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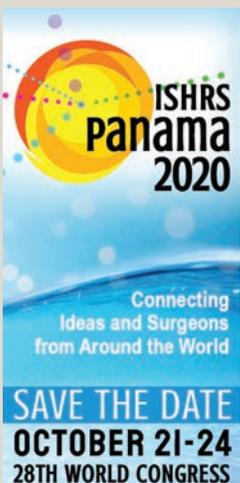
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Extended Abstract
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Coronal or Sagittal Incisions: A Mathematical Approach to the Problem

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ABSTRACT

Introduction: The debate on using sagittal (parallel) or coronal (perpendicular) incisions is ongoing. However, it is our belief that coronal incisions reduce injury to the subdermal vasculature while allowing for higher graft density. In this article, we will use mathematics to support our stance that coronal incisions cause less injury to the recipient area.

Objective: To mathematically prove why coronal incisions cause less trauma to the recipient area and to quantify the exact percentage of graft density increase.

Method: The trigonometric theory was applied to find an equation that correlates the size of both sagittal and coronal incisions with the size of a square-end blade at any given angle.

Results: Using sagittal incisions with a square-end blade directed at an acute angle results in a wound that is significantly greater in length than the size of the blade. However, using coronal incisions, the blade creates the same size wound independently of the entry angle.

Conclusion: Coronal incisions minimize injury to the skin while maximizing graft density, potentially allowing for better results.

Key words: sagittal (parallel) incisions, coronal (perpendicular) incisions, perpendicular angle grafting

INTRODUCTION

Hasson first presented the concept of perpendicular angle grafting and has explained and presented over the years the advantages of using coronal versus sagittal incisions.^{1,2}

According to his research, coronal incisions reduce the injury to the subdermal vasculature because the incisions are smaller, which also allows for higher graft density, easier placement, and greater control of graft angulation.

In this study, using trigonometry,³ I will prove why coronal incisions cause less injury to the recipient area. In addition, not only will I quantify this reduced injury, I will also quantify the increase in achievable density.

There is the opinion amongst hair surgeons that the use of sagittal incisions helps prevent cutting across Langer's lines, thus protecting the vessels that are emerging from the subdermal vascular plexus. Similarly, there is the opinion that coronal incisions are more likely to cause vascular damage.

Personally, I have never observed decreased survival rates using coronal incisions. Therefore, I will attempt to prove that, by using coronal incisions, the injury to the skin decreases remarkably while allowing for higher density and improved hair coverage.⁴

METHOD

The primary difference between coronal (perpendicular) and sagittal (parallel) incisions is their direction in relation to the hair flow. The orientation of coronal incisions is perpendicular to the direction of the hair, whereas the orientation of sagittal incisions is parallel to the direction of hair at any given point on the scalp.¹

Figure 1 shows a size L square-end surgical blade creating a sagittal incision at angle θ , whereas Figure 2 shows the same blade cre-

FIGURE 1. A sagittal incision made by a square-end surgical blade at angle θ .

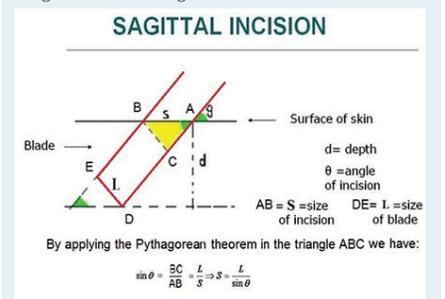


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President's Message

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The global coronavirus (COVID19) pandemic has impacted several of our upcoming educational activities. Because of this global threat, we were forced to cancel the March Cowgirl Hair Loss Workshop in Texas (chaired by Dr. Carlos Puig) and the ISHRS

Euro 2020 Workshop in Athens planned for June (chaired by Dr. Konstantinos Anastassakis). We recognize how important it is to take the necessary precautions. The health and safety of our attendees, faculty, and staff are our number one priority. The ISHRS is continuously monitoring the situation. Although we will make all efforts to keep you updated, the situation is changing daily so new decisions may well have been adopted by the time you receive this issue. In the meantime, our staff will continue working on the rest of the educational activities as planned. Other initiatives that the ISHRS leadership is taking include the following:

Creation of the ISHRS European Council. Many ISHRS members from Europe met in Bangkok and advised us on the importance for and interest in creating a European branch of the ISHRS. After a few meetings of an ad-hoc Task Force Committee, we have decided to launch this branch in April 2020. It will be named the "ISHRS Europe Council" and comprise 8 members from European countries. The first Chair of this new European Council will be Dr. Bessam Farjo; other members of this first Council will be Asim Shahmalak (UK), George Zontos (Greece/Denmark), Geza Sikos (Hungary), Vincenzo Gambino (Italy), Andreas Finner (Germany), Conradin von Albertini (Switzerland), and myself (Spain). I want to emphasize that the members of this Council will rotate periodically (every 1-3 years), and many ISHRS European members will have the chance to form part of it and contribute their ideas. Our aim is for this Council to be a permanent part of the ISHRS, and there is no intention of forming a new society. As occurs with other ISHRS committees, the next Council members will have to be approved by the BOG.

Following are some of the reasons that help to explain the rationale behind the formation of this ISHRS Europe Council:

1. The space left unoccupied by the ISHRS for educational activities in Europe has been taken advantage of by other hair restoration societies. As an initial measure, the European Council will organize a yearly workshop and/or may even liaise with other national societies that belong to the Global Council.
2. The ISHRS will increase its visibility in Europe, hoping to increase the number of European hair restoration surgeons that will join the ISHRS.
3. It will be possible to more effectively combat the specific problems faced by European members regarding the proliferation of black market clinics, problems that differ from those occurring in United States or Asia.
4. The existence of the Council will enable a unified voice before the European health authorities and legislators with respect to the implementation of policies and regulations that affect the hair restoration sector.
5. The discussion will be facilitated of new initiatives that

can protect the principle of best practices and ensure only well-trained and suitably qualified doctors are allowed to perform hair restoration surgery. One such initiative would be the creation of a European-recognized certification of hair restoration surgery, similar to that issued by the American Board of Hair Restoration Surgery.

Travel grants for the ISHRS World Congress meeting. As a new incentive, this year we are offering 10 travel grants that include free registration plus \$1,000 USD for some of the doctors whose abstracts are accepted. For more information about who will qualify for these travel grants, please visit <https://www.28thannual.org/travel-grant/>.

The ISHRS will honor featured members at future World Congress meetings. As a token of gratitude to members who have made important contributions to our society, it has been decided that each year two of the Guest Lectures at the Congress will be named after our members. One will honor a founding member of the ISHRS and the other an ISHRS member who has made a significant contribution to the running of the society.

Members will be permitted to take photographs at the World Congress Meeting. We have changed the policy concerning photography at meetings. We have decided to follow the policy of other reputable scientific societies such as the AAD (American Academy of Dermatology) and will allow attendees to take photos during the talks, provided they are exclusively for personal and not commercial use and are not disruptive (no flash will be allowed).

Spread our message through Fight the FIGHT campaign. After launching the Fight the FIGHT campaign last November, it is time to spread our message through social media networks and other communicative platforms. We would like to reach as many people as possible worldwide. A number of initiatives are underway including the following:

1. **Google ad grant program:** We have received approval for a Google Ad Grant Program for non-profit organizations through which we will receive up to \$10,000 USD a month in free Google Ads.
2. **Translation of campaign microsite:** The Spanish translation of the campaign microsite has been completed: <https://luchafight.ishrs.org/>.
3. **International journalist outreach:** We are using the services of Cision, which has one of the world's largest journalist databases, to gain access to journalists worldwide.
4. **Video editing:** We have hired a video editor for the raw footage captured in Bangkok by members who have reported to us about the black market there. This content will be added to the campaign microsite in the form of blogs.
5. **YouTube and social media ads:** We will be publishing paid media ads on Facebook, Instagram, and YouTube to extend the reach of the campaign.
6. **Influencer campaign:** We will continue with an influencer program where Instagram users can share campaign images and/or videos on their own channels. ■

Co-Editors' Messages



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Oh, these are exciting times! While each world crisis is different, this is now the third time I (and many of our more experienced colleagues) have faced challenging times (the 2008 banking and market collapse threatening a worldwide depression, and 9/11 invoking fear

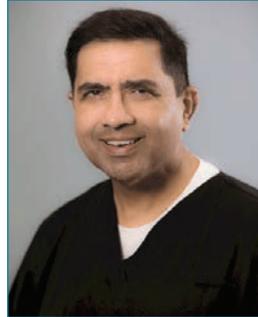
of a change in the world order and our safety from attack), and as such I would like to provide some perspective. Please do not think I am equalizing a threat to life to that of financial issues, but there are some common themes.

Challenging times call for strong leadership. Whether talking about a nation or the world at large, or on a more personal level our practices, a leader is essential for bringing people together, encouraging working together to face the challenge, and providing a sense of security. Each team member of your practice should be educated on the importance of working as a team towards a common goal. This means maximizing safety and patient care, and going the extra mile (or kilometer) to make the patient experience as positive as possible. For at least some time to come, due to a combination of financial, travel, and safety concerns, the demand for elective procedures will decrease; after all, having a fuller head of hair or beard or eyebrows will suddenly not seem as important. This means that each patient interaction with your practice should be handled with the most attentive and caring approach by everyone in the office. Your practice needs to rise to the challenge, becoming the best it can be. This includes tightening up office policies, handling each inquiry expeditiously and carefully, and expecting every team member to treat every patient with the utmost respect and care. Times like this are characterized by fewer in number and more discriminating patients, who will take more time to research treatment and physician options. My advice to younger doctors has always been, "If you become recognized as an expert, you make your practice largely recession-proof."

There is a rainbow after every storm. It may take months or more, but humans are by nature consumers, and there are few purchases more life-enhancing than a better head of hair.

In this issue, Editor Emeritus Bernie Nusbaum focuses on proper hair loss etiology diagnosis, Sam Lam describes his use of Botox® in hair patients, and George Zontos's cover article provides a mathematical assessment of recipient site techniques with commentary from Jerry Wong to provide a clinical perspective. In fact, several of the articles have invited commentary to enhance the learning from the papers. We also have three new columns: Marwan Noureldin's "Hear from the Assistants" will showcase assistants and the lessons they can provide, David Perez-Meza's "In Focus: Global Council Societies" will cover the many international hair societies, and a review and reprint of the most important articles to appear in the *Forum* over the past 30 years, chosen by Aditya and me for how they helped shape our specialty, will appear in the new column, "The Notable Articles Project," which in this issue reprints the inaugural 1990 *Forum*.

Enjoy the reading, particularly if you are in home quarantine. ■



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As we face the unknown in this turbulent time, I call for you to remain optimistic. This too, shall pass. Business will certainly not be as usual, but I encourage you to find something positive to focus on—perhaps this is a great time to catch up on the leading research

in our field to make your practice even better once the tides change. We have a great array of research and ideas presented in these pages that will give you a lot to think about!

In this issue, Jeff and I debut an exciting new column we are spearheading along with the Editor Emeriti: "The Notable Articles Project." This column will feature articles from past *Forum* issues and review the impact they have had on the ISHRS community. Our first contribution to this column is the inaugural issue, in its entirety, that was published in September 1990. It is nostalgic to read and think about how far we have come in our field. The *Forum* has been an instrumental player in this process, facilitating the rapid sharing of the ideas that have helped shape and advance our specialty.

Our cover article, by Georgios Zontos, addresses an ongoing debate about the use of sagittal vs coronal incisions when preparing graft recipient sites. Zontos uses an elegant trigonometry approach to demonstrate that coronal incisions produce a much smaller accumulated wound size and allow for higher graft density compared to sagittal incisions. Commentary on this article by Jerry Wong discusses the potential for coronal incisions to cause vascular damage and outlines the guidelines on depth control, blade size, and tumescence that his team follows.

Gregory Williams, as always, provides a thought-provoking piece on "puffery"—advertising claims that are exaggerations or hyperboles. This article is a good reminder that as ISHRS members we are not to mislead clients by claiming to be "the best" hair restoration practice in our advertising. Our society views such claims as unethical. We have a responsibility to not mislead patients with exaggerated, false claims for advertising purposes. Some degree of puffery is acceptable as every business needs to promote itself, but it is best to have proof (awards, ratings) to back up your claims.

A perspective on WAW implanters is presented by Aileen Ullrich. This article provides a detailed account of using these implanters and reinforces the notion that, regardless of the tool used, implanting grafts is an intricate step that requires delicate handling and proper training.

A new idea is shared by Sam Lam in his article about patients experiencing severe intractable pain along the linear-strip excision donor scar. This article describes instantaneous pain relief upon the injection of a few units of botulinum toxin into the painful area. In most patients, pain is eliminated without regression after a few sessions of this treatment. Thus, this is an attractive approach to effectively eradicate pain from occipital nerve damage incurred from strip excision.

As I sign off on the second issue as co-editor, I am again amazed at the innovative ideas and lively debate the *Forum* always brings. Happy reading! ■

Notes from the Editor Emeritus, 2008–2010

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Lichen Planopilaris in the Hair Transplant Consultation

I've been taken aback by the increasing number of patients who present to our clinic for a hair transplant consultation in whom we've made the initial diagnosis of Lichen Planopilaris (LPP). In a 12-month period, we have had 31 cases with the diagnosis confirmed by biopsy.

