

## Meetings and Studies

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San Francisco, California, was the perfect location for the 2013 ISHRS annual meeting. I say “perfect” because we already have the final attendance numbers, which indicate that San Francisco was the largest ISHRS attended meeting in history! A staggering 520 physicians and residents, an impressive 146 assistants and administrative staff, culminating in a grand total of 681 total attendees. We had a great meeting and kudos to Dr. Robert True (Chairman), the entire faculty, the assistants, Victoria Ceh, and the entire ISHRS Team for a job well done.

As a medical society, it was great to see the increase of doctoral attendance at this year’s session. Prior to this event, the two previous highest meetings consisted of 414 doctors in attendance at the 1994 annual meeting and 415 at the 2012 annual meeting. With an increase of over 20%, bringing us to 520 doctors in the audience, this demonstrates the ISHRS’s influence and leadership in hair loss and hair restoration around the world. I fully expect to see high attendance numbers for the 2014 Annual meeting in Bangkok, too!

“I left my heart in San Francisco...” After a great meeting, seeing my old friends and making new ones, I can see where this old adage came from. I truly enjoyed the companionship, the sharing of ideas, and the camaraderie that was established during that busy time.

Thank you to my friends and colleagues: Drs. Roy Stoller, Jerzy Kolasinski, David Josephitis, Ed Epstein, and Jeffrey Donovan for taking the time to write summaries from this fantastic educational experience. Their detail and perspective will only aid in the preservation and continuing growth of hair loss and restoration knowledge for future generations of doctors and staff.

As a personal note: I was elected President of the SILATC (IberoLatinAmerican Society of Hair Transplant Surgery); the society involves Spanish and Portuguese speaking hair restorations in Ibero-America and around the world. It is an honor and privilege to be the leader.

## Day-by-Day Review of the 2013 ISHRS 21st Annual Scientific Meeting

### Thursday/October 24, 2013

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Dr. Robert True opened the meeting and welcomed all participants. Dr. Carlos Puig gave the president’s address. He spoke about adding credibility to ISHRS membership by expanding current designations.

The meeting opened with a two-part session on State-of-the-Art Hair Restoration Surgery. The first section focused on Hair Restoration via Donor Strip Harvesting.



Robert H. True, MD, Chair of the Annual Scientific Meeting

### Strip Harvesting (FUT)

Dr. Victor Hasson, who, along with his partner, Dr. Jerry Wong, has set the benchmark for performing large FUT sessions, gave a comprehensive and detailed presentation of his approach. He focused primarily on donor harvest. In preparing patients for surgery, he emphasized use of finasteride as he is convinced that it stabilizes hair loss all over the scalp including in the donor region. Dr. Hasson has many of his patients stretch the donor area with daily exercises for 4-12 weeks before surgery to increase yield by allowing a wider donor strip to be removed. He stressed for patients with class IV or greater baldness, it is essential to harvest as many grafts as possible to produce the best results. He empha-

sized the need to recognize the potential for retrograde alopecia in positioning the donor strip. His usual strip limits are 1cm behind the anterior fringe, from 28-38cm in length, with the width of the strip being determined by the tension of the tissue. Prior to harvest, he injects tumescent solution superficially and then deeper to the galea to create an optimal stretch and tautness. He takes the donor in sections, adjusting the width in each area with the widest strips coming from the temporal and mid-occipital areas and narrower in the parietal and supramaxillary areas. He routinely undermines and uses a single layer closure with staples. He described a unique approach to slivering along the length of the strip rather than the typical cross strip slivering; an approach that he believes improves the efficiency and accuracy of graft dissection.

Dr. Arthur Tykocinski agreed with the value of pre-operative stretching exercises to increase yield and with the need to measure and adjust strip width during harvesting. He uses less tumescence as he finds that the fluid increases closure tension; and he employs a two-layer closure supplemented by an intermittent holding suture. He harvests as high in the permanent donor zone as possible because of lower tension, best density, and better healing than lower. Finally, he uses a superior trichophytic in almost all cases except when there is high closure tension.

