ethnicities

To register, go to:

www.2018wlswdubai.org

Meeting Review

Review of the 17th Annual Meeting of the Russian Trichologists Union June 22-24, 2017 • Saint Petersburg, Russia

Tatiana Siliuk, MD | *Saint Petersburg, Russia*

The 17th annual meeting of the Russian Trichologists Union was held in St. Petersburg, known as the Northern Capital of Russia. The Russian Trichologists Union is a community of hair treatment specialists existing since 2000. The meeting was organized by the trichology school, Nautilus, and by the medical hair treatment and hair transplantation clinic, Hair Care Center. The directors of the event were Drs. Spartak Kayumov and Tatyana Silyuk.

A feature of this meeting is that it was attended by famous faculties from the United States, the United Kingdom, Canada, Israel, Spain, Germany, and Korea; and one day was entirely English-speaking.

A record number of 180 visitors and specialists from Russia, Ukraine, Belarus, Georgia, Poland, Latvia, Kazakhstan, Uzbekistan, and other countries attended the event. The 3-day conference included 44 speakers who presented lectures on androgenetic alopecia in men and women, hair loss in children, alopecia areata, diseases of scalp, and clinical cases and hair transplantation. There was also a session devoted entirely to hair transplantation for the first time in Russia. In addition, there were two live workshops with PRP therapy in trichology and using stromal vascular fraction (SVF).

Guests of the conference included current president of the EHRS, Abraham Zlotogorski (Israel), along with Jerry Shapiro (USA), Won-Soo Lee (Korea), Ramon Grimalt (Spain), Bradley Wolf (USA), Bessam Farjo (UK), Nilofer Farjo (UK), and Andreas Finner (Germany).

There were many interesting lectures: Dr. Nilofer Farjo, "Guidelines for Surgical Correction and Modern Opportunities for Female Hair Transplantation," Dr. Bessam Farjo, "The Indications for Surgical Treatment and Modern Opportunities for Male Hair Transplantation," Dr. Andreas Finner, "Hair Clinic and Hair Transplantation—How I Do It," and Dr. Bradley Wolf, "The Achievements in Hair Transplantation in Scarring Alopecia."

The gala dinner, which was accompanied by a gypsy band, was held in the warm and friendly atmosphere of the restaurant of the Museum of Russian Vodka.

The 2018 meeting, also scheduled for St. Petersburg, will maintain and develop on our worthy level of our annual meetings. In addition, the FIFA World Cup will be played in Russia and St Petersburg will host some of the matches, so you can plan for a great holiday in our beautiful city. ■

Cole Dissection Device or The CDD-Vortex

*Our Vortex is the only motorized FUE extractor with built in precision depth control

*Accelerated FUE learning curve

*Exceptional value

*Sharp motorized dissection

*Portable; put it in your pocket and take it with you

*Improved lightweight tip
*No lubrication necessary

New! Zero-T Punch™

Cole Instruments Zero-T

*High quality steel lasts longer
*Continuous oscillating punch
*Extremely sharp
*Exceptional value
*Long punch life
*Based on 2006 patent filing - USPTO

Cole Instrument Punches

The Professional's Choice:

*Precise depth control

*Long lasting super sharp punches

Serrated tip

The Wind-O opening reduces torsion and serves as a 1 mm depth reference

Our revolutionary new Wind-O Punch allows you to see the graft as you are cutting. You can quickly change the cutting angle to avoid transection

Video Demonstrations:
www.coleinstruments.com/video-demos
SALES@COLEINSTRUMENTS.COM
WWW.COLEINSTRUMENTS.COM
1 800 368 4247

Classic CII Punch | Serrounded Punch™ | New! Wind-O Punch™

In Loving Memory of Dr. Rajaratnam Sundarason

Sunda and friends at the 1995 ISHRS annual meeting held in Las Vegas, Nevada.

On 21st December 2017 the ISHRS lost one of its oldest members, 88-year-old Dr. Rajaratnam Sundarason of Singapore.