LPP is the most frequently encountered scarring alopecia. On scalp examination, the physician typically sees areas devoid of follicular ostia a few millimeters in diameter, and in more advanced cases larger patches of hair loss. Patients are usually asymptomatic or can have hair shedding, pruritus, or burning. At the periphery of the alopecic areas, inflammatory changes are evident, consisting of follicular hyperkeratosis and perifollicular erythema. Some of our patients have concomitant androgenetic alopecia (AGA). Patients with co-localized AGA and LPP are often misdiagnosed as having AGA with seborrheic dermatitis. These patients are of particular concern, as in a reported series, 14 of 17 male patients who had co-localized AGA and LPP originally presented to a physician for hair transplant consultation.¹

It is imperative to make a correct hair loss diagnosis during the consultation; however, to further complicate matters, some of our patients presented with very subtle findings. Aside from performing a detailed scalp examination, what has been a "game changer" for us is the use of scalp dermoscopy. This is an invaluable ancillary tool that can be performed using a video microscope with greater than 20× magnification or a dermatoscope to interpret magnified scalp images.² Hair restoration surgeons already use these tools to assess the donor area for density, caliber, and follicular groupings, and to rule out diffuse unpatterned alopecia (DUPA). It does not require much additional time to then also image the recipient area to ensure that all we

are dealing with is AGA. In that regard, to diagnose AGA dermoscopically a physician needs to look for hair shaft diameter variability and miniaturization greater than 20% (Figure 1). The dermoscopic features of LPP are quite different and include the following: absence of follicular ostia, peripilar casts (which appear as a hyperkeratotic cuff surrounding the proximal hair shaft at the follicular opening), perifollicular erythema, and, at times, tufting of 2-4 hairs (Figure 2). In our experience, the most

common finding is peripilar casts, and in some rare cases, only perifollicular erythema is observed. When LPP is superimposed on AGA, a combination of the dermoscopic features of both are seen.

When a scarring alopecia is suspected, a scalp biopsy should be performed. Generally, one or two 4mm diameter specimens are obtained including the subcutaneous fat, and the importance of submitting these to a dermatopathologist with expertise in hair loss pathology cannot be overstated. Dermoscopy is also useful for biopsy site localization, as sampling an area of active disease is crucial in obtaining a diagnostic specimen. In a study of scarring alopecias, dermoscopy-guided biopsies had a 95% diagnostic yield.³

The surgical guidelines for patients with scarring alopecia entail foregoing hair transplant surgery until medical therapy achieves absence of disease activity for 12-24 months. Even then, if surgery is contemplated, the patient should always be informed that the inflammatory process may recur at some future time with potential compromise of the transplanted hairs. Interestingly, multiple cases of LPP occurring AFTER hair transplants have been reported.⁴ While it has been suggested that hair transplants might activate subclinical disease or induce LPP *de novo*, it is likely that at least some of these reported cases had active LPP that went unrecognized prior to surgery. LPP should be suspected in patients with unexplained poor growth from a hair transplant procedure.

We also see patients with frontal fibrosing alopecia (FFA) requesting hair transplantation. This entity is a histologic variant of LPP and is characterized by hair loss in the frontotemporal area. Dermoscopic features include lack of follicular ostia, absence of vellus hairs at the hairline, and follicular hyperkeratosis. Loss of sideburns and eyebrows are commonly seen and loss of body hair may be present. Keep this disorder in mind in when seeing patients seeking hairline and/or eyebrow restoration.

Individuals with different types of alopecias will at times initially present to hair restoration surgeons rather than to dermatologists. Some of these conditions, if transplanted, can result in failure of growth and/or reactivation of the underlying inflammatory process. The ISHRS membership statistics show that approximately 23% of the physician

FIGURE 2. Dermoscopy of LPP: follicular units exhibiting peripilar casts



FIGURE 1. Dermoscopy of AGA: hair shaft diameter variability and miniaturization > 20%



members are dermatologists by primary specialty. Due to the multidisciplinary makeup of our group, the ISHRS has included hair loss diagnosis in its core curriculum and core competencies.

I encourage all members to attend these types of workshops at our annual meetings. The use of dermoscopy in the hair transplant consultation definitely enhances diagnostic accuracy. Nevertheless, if a surgeon has an index of suspicion about a case but is not comfortable making a diagnosis and/or determining that the underlying process is quiescent and the patient is cleared to undergo a transplant procedure, this presents an excellent opportunity for collaboration and referral between hair restoration surgeons and dermatologists with expertise in hair loss disorders.

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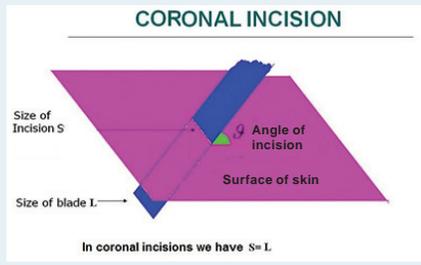


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FIGURE 2. A coronal incision made by a square-end surgical blade at angle θ .



ranges from 0 to 1, the size of a sagittal incision S is always larger than the size of the blade.

However, as shown in Figure 2, in coronal incisions, the size of the incision S is always equal to the size of the blade L. This means that the size of a coronal incision is independent of the angle of the incision.

Given that angle $\theta = 30^\circ$, then $\sin\theta = 1/2 = 0.5$. Therefore, $S = L/0.5 = 2 \times L$.

This means that there is a 100% increase in trauma caused by the blade in sagittal incisions made at a 30° angle. Along the hairline, where the incisions are made at an even more acute angle, the trauma will be even greater. For example, if the angle is 20° , then the size of the incision becomes $2.92 \times L$, or 192% larger than the size of the blade. Similarly, if the angle is 15° , then the size of the incision becomes $3.86 \times L$, or 286% larger.

FIGURE 3. A 0.7mm square-end blade makes sagittal and coronal incisions at 20° . The difference in wound size between coronal and sagittal incisions is pronounced.

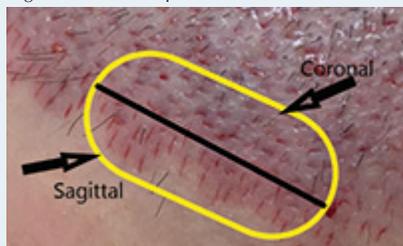


FIGURE 4. The microphotograph illustrates the difference between the wound size of both coronal and sagittal incisions produced by the same 1.0mm square-end blade at 20° .



whereas the same number of sagittal incisions creates 212.4cm of total wound, or 136% greater trauma to the skin. In other words, 1,000 sagittal incisions cause the same wound as 2,360 coronal incisions.

Consequently, the size of the incisions influences the density of the incisions per cm^2 . According to my calculations, using a 0.9mm square-end blade with a width of 0.1mm and directed at 25° , the physician can make a maximum of 29 sagittal incisions within a 1cm^2 area, resulting in a 60.9mm

ating a coronal incision at the same angle θ .

Using trigonometry, we find that $S = L/\sin\theta$,¹ where S is the size of the incision.^{3,5}

According to the previous equation, the size of a sagittal incision depends on the angle of the blade and since $\sin\theta$

wound length. On the other hand, in coronal incisions, the corresponding numbers of incisions per cm^2 and wound length are 47 and 42.3mm, respectively.

RESULTS

The results are shown in Figure 5. The blue columns represent the maximum incision density and the red ones the corresponding trauma. By using coronal incisions, the physician can achieve a 62.07% higher density while the wound size decreases by 30.5%.

Another interesting comparison to make is between the wound caused by coronal and sagittal incisions at the same density. To make it more realistic and tangible, we assume that the density is 30 incisions per cm^2 of the recipient area, which for many surgeons is the ideal surgical density. In addition, the mean of angle θ is assumed to be 45° , which is typical when the incisions are made in the frontal and mid-scalp regions of the head.

Additional results are shown in Figure 6. The diagram shows that under the aforementioned conditions, with coronal incisions, the wound is 27mm/cm²; with sagittal incisions, the wound is 38.18mm/cm².

CONCLUSION

Trigonometry proves that coronal incisions decrease injury to the recipient area. The initial claim that sagittal incisions are more likely to protect the vessels of the subdermal plexus is only partially accurate. Specifically, when the angle of the incisions is acute, the blade covers a longer distance within the dermis so the probability of traumatizing the emerging vessels from the subcutaneous plexus increases. However, the considerably smaller size of coronal incisions gives the hair surgeon a greater margin of safety. As a result, there is less bleeding and popping, which makes placement easier.

Furthermore, coronal incisions allow for more precise control of graft angulation by enclosing it between the anterior and posterior wall of the incision. In sagittal incisions, the opposite occurs because the longer length of a sagittal incision allows for greater migration of the graft, which can change the desired angle.

Another important conclusion is that coronal incisions improve the appearance of hair coverage. This is not only due to higher density but, as Hasson has explained, the hair follicles tend to emerge side by side from the scalp, and if the angle is more acute, then the appearance of better coverage is provided owing to the shingling effect of the underlying scalp.

FIGURE 5. In coronal incisions, even with a 62.07% higher density, the trauma is reduced by 30.5%.

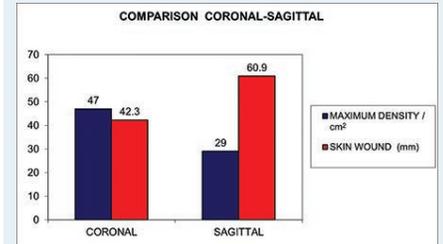
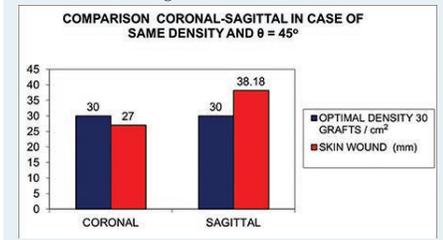


FIGURE 6. Under these conditions, sagittal incisions cause a 41.4% larger size wound.



Therefore, the use of coronal incisions decreases injury to the recipient area, permits denser packing of grafts, and potentially can give a more natural and aesthetically pleasing result.

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Invited Commentary

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In mathematical terms, I agree with Dr. Zontos. When using the same length blades, the sagittal incision does make a longer incision on the skin, so in this case the lateral slit has

an advantage. However, we have to keep in mind that the feeder blood vessels to the skin branch off from the deeper vessels and run vertically to the surface. A coronal blade set at an angle has a greater chance of cutting these vessels than a sagittal blade held at the same angle, therefore, coronal cuts have a greater potential for vascular damage.

It is important to use the smallest blade for the transplant, to incorporate depth control, to watch the skin color as the incisions are being made, and to decrease the density if the skin shows any sign of cyanosis.

Some specific recommendations include the following:

1. *Maintain depth control.* Keep depth between 4.0mm to 4.8mm. Occasionally, if a 5mm depth is required, then ease up on dense packing.
2. *Use the smallest blade size possible.* I have been gradually decreasing blade size over the years. For FUE grafts extracted with an 0.85mm punch, the doubles and triples should fit into incisions made by a 0.72mm or smaller blade. For FUT grafts, I use the following blade sizes: 0.58mm for singles, 0.7-0.75mm for doubles, and 0.88-0.9mm for 3-hair grafts.
3. *Make incisions while the skin is tumesced.* This will help ensure maximum separation between skin and underlying large vessels.

These are guidelines that our team follows; however, we are continually refining them as the team's skill improves. ■

AtoZ has acquired the HARRIS instrument product line.



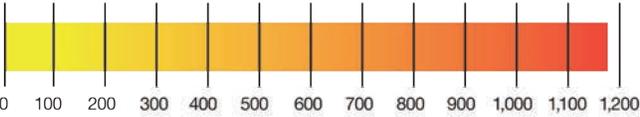
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HairMeasure: A Cost-Effective Device for Measuring Hair Mass Index

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ABSTRACT

Introduction: In 2001, Arnold coined the term “Hair Mass Index” (HMI).¹ HMI is an accurate measurement that allows you to calculate the amount of, and thickness of, hair on areas of the scalp by dividing hair mass by the area from which hair is isolated. The HMI has advantages in terms of early detection of miniaturization, hair growth measurement, and hair breakage. HairCheck, a device currently available to measure HMI, is expensive because it requires disposable material for every measurement. Thus, we present the economical “HairMeasure” and “Scalp Zone Identifier” devices that do not require disposable material.

Objective: To design a mechanical device that precisely measures the cross-sectional area of a bundle of hair and a device that can precisely delineate an area of scalp for successive examination.

Material & Methods: A thin metal sheet is used to make the “HairMeasure” device, which is then mounted on one of the arms of a vernier caliper. Using a “Scalp Zone Identifier,” the hair bundle to be measured is isolated. This hair bundle is parked in the slot of HairMeasure and the thickness of the hair bundle is measured by digital vernier caliper. Successive readings are taken in the same way. The Scalp Zone Identifier assists in identifying the same scalp zone without any tattoo markings over the scalp.

Conclusion: The “HairMeasure” and “Scalp Zone Identifier,” which don’t require disposable material, are economical devices for calculating HMI and locating the scalp zone area for examination without any tattoo marking.

Key words: Hair Mass Index, HairCheck, HairMeasure, Scalp Zone Identifier

INTRODUCTION

In 2001, Arnold introduced the concept of hair mass;¹ the circumference of a bundle of hair is measured from an isolated defined area and Hair Mass Index (HMI) is calculated by dividing hair mass by the area from which hair was isolated. Repeated HMI measurements give information about hair loss and/or reduction in hair thickness. The HMI has advantages in terms of early detection of miniaturization, hair growth measurement, and hair breakage. The existing device used to calculate HMI is HairCheck, which is expensive since it involves disposable material that increases cost with each measurement.