Dr. Bobby Limmer concurred that his excision stays above the superior nuchal ridge to avoid tension of the closure; he usually performs a trichophytic closure.

### Extraction Harvesting (FUE)

Dr. James Harris presented a comprehensive review of the development of extraction harvesting (FUE) noting that the variety

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of methods developed continue to be refined through ongoing individual and collaborative innovation. He emphasized that the “state of the art” is not ONE thing... it’s not the fastest production, the lowest transection rate, powered, manual, sharp, dull. It’s not one device, one technique, or one surgeon... it is the sum of all these—it’s the result of the collective effort viewed at a point in time.

He suggested that further advancements would be enhanced by FUE surgeons worldwide collaborating in evidence-based research. The FUE Research Committee formed by the Society in 2012 will be an important vehicle for such research. The committee has already created standardized terminology and a literature database, and it will launch its first multicenter study in early 2014.

Dr. Jose Lorenzo identified 10 components of state-of-the-art extraction harvesting: proficiency with the method, proper selection of punch size and cutting surface, extraction speed, time out of body, maintaining intra-operative graft statistics, patient selection, quality of donor hair, surgical strategy, and teamwork.

Dr. John Cole added that with transection rates now being minimized with many different FUE approaches, the real focus of state-of-the-art surgery is donor management and preservation.

### Research Studies

Dr. Sara Wasserbauer analyzed the difference between FUE and FUT grafts in her practice. She found that her FUE cases contained a higher percentage of 3-hair FUs than her FUT cases. Acknowledging that results might be different in other hands, she has found this study to help her decide which type of procedure would be best suited for each case. Dr. Michael Beehner reported results of an ongoing study comparing the yield in FUE vs. FUT. With two cases comparing test boxes, he is seeing lesser and more variable growth rates in FUE graft growth rates than with FUT, but he has not been able to come to any conclusions at this time and is adding more cases. Dr. Cole found in 253 cases that in measuring donor area cross-sectional trichometry (CST) before and after FUT and FUE, donor hair mass is preserved more by FUE. He also has found that the average donor area CST for his patients was 68.9, which is lower than previously reported by Drs. Bernie Cohen and Alan Bauman. Dr. James Harris used CST to compare yields for FUT, conventional FUE, and robotic FUE. Unfortunately, the hair mass in the test areas was not sufficiently large for reliable CST measurements and therefore no conclusions could be reached.

### Beyond FUT/ FUE

In an intriguing presentation, Dr. Carlos Wesley presented his ongoing research and development of piloscopy, a form of endoscopic harvesting of donor follicles. He demonstrated how he has been harvesting hair grafts under the skin without any of the punctate scarring associated with FUE or linear scarring with strip harvesting. The technique promises the potential of a truly scarless hair transplant procedure and also carries the potential for enhanced graft yield because the stem cells of the dermal papilla are optimally harvested (Figure 1).



Figure 1. Piloscopy

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### Cicatricial Alopecia

Dr. Vera Price gave a lecture entitled “Cicatricial Alopecia: What You Should Know About the Many Different Types.” She began by reminding us that in primary cicatricial alopecia, the hair follicle is the primary target of destruction. The clinical hallmark of all scarring alopecias is loss of follicular markings or pores. One of the key histological and cellular features of scarring alopecias is inflammation and destruction of the sebaceous glands and stem cells located in the bulge.



Featured Guest Speaker Vera H. Price, MD, FRCP (C), speaking on Cicatricial Alopecia, alongside panelist Gholami Abbasi, MD

The cause of scarring alopecia is largely unknown. New research suggests that perifollicular inflammation may be due to lipid-metabolic changes in the sebaceous gland. In some scarring alopecias, such as lichen planopilaris (LPP), frontal fibrosing alopecia (FFA), and central centrifugal alopecia (CCCA), loss of function of transcription factor PPAR $\gamma$  may be contributory.

Dr. Price reminded us that at the present time, primary scarring alopecias are classified into three main groups: the lymphocytic group, the neutrophilic group, and the mixed group. The lymphocytic grouping is by far the most common and includes conditions such as LPP, FFA, and CCCA. The neutrophilic group includes folliculitis decalvans and dissecting cellulitis.