"Sunda," as he was known to all his friends, was born in Singapore from a large family of Sri Lankan stock. He did his medical degree (M.B., B.S.) and Surgical specialization (FRACS) in Melbourne, Australia, before returning to set up a very successful Plastic Surgery practice in his country of birth. He was at one time the most senior Plastic Surgeon in that country, but in recent years, he had withdrawn from Hospital practice, where he had been a world authority on the treatment of severe burns. He then concentrated more on his hair transplant practice, which he ran with the aid of several skilled assistants. In Singapore, only plastic surgeons may perform hair transplants surgery.

His 15 years in Australia were remarkable and possibly unique. As a very black-skinned but confident young medical student in 1950, he found it difficult to get decent residential lodgings and discussed his situation with the Housing Officer at Melbourne University, Sam Dimmick. Sam was able to get him better lodgings, realising that his desperate situation was not uncommon in a city unaccustomed to Asians, whether black or not. They decided to raise funds for a joint residential dwelling for Australian and foreign students to be called "International House."

With Sam's contacts in social and political circles, they were successful beyond their wildest expectations. After intensive political lobbying and fundraising by various committees, an active Women's Auxiliary, and great assistance from the Rotary Clubs of Melbourne, land was purchased and plans were underway. Contributions were received from the governments of Victoria, Singapore, Malaya, Hong Kong, Sarawak, and Sri Lanka, as well as the Commonwealth of Australia.

The first International House, with 32 students, was opened 6 years later for the start of the 1957 University year. In 1960, Sundarasen became the first Vice-Warden and Anatomy Tutor of the House. Fundraising and building has continued over several decades, and there are now five Wings housing some 350 students and tutors. Despite early misgivings on moral grounds, by 1972, International House had become the first University Hall of Residence in Australia to become co-educational.

On a visit to Melbourne in 1969, I had demonstrated hair transplant techniques to Sunda, and although he did not take it up immediately, he gradually introduced it into his surgical repertoire over the next 20 years, and was the Father of HT surgery in that country. I was able to keep him up-to-date on technique changes during my regular trips through Singapore. Upon the formation of the ISHRS in 1993, Sunda became a member and a regular attendee at our meetings.

Sunda maintained his many friendships in Australia and has been a regular visitor back to Melbourne and International House over the past 50 years. He married Margaret, an English nurse, and had three children in Singapore. After their divorce, he married Mary Silva, who had two children of her own.

Sunda maintained his social networking in Singapore where he was well-known and an Examiner in Surgery at the University. He was a member of both the expensive golf clubs, although he did not play himself.

Sunda had a stroke in mid-2017 and died on 21st of December. He had not attended many meetings in recent years nor did he contribute any papers to the *Forum*, so will not be known to many American members of the ISHRS. He is however, well known to our SE Asian members for his social affability, surgical skills, and as a HT pioneer. We will miss him.

Richard Shiell, MBBS
Melbourne, Australia
Friend and former student

WORLD LIVE SURGERY WORKSHOP

We welcome you to join us for this global event.

Share your experiences and learn from your colleagues about innovative state of the art hair transplantation techniques and approaches.

Observe live surgical cases from some of the world's outstanding surgeons and participate in exciting discussions and debates.

A sophisticated and highly intellectual program awaits you. You will return to your practice with new ideas, practical tips that you can implement immediately, and a revived enthusiasm for the refined art and science of our beloved field of hair transplant surgery!

Sign-up now for early interest.

CHAIR: Conradin von Albertini, MD | Switzerland | CO-CHAIR: Bessam K. Farjo, MBChB, FISHRS | U.K.

WWW.2018WLSWDUBAI.ORG

APPLY FOR ISHRS FELLOW MEMBER CATEGORY (FISHRS)

The designation of Fellow has been established in order to recognize members who meet its exceptional educational criteria. In order to be considered, the hair restoration surgeon must achieve a specific level of points in a system of various educational parameters such as serving in leadership positions, receiving American Board of Hair Restoration (ABHRS) certification, writing scientific papers, and teaching at scientific programs, among others.

It is a great honor for a member to achieve the Fellow designation of the International Society of Hair Restoration Surgery (FISHRS). This recognizes the surgeon who strives for excellence in this specialized field. To maintain this status, the surgeon must continue to meet established educational criteria over time. Fellows may vote and hold office in the Society. Fellows may use the ISHRS Fellows logo on their websites and in other promotional materials, and use "FISHRS" behind their name.

If you believe you qualify and would like to be considered to elevate to Fellow Member status, then please consider completing the Scorecard Application.