We invented the “HairMeasure” and “Scalp Zone Identifier” to address these costs. Since they do not require disposable material, they are very economical. They serve the purposes of calculating HMI and locating the scalp zone area for examination without any tattoo marking. Together, these devices combine to precisely measure the cross-sectional area of a bundle of hair and delineate an area of scalp for successive examination.

MATERIAL & METHODS

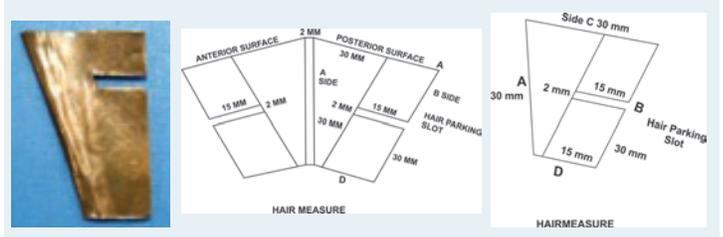
The following materials are needed to make both devices:

1. A 1mm-thick, 10×10cm copper sheet (2 sheets)
2. A digital vernier caliper
3. Four tailor (cloth, soft) tape measures
4. Sticking solution, such as FeviStick
5. Strong scissors to cut copper sheet

HairMeasure

The HairMeasure is used to measure thickness of a cross-sectional area of a bundle of hair (Figure 1). This device is made of a copper sheet, and can be mounted on any digital vernier caliper. There is a 2mm-wide slot in the device into which the bundle of hair is inserted to measure the thickness by using the digital vernier caliper (Figure 2). The copper sheet is cut with a strong pair of scissors. The idea is to make a device that has a hair parking slot that can be mounted on one arm of a vernier caliper and measured.

FIGURE 1. HairMeasure



Scalp Zone Identifier

Next, the Scalp Zone Identifier is used to precisely delineate an area of scalp as well as to identify the same area that was examined/measured before (Figure 3). This is made of a 40×40mm copper sheet. There is a 20×20mm square slot in the centre through which a section of hair is retrieved from the scalp examination zone for measurement.

FIGURE 3. Scalp Zone Identifier

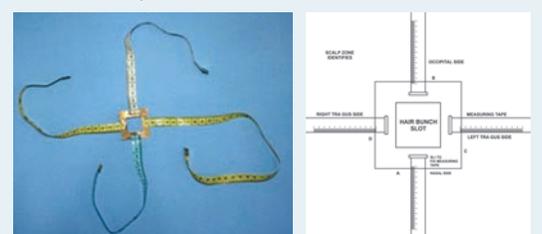


FIGURE 2. Digital vernier caliper with HairMeasure mounted on it



The Scalp Zone Identifier can be affixed to the scalp with tape. The device has four measuring tapes on all its four sides to measure distances from the nasal tip, occipital protuberance, and left and right tragus. These distances are noted for future reference so as to identify the same scalp zone for measurements.

In addition, we use a digital vernier caliper to measure the thickness of hair mass. As shown in Figure 2, the HairMeasure is mounted on one arm of the caliper, the slot is used to park the bunch of hair, and the thickness of the hair mass is measured using the caliper.

FIGURE 4. Use of Scalp Zone Identifier to locate “hair mass examination zone”



Protocol

Step I: Scalp area identification using “Scalp Zone Identifier”: To quantify hair loss and growth, repeated HMI measurements in the same region of scalp are required. The area of scalp is identified or located using the “Scalp Zone Identifier,” which has four measuring tapes attached to it (Figure 4). Scalp area, called the “examination zone,” is identified and the central slot is put over the area. All four measuring tapes are used to measure the distance from the nasal tip, occipital protuberance, and left and right tragus, which is written down for future reference. The hairs that are in the area of the central slot are taken out from it. After defining this area, hair within the central slot is gathered into a bundle and its cross-section is measured using the HairMeasure.

Step II: Hair mass measurements using

“HairMeasure”: The HairMeasure is mounted on a digital vernier caliper. The bundle of hair is identified and separated as explained above, and is placed in the HairMeasure slot. The hair bundle is delivered through the window of the Scalp Zone Identifier and inserted into the 2mm-wide slot of the HairMeasure (Figure 5). When the sliding arm of the vernier caliper is squeezed, the bundle is gently compressed within the rectangular 2mm-wide slot, which compacts the bundle but does not damage the individual fibres.

FIGURE 5. Measuring thickness of a bundle of hair



The LED screen of the digital vernier caliper will display the hair mass in millimetres. This indicates thickness in millimetres of hair in a 20×20mm² area of the scalp examination zone.

The procedure is repeated after a defined interval in a similar way. The same exam-

ination zone is identified by fixing the Scalp Zone Identifier with the help of all four measurements. The difference in the thickness of hair bundle will inform us of the variation in thickness of hair.

DISCUSSION

In 2001, Arnold introduced the concept of hair mass. The circumference of a bundle of hair is measured from an isolated defined area and the hair mass is used to calculate the Hair Mass Index.

HMI is calculated by dividing hair mass by the area from which the hair was isolated. Repeated HMI provides

information about hair loss and/or reduction in hair thickness. Arnold emphasised the importance of hair thickness in appearance of density.² The cross-section trichometer device, which was made of stainless steel and patented, was introduced to measure the HMI.^{3,4} The literature confirmed that the cross-section area of the bundle of hair measured by cross-section trichometer was a reliable device to measure hair growth and hair loss.^{5,6} The researchers suggested that the hair thickness measurement gives more meaningful data than the hair density measurement and global photography.⁷

HMI has advantages in terms of early detection of miniaturization, hair growth measurement, and hair breakage.⁶ The existing device used to calculate HMI is HairCheck, which is made of plastic with a pair of contoured, spring-loaded levers contained in a disposable cartridge.⁸ This device is expensive because it uses disposable material that increases cost with each measurement.

Our new HairMeasure and Scalp Zone Identifier devices are economical because they do not use disposable material. Their function is to calculate HMI and also to locate the scalp zone area for examination without the need for tattoo marking.

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Invited Commentary

Editor’s note: Dr. Bernie Cohen, the developer of the HairCheck device, was invited to write a commentary on this article.

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The Garg HairMeasure device employs the same concept as HairCheck. It attempts to measure hair mass, a combination of hair density and hair diameter. It measures the cross-sectional area of a hair bundle captured from a pre-measured area of scalp skin. Unfortunately, the captured

hair bundle is soft and compressible, and therein lies the mechanical dilemma.

The Garg device applies hand pressure to the bundle, and this force is not mechanically standardized. The highly compressible bundle of hair will give a wide range of readings, depending on the magnitude of the manual force applied. Inability to control compression force on the bundle was the major deficiency with Dr. Jim Arnold's string technique. Jim and I spoke at length on this issue. It required mechanical engineers to design a spring-loaded system that would apply a standardized and uniform compression to the soft bundle. Following the preliminary design, it took months of laboratory testing (with varied sizes of silk suture bundles) to confirm that the systems accurately measured a wide range of suture combinations. Precision and accuracy studies were performed on the original prototype,¹ as well as on the commercial HairCheck device.^{2,3}

The locator system was likewise a challenge. The physician should return to the same area and precisely capture hair from a well-defined area of scalp. The Garg locator system is cumbersome and does not use ink markings on the skin. Its collection of a standard-sized hair bundle is imprecise, requiring four hands. The locator system apparatus of HairCheck was studied by Hendriks et al and found to show "high reproducibility."³ Reproducible results require precise collection of the bundle and controlled compression of the captured bundle. The Garg system has neither.

In response to Dr. Garg's criticism of HairCheck's "plastic" design, I would add that HairCheck's plastic exterior houses a highly precise metal mechanical interior. The stylized exterior design was chosen by the patent licensee to appeal to beauty salons. The internal mechanism is mechanically and electronically sophisticated.

Unlike the Garg device, which contains no bundle compression-responsive spring, the HairCheck contains a unique, partially collapsed spring, housed in a confining chamber. Pre-tensioning ensures that only the middle one-third of the spring (the most precise portion of any compression spring) is

engaged when the force is applied to the compressible bundle. The force applied to the bundle is identical each time the arms are closed, regardless of bundle diameter. The exact force (sweet spot) was determined by microscopic examination of bundles following compression. The standardized delivered force gives maximal bundle compression with no damage to captured hair.

The "plastic" black cartridge hook is aerospace acrylic, laced with glass particles—the equivalent of metal. This prevents structural deformation when compression is applied. The chamber size, piston, spring assembly, and mechanical arms are carefully proportioned so that the mini-computer display (in the absence of thinning and shedding) ranges between 75 and 100; 75 for phenotypically fine hair (60 microns) and 100 for phenotypically coarse hair (80 microns). The display expresses square mm of hair per square cm of skin \times 100.

The Garg device reads and displays in fractions of millimeters—directly off of a \$15 electronic caliper. NOTE: Electronic calipers are not designed to measure compressible materials. The material must be hard and/or solid. The patented, compensating compression feature is what makes HairCheck uniquely suited to measure the soft bundle of hair.

The results are 95% reproducible. Variations in results will occur if the bundle collection is not carefully performed. Variations are not a result of device imprecision.

To suggest the Garg device is equivalent to HairCheck is simply incorrect.

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Technical Tip: Designing the Hairline Using the Prayer Mark

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ABSTRACT

Designing a hairline is a difficult procedure that requires expertise. Although there are no specific rules about hairline placement, different factors play an important role. Forehead marks (prayer marks/bumps), which are caused by repeated contact of the forehead with the floor/prayer mat, are typically seen in Muslims. The hairline should always be marked above these marks, as daily practice will result in lack of hair growth in these areas.

Hairline design is one of the most important and permanent parts of a hair restoration procedure and it requires knowledge and experience.^{1,2} Hairlines vary from patient to patient. There are certain landmarks and guidelines that help the surgeon to mark a proper hairline in an individual, including the rule of “thirds” and “fives”.³ The most important points to consider are the “mid frontal point” in the midline and the “fronto-temporal point” on the sides. Any discrepancy in these three points results in an unnatural hairline.

Forehead marks (prayer marks/bumps) are typically seen in Muslims. These are the result of friction generated by repeated contact of the forehead with the prayer mat or floor during daily prayers.⁴ In extreme cases, callus formation is also seen. These are also seen in other religions as well. A study by Abanmi et al demonstrated that the prayer mark is hyperpigmentation and lichenification.⁵ The common histological findings were orthokeratosis, hypergranulosis, and dermal papillary fibrosis. The study also showed changes in basal cell hyperpigmentation, hyperkeratosis, and acanthosis.

The characteristics of facial features, in particular the nose and forehead, define the place of formation of prayer marks. Most commonly, they are seen near the transition zone between the face and scalp.

Here, we define a useful method to design hairlines especially in the presence of any signs of prayer marks.

TECHNICAL POINT

The marking of the anterior hairline is one of the most important and permanent factors that stays with the patient for the rest of his/her life. Too low or too straight a line or an imbalanced hairline does not reflect well on the personality and can have a negative impact. If the hairline is marked below or at the level of a prayer mark on the forehead, the hair that grows in the area of the prayer mark will be exposed to continuous friction/practice. Moreover, the underlying pathology in some cases does not allow hair growth and can result in hair-root fibrosis. This will result in an irregular hairline, elevated in the center and depressed on the sides.

Therefore, it is advisable to take the prayer mark as the highest mid-frontal point, and the hairline should be designed accordingly. The upper limit of the prayer mark should be taken as the mid-frontal point.

This technique poses many advantages:

1. It will result in long-term cosmesis.
2. The hairline will not be affected by the prayer practice and future hair loss will not be seen (Figure 1).

3. It will result in avoiding the need for future corrections of the hairline.
4. The hairline will remain symmetrical.
5. It helps to correct a previously constructed hairline (Figure 2).

FIGURE 1. Prayer mark as guideline for anterior hairline



FIGURE 2. Use of prayer mark as hairline guide and removal of all hair below it



CONCLUSION

The alteration of the mid-frontal point in hairline design should be adjusted/marked according to the individual. The presence of a prayer mark provides a new guideline for designing anterior hairlines.

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Botulinum Toxin Therapy for Acute and Chronic Pain in Hair Transplant Surgery

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INTRODUCTION

Botulinum toxin (BTX) therapy has been shown to improve rhytids in the upper face along with other diverse indications in the body including migraines, teeth grinding, depression, muscle spasms, etc.¹⁻⁴ Some newer therapies that have been discussed include reducing scar formation and possibly helping with skin texture and tone.⁵⁻⁶ These latter two indications have particular interest for me, and I have used BTX for these purposes in numerous patients with good success. Although BTX as a therapy for migraine and scar pain has been documented in the literature, the particular method that I will outline in this paper has had limited to no reporting on, however, in my opinion, it can have incredible impact for the hair restoration surgeon.

Approximately 12 years ago, I stumbled upon the benefit of BTX treatment for pain therapy. Following a facelift procedure, one of my patients had intractable discomfort in the region of the left great auricular nerve. I tried bupivacaine injection, which had a short-lived benefit for her; I also tried a dilute steroid injection that had an equivocal benefit. However, when I then tried a few units of BTX treatment into the local region of nerve pain, the patient noted an almost immediate benefit and the pain never returned. Over the past 2-3 years, I have been more aggressively pursuing this concept of pain management in different body parts—including the head, neck, shoulders, back, chest, arms, hands, fingers, knees, ankles, feet, and toes—with almost universal success. I was lecturing last year at the World Live Surgery Workshop as part of the ISHRS 27th World Congress in Bangkok, Thailand, and mentioned the details of my strategy. The concept received quite a bit of a stir since apparently no one had heard about this technique as a way to treat and manage pain quickly, inexpensively, and durably.