Dr. Price advocates one or two 4mm punch biopsies for all suspected cicatricial alopecias. A close relationship with the dermatopathologist will help determine whether the patient has a lymphocytic, neutrophilic, or mixed scarring alopecia. Dr. Price cautions that dermatopathologists cannot reliably distinguish various conditions within a grouping (i.e., lichen planopilaris vs. central centrifugal cicatricial alopecia), and that clinical information is needed to help differentiate these conditions.

Treatment is administered with the goal to alleviate symptoms and signs, and to retard or slow progression. Regrowth of scarring alopecias is not possible. Hair transplantation may be considered if the condition is quiet, but Dr. Price cautions that reactivation is possible months or years later.

Prior to hair transplantation, treatment with topical and/or oral medications may be needed to bring the condition under control. For some conditions, this may take many years. For treatment of the predominantly lymphocytic group, immunomodulating agents are used including topical and injection of steroids, and oral medications such as hydroxychloroquine, doxycycline, mycophenolae mofetil, and cyclosporine. For the predominantly neutrophilic/plasmacytic group, treatment with antimicrobials is required. For the mixed group, antimicrobials, anti-inflammatories, and isotretinoin may be used.

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### Post Finasteride Syndrome

The session opened with an audience response system (ARS) survey about clinical experience with Post-Finasteride Syndrome (PFS). 79% (87) reported in the past 12 months not

seeing any cases in their practices of persistent sexual dysfunction after discontinuing alpha reductase inhibitors (ARIs); 18% (20) 1 to 2 cases; 1.8% (2) 3-5; and .91% (1) more than 5 cases. Among 111 responses, 78 had not seen any patients with persistent sexual dysfunction after discontinuation of AR in their practices prior to the last 12 months; 23-1 to 2 cases; 8-3 to 5 cases; and 2 more than 5 cases. The duration of symptoms was not included in the survey. Experience varied in the percentage of patients with persistent effects who also had one or more concomitant conditions contributing to sexual dysfunction with 38% reporting coexisting factor(s) present in a majority of patients and 62% identifying such factors in less than half of affected individuals. 65% expressed concerns about reported persistent side effects after discontinuation of ARIs. All participating in the survey reported having discussions of risks and benefits when prescribing ARIs, and 16% include a written information sheet and 22% use a signed consent form. 95% of responders continue to prescribe ARIs for androgenic alopecia. Though informative, the value of this survey is limited by the reality that it is not common medical practice to obtain a detailed sexual history on all patients presenting for hair restoration surgery whether they are prescribed ARIs or not and so the data collected by ARS response is biased.

Invited guest speaker Dr. Wayne Hellstrom gave an overview of 5-alpha reductase inhibitors (5-ARIs), including indications, benefits, prevalence of side effects, risks and benefits, critique of adverse events data, labeling changes, and the post-finasteride syndrome. Finasteride reduced the risk



Finasteride Symposium Panel with Featured Guest Speaker, Wayne J.G. Hellstrom, MD, FACS, moderated by Edwin S. Epstein, MD

of prostate cancer by one third, and while high-grade prostate cancer was more common in the finasteride vs. control group, 18-year follow-up had no difference in cancer survival rates. The low incidence of sexual side effects is well documented in controlled studies, and although the prevalence may be higher than reported in pre-clinical trials, it is also low. Post-marketing reports of sexual side effects are likely real and may be under reported; however, recent published studies identifying persistent side effects have significant shortcomings and require validation by well-designed studies. Nocebo effect and increased public awareness/lawsuits may account for an increasing number of reported sexual adverse events. Dr. Hellstrom projected that further investigation of PFS will focus on neurosteroids.



Vincenzo Gambino, MD leading a Coffee with the Experts table on Treating the Young Patient.