To be considered this year, submission deadline is July 1, 2018.

You may download the application at the link below. It is an Excel file. The first worksheet is a blank scorecard, and the second worksheet is a sample of a completed scorecard. The criteria are also listed on this page:

http://www.ishrs.org/members-only/ishrs-fellow-category

We encourage all Physician Members to consider applying for Fellow Member status.

10th Annual

August 2-5, 2018 St. Louis, Missouri, USA

Hair Transplant 360 WORKSHOP

Comprehensive Hair Transplant Course & FUE Hands-On Course

- *New, Expanded Course Format*
- *3 Information Packed Days*
- *Latest High-Definition Live 3D Lectures and Surgery Dissection*
- *Extensive, Hands-on Cadaver Workshop with Low Student-to-Faculty Ratio*
- *Fast-Track Stand Alone or Combined Full-Day FUE Course*

- ►Hairline Design
- ►Donor Harvest/Closure
- ►Recipient Site Creation
- ►Graft Dissection
- ►Graft Placement
- ►Crown Design
- ►Female Hairline Design
- ►Temporal Point Design
- ►Graft Calculation
- ►Marketing
- ►Consulting
- ►Medical Treatment
- ►Critical Thinking Day
- ►Quality Control
- ►FUE

In collaboration with:

An offering through:
Practical Anatomy & Surgical Education
Department of Surgery
Saint Louis University
School of Medicine

http://pa.slu.edu

Course Director:
Samuel M. Lam, MD, FACS, FISHRS

Assistant Course Director:
Emina Karamanovski Vance, MD

International World Class Faculty

STOP THE PRESSES! READ ALL ABOUT IT!
NEW HEADLINES CREATED BY SCALP MICROPIGMENTATION

ISHRS Regional Workshop
Hosted by: Sara Wasserbauer, MD, FISHRS
Confirmed Faculty: Robert Haber, MD FISHRS,
Ronald Shapiro, MD FISHRS
Initial Equipment Partner: Finishing Touches Group

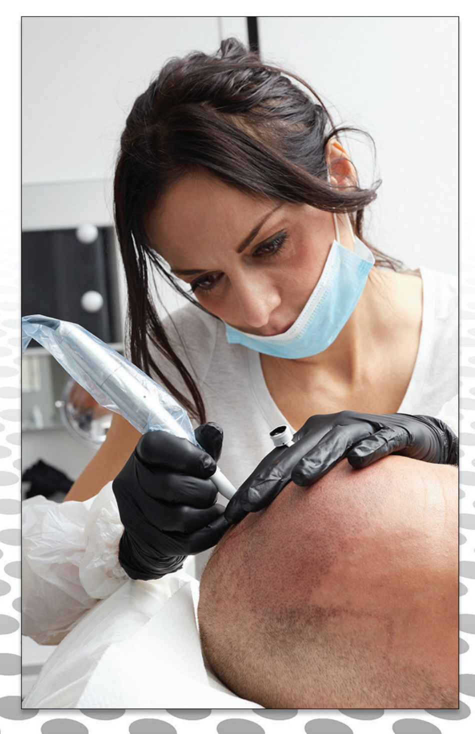
INTERNATIONAL SOCIETY OF ISHRS HAIR RESTORATION SURGERY

OCTOBER 14-16, 2018 in Walnut Creek, California
(Immediately after the Hollywood, California ISHRS World Congress Meeting)

Clinic Sponsor:

Sara Wasserbauer, MD | info@californiahairsurgeon.com
www.californiahairsurgeon.com

MicroPigementation of the Scalp is one of the best adjunctive treatments to gain traction in the past few years It is an excellent technique for making hair appear denser, with or without a transplant. If you are a serious hair transplant practice, you need to know how this new technology will fit into your practice and the many different applications it can have. Drive up the California Coast or Fly the 45 minute airplane ride from Hollywood to Northern California for this worthwhile conference extender!



Hair Transplant 2018 Pre-Congress Course
12 SEPTEMBER

The ISHRS is pleased to present this Pre-Course at the

4TH INTERNATIONAL CONGRESS OF THE AESTHETIC ACADEMY OF EGYPT (AAEgy)

13-14 September 2018 • The Nile Ritz Carlton Hotel • Cairo, Egypt

The ISHRS is pleased to participate with the Aesthetic Academy of Egypt to organize a full-day pre-congress course on HAIR TRANSPLANTATION on 12 Sept. 2018, which is the day prior to the AAEgy Congress.