Over the past 10 years, I have treated a handful of patients who had severe intractable pain along their linear-strip excision donor scar from occipital nerve damage. Fortunately, in close to 20 years of practice, I have never caused this problem, and I believe that I have avoided causing permanent nerve damage by my generous use and careful application of tumescent solution and by meticulous donor harvesting. These men were suffering from chronic pain that could be provoked by gentle pressure on the occipital nerve, a breeze or wind or no inciting event at all, which would cause the nerve to throb relentlessly at times. I am sure if you have been in practice long enough that you have encountered patients complaining of this problem and perhaps have not known how to correct it. Traditionally, this type of nerve damage is attributed to a neuroma with the recommendation for surgical excision and ligation. Of course, this invasive procedure can lead to more scarring, more pain, and perhaps worsening of hair loss around the incision, and it is not a guarantee for correction.

Based on the success I had with my facelift patient, I chose to try BTX with these HT patients who had chronic pain along their donor scar that had been caused by occipital nerve damage. The initial BTX injection resulted in immediate pain relief, and after a few subsequent injections, the pain was almost entirely eliminated without regression for these patients. The technique I used will be explained herein.

Typically, I use a 4ml dilution of botulinum toxin in my cosmetic treatments with both onabotulinum toxin A (Botox, Allergan, Inc., Irvine, California, USA) and incobotulinum toxin A (Xeomin, Merz, Inc., Frankfurt, Germany). Personally, I believe to extinguish nerve pain that almost any brand or type would be successful and the dilution is also not important. In fact, I would encourage you to try other types and dilutions other than what I am proposing. However, I do not have any personal experience beyond what I will be describing in this article. (Of note, I do not have any financial affiliations with any companies mentioned here either.)

MATERIAL AND METHODS

With a 4ml dilution, I draw up 0.1-0.15ml (which equals 2.5-3.75 units) of BTX into a 1ml syringe outfitted with a 30- or 32-gauge, ½-inch needle for every point of pain a patient describes. First, I have the patient take his/her index finger to touch each area of pain that he/she is experiencing. If the pain can be isolated to a single finger point or multiple finger points, I believe there is a chance of greater success than when the pain is vague and broadly felt. Once the patient has identified the areas of discomfort, I then take the index finger of my non-dominant hand to press and confirm the area of pain (i.e., that I can reproduce the patient's pain when I myself press on it). I then insert the needle perpendicularly all the way down to the ½-inch needle hub and inject the above stated amount of BTX. This procedure is repeated for every point of pain the patient is experiencing.

RESULTS

I have found that the patient experiences almost instantaneous pain relief with the BTX treatment. Occasionally, it can take up to 15-30 minutes for full resolution, but in most cases, the pain relief is very obvious and present within seconds. However, I cannot explain why there is such profound pain relief so quickly because even animal studies have shown that it takes at least 12 minutes for any kind of nerve uptake if not a few hours.⁸⁻⁹ I then schedule a 3-month follow-up for the patient and in many cases will need to repeat the injection at this time in the same quantities as the first session. If the nerve damage is severe, the patient may need to return again in 3 months. In some cases, the pain relief may be for 4-6 months in duration. Thereafter, I have found that the pain is entirely gone for years if not indefinitely.

I have also used this treatment to help my own patients who occasionally have significant pain in their incision after a linear-strip excision surgery, usually confined to a single point. The results are very similar to those described above, however, since the nerve is not damaged but merely inflamed, at times I have needed to re-inject the area that same week but never again past the acute post-operative setting. For patients who have mild generalized pain throughout the incision in the immediate post-operative period, I will use a very dilute BTX treatment into the entire incision. I draw up 0.3ml of the 4ml dilution mentioned above, then draw up an additional 0.7ml of saline to fill the syringe to 1ml. I will use 1ml for every 10cm or so of incision and inject the hyper-diluted BTX solution along the incision line. This typically manages the patient's pain, but I will not hesitate to add additional BTX as needed.

Recently, I have started to use BTX in donor incisions to help with the possibility of reducing scar tissue, especially in younger and/or ethnic (non-Caucasian) patients who are more prone to scar formation. It will be awhile before I report on these findings. For facial plastic surgery cases, there is no doubt that BTX helps radically reduce scar tissue, and I have used it to treat hypertrophic scars and even to prevent bad scar formation when I am making an incision along an area that I am worried will not heal as well (e.g., in the middle of the face or other exposed areas). I use the same hyperdilute formula for scars and inject in the same method described above.

Because BTX therapy can cause muscle dysfunction or movement issues, I explain this risk to my patients before I inject an area, especially if the injection is in a midfacial area where it has a higher chance of causing a severe social impairment. I have found when injecting discrete scars that the dysfunction in movement is negligible or at least not that common. The depth of injection for scars is relatively superficial. I inject it into the dermis along the incision line as well as immediately subcutaneously, preferably a week after the surgery, as recently advocated by a study that performed a double-blind, prospective, randomized trial in split facial scars. However, I have had success with scar treatments even months later. I believe the highest chance of success is within the first 6 months, and you can even inject the scar at the conclusion of surgery. In general, I prefer to wait 1-2 weeks so that the BTX is not overly diluted by the anesthetic and the tissue planes have healed sufficiently to keep the BTX at the desired point of injection. I do not have enough clinical experience to espouse a better timing though, whether at the time of the surgery or 1-2 weeks after would be better. This is based on the above-stated conjecture on my part. Obviously, for follicular unit excision (FUE), pain and visible scarring are less of an issue, so BTX therapy may be for the most part relegated to linear-strip harvesting cases. However, if the patient experiences discrete pain postoperatively, I have found nothing works as miraculously as a few units of BTX injected in a targeted fashion.

DISCUSSION

I hope that this practical method that I have developed to manage pain (and possibly scars) will be helpful for you and your patients who may be candidates for this treatment. I believe that this method is an easy, potent, and reproducible technique for the hair transplant surgeon that can have a profound impact on your patients. I encourage experimentation and further investigation, and I hope that if you find other novel methods of implementation that you contact me at my email above so that I can learn from your expertise as well.

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Literature Review

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

Oral Minoxidil for Men

Jimenez-Cauhe, J., et al. Effectiveness and safety of low-dose oral minoxidil in male androgenetic alopecia. Letter to the Editor; *J Am Acad Dermatol.* 2019(Aug); 648-649.

Researchers at the Dept of Dermatology in Madrid, Spain, retrospectively reviewed male patients who had been diagnosed clinically and by trichoscopy with male pattern hair loss and were being treated with oral minoxidil as monotherapy or who were stable on other treatments for 12 months and it was used as an additional therapy. A total of 41 men with an average age of 33.3 years were given 2.5mg (10 patients) or 5mg (31 patients), and their results were assessed after a 6-month period by three independent dermatologists with expertise in hair disorders using a 4-point scale (worse, stable, mild improvement, marked improvement).

Clinical improvement was seen in 37 patients (90.2%) with 11 of these (26.8%) showing a marked improvement. Four patients (9.8%) showed stabilization. None had worsening of their hair loss. All 16 who were on minoxidil as monotherapy showed improvement with minoxidil, and 6 showed marked improvement.

Adverse effects included hypertrichosis in 10 patients (24.3%), lower limb edema in 2 (4.8%), and shedding in 1 (2.4%). Most of the side effects appeared in patients taking 5mg daily and just 1 patient discontinued treatment for the pedal edema.

Comment: The use of oral minoxidil may become first line therapy in men who are concerned about, or have already experienced, sexual side effects from finasteride and cannot tolerate or be compliant with topical minoxidil. Although it remains off-label, the careful use of oral minoxidil around 2.5mg daily in men appears to have good safety profile without so much risk of adverse effects. ■

Minoxidil and Aspirin Don't Mix

Goren, A., et al. Low-dose daily aspirin reduces topical minoxidil efficacy in androgenetic alopecia patients. *Dermatologic Therapy.* 2018; 31:e12741. <https://doi.org/10.1111/dth.12741>

In this short paper, the authors review how the efficacy of topical minoxidil is relatively low (39%) in the general population, based on the need for minoxidil to be converted to its active form, minoxidil sulfate, by sulfotransferase enzymes present in the outer root sheath of hair follicles. These enzymes are expressed in the human liver and can be inhibited by the intake of salicylic acid and aspirin (a derivative of salicylic acid).

Twenty-two male patients in India were recruited for this study and given oral aspirin 75mg to be taken daily. Their hairs were plucked at the beginning and at the end of the study, and they were assessed for follicular sulfotransferase enzymatic activity. Of the 22 subjects, 12 (55%) had a significant ($P < .0001$) reduction in sulfotransferase enzymatic activity following 14 days of aspirin intake.

Comment: Although this was a small study, it suggests that topical minoxidil may be less effective in patients taking daily aspirin. The authors suggest that clinicians take into account a patient's aspirin regimen before recommending minoxidil use for hair loss. ■

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The Relationship Between Body Height and Follicular Unit Graft Length: An Exploratory Study

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INTRODUCTION

The parts of the human body—such as the legs, arms, fingers, and so on—are proportional to body height; for instance, the arms of a taller person would be larger than those of a much shorter individual. The aim of our exploratory study was to investigate whether there is a correlation between body height and follicular unit graft length. A potential correlation between the two would serve as useful knowledge in hair transplant research as such knowledge, for example, can enhance planning of both conventional and robotic hair transplant surgeries and improve donor and recipient site planning. Thus, a valid prediction of a person's follicular unit graft length prior to surgery can aid in obtaining optimal results from a hair transplant procedure. Moreover, being able to validly predict a person's follicular unit graft length affords greater efficiency in terms of workload: the time expended on detecting graft length prior to a surgery will be saved if a means to validly predict graft length is available.

BACKGROUND

Relevant factors pertinent to the hair transplant procedure are yet to be unraveled. The relevance of graft length is exemplary of such factors and identifying whether there is a correlation between graft length and body height has useful implications.

METHODS

Our study included 104 individuals of any sex and age undergoing hair transplant; however, those with curly hair were excluded. Using a caliper, we quantified subjects' follicular unit graft lengths—or, simply, graft length (GL)—starting from the epithelium down to the hair bulb. Body height (BH) was measured in centimeters. For each subject, we computed the mean from nine grafts that were harvested equally from right and left parietal and mid-occipital anatomic donor regions, because the hair follicle growth stage is not obvious. The mean value was denoted as the mean graft length (MGL). The graph in Figure 1 depicts the raw data, MGL, and height.

We created a variable MGL group (MGLG), which grouped MGL into seven categories that corresponded to lengths that ranged between 1) 0 and < 0.439, 2) 0.439 and < 0.478, 3) 0.478 and < 0.517, 4) 0.517 and < 0.556, 5) 0.556 and < 0.595, 6) 0.595 and < 0.634, and 7) 0.634 and < 0.673, respectively. Needless to say, the MGLG represents the range within which an individual's MGL falls under; we deemed the MGLG to be a more meaningful metric than MGL because a unit increase in MGLG underlies a more meaningful increase than a unit increase in MGL. We performed tests of correlation and an ordinal logistic regression.

RESULTS

Results from our tests for correlation suggest that there is a trend (i.e., nonsignificant relationship) that supports a positive correlation between an individual's height and MGLG. Likewise, our results showed that a unit increase in an individual's height was associated with an increase in MGLG from the first category to any of the higher categories of MGLG (odds ratio = 1.02), albeit this increase was merely a trend. (See tables.)

TABLE 1. Results from Pearson's Correlation and Kendall Tests of Correlation

Correlation test	Value of test-statistic	p-value
Pearson	Rho = 0.12	0.23
Kendall	Tau = 0.09	0.18

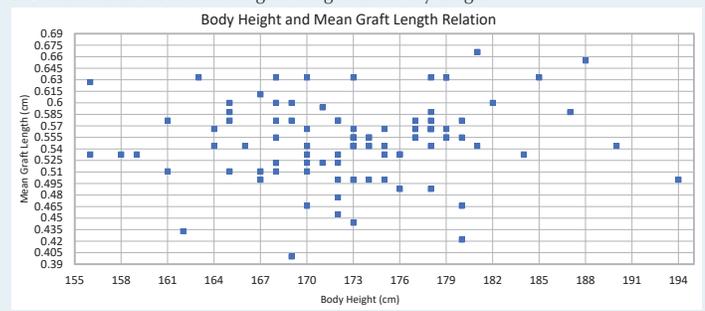
TABLE 2. Coefficient of Height on Mean Graft Length Group

	Coefficient	Standard error	p-value
Height	0.02743517	0.02731961	0.315268
Intercept:			
1 2	1.21612725	4.74523202	0.797732
2 3	2.24912421	4.72404623	0.634002
3 4	3.42080070	4.71809465	0.468428
4 5	5.13558880	4.72972860	0.277563
5 6	6.24595814	4.73804317	0.187418
6 7	7.97283786	4.76962025	0.094606

TABLE 3. Relationship Between Height and Mean Graft Length Group

	Odds Ratio	95% confidence interval
Height	1.03	0.97 – 1.1

FIGURE 1. Raw data of mean graft length and body height



DISCUSSION

Findings from our study support a trend where height is directly proportional to a person's mean graft length group. We speculate that testing our research question in a larger sample size could produce significant findings. Thus, findings from our study support the need to conduct larger studies investigating the relationship between an individual's mean graft length and body height. ■

Summary of an Audit of Clinical Trial Studies Conducted in the United States, Europe, Canada, and Australia for the Treatment of Various Types of Alopecia Over a Six-Year Period

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INTRODUCTION

The treatment of hair loss is challenging due to the complicated immunology and biology of the condition. There are a limited number of therapies for treating androgenetic alopecia (AGA), alopecia areata (AA), and radiation- and chemotherapy-induced alopecia (RIA, CIA), including surgical and non-surgical options. There is currently no approved treatment for any form of scarring alopecia.