### Recipient Sites and Cosmesis

Dr. Bradley Wolf discussed the critical details of recipient sites and graft placement. He emphasized precision in site depth and size, and that the best healing occurs when graft epithelium is left 0.5mm above the scalp surface. Dr. Tony Ruston used several examples to demonstrate that it is not only the number of grafts that are harvested, but also how they are distributed and placed that results in the appearance of maximum density. Dr. Jennifer Martinick demonstrated that although hair restoration surgery appears "easy" to do, it is important to recognize the subtleties, which take time to master, including technique and planning of the surgery in order to ensure good cosmesis. And Dr. Bertram Ng outlined his approach to extending or lowering the female hairline, emphasizing the need to follow the flow of existing hair in planning and graft placement.

## Friday/October 25, 2013

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If you're going to San Francisco  
 Be sure to wear some flowers in your hair  
 If you're going to San Francisco  
 You're sure to meet some gentle people there  
 —Scott McKenzie

We came to San Francisco, but there were no flowers in our hair. We met a few old friends, many of whom could certainly be called "gentle people," and made new ones. And we all were united by one passion—hair restoration surgery. Each day brought insights into this area of study.

### Morning Workshops

The morning workshops were organized by Dr. James Harris and included the following:

**Workshop 201:** "Non-Androgenic Alopecias by Medical and Surgical Super Specialists: When You Should and When you Should Not Indicate Surgery for the Patients Who Do Want Hair Transplantation." Drs. Vera Price and Marcelo Pitchon

addressed the issue of when to perform surgery when a patient requests hair transplantation, but the diagnosis is not androgenic alopecia. Hence, various methods of cicatricial alopecia and its management were discussed. Indications and contraindications of surgical management of alopecia were also presented.

**Workshop 202:** "Corrective Surgery and Strategies." Dr. Jerzy Kolasinski, focused on prevention and corrections of complications of hair restoration surgery and cosmetic surgery.

**Workshop 203:** "Hair Design and Recipient Area Planning." Dr. Antonio Ruston, focused on the crucial issue of adequate hairline planning, which is the most conspicuous hallmark of a surgeon's work. The lectures and video presentations demonstrated not only the principles of hairline planning, but also ways to rectify past mistakes.

**Workshop 204:** "Body Hair FUE." Dr. Alex Ginzburg pointed out that chin and chest regions, as well as extremities, are all good donor areas for hair transplants. Body Hair Transplant is now a very good supplementation of classic hair transplant procedures in which hair is collected from typical donor areas on the head. The presentation discussed not only indications but also analyzed technical aspects of the BHT technique.



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**General Session**

The first session, "Anatomy and Basic Science," was moderated by Dr. Damkerng Pathomvanich, host of next year's Annual Meeting in Bangkok. Dr. Rangsit Sittiwangkul demonstrated that temporal and fronto-temporal points are angulated in shape in a majority of individuals. The most commonly observed angles at temporal and fronto-temporal points are 90° and 80°, respectively. Dr. Bisanga, described how miniaturization negatively affects a person's donor area, effectively reducing the available donor hair supply and decreasing the chances that a patient will be a candidate for hair transplantation. Ms. Sheida Abbasi demonstrated that detailed knowledge of eyelash anatomy is crucial in HRS. Eyelashes are structurally similar to scalp hair, but the follicle cycle and pigmentation are markedly different, as well eyelid epidermis thickness, the absence of a hypodermis, and the shortness of eyelash follicles. Dr. Antonio Ruston demonstrated how merely 200 to 300 follicular units on each side of the temporal points make an enormous difference in appearance, with incision angle imitating the existing hair angle, usually sharp and angled backward.

**General Membership Business Meeting**

Dr. Sharon Keene was elected vice-president of the ISHRS. Next year she will take over the duties of ISHRS president Dr. Vincenzo Gambino. Sincere thanks were expressed to retiring president Dr. Carlos Puig, noting the increase in regional workshops and the subsequent improved prestige of ISHRS worldwide.

**Norwood Lecture**

Dr. Colin Jahoda, Professor at Durham University, U.K., gave the Norwood Lecture, "Hair Follicle Cloning, Regeneration, and Other Prospective Developments for the Transplant Clinic: Where Are We Now?" He detailed the biological constraints that limit "hair follicle cloning" using cultured follicle dermal papilla cells, and outlined new frontiers for hair cloning.