COST OF THE PRE-CONGRESS COURSE		
EARLY BIRD *Until 1 July 2018*	$200	*BEST DEAL*
REGULAR *Until 1 Sept. 2018*	$250	
After 1 Sept. 2018	$300	

For those registered for HT Pre-Congress Course, you may choose to attend the full Congress on 13-14 September for additional $50 registration fee.

PRELIMINARY PROGRAM

9:00AM-1:00PM Overview and the Basics

- Opening and Welcome Introduction
- About the ISHRS
- Overview of Hair Restoration Surgery: History, Terminology
- Follicular Unit: Macro and Microscopic Anatomy for Hair Surgeons
- Anatomical Landmarks in Hair Transplantation including Safe Donor Zone and Density in Donor and Recipient Area
- Anesthesia of the Donor and Recipient Area
- Hairline Design in Males and Females

COFFEE BREAK

- Strip FUT (Follicular Unit Transplantation): Overview
- FUE (Follicular Unit Excision): Overview
- Graft Placement Techniques including Implanters
- Discussion Panel: Candidate Selection Strip vs FUE

LUNCH BREAK

2:00PM-5:30PM Advanced Topics

- Differences in the Devices Used in FUE (sharp, blunt and hybrid punches, robotic devices)
- Recipient Sites: Special Considerations
- Female Hair Loss: Special Considerations
- Transplanting into Scars and Scarring Alopecias
- Transplanting the Eyebrows

COFFEE BREAK

- Body Hair Transplantation
- Tips and Tricks in HT of Curly Hair Candidates
- General and Most Common Complications in HRS
- Discussion Panel: Getting Started—How to Get Training and Setting up a HT Practice

Francisco Jimenez, MD

Ahmed A. Noreldin, MD

Francisco Jimenez, MD, FISHRS | Spain
Chair, HT Pre-Congress Course
Executive Committee Member, ISHRS

Ahmed A. Noreldin, MD, FISHRS | Egypt
Co-Chair, HT Pre-Congress Course
Chair, AAEgy Congress

ESTEEMED FACULTY

Konstantinos K. Anastassakis, MD, PhD | Greece
Jean M. Devroye, MD, FISHRS | Belgium
Shady El-Maghraby, MD, MSc | Egypt
Francisco Jimenez, MD, FISHRS | Spain
Ahmed A. Noreldin, MD, FISHRS | Egypt
Marwan Saifi, MD, FISHRS | Poland
Ahmed A. Youssef Ibrahim, MD | Kuwait

REGISTRATION AND INFORMATION http://www.aaegy.org/

Classified Ads

Seeking Hair Transplant Physician and Technicians

Anderson Center for Hair in Atlanta, Georgia is looking for a full-time hair restoration physician, and full-time technicians. We are a state-of-the-art, brand-new boutique center. We perform one procedure per day, with emphasis on quality, ethics, and natural results…not quantity. On-the-job training available for physicians. Technicians will require experience, with references required. Outstanding, friendly working environment, salary, benefits, insurance, 401k, vision, dental, etc.

Please email your résumé to: jobs@andersonhsc.com.

Seeking Hair Transplant Technicians

The Paragon Hair Clinic in Southlake and Mansfield, Texas is currently looking for full-time technicians with planting experience, minimum speed requirement of 600 grafts per hour. We are a multiple case practice per day utilizing FUT and FUE (motorized and robotic). Required 90-day trial/training period.

Please email your résumé to: careers@markbisharamd.com

2015 ARTAS™ with Chair for Sale

2015 ARTAS for sale with chair. Used 3 times. Perfect condition. Originally $250,000. Asking $150,000 or best offer. Here is your chance to own a mint robotic hair transplant device at a substantial savings!

Email: artasforsale@gmail.com

Hair Restoration Surgeon Needed

A growing hair restoration practice in Northern California is looking for a physician willing to perform manual powered and ARTAS System FUE. Some experience in hair restoration is desirable but not required. The candidate must possess great bedside manner, excellent eye-hand coordination, and an eye for the esthetics of hair restoration.