METHOD

The aim of this retrospective audit was to review the available information on active and completed clinical trials for the treatment of different forms of alopecia to determine intervention/treatment types (small molecules, biologicals, medical devices), the study design, the location of the studies (United States, Europe, Canada, and Australia), and the status of the clinical trial. The secondary objective of the research project was to identify potential or emerging new treatment options for alopecia by assessing the results of completed trials. The United States (clinicaltrials.gov), WHO-ICTRP, European, Australian, and Canadian clinical registries were assessed to collect relevant information about clinical trials conducted on alopecia, from 1 January 2013 to 1 May 2019.

RESULTS

Most of the studies were conducted in the United States, followed by Europe, Australia, and Canada. As for study design, 90% of the studies were interventional clinical trials, compared to 10% observational studies.

Studies finishing before 2018 mainly involved small molecules for alopecia. In 2018, it was still small molecules that were studied most often. However, in 2019, medical devices outnumbered the small molecules. It is predicted that studies finishing after 2020 will focus mainly on biologicals and medical devices. As for locations by different treatment types, the United States tested most of the biologicals, followed by small molecules and medical devices. Neither Europe nor Australia tested any biologicals.

Most of the clinical trials were conducted on AGA, including small molecules: anti-androgens (topical finasteride, oral dutasteride, topical clascoterone), anagen phase stimulators (minoxidil 5%, bimatoprost 0.03%), and some as yet unnamed small molecules (SM04554 topical solution, Fol500 topical solution); medical devices (platelet rich plasma [PRP] therapy, stromal vascular fraction [SVF], low level laser therapy, ARTAS® robot); and biologicals (JAK-kinase inhibitor [ATI500002 topical solution], Hair Stimulating Complex [HSC] injection). For AA, mainly biologics were tested, including JAK-kinase

inhibitors, interleukin inhibitors, and TNF-alpha inhibitors. Some small molecules (LEO1242492 [new from LEO Pharma], methotrexate, cyclosporin) and medical devices (PRP therapy, SVF therapy) were also tested as potential treatments for AA. For CIA and RIA, only medical devices with scalp cooling effects were tested.

There are some ongoing and recently completed studies without any available results that are worth mentioning to monitor in the future. For example, bimatoprost 0.03% solution, topical finasteride 0.25%, SM04554 topical, and topical corticosterone for the treatment of AGA in males; clinical trials on PRP and SVF for the treatment of AGA and AA in both genders; and several JAK-kinase inhibitor studies for AA. For scarring alopecia, there are no currently available treatments, however, ongoing clinical trials were found with apremilast and topical gabapentin 6%.

DISCUSSION

There has been a recent shift from studying small molecules to medical devices as treatments for alopecia, and biologics will likely become a popular test choice after 2020, especially in the United States. Studies investigating treatments for AA have focused mainly on biologics, and ongoing trials are maintaining this trend. ■



How I Do It

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

As our lead HIDI article for the new year, Dr. Ken Anderson looks at one of the informed consent mainstays of the consultation phase in our practices as hair transplantation surgeons: male pattern hair loss (MPHL). He presents a wonderful analogy to help his patients understand how MPHL should be viewed in the overall context of diagnosis and treatment.

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

A Useful Analogy to Help Patients Understand the Nature of Hair Loss

Ken Anderson, MD, FISHRS | *Alpharetta, Georgia, USA* | dranderson@andersonhsc.com

It's 2020 and we're living in a modern world. An explosion of technology over the past 50 years has significantly changed life as we know it. We have powerful computers/telephones/cameras/video cameras in our pockets every day, and most of us take that technology for granted. So it's really no surprise when patients presenting with androgenetic alopecia are expecting a "silver bullet" that will take care of their hair loss, allowing them to move on in life worry-free from any further hair loss. They desire something—some one thing—that has no side effects or risks, that is going to solve their problem forever.

The general public seems to approach hair transplant like other forms of cosmetic plastic surgery, and this may be the source of some of the confusion. Let's consider a nasal hump and a rhinoplasty, the surgical procedure performed to remove the hump. Once removed, the nasal hump isn't returning. It's not going to slowly grow back, so there's no need for continued maintenance after a rhinoplasty. Patients understand that you don't have to shine a laser on your nose or take any medication to prevent the nasal hump from returning. As we know, setting accurate expectations in consultation when talking with our hair loss patients is critical, and so I've found a method to help my patients understand that it's not going to be the surgery that takes care of everything—that there is still a LOT of work to be done to achieve the desired cosmetic effect for as long as possible.

I've seen this across all ages, but it seems the younger men have the most unrealistic expectations. I have found it difficult over the years to impart on the patient how important maintenance is following a hair restoration surgery. Often the scenario is a bit like this: a patient will undergo a hair restoration procedure, will fail to act on all the counseling provided about how to control hair loss, and will return 18 months later dissatisfied because they look the same; often they look even more hairless than prior to their surgery due to the continued hair loss. The patients can be confused and quite angry, wanting to know why they paid a substantial fee to take care of the problem only for it to continue.

The general concept I use in counseling patients about

hair loss is to liken it to dental decay. In fact, in many respects the two phenomenon are identical, with the main difference being that not everyone has hair loss, but everyone fights dental decay every day. Both phenomenon

- have no known cure,
- are progressive in nature,
- are with you for life,
- and, most importantly, require multiple avenues of non-surgical treatment to control effectively.

For dental decay, we all do quite a bit: we brush, floss, use mouthwash, go to the dentist office multiple times a year for a dental cleaning, and eat correctly—and, some of us even pray about it. It's a lot of work for one issue! I ask patients if they brushed their teeth this morning and, of course, they tell me yes. I then point out that the laser cap device (low level light therapy, or LLLT, device) is their "toothbrush," the topical finasteride/minoxidil is their "dental floss," and the PRP procedures are their "dental cleanings." When my patients ask things like "When do I stop using the laser cap?", my answer is, "On the very same day you elect to stop brushing your teeth." When my patients ask me what happens if they don't see any changes, and no hair grows, I point out that we brush our teeth all year long and everyone is happy when there's zero change. The one guarantee is that if the patients don't act, the hair loss will continue. So if in a year they have not lost any more hair, but not gained any from the non-surgical therapies, well, something is working effectively to reduce the rate of hair loss.

Effective counseling of hair loss patients is critical for patient satisfaction, particularly in the long term, and I believe it is also critical to the success of a hair restoration surgery practice. Of course, every practice will have some patients who are unhappy, and a common thread amongst the unhappy in my practice is that they failed to take any action to prevent hair loss following their hair restoration surgery. I have found that comparing hair loss to dental decay helps patients understand the chronic nature of hair loss and the need for lifelong maintenance. ■



Medical and Professional Ethics

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Spotlight on Puffery

The English language term “puffery” can be defined as “exaggerated or false praise.”¹

In a legal context, the term originated in the 1892 English Court of Appeal case *Carlill v Carbolic Smoke Ball Company* that centred on whether a monetary reimbursement should be paid when an influenza preventive device failed to work. The manufacturers had paid for advertising stating that £100 would be paid in such circumstances then failed to follow this promise. Part of their defence was that such a statement was “mere puff” and not meant to be taken seriously. While the defence ultimately lost the case, the principle was confirmed that certain statements made by advertisers that were obviously not made in a serious manner could be exempt from usual rules relating to promises in open contracts.

Whilst “the law” varies from country to country, in the United States, the case *Newcal Industries v Ikon Office Solution*, 513 F.3d 1038 resolved that puffery is a promotional statement or claim that expresses subjective rather than objective views, which no “reasonable person” would take literally.² In this sense, puffery is not illegal in the United States.

The United States Federal Trade Commission (FTC) has formerly defined puffery as a “term frequently used to denote the exaggerations reasonably to be expected of a seller as to the degree of quality of his product, the truth or falsity of which cannot be precisely determined.”³ The FTC stated in 1984 that puffery does not warrant enforcement action by the Commission. In its FTC Policy Statement on Deception, the Commission stated: “The Commission generally will not pursue cases involving obviously exaggerated or puffing representations, i.e., those that the ordinary consumers do not take seriously.” e.g., “The Finest Fried Chicken in the World.” The FTC goes on to say in one of its fact sheets “puffery usually isn’t considered misleading, because it’s a pretty obvious exaggeration.”⁴

However, if the puffery works to misrepresent the product, or to tell customers an outright lie, the seller may be held liable by the customer for false advertising or fraudulent representation.⁵ False advertising can be defined as “the crime or tort of publishing, broadcasting, or otherwise publicly distributing an advertisement that contains an untrue, misleading, or deceptive representation or statement which was made knowingly or recklessly and with the intent to promote the sale of property, goods, or services to the public.”⁶ “Puff pieces” are journalistic articles or productions that use exaggerated praise to promote something or someone. These may often downplay opposing viewpoints or evidence to the contrary.

So why is any of this relevant to hair restoration surgery? Surely surgery is different from chicken and patients should choose their medical care more carefully than a meal of fried chicken? The advertising of medical procedures and



Reflective Questions

- Do I know what the legal status of puffery is in my country and what the guidance is from my medical licence governing body in relation to medical practice?

those who perform them, in countries where it is legal to advertise these, should be done in a responsible and truthful manner. We all have seen examples of advertising where hair restoration surgeons refer to themselves as “the best hair transplant surgeon in...” and hair transplant clinics being advertising as “the number one hair transplant clinic in...” or “the premier hair restoration clinic in...” or “the leading hair loss clinic in...” Can these statements be justified? Is this sort of puffery appropriate or ethical when it involves the medical profession?

In the UK, the Advertising Standards Authority’s Committees on Advertising Practice guidance on cosmetic procedures states that “marketers should be able to prove claims such as ‘leading surgeons,’ ‘best surgeons,’ ‘foremost surgeons,’ and ‘surgeons of the highest calibre’. They would need to show that the surgeons’ achievements and experience put them near the top of the profession in their surgical speciality nationally or internationally, depending on the context.” It also states: “Claims such as ‘the leading clinic’ or ‘a leading clinic’ are likely to be seen to refer to the clinic and not purely to the surgeons themselves. Marketers should be able to demonstrate that the clinic has qualities (for example, track record, facilities, nursing and other staff) that put it above most or all other clinics.”⁷

In a competitive marketplace, practitioners are often under pressure to use innovative advertising methods to set themselves apart from their competitors. This should not lead doctors to use claims that are misleading to patients. Paragraph VI of the ISHRS Code of Ethics says: “Members will maintain truth and integrity in their advertising, always avoiding deceptive communications.”⁸

If a hair transplant surgeon or clinic feels they can genuinely justify being at the top of the hair restoration surgery field, then it may be considered reasonable to use the relative phrase “one of the best” rather than the definitive “the best.” ISHRS members are reminded that in the video that prospective members should watch before completing their membership application, it clearly states that ISHRS members should not claim to be the best. Perhaps claiming to be “the best,” “the number 1,” “the premium,” or similar meaning phrases should be added to the ISHRS list of misleading messages⁹? Although it might not be illegal, in the field of hair restoration surgery, such a claim might be considered unethical.

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ISHRS Legal Update: Hair Restoration Surgery Should Only Be Performed By Qualified Physicians

February 21, 2020

On January 31, 2020, the New York State Board for Professional Medical Conduct (the "Board") issued a Consent Agreement charging Dr. Dennis Daly with committing professional misconduct under N.Y. Educ. Law § 6530(25) for allegedly allowing unqualified and unlicensed individuals to perform a hair transplant procedure at the SNY Surgery Center in 2017. Dr. Daly did not contest the allegations and agreed to the penalties imposed by the Board.

Effective February 7, 2020, the Board suspended Dr. Daly's medical license for a period of three years (which suspension was stayed) and placed him on probation for 36 months. Under the Consent Order, Dr. Daly also agreed to dissolve the SNY Surgery Center and is precluded from performing cosmetic surgeries, cosmetic treatments, and cosmetic injections, including hair transplants,

at any time he is licensed to practice medicine in the state of New York. In addition, he may practice medicine only with a medical monitor, board certified in the appropriate specialty.

This decision is consistent with the ISHRS policy that hair restoration surgery should only be performed by qualified physicians who possess education, training, and current competency in the field of hair restoration surgery or other licensed health care professionals who are properly trained, performing the procedure within their scope of practice, and supervised by a qualified and experienced physician.

Information for this article was obtained from the Board's Consent Agreement. The ISHRS has not contacted the Board, Dr. Daly, or his attorney for further comment.

What you can do to... ***Fight*** ***The*** ***FIGHT***

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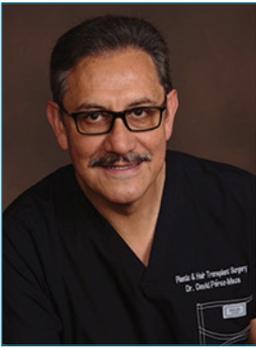
We will include them in our distributions. The more press, the more exposure for our important message globally.

2. Donate to the "Fight The FIGHT" Consumer Awareness Campaign

Make a donation today. Thank you to the many generous donations already received in 2020! Together we will Fight the FIGHT!

In Focus: Global Council Societies

David Perez-Meza, MD, FISHRS | *Benalmádena, Malaga, Spain* | drdavid@perez-meza.com



First, thank you to ISHRS President Dr. Francisco Jimenez and Co-Editors Drs. Aditya Gupta and Jeff Epstein for suggesting the inclusion of this column in the *Forum*.