Colin Jahoda, MD, PhD, Norwood Lecturer

In her "Highlights from the 7th World Congress for Hair Research," Dr. Nilofer Farjo, described the breadth of multidisciplinary research presented at the congress in Edinburgh, including hair follicle attributes, genetic testing, and stem cell experimentation that may lead to new diagnostic and therapeutic modalities.

**General Session I**

Dr. Ken Williams moderated this session, "Advancing the FUE Technique." Dr. Georgios Zontos discussed the injection of saline to minimize the injury of the donor area and accelerate healing by making the follicular units more vertical, or by expanding the skin and reducing the amount of skin mass removed by the punch. Dr. Juyong Kim, discussed methods to increase the efficiency of FUE procedures for donors with problematic scalp characteristics. Dr. Suneet Soni discussed "the safe donor zone," emphasized that mega sessions of FUE should be restricted to lower grades of baldness with high donor density and should not

be considered in patients with higher grades of baldness or with a strong family history of baldness. Dr. Paul T. Rose, outlined advantages of using vacuum-assisted wound closure to minimize FUE wound-site scars. Dr. Tejinder



Advancing the FUE Technique session, moderated by Ken Williams, DO

Bhatti detailed numerous instances of botched FUE procedures to emphasize the importance of adequate HRS training. Dr. Anil K. Garg described a prototype vacuum-assisted follicle extraction device VAFED that notably reduces follicle transection.

**General Session II**

This session, "Enhancing Donor Management in Strip Harvesting," was moderated by Dr. Henrique Radwanski. Dr. Bertram Ng noted that immediate post-operative steroid injection has no bearing on scar esthetics in the donor area. Dr. Prapote Asawaworarit similarly noted that applying a low-dose ACE inhibitor (Enalapril) in the donor area did not improve scar appearance. Dr. Parsa Mohebi showed that partial trichophytic closure can improve overall appearance of the donor scar in many patients. Dr. Wen-Yi Wu described the injection of hyaluronidase to the donor area to increase scalp laxity, enhancing wound closure. Dr. Paul Rose described the use of liposomal bupivacaine in reducing post-operative discomfort, noting dangers associated with lidocaine interaction.

**Commentary**

The training courses this year were very good, featuring thoroughly prepared lectures. From the standpoint of someone who has participated in ISHRS Annual Meetings since 1997, though, this year's contributions also included a few sub-standard presentations. Yes, there were numerous presentations supplemented with valid material that might be classified as Grade 2 or 3, according to Evidence-Based Medicine (EBM) ratings, however, there were also papers that compiled only to cursorily present observations, not always supported by adequate data, which at most might be classified as EBM Grade 5.

The choice of guest lecturers included a fascinating variety: Dr. Cheng-Ming Chuong, Dr. Colin Jahoda, Dr. Vera Price and Dr. Wayne Hellstrom. It has become a tradition to invite researchers to the ISHRS from areas indirectly related to hair restoration surgery. These experts cast new light on issues of hair restoration medicine in a broad sense. I would like to take the liberty of suggesting that in the future the subject matter of lectures include more of these and fewer of the marginal HRS papers.

The international character of our meetings is most encouraging. The ISHRS includes growing numbers of participants from countries in Asia, including China, India, and Korea. Looking to the future, we can continue to grow globally while increasing the quality of conference presentations, thus enhancing the reputation of our organization.

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Saturday/October 26, 2013

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### **Difficult Cases I**

This panel, moderated by Dr. James Vogel, discussed unique ways to handle some challenging cases. Dr. Jerry Cooley reviewed the case of a 50-year-old male undergoing a routine hair transplant with platelet rich plasma (PRP). Thrombin was inadvertently injected into the recipient area instead of tumescence, and the patient subsequently incurred necrosis in a small part of the frontal zone. A possible treatment option would have been to wait until the area scarred over and then to have added new grafts. Instead, the necrosis was excised early on, the surrounding grafts grew normally, and the patient ultimately had a good result. This case brings up the importance of good quality control in the office in order to help prevent mistakes. Also, in these situations, patients deserve honesty and a high level of consideration and care while they undergo additional procedures.