If you would like to be part of rapidly expanding practice committed to excellent patient care and results and advancing the art and science of hair restoration with a commitment to research, physician education, and social responsibility, contact Dr. Doug Kelly at doug@westbondhair.com.

For Sale Canadian HT Clinic

FOR SALE: Firmly established and fully equipped Canadian Hair Transplant Clinic located in Winnipeg, Manitoba, Canada. No significant competition in the area. Willing to train new owner, if necessary.

Contact (204) 489-2694. Website: www.hairtransplantcanada.com

Los Angeles: Hair Transplant Surgeon

Busy Beverly Hills practice is seeking an additional full time experienced hair transplant surgeon. We provide one of the most aggressive compensation and benefits packages with ownership opportunity.

Please contact immediately: jobs@calihairloss.com; 1-888-930-0554

Los Angeles: Top Pay FUE Harvester

Busy Beverly Hills practice is seeking an additional full-time licensed Physician Assistant to perform FUE harvesting. Must be proficient in hand-held non-robotic FUE harvesting. We provide one of the most aggressive compensation and benefits packages.

If you are a top performer, please contact us immediately: jobs@calihairloss.com; 1-888-930-0554

Seattle Hair Transplant Surgeon

Retiring physician is looking to bring on a replacement hair transplant surgeon, practice is very busy, outgoing physician can train the right candidate, opportunity to make $500,000+yr.

Please contact: DrCrawshaw@advancedhair.com; 1-425-449-8185

Hair Trasplant Surgeon Wanted

Opportunity for hair transplant surgeon in Orange County, California. Experienced or, if not, will train.

Send résumé to: Williamrassman@gmail.com

Calendar of Hair Restoration Surgery Events

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

DATES	EVENT/VENUE	SPONSORING ORGANIZATION(S)	CONTACT INFORMATION
FEB 16-18, 2018	HAIRCON 2018 *Mahabalipuram, off Chennai, India*	Association of Hair Restoration Surgeons, India ahrsindia.org	Dr. K. Ramachandran haircon2018@gmail.com
* MAR 8-10, 2018	ISHRS World Live Surgery Workshop *Dubai, UAE*	International Society of Hair Restoration Surgery www.2018WLSWDubai.org	info@ishrs.org
MAR 17, 2018	The Present & Future of Hair Restoration Surgery and Medicine *London, United Kingdom*	British Association of Hair Restoration Surgery	Liz De Pass, BAHRS Administrator office@bahrs.co.uk
MAR 27-30, 2018 MAY 22-25, 2018	University Diploma of Scalp Pathology and Surgery *Paris, France*	University of Paris VI Coordinators: P. Bouhanna, MD, and M. Divaris, MD www.hair-surgery-diploma-paris.com	Dr. Pierre Bouhanna, Course Director sylvie.gaillard@upmc.fr
MAY 2-3, 2018	2nd SILATC Annual Meeting & Live Surgery Workshop *Cancun, Mexico*	Ibero Latin American Society of Hair Transplantation (Sociedad Iberolatinoamericana de Trasplante de Cabello – SILATC)	drdavid@perez-meza.com
MAY 11-13, 2018	6th Asian Hair Restoration Surgery Meeting & Live Surgery Workshop *Beijing, China*	Asian Association of Hair Restoration Surgery in conjunction with 3rd CAHRS	www.aahrsasia.org
MAY 25-27, 2018	4th Latin American Workshop of FUE *Westin Camino Real Resort, Guatemala City, Guatemala*	Paraguayan Society of Hair Restoration Surgery	http://workshop-latc.com
JUN 9-10, 2018	8th International Congress of the KSHRS *Seoul, Korea*	Korean Society of Hair Restoration Surgery	www.kshrs.org or kshrs@naver.com
* AUG 2-5, 2018	Hair Transplant 360 Cadaver Workshop & FUE Hands-On Workshop *St. Louis, Missouri, USA*	Saint Louis University School of Medicine, Practical Anatomy & Surgical Education In collaboration with the International Society of Hair Restoration Surgery	info@ishrs.org
AUG 22-25, 2018	7th Congress of the ABCRC *Wish Resort Golf Convention, Foz do Iguassu, Brazil*	Brazilian Society of Hair Restoration Surgery – ABCRC	Additional details available in January 2018
SEP 12, 2018	Pre-Congress on Hair Transplantation *The Nile Ritz, Cairo, Egypt*	Organized by the International Society of Hair Restoration Surgery At the 4th International Congress of the Aesthetic Academy of Egypt (AAEgy), Sept. 12-14, 2018	info@aeegy.org
* OCT 10-14, 2018	26th World Congress of the ISHRS *Hollywood, California, USA*	International Society of Hair Restoration Surgery www.26thannual.org	info@ishrs.org
OCT 14-16, 2018	ISHRS Regional Workshop: Scalp Micropigmentation *Walnut Creek, California, USA*	International Society of Hair Restoration Surgery Hosted by: Sara Wasserbauer, MD, FISHRS	info@californiahairsurgeon.com