One of the ISHRS's main goals in 2020 is to strengthen our relationship with the societies that make up the Global Council of Hair Restoration Surgery Societies. Dr. Jimenez appointed the International Advisory Committee, which is composed of three

Ambassadors that directly liaise on behalf of the ISHRS with the Global Council societies. I am the Lead Ambassador, and Drs. Ricardo Mejia and Russell Knudsen are your other Ambassadors.

The purpose of the Global Council is to create unity in the field amongst the leaders of the national hair restoration surgery societies. The Global Council provides a forum to exchange ideas and to discuss issues regarding hair restoration surgery that the various countries face.

The Global Council is a sounding board to ask advice, and serves as support for the member societies. At times, the ISHRS calls upon the Global Council to assess specific

needs of a particular country's members, to assess trends, or to determine ways to attract new members from the various countries. The member societies may wish to work together on future educational programs or help each other in promoting their meetings (e.g., swapping

mailing labels, listing each other's meetings in society newsletters and on websites, or exchanging website links). Member societies can also coordinate meeting schedules to avoid conflict with one another. The Global Council, which is overseen by the ISHRS, is

treated as an ISHRS committee and meets annually at the ISHRS World Congress.

Every day, we read and see "breaking news"—important information and issues related to the hair loss, hair research, and the hair restoration industry worldwide. The ISHRS's relationship with the Global Council societies provides a key pathway to communicating on and resolving these and other issues pertinent to our industry.

We created this new section to keep you informed of the important news related to the ISHRS Global Council societies. Please feel free to contact me or your regional Ambassador with any questions or comments. ■

Regional Society Ambassador Designations

RUSSELL KNUDSEN	RICARDO MEJIA	DAVID PEREZ-MEZA
Arab	American	Asian
Australian	Argentinian	Brazilian
French	Chinese	British
German	Greece	Iberic Latin American
Indian	Korean	Italian
Japanese	Paraguayan	Pakistani
Thai		Polish
		Swiss

Video Marketing Webinar: Exclusive to ISHRS Members (recorded Feb. 2020)

Watch the replay of this value-packed video marketing webinar hosted by Dr. Konstantinos Anastassakis, ISHRS member and president of the Hellenic Academy of Hair Restoration Surgery, and his marketing manager, Maria Chatzina.

His Greek YouTube channel has 179 videos with over 3 million views, and he attributes much of his success to this platform. Imagine what you can do in your own language!

What you will learn:

- ⇒ How to become a familiar and trustworthy face
- ⇒ Video content types
- ⇒ Video shooting tech and creative tips
- ⇒ Must do's and don'ts
- ⇒ Video analytics
- ⇒ Topic and keyword spreadsheet

Replay the presentation in the in the Members Only section of the ISHRS website under "Resources" titled "Video Marketing Webinar Exclusive to ISHRS Members, Feb. 2020."





Hair's the Question

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

Much like the ISHRS, the ABHRS is a non-profit that was started in the United States for the purpose of advancing the field of hair restoration and has since become an international organization with members all over the world. Even 20+ years later, it remains dedicated to the highest standards in our industry. To inaugurate my term as president of the ABHRS, I quizzed my own Board of Directors of the ABHRS to see how much they knew about their own organization and the exam itself. Here is the test they took: Do you have what it takes to be a Board member of the ABHRS?

ABHRS Director's Quiz

- When was the ABHRS founded?
 - 1996
 - 1998
 - 1999
 - 2001
- What is the definition of the word psychometrics?
 - The theory and study of specific methods of head hair measurement
 - A method of ensuring test writers will write a test that can withstand legal challenge
 - Crazy people who measure things
 - A field of study concerned with the theory and technique of psychological measurement
- Which of the following is NOT a route that candidates may follow to achieve ABHRS certification?
 - Experience Route
 - Fellowship Route
 - Lifetime Achievement Route
 - Certificate of Added Qualification for Physicians New to the Specialty
- What was "wrong" about the way the previous question was written?
 - It was a "negative question."
 - It had too many answer choices.
 - The correct answer was the shortest answer.
 - It had a clinical "stem."
- What is the part of a question that gives the scenario called?
 - Distractor
 - Lead-in
 - Key
 - Stem
- How many answer choices should each new question on the ABHRS written exam have to optimize the psychometrics?
 - 3
 - 4
 - 5
 - As many as possible to be able to reuse the question on future exams
- Which of the following is the mission and goal of the ABHRS?
 - To act for the benefit of the public to establish specialty standards
 - To examine surgeons' skill, knowledge, and aesthetic judgment in the field of hair restoration
 - To grant certification to candidates who meet the highest standards of the medical profession in the field of hair restoration surgery
 - To NOT act as a business, vocational or post-secondary school
- How many before and after photos must a potential examinee submit in order to qualify to take the ABHRS exam (both written and oral)?
 - The number depends on whether the candidate is pursuing the Experience, Fellowship, or Life Achievement Route.
 - 10 photos (5 before and 5 after) for each of 5 cases (out of 50 case reports) for a total of 50 photos
 - 12 photos (6 before and 6 after) for each of 5 cases (out of 50 case reports) for a total of 60 photos
 - 16 photos (8 before and 8 after) for each of 5 cases (out of 50 case reports) for a total of 80 photos
- Which committee in the ABHRS is responsible for reviewing physician candidate applications before they are accepted to take the exams?
 - Ethics Committee
 - Written Examination Committee
 - Credentials Committee
 - Oral Examination Committee
- How long is the certification by the American Board of Hair Restoration Surgery "good" for?
 - 5 years
 - 10 years
 - 15 years
 - Life as long as dues are current and there are no ethics violations

➤ ANSWERS ON PAGE 60

Answers

1. **A.** On June 10, 1996, the organizational meeting for a hair replacement surgery certification examination was held at the Hotel Intercontinental in New York City. At the culmination of this meeting, the American Board of Hair Restoration Surgery (ABHRS) was created. Each of the societies represented at this meeting agreed that their organization would accept and recognize this board as the only board certification focusing strictly on hair restoration surgery. The first EXAM was held in 1997. <https://abhirs.org/about-abhirs/abhirs-history/>
2. **D.** Psychometrics is a scientific discipline concerned with the construction of assessment tools, measurement instruments, and formalized models that may serve to connect observable phenomena (e.g., responses to items in an IQ test) to theoretical attributes (e.g., intelligence). In the case of testing like Board exams, it is the science of making a robust test that actually assesses whether the candidate knows the information needed to practice that specialty. I knew NONE of this before joining the ABHRS—there is a lot more that goes into these tests than I ever thought.
3. **D.** If you didn't answer D, see question number 4 to know why I will not count this one against you! <https://abhirs.org/certification-process/>
4. **A.** Questions should avoid "All of the following EXCEPT" or "Which of the following is NOT" because these types of questions usually don't test the material, they test the ability of the test taker to catch the word "EXCEPT" or "NOT"! Thus, they usually indicate an examinee does not know the answer, when in fact they probably do.
5. **D.** A "stem" is the question or scenario. Distractors are the incorrect options, and a key is the correct answer. Lead-ins are an introduction or preamble that allows one to move smoothly on to the next part of something, like this... Incidentally, if you want to "geek out" like the rest of us test-writing nerds, this link is a good place to start: <https://synap.ac/learning/10-tips-for-writing-great-multiple-choice-questions-mcqs/#anatomy-of-a-multiple-choice-question>.
6. **B.** WE like to have lots of answers to be able to reuse a stem, but optimal statistics indicate we should write about 4 total answer options (3 distractors plus 1 key).
7. Mea culpa. This is a terrible question because I used it to make a point: ALL of these answers are taken directly from the Mission and Goals of the ABHRS statement!
8. **B.** <https://abhirs.org/certification-process/>. Take those photos! And for tips on taking great photos check out Dr. Bob Haber's short video at https://ishrs.org/wp-content/uploads/2018/02/24_Alaska_Medical_Photography.mp4.
9. **C.** The Credentials Committee does this important work.
10. **B.** The founders of the society wanted their diplomates to participate in the ongoing progress of the specialty, and thus required continuing medical education as a part of the process. Diplomates may "recertify" 10 years after their initial certification and are required to provide proof of an internal chart review, provide patient satisfaction results, and participate in an ISHRS CME program. SO if you are a diplomate, display that banner proudly! The bar for ABHRS certification standards is high! ■



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American Board Of
Hair Restoration Surgery

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ABHRS President's Corner

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

JOB POSTING

NEEDED! Worldwide certification test for Expert hair surgeons. 20 years' experience required. Must be psychometrically valid and focused exclusively on aesthetically sensitive and medically sound hair surgery. Unethical or inexperienced organizations need not apply...

Hair surgery is one of those tiny niche specialties in medicine that affords a high level of patient demand—especially due to the emotional nature of hair loss. But scarcity of training opportunities has left us with a problem: patient demand entices unskilled practitioners into unethical behavior. Unethical treatments cause patient distrust of our whole specialty, and in turn, patient distrust decreases demand.

This is why our entire specialty needs a medical board level, international standard of certification. This standard will need to be

- psychometrically valid,
- reflect the most ethical and scientifically proven therapies for hair surgery and medicine, and
- capable of being internationally administered.

The American Board of Hair Restoration Surgery holds this unique high ground and is the only organization with the historical track record to prove its value for diplomates and other medical certifying organizations. And while we may have started as a non-profit organization in the United States, it is our goal to make this test the international standard for hair restoration certification. Our ongoing capital campaign launched our ability to partner with the NBOME (National Board of Medical Examiners) ensuring the validity and portability of our test. We have started working with international medical boards and certifying agencies to incorporate this test into licensure requirements for countries across the globe.

In addition, we recently partnered with IMCAS (International Master Course on Aging Science) to raise awareness of the existence of our specialty and exam. And, we are exploring ways to “bring the test to the surgeons,” with the goal of offering our exam to future diplomates in places such as Europe, Asia, India, and other locations around the world particularly in conjunction with live surgery workshops (like Athens!) and continuing medical education meetings.

What can YOU do to ensure the health of your specialty and the safety of your patients?

- Take the test—join our ranks, and hold your colleagues to the high standards of ethically performed hair surgery.
- Submit an interesting case! ABHRS diplomates may submit cases for publication on our ABHRS.org website and in the *ISHRS Forum* (pending editorial review). This is the most visited section of our website and a great way to spotlight your own work.
- Contact your local medical board, help us incorporate the ABHRS Board standards into your jurisdiction, and invite other good surgeons to take the test with you!

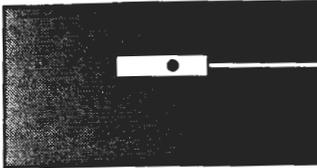
Finally, call the new president of the ABHRS—Dr. Sara Wasserbauer (that's me!)—with your ideas and feedback about spreading the word, increasing training opportunities, and taking our specialty back from the hands of those who seek to profit from unethical behavior. Together we can make all the difference in the WORLD. ■

The Notable Articles Project

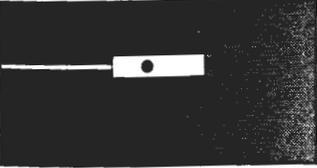
The *Forum* in Review, 1990–2020: Revisiting the Articles That Helped Shape the Specialty

Editors' note: Over the next 3 years, we will be presenting a review of some of the more notable articles published in the *Forum* in its 30-year history. Assisted by the Editors Emeriti, this project will provide an unparalleled perspective on the history of our specialty, and an appreciation for the developments that have brought us to the current state of our field. If you would like to contribute to this project, we invite you to write a review of a past article that includes your perspective on the impact it had on your practice.

To kick off this section, the inaugural issue of the *Forum* is reprinted here. This issue launched the concept of rapid communication and idea sharing in our field. The *Forum* has indeed lived up to this original concept, serving as a place of lively discussion and debate and sharing of new techniques and developments. Enjoy this trip down memory lane. —Aditya & Jeff



HAIR TRANSPLANT FORUM



VOLUME 1, NUMBER 1
SEPTEMBER 1990

New Publication Aims at Idea Sharing Among Surgeons

In this age of instant communication and exploding information, it is incongruous that it should take so long to exchange information. The purpose of this informal publication will be the rapid dissemination of ideas, questions, concepts, views and opinions. Its course and content will largely be determined by the comments, questions and reactions of its readers.

Timely Information a Must

Currently it takes up to two years to get an idea into print. Most physicians attend meetings to listen, discuss and learn from one another; but these meetings are infrequent. A doctor who hears of an interesting approach at a conference may be motivated to go back to his or her practice and apply it . . . but may be afraid to try it without more discussion and feedback from other experienced practitioners. This factor is exacerbated by the usual lead-time of 18 months to two years before work on a patient is complete and results can be evaluated.

Divergent Ideas, Responses Sought

Hair Transplant Forum will fill the

void by eliciting ideas, questions and responses from those who are doing hair transplants and getting them into print immediately.

With sufficient reader participation, the newsletter can offer much the same benefits as professional meetings, informal discussions and one-on-one conversation, with the added advantage and convenience of a written record of the dialogue which can be retained for future reference.

A lively debate can be expected, since doctors in the field come from so many different backgrounds and carry out their business in such varied ways.

Good results go unnoticed, but bad results are obvious. One bad result can damage the entire hair transplant community. More rapid communication will reduce bad results and benefit the entire industry—not to mention helping all our patients.

“Good results go unnoticed, but bad results are obvious.”

Questions and Discussion from Readers

Practitioners' Forum

Readers are urged to send responses to these questions and to submit their own questions—with or without discussion—for publication in this section. Please indicate whether we may use your name when we publish your input.