Dr. Daniel Rouso presented the case of a 55-year-old female with an oil burn to the scalp. A tissue expander was attempted but failed secondary to a tight scalp and pain. Instead, a small alopecia reduction was done as well as three sessions of 500 grafts each with the results providing a notable improvement for the patient. Having strong relationships with your patients and always having backup plans are keys to successful outcomes.

Finally, Dr. Alan Bauman presented a case that upholds the notion that it is sometimes better not to perform a surgery at all on certain patients. A 70-year-old female with poor donor and diffuse loss, who had been treated in the past for alopecia areata, requested HT. Instead of surgery, this patient received a combination of medical therapy with low level laser therapy (LLLT) and a minoxidil formulation called 83M. She had excellent results.

### **Advances in Hair Biology**

The guest speaker for the 10th annual Advances in Hair Biology lecture was Dr. Cheng-Ming Chuong from USC. He discussed the ever-evolving topic of hair regeneration. Hair growth and follicular regeneration is extensively affected by its external environment as well as being determined by the intrinsic character and composition of the follicle. The surrounding dermal and adipose tissues as well as other external factors such as puberty, pregnancy, and aging can have a notable cascade effect upon hair cycling and character. In the future, by modifying the external environment, we may be able to improve hair growth and possibly induce follicular regeneration.

Dr. John Cole spoke specifically about hair follicle regeneration in the arena of FUE. He showed the possibility of follicle regeneration in the donor region after FUE. He used a technique of minimal depth FUE (2-2.5mm punch insertion) followed by

an application of porcine derived acellular matrix (ACell), and sealing the sites with a heat activated polymer. He reported that compared to his standard FUE technique, on average, there was a 48% increase in donor area follicle regrowth. He acknowledged that some of the regrowth might have come from transected follicles in the sites.

Dr. Jerry Cooley succinctly summarized all of the current adjunct therapies including platelet rich plasma (PRP), acellular matrix (ACell), HypoThermosol, and liposomal ATP, in what has been called "bioenhancements," a term coined by Dr. Robert True. Even though current hair transplant surgery is of such high quality that we may think we don't have to consider other therapies, we all have had occasional surgery results that are less than superior. In cases like those and others, bioenhancements may help to improve our overall results.

### **Diagnostic Aids and Treatment Outcome Assessments with a Focus on FPHL**

Dr. Francisco Jimenez moderated this session focused on the importance and utility of devices for diagnosing and treating female pattern hair loss (FPHL). It began with Dr. Russell Knudsen discussing the use of a commercial device called the HairCheck to measure the cross-sectional trichometry (CST). The device was found to be very easy to use and gave reproducible CST measurements. Benefits of using the device include assessing the stability of hair loss in patients, quantifying their improvement in density over time, and also using a measuring device in clinical trials. Finally, the device clarifies for the patient their amount of hair loss and assists in assessing the results of treatment.

Dr. Bernard Nusbaum talked about the challenges we all face when trying to evaluate the efficacy of various medical treatments for hair loss. A computer program called the FotoFinder helps to standardize patients' photos, and in doing so, helps to create uniformity to better show patient improvement.

Another inexpensive tool that is often underutilized is the dermatoscope. Dr. Alessandra Juliano discussed easy ways one can evaluate hair loss in female patients and distinguish between various diagnoses. Important benefits of using the dermatoscope include its low cost, non-invasiveness, and the confidence it can give both the patient and physician in making the correct diagnosis.

Low level laser light therapy (LLLT) has been used for the treatment of hair loss for many years despite a shortage of studies showing its effectiveness. Dr. Sara Wasserbauer spoke about a study to determine the usefulness of LLLT by using CST to measure its benefit. The preliminary results at 8 months showed no clear trends comparing the study group with the control group. Despite the lack of larger studies on LLLT, many hair surgeons still recommend laser treatment for their patients as an option, and they continue to have good results. Dr. Shelly Friedman showed a number of impressive before-and-after photos over a 5-year period of patients who experienced both subjective and objective improvements with LLLT. The primary benefit of LLLT is reversal of miniaturization.