*2018 meetings that qualify for the ISHRS member educational maintenance requirement

REMINDER

ISHRS full **Members** and **Fellow Members** are required to attend 1 ISHRS-approved meeting every 3 years to maintain their member category.

ISHRS WORLD CONGRESS SCHEDULE

26TH WORLD CONGRESS	27TH WORLD CONGRESS	28TH WORLD CONGRESS
October 10-14 2018 Hollywood, California I USA	November 13-17, 2019 Bangkok I Thailand	October 21-25, 2020 Panama City I Panama

INTERNATIONAL SOCIETY OF HAIR RESTORATION SURGERY

Vision: To establish the ISHRS as a leading unbiased authority in medical and surgical hair restoration.

Mission: To achieve excellence in medical and surgical outcomes by promoting member education, international collegiality, research, ethics, and public awareness.

2017–18 Board of Governors

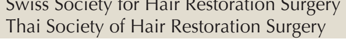
President | Sungjoo (Tommy) Hwang, MD, PhD, FISHRS
Vice President | Arthur Tykocinski, MD, FISHRS
Secretary | Francisco Jimenez, MD, FISHRS
Treasurer | Paul J. McAndrews, MD, FISHRS
Immediate Past President | Ken Washenik, MD, PhD, FISHRS
Kapil Dua, MD, FISHRS
Jean Devroye, MD, FISHRS
Nilofer P. Farjo, MBChB, FISHRS
James A. Harris, MD, FISHRS
Melvin L. Mayer, MD, FISHRS
Ricardo Mejia, MD
Marcelo Pitchon, MD
Robert H. True, MD, MPH, FISHRS
Sharon A. Keene, MD, FISHRS
Paul C. Cotterill, MD, FISHRS

2016–17 Chairs of Committees

American Medical Association (AMA) House of Delegates (HOD) and Specialty & Service Society (SSS) Representative | Carlos J. Puig, DO, FISHRS (Delegate) | Paul T. Rose, MD, JD, FISHRS (Alternate Delegate)
Annual Giving Fund Chair | John D.N. Gillespie, MD, FISHRS
World Congress Scientific Program Committee | Jean Devroye, MD, FISHRS
Audit Committee | Robert H. True, MD, MPH, FISHRS
Bylaws and Ethics Committee | Gregory Williams, MBBS, FISHRS
Communications & Public Education Committee | Ken Washenik, MD, PhD, FISHRS
CME Committee | Paul C. Cotterill, MD, FISHRS
Regional Workshops Subcommittee | Bessam K. Farjo, MBChB, FISHRS
Subcommittee Best Practices Project | Paul C. Cotterill, MD, FISHRS
Core Curriculum Committee | Anthony J. Mollura, MD
Fellowship Training Committee | Robert P. Niedbalski, DO, FISHRS
Finance Committee | Arthur Tykocinski, MD, FISHRS
FUE Advancement Committee | James A. Harris, MD, FISHRS
International Relations Committee | Bessam K. Farjo, MBChB, FISHRS
Membership Committee | Ken L. Williams, Jr., DO, FISHRS
Nominating Committee | Francisco Jimenez, MD, FISHRS
Past-Presidents Committee | Sharon A. Keene, MD, FISHRS
Pro Bono Committee | Edwin S. Epstein, MD, FISHRS
Scientific Research, Grants, & Awards Committee | Carlos J. Puig, DO, FISHRS
Surgical Assistants Committee | Emina Vance
Surgical Assistants Awards Committee | Emina Vance
Ad Hoc Committee on Database of Transplantation Results on Patients with Cicatricial Alopecia | Jeff Donovan, MD, PhD, FISHRS
Ad Hoc Committee on Issues Pertaining to the Unlicensed Practice of Medicine | Sharon A. Keene, MD, FISHRS
Ad Hoc Committee on PRP | Carlos J. Puig, DO, FISHRS
Ad Hoc Committee on Regulatory Issues | Paul T. Rose, MD, JD, FISHRS
Subcommittee on European Standards | Gregory Williams, MBBS, FISHRS ISHRS Representative to CEN/TC 403
Task Force on Finasteride Adverse Event Controversies | Edwin S. Epstein, MD, FISHRS