Q Do minigrafts grow as well in punch holes as they do in stab wounds?

DISCUSSION: Since the last meeting I attended, I have been switching to a 1.5 mm. punch hole for the recipient sites for minigraft "quads" (i.e. 4.0 mm. grafts cut into quarters). I like them better because I get a more precise angle and direction, and they fit better. However, I worry about hair growth. I get virtually 100-percent growth in stab wounds.

Editor

DISCUSSION: The overall cosmetic difference between quartergrafts (4.5 mm. quadrasections) placed in slits versus 1.5 mm. punch-defects is debatable; but the yield produced is less controversial. After careful observation of hundreds of cases, I am convinced that a higher yield is obtained with quartergrafts placed into slits. In other words, "donating" does not occur with grafts placed into slits.

*Dowling B. Stough, IV, M.D.
Hot Springs, Arkansas*

Q Are there any new ideas on the vertex?

DISCUSSION: There was not much discussion at the last meeting about the vertex. Personally, I do not like scalp reductions, because of scar and stretch-back. I wonder about new ways to cover the vertex. To provide a thinning look, I currently use a lot of minigrafts,

combined with large grafts, with the ratio depending on hair type. Because it is not unnatural to have a bald spot in back, I sometimes just ignore the vertex.

Editor

DISCUSSION: Scalp reduction without tissue expansion is vastly over-rated as a means to cover the mid-scalp and crown. Quite often, the scalp is not lax enough to allow for significant reduction, even with extensive undermining and four or five procedures. Also, the scarring from scalp reduction can be unfavorable, especially since the hair adjacent to the scar is the poorest quality hair on the balding scalp. Nevertheless, certain very lax scalps do well with scalp reduction, provided that techniques are avoided that would result in "slot" formation.

Even if tissue expansion is the treatment of choice, it is no panacea. Few patients will tolerate the six to eight weeks of progressive deformity; and a great many will have significant pain throughout the expansion procedure. I have noted that patients who have had previous scalp surgery for hair replacement (i.e., multiple grafts and/or flap procedures) have less sensitivity to the donor area of the scalp and undergo tissue expansion with greater comfort.

*Sheldon S. Kabaker, M.D.
Oakland, California*

Readers: Does a minigraft have orientation?

Pearls & Commentary

Here in Australia, I am experiencing something of a "style revolution." Nearly every new patient requests minigrafts. Even my old regular customers have been influenced by the trend. Doing lots of minigrafts certainly alters the way one approaches the business of hair transplantation. I am still in a learning phase when it comes to quoting the number of operations required. I will have to increase my minigrafts from 100 to 250 per session in order to get comparable final density. This will take more time than the old 60 to 70 plugs.

*Dr. Richard Shiell, M.B., B.S.
Melbourne, Australia*

The word "minigraft" must now be qualified, with so many sizes and ways of cutting them. I cut 4.5-mm. minigrafts into quarters and call them "quads." I cut 4.0-mm. grafts into halves and call them "hi's." Others cut 4.0-mm. grafts into thirds and 4.75-mm. grafts into quarters. Our terminology must be more precise. We should also begin stating the size and manner of the recipient site cut.

Editor

Whether scalp reductions are beneficial for those individuals with thin hair but no perceptible bald scalp is a tough judgment call. The patient must be prepared for a fairly extensive telagen following a scalp reduction, if there is thin hair adjacent to the incision line. I often opt not to perform reductions on these patients.

*Dowling B. Stough, IV, M.D.
Hot Springs, Arkansas*

For 1.5 mm. punch holes, it works better to use the power punch as a hand punch. This avoids the problem of hair getting caught up in the punch. Also, the small plug stays in the skin instead of sticking in the punch.

Editor

Will you support Hair Transplant Forum with your subscription?

Initially, the cost of this publication will be absorbed by Norwood Hair Transplant Center. To sustain it, however, reimbursement will be needed to cover printing and mailing. With no income from advertisers, *Hair Transplant Forum* must look to its readers.

- Amortizing the start-up costs over 12 issues, with each issue being mailed to some 1,000 hair transplant surgeons all over the world, the cost will be approximately \$3.00 per issue to each subscriber.
- Are you interested enough to join our effort at improving the speed and effectiveness of communications within our specialized community?

Yes, I want to be a charter subscriber. Please send me the first 12 issues of Hair Transplant Forum at \$36.00 each. Enclosed is my check or money order for \$36.00.

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HAIR TRANSPLANT FORUM
A publication of Norwood Hair Transplant Center
O' Tar T. Norwood, Editor

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HAIR TRANSPLANT FORUM

Welcome to Hair Transplant Forum!

This publication launches a new concept in communication within the hair transplant community.

The goals of the Forum will be the timely exchange of ideas and the rapid appreciation of new developments and changing trends.

In addition, it will be interesting to learn more about this divergent group of doctors who perform hair transplant surgery



around the world. These differences hold the promise of an immensely interesting dialogue about our business.

Let me know what you think of the idea, using the attached mail-in form. I eagerly await your responses, your suggestions and your expert contributions.

Sincerely,

O'Tar
O'Tar T. Norwood, M.D.

A Surgical Assistant's Initial Impression of the WAW Implanters

Aileen Ullrich | Tigard, Oregon, USA | aileen@gabelcenter.com

Thinking back to the 2019 ISHRS 27th World Congress in Bangkok, Thailand, I'm reminded of why I value these meetings so much. Of course, the camaraderie is unsurpassed, but even more noteworthy is the way these meetings can drive us toward quality improvement. They most often leave me considering new tools to increase surgical efficiency, methods to enhance graft survival, and strategies for staff training. Without fail, our visit to Bangkok this year left me pondering the question: How can we further incorporate the use of implanters into our practice?

This is a question our clinic has struggled with over the past few years. During the Surgical Assistants' Program on Wednesday, Tina Lardner, surgical assistant to Dr. James Harris, described her clinic's experience transitioning to the WAW implanters. These implanters are slender, require very little assembly, are easy to clean, and can be loaded with approximately seven grafts at a time. The videos that Tina shared illustrated impressive graft placement speeds with a relatively short training period.

In the first video, an assistant with only two months of experience with the device was able to place at a rate of 540 grafts per hour. The second video was of an assistant with one year of experience placing at a rate of 1,260 grafts per hour. Now, these speeds were calculated based on a short clip of video. In actual practice, we all know that speed can be affected by various factors, and I'm sure the speeds illustrated may not always be obtainable. However, the notion that with relatively little training technicians and physicians can be taught to place grafts quickly and atraumatically is an alluring concept indeed.

After expressing my intrigue with this concept, our practice decided to purchase the WAW implanters. During one of our first FUE cases upon returning home from Thailand, we decided to give them a try. As I sat loading the device, I was somewhat startled by the risk of damage to the grafts during this initial step. This should not have surprised me as I know that grafts are vulnerable to desiccation and mishandling at every phase of a hair transplant procedure. I suppose I was disillusioned by the belief that someone, like myself, with years of experience handling grafts with forceps, would have been in-

herently more adept at loading them into such a simple device, and that the real challenge would be adjusting to the implantation aspect. Instead, both phases presented challenges.

For example, it quickly became clear that adjustments in how we prepare our grafts would be necessary. In our clinic, we routinely trim a small amount of epithelium on our grafts to help minimize post-operative crusting. The lack of substantive tissue, by which to grasp the graft, posed a challenge in terms of safe handling. It also proved more difficult to orient the hair curl in the proper direction. In fact, sometimes the grafts would rotate within the channel of the implanter when sliding them up the channel for loading or down the channel for insertion.

Another unexpected difficulty arose around magnification. In our office, placers use loupe magnification of 3.0x and higher. With the implanter fully loaded, some of the grafts were outside the field of vision. To improve ergonomics and reduce eye strain, I found it helpful to limit the number of grafts loaded into the channel of the device. In one subsequent surgical case, we were deterred from using the implanters altogether due to the patient's hair characteristics. That particular patient had such thick hair that the grafts would not fit inside the channel of the implanter. Despite these difficulties, our clinic continues to see value in such tools for graft placement.

During the general session of the World Congress on Friday, Dr. Jean Devroye, inventor of the WAW implanter, spoke to the complexity of graft placement. He described his personal methodology for selecting a variety of tools and techniques for graft placement based on relevant patient and surgical factors. With that in mind, our practice is dedicated to further developing our skills and experience with graft placement tools and methods of all types. I feel strongly that implanters can be a valuable tool for meeting our primary goals of graft survival and obtaining natural results for our patients. Humbly, this experience has affirmed that when it comes to addressing the challenges of graft placement, there is simply no panacea. This intricate step of hair restoration surgery requires a keen eye, a delicate touch, and proper training and experience, regardless of the tools utilized. ■

Invited Commentary

Mauro Speranzini, MD | São Paulo, Brazil | mauro@clnicasperanzini.com.br

With the popularization of the FUE technique in recent years, fragile follicular units have increased the surgeon's demand for less traumatic placement techniques.

Implanters allow for less manipulation of the grafts and, consequently, a higher rate of graft survival. Using implanters, I personally identified that 10%–20% of my patients had a low shedding rate in the first month after surgery—results I never had with forceps.

All of the different implanters available on the market seem to be efficient in providing this protection, but each has its

own advantages and disadvantages. There also seems to be an issue of adaptation. Some doctors simply adapt more to some implanters than others. Another point to consider is the preference of technicians for implanters that require less work for assembly, disassembly, and cleaning and sterilization. In such cases, the replacement cost is secondary.

A physician's preference for a particular implanter may be due to the lack of knowledge of the correct use of other models. While beginners using implanters are looking for the ideal model to start with, teams with extensive experi-

ence with a particular technique may be reluctant to change an established routine or to invest in training and the purchase of new equipment. Small advantages may simply not justify so much change. The following are things to consider when choosing an implanter:

- Cost of the implanter and cost of the replacement needle (if necessary)
- Number of implanters required for surgery, accounting for the fact that for each implanter placing a graft, there are one or two at the same time being loaded with a hair
- Durability of the implanter (how many surgeries can be performed with the same implanter)
- Ease and speed of the learning curve
- Time and cost of cleaning and sterilizing the implanters
- Loading and placement speed
- Number of doctors/technicians involved in the placement process
- Mode of implantation: Does it allow for direct implantation (stick-and-place with sharp needle) or does it require premade sites?
- Size of incisions: Very important—how big are the incisions for placing grafts? Some implanters require much larger incisions, decreasing blood supply and decreasing the capacity for dense packing.
- Placement options: Does it allow for placement in both coronal and sagittal incisions?

Although satisfied with the technique I already use (pre-made sites and dull implanter), driven by curiosity and the search for techniques with advantages that would justify a change, I bought and used the Devroye implanter. When comparing with the technique of my preferred implanter, I identified advantages and disadvantages of the Devroye implanter:

- Advantages: It is easy to clean and sterilize. It does not require assembly or disassembly. It is priced just below the traditional implanter.
- Disadvantages: It requires the use of forceps (additional cost). It worked well with coronal incisions, but I found it difficult with sagittal incisions. In my hands, the placement was slower when compared to the dull implanter. There are a greater number of implanters to perform surgery (more than four) than using a dull implanter (three are sufficient for each size). The company requires the minimum purchase of five units.
- Similar: Both require premade sites, have similar learning curves, require the same number of people for a similar process, and have comparable durability (no need to replace needles and can be resterilized indefinitely).

A physician should consider the advantages and disadvantages of each implanter and, after mastering the technique, choose the one that best meets his/her needs. ■

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Sessions:

- Session 1: Opening Session
- Session 4: Current Hair Follicle and Stem Cell Research
- Session 8: PRP and Other Mechanical Treatments
- Workshop 105: SMP

Session 1: Opening Session

Welcome & Introduction
Robin Unger, MD, Program Chair | USA

Introduction of Stough Lecture Debut
Sungjoo (Tommy) Hwang, MD, PhD, FISHRS, Immediate Past President | South Korea

STOUGH LECTURE

Allogeneic Hair Transplantation: Current Status

FEATURED GUEST SPEAKER

Ohsang Kwon, MD, PhD | South Korea

Important Indications for FUT

Robert H. True, MD, MPH, FISHRS | USA

Fight the FIGHT (Black Market Campaign) – Why You Should Care
Arthur Tykocinski, MD, FISHRS, President | Brazil

Patient Stories

Shady El-Magrably, MD | Egypt

Konstantinos Anastassakis, MD, PhD, FISHRS | Greece

Marie Andree Schambach, MD | Guatemala

FIGHT Turnkey Model

Ricardo Mejia, MD | USA

Paul J. McAndrews, MD, FISHRS | USA

What You Can Do to Fight the FIGHT

Arthur Tykocinski, MD, FISHRS and Panel

Navigating the Conference App & Housekeeping Notes

Victoria Ceh, MPA, ISHRS Executive Director | USA

Session 4: Current Hair Follicle and Stem Cell Research

Moderator Introduction

Francisco Jimenez, MD, FISHRS | Spain

NORWOOD LECTURE

Adipose Derived Stem Cells: Where Are They From and What Are They Doing for the Hair Follicle?

FEATURED GUEST SPEAKER

Gillian Westgate, PhD | United Kingdom

A Review of the First FDA Approved Study on Regenerative (Stem) Cells for Hair Loss – What Have We Learned?