Global Council of Hair Restoration Surgery Societies

Membership proudly includes:

American Board of Hair Restoration Surgery
American Society of Hair Restoration Surgery
Argentine Society of Hair Recovery
Asian Association of Hair Restoration Surgeons
Association of Hair Restoration Surgeons–India
Australasian Society of Hair Restoration Surgery
Brazilian Society of Hair Restoration Surgery (ABCRC)
British Association of Hair Restoration Surgery
French Hair Restoration Surgery Society
German Society of Hair Restoration Surgery
Hair Restoration Society of Pakistan
Hellenic Academy of Hair Restoration Surgery
Ibero Latin American Society of Hair Transplantation (SILATC)
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
Paraguayan Society of Hair Restoration Surgery

Polish Society of Hair Restoration Surgery
Swiss Society for Hair Restoration Surgery
Thai Society of Hair Restoration Surgery

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

1. Articles should be written with the intent of sharing scientific information with the purpose of progressing the art and science of hair restoration and benefiting patient outcomes.
2. If results are presented, the medical regimen or surgical techniques that were used to obtain the results should be disclosed in detail.
3. Articles submitted with the sole purpose of promotion or marketing will not be accepted.
4. Authors should acknowledge all funding sources that supported their work as well as any relevant corporate affiliation.
5. Trademarked names should not be used to refer to devices or techniques, when possible.
6. 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 who are experts in the particular area in question, for the purpose of obtaining rebuttal 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 blinded fashion to make recommendations about its acceptance, further revision, or rejection.
7. Once the manuscript is accepted, it will be published as soon as possible, depending on space availability.
8. All manuscripts should be submitted to forumeditors@ishrs.org.
9. A completed Author Authorization and Release form—sent as a Word document (not a fax)—must accompany your submission. The form can be obtained in the Members Only section of the Society website at www.ishrs.org.
10. All photos and figures referred to in your article should be sent as ***separate*** attachments in JPEG or TIFF format. Be sure to attach your files to the email. Do NOT embed your files in the email or in the document itself (other than to show placement within the article).
11. Images should be sized no larger than 6 inches in width and should be named using the author's last name and figure number (e.g., TrueFigure1).
12. Please include a contact email address to be published with your article.

Submission deadlines:
February 5 for March/April 2018 issue
April 5 for May/June 2018 issue
June 5 for July/August 2018 issue
August 5 for September/October 2018 issue
October 5 for November/December 2018 issue

Please note new submission address:
forumeditors@ishrs.org

Classified Advertising Guidelines for Submission

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

Classified Ads cost $100 per insertion for up to 75 words. You will be invoiced for each issue in which your ad runs. The *Forum* 2017 Advertising Rate Card can be found at the following link:

http://www.ishrs.org/content/advertising-and-sponsorship

Submit your Classified Ad to:
cduckler@ishrs.org

INTERNATIONAL SOCIETY OF
ISHRS
HAIR RESTORATION SURGERY
2018
ISHRS 26TH
WORLD
CONGRESS
INTERNATIONAL SOCIETY OF HAIR RESTORATION SURGERY
When Award Winning
Hair Transplant Surgeons Meet
SAVE THE DATE
OCTOBER 10-14
HOLLYWOOD
LOEWS HOLLYWOOD HOTEL
www.ISHRS.org

HAIR TRANSPLANT FORUM INTERNATIONAL
International Society of Hair Restoration Surgery
303 West State Street
Geneva, IL 60134 USA

Forwarding and Return Postage Guaranteed