Gorana Kuka-Epstein, MD | Serbia

Methods for Deriving Hair Follicle Containing Sheets In Vitro

Craig L. Ziering, DO, FISHRS | USA

The Experience of Using Autologous Scalp Tissue Micrograft Obtained with Rigenera Technology for Hair Restoration

Ratchathorn Panchaprateep, MD, PhD, FISHRS | Thailand

Questions & Answers

Session 8: PRP and Other Mechanical Treatments for Hair Loss

Moderator Introduction
Daniel G. McGrath, DO | USA

Exosomes/Mesenchymal Stem Cells: What Are They? What Do You Need to Know?
Robin Unger, MD | USA

Use of Platelet Rich 3D Fibrin Scaffold as a Graft Holding Media with Clinical and Histological Analysis

Anil Garg, MBBS, MS, MCh | India

PRP for the Treatment of AGA

FEATURED GUEST SPEAKER

Ramon Grimalt, MD | Spain

The Effect of PRP on Linear Wound Closure Forces During FUT Megasessions
Akaki Tsilosani, MD, PhD, FISHRS | Georgia

Comparison of the Efficacy of Platelet Rich Plasma (PRP) Therapy vs. Enriched Adipose Tissue with PRP in Treating Early Stage of Androgenic Alopecia in Men and Women

Gorana Kuka-Epstein, MD | Serbia

The Application of Microneedle in Eyebrow Transplantation

Xingdong Li, MD | China

Questions & Answers

Workshop 105: SMP

Director: Timothy P. Carman, MD, FISHRS | USA

Faculty:

Dawn Forshaw | United Kingdom

Robert S. Haber, MD, FISHRS | USA

Milena Lardi | Italy

William R. Rassman, MD | USA

Ronald L. Shapiro, MD, FISHRS | USA

Tarryn Vice | United Kingdom

Sara M. Wasserbauer, MD, FISHRS | USA

Greg Williams, MBBS, FISHRS | United Kingdom

Scalp Micropigmentation (SMP) is a powerful adjunctive therapy to complement any hair transplantation practice. It is a subtle tool which can be used in aiding cosmesis related to low follicular density or scarring from previous surgery. It accomplishes this by decreasing the appearance of color contrast between the hair and scalp. This workshop will address the basics of the science behind the different types of available pigments and how they interact with dermal tissue, the available systems and techniques for delivering these pigments, patient selection and indications, and how to deliver this care in a safe, responsible manner.

Artistic Goals in SMP

Timothy P. Carman, MD, FISHRS | USA

Safety in SMP

Greg Williams, MBBS, FISHRS | United Kingdom

Dermatologic Consequences of SMP

Robert S. Haber, MD, FISHRS | USA

Technical Aspects of SMP

Tarryn Vice | United Kingdom

Questions & Answers

Technical Aspects of SMP II: SMP Systems

Milena Lardi | Italy

Technical Aspects of SMP III: SMP Systems

Dawn Forshaw | United Kingdom

Proper Selection of Patients/SMP

Consultation

William R. Rassman, MD | USA

Practice Integration of SMP

Ronald L. Shapiro, MD, FISHRS | USA

Complications/Revisions in SMP

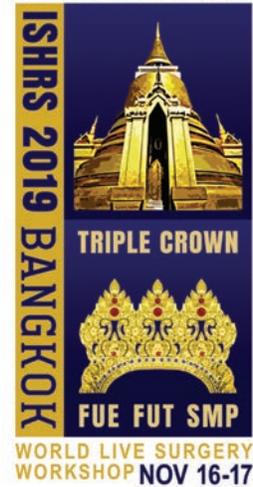
Sara M. Wasserbauer, MD, FISHRS | USA

New Frontiers in SMP

William R. Rassman, MD | USA

Questions & Answers

NOV 13-16
27TH WORLD CONGRESS





Hear From the Assistants

Marwan Noureldin, MD, MRCS | Cairo, Egypt | marwannoureldin@hotmail.com

Sara Roberts was awarded the “Distinguished Assistant Award” at the 2018 ISHRS World Congress in Los Angeles. She is part of the team at the Farjo Hair Institute in the UK and has been in the field for 24 years. Sara, a graduate of Manchester University, United Kingdom, is also a registered nurse.

I had the pleasure of interviewing Sara, and we talked about her career and her tips for inspiring fellow assistants and doctors around the world. If you would like to nominate an assistant from your practice to be interviewed for this column, please email me.

Hi Sara, we are impressed by your résumé in the hair restoration field. It is not common to meet someone who has been assisting for 24 years and you seem to be enjoying it. Could you tell me what is your greatest joy in this field?

Thank you. There is no greater joy than seeing the patient’s reaction to their procedure and receiving the thanks and the praise that they give to the team both on the day of the procedure and when they are happy with the result. And as you said, after 24 years working within the field, this is still the best part of my job.

So being that long in the field, definitely you have crossed through a lot. What do you think are the biggest challenges you face within the practice?

From a surgery manager’s standpoint, I feel that my biggest challenge is keeping the team feeling motivated, empowered, and engaged. It can be challenging sometimes when introducing new techniques or new ideas into the daily routine; change is a necessity, but is always difficult to manage.

Since you mention change, what changes have you made that have made a real difference?

We are constantly reviewing our practices and procedures and make changes on a regular basis. We compile an annual audit report that helps to evaluate and recognize the impact of these changes. One example of this would be the use of “implanters,” whilst implanters have been around for many years, we have within the past 12-18 months introduced dull implanters as a common practice for graft placement within our FUE procedures.

From your point of view, what are the best innovations over the past few years?

This is a difficult question to answer. I work within a practice that is always striving for improvement. The clinic has always been involved in various research projects including hair biology and more recently cell therapy. So, I think the answer is, it’s exciting to have the opportunity to be part of future advancements within the field.



Sara Roberts received the 2018 Distinguished Assistants Award

I know in your practice you have different roles and a variety of backgrounds among the staff. Could you tell me more about this?

We have a very mixed team and recruit from a variety of backgrounds. For example, registered nurses, dental nurses, beauticians, and biomedical science backgrounds. All of the training is completed in house. We have a very structured programme that consists of theoretical and practical modules. The new staff are supervised until they have been assessed as competent. Ongoing training is important; therefore, we have regular updates of advance-

ments in our field that comes from either the doctors within the practice or senior team members. All of our assistants have the opportunity to attend and participate in external meetings and workshops recognised within the field of hair restoration.

So, we divide the work within our team. We have a designed structure that consists of myself as surgery manager, a deputy manager, surgery team leaders, and surgery technicians. Each surgery case is assigned a Surgery Team Leader who is in charge of that particular procedure. They will then allocate tasks to the technician working with them within the room. The surgery manager and deputy manager are responsible for the safe management of the entire surgery floor—with 4 doctors, we routinely have 1-3 surgeries running at the same time.

So, do you have any advice for your doctor or other hair surgeons?

I think for this I would say that above all, good communication is the key. It can be very difficult to do so, but always allow time for education, discussion, and reflection. Be clear about expectations and required standards of care. It’s also a great idea to regularly share patients’ results so the team is reminded that this is what it’s all about! ■



Message from the ISHRS 2020 World Congress Program Chair

Bradley R. Wolf, MD, FISHRS | Cincinnati, Ohio, USA | htwolf@wolfhair.com

It's time to start making plans to attend the 28th ISHRS World Congress in Panama City, Panama, in October. Please consider submitting an abstract for a lecture or poster.

This year, we return to displaying all posters on large boards for convenient viewing. Also, one general session will have a section called "Come See My Poster" where each poster author will have 60 seconds to describe their poster to the audience. We think posters are an important part of the learning process and urge you to take the time to view all of the posters.

Sara Wasserbauer, our Workshops Chair, is hard at work putting together what we are calling "Focused Sessions." These include a 4½-hour focused Beard, Eyebrows, and Body Hair mini course on Wednesday, as well as twelve 90-minute Focused Sessions (workshops) on Friday. There will be two banks of six sessions each. This year, no tickets are needed; sessions will be open to all attendees according to registration type (e.g., Physicians Only or All Categories), and are first-come, first-served. These small, focused learning sessions will enhance your learning experience, so be sure to take advantage of them.

Dr. Angela Christiano, Professor of Dermatology, Columbia University, will present this year's Norwood Lecture on hair follicle bioengineering producing human hair follicles *in vitro* using 3D printing technology. Her lab created a plastic mold designed to reproduce a natural micro-environment that stimulates the growth of the hair follicle. This mold has very fine



Bridge of the Americas

Centennial Bridge

small peaks, half a millimeter wide, inside which the cells are grown. "Traditional manufacturing techniques were not able to create such fine structures. This work has therefore been greatly facilitated by the innovations of 3D printing technology,"

she explains. Dr. Christiano is a worldwide authority on hair follicles and we look forward to her lecture in Panama.

There are two major bridges crossing the Panama Canal. The Bridge of the Americas was opened in 1962. Centennial Bridge was built to supplement the overcrowded Bridge of the Americas and to replace it as the carrier of the Pan-American Highway. Upon its opening in 2004, it became the second permanent crossing of the canal. These two bridges are prominent icons of the Panama City skyline and a sight to behold while you are there. ■

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.

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Calendar of Hair Restoration Surgery Events

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

DATES	EVENT/VENUE	SPONSORING ORGANIZATION(S)	CONTACT INFORMATION
* MAR 19-22, 2020 Postponed to March 18-21, 2021	ISHRS Regional Workshop: Cowgirl Hair Loss Workshop—Art & Perfection, Female Hair Loss <i>Houston, Texas, USA</i>	International Society of Hair Restoration Surgery Hosted by Carlos J. Puig, DO, FISHS	cpuig@hairdoctexas.com
APR 24-26, 2020 Canceled	7th AAHS Scientific Meeting: FUE – Asia <i>Bangkok, Thailand</i>	Asia Association of Hair Restoration Surgeons	www.aahrsasia.org
MAY 22-24, 2020 Postponed to June 4-6, 2021	Italian Society for Hair Science and Restoration International Conference <i>Florence, Chianti</i>	Società Italiana di Tricologia (Sitri)	info@sitri.it
MAY 23-24, 2020 Canceled	6th International Congress of the KSHRS 2020 <i>Seoul, Korea</i>	Korean Society of Hair Restoration Surgery	www.koreanhair.or.kr/
* JUN 12-14, 2020 Canceled	ISHRS Euro 2020: European World Live Surgery Workshop <i>Athens, Greece</i>	International Society of Hair Restoration Surgery	http://euro2020ishrs.org/
JUN 13-14, 2020	Annual Meeting of the Hair Restoration Society of Pakistan (HRSP) <i>Islamabad, Pakistan</i>	Hair Restoration Society of Pakistan (HRSP) in collaboration with Academy of Aesthetic Medicine and Surgery	Muhammad Ahmad, MD plasticsurgeonpk@yahoo.com
JUN 18-20, 2020	19th EHRS Meeting <i>Sheffield, UK</i>	European Hair Research Society	www.ehrs2020.org
* JUL 24-25, 2020	12th Annual Hair Transplant 360 Cadaver Workshop & FUE Hands-On Workshop <i>St. Louis, Missouri, USA</i>	Saint Louis University School of Medicine, Practical Anatomy & Surgical Education In collaboration with the International Society of Hair Restoration Surgery http://pa.slu.edu	pa@slu.edu
JUL 29-AUG 1, 2020 Canceled	8th Brazilian Congress of Hair Restoration <i>Rio de Janeiro, Brazil</i>	Brazilian Association of Hair Restoration Surgery	eventos@abcrc.com.br
OCT 19-20, 2020	3rd SILATC Meeting & Live Surgery Workshop <i>Panama City, Panama</i>	Iberolatinoamerican Society of Hair Transplant Surgery	Drs. David Perez-Meza/ Marie Schambach Silatcpanama2020@gmail.com
* OCT 21-24, 2020	28th World Congress of the ISHRS Westin Playa Bonita <i>Panama City, Panama</i>	International Society of Hair Restoration Surgery www.28thannual.org	www.28thannual.org

* 2020 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

28TH WORLD CONGRESS

October 21-25, 2020
Panama City | Panama

29TH WORLD CONGRESS

October 20-23, 2021
Lisbon | Portugal

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.

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 American Society of Hair Restoration Surgery
 Arab Association of Hair Transplantation
 Argentine Society of Hair Recovery
 Asian Association of Hair Restoration Surgeons
 Association of Hair Restoration Surgeons-India
 Australasian Society of Hair Restoration Surgery
 Brazilian Society of Hair Restoration Surgery
 British Association of Hair Restoration Surgery
 China Association of Hair Restoration Surgery
 French Society of Hair Restoration Surgery
 German Society of Hair Restoration
 Hair Restoration Society of Pakistan
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 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 Surgeons



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

- Articles should be written with the intent of sharing scientific information with the purpose of progressing the art and science of hair restoration and benefiting patient outcomes.
- If results are presented, the medical regimen or surgical techniques that were used to obtain the results should be disclosed in detail.
- Articles submitted with the sole purpose of promotion or marketing will not be accepted.
- Authors should acknowledge all funding sources that supported their work as well as any relevant corporate affiliation.
- Trademarked names should not be used to refer to devices or techniques, when possible.
- Although we encourage submission of articles that may only contain the author's opinion for the purpose of stimulating thought, the editors may present such articles to colleagues 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.
- Once the manuscript is accepted, it will be published as soon as possible, depending on space availability.
- All manuscripts should be submitted to forumeditors@ishrs.org.
- 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.
- 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).
- 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).
- Please include a contact email address to be published with your article.

Submission deadlines:

April 5 for May/June 2020 issue

June 5 for July/August 2020 issue

August 5 for September/October 2020 issue

October 5 for November/December 2020 issue

Please note submission address:
forumeditors@ishrs.org

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SAVE THE DATE

OCTOBER 21-24

Panama 2020

ISHRS 28TH WORLD CONGRESS

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