Cheng-Ming Chuong, MD, PhD, *Advances in Hair Biology* Lecturer

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Dr. Sharon Keene discussed the complex issues involved in the diagnosis and treatment of women with hair loss. She recommended a full lab panel for the majority of her female patients in order to rule out any hormonal, thyroid, or vitamin deficiency causes of hair loss. Androgens may also play a role in some women's hair loss and testing for androgen sensitivity may be helpful in creating treatment options.

**Advanced Surgical Videos I**

With Dr. Carlos Puig moderating, the first section of videos demonstrated "FUT Donor Management." Dr. Dae-young Kim noted a change in up to 10 degrees in the angle of exiting hairs from the top to the bottom of an excised area of donor strip. It was noted that the use of a two-layer closure can possibly minimize the difference in this exit angle by straightening the hair around the incision. An interesting concept for tight closure of the donor was discussed by Dr. Ji-sup Ahn. The donor should first be closed without any tension. In the remaining open area of the defect, a sliver of donor tissue termed a "composite graft" can be re-inserted and sutured into place, reducing the overall amount of area needing to heal by secondary intention.

The final videos in this section dealt with "Improving Cosmesis." Some physicians shave the recipient area to assist in recipient site creation and graft placement but find that some of their patients resist having this done. Dr. Sara Kotai revealed that there are cultural and religious significances of cutting hair for some patients, and she discussed her own technique to avoid having to shave the head completely. One of the potential drawbacks of the FUE procedure is the need to completely shave the donor area. Dr. Marco Barusco demonstrated an effective, albeit time-consuming, method of strategically trimming the hairs of selected FUs and then extracting grafts for FUE. No more than 1,000 grafts are extracted when using this method. Dr. Emre Karadeniz discussed the importance of taking intra-operative transection rates both early in the procedure and throughout in order to make adjustments to the instrumentation or FUE technique. This can help improve the extraction of grafts and their overall quality.

**Difficult Cases II**

This session was also moderated by Dr. Jim Vogel. The first case presented by Dr. Robert Bernstein was a patient with a scalp and facial burn and considerable scar tissue. A common misconception in the community has been that grafts don't grow well in scar. The key to improvement in cases like these is to take it slowly. Grafts will grow quite well as long as they are staged appropriately and grafted over time.

Dr. Sheldon Kabaker discussed the case of a female hairline placed too low. While it might have been an option to remove some of these grafts by FUE and/or laser, this particular patient wanted all of the grafts removed. An expander and galeotomy was used in order to hasten the expansion process, and subsequently, all of the grafts were removed. These first two cases

also showed that emotional support is essential when caring for these challenging patients. In addition, as physicians, we need to help guide our patients in making educated decisions about their care.

Another patient by Dr. Bernstein was an elderly woman who presented shortly after a small FUE case from another physician. Areas of irregular alopecia around the transplants were biopsied and found to be frontal fibrosing alopecia (FFA). Another patient who presented after losing her transplanted hair was also found to have FFA with biopsy. Both of these cases emphasize the importance of understanding that patients may have more than one diagnosis at a time.

**Advanced Surgical Videos II**

The second round of videos moderated by Dr. John Cole included "Innovation in the Use of Implanters and Improving Efficiency in FUE Procedures." Implanter use has risen over the years. Dr. Jae Park discussed a method of using implanters to speed up the hair restoration process. With practice and proper planning, 1,600 grafts or more can be placed in an hour. He emphasized the key to this efficiency is maintaining his focus on the patient's scalp rather than having to look away while he is handed the implanters.

Both Drs. Michael Vories and Conradin von Albertini demonstrated ways of doing large FUE sessions in a single day using a motorized FUE and implanter pens. Finally, Dr. Kavish Chouhan demonstrated the possibility of doing FUE gigasessions of 3,500 grafts or more in one day. The keys to these very large-sized procedures include powered FUE, using a sharp punch, high magnification, simultaneous extracting and placing, and rotation of staff to prevent fatigue.

**Live Patient Viewing**

The close of the meeting as organized by Dr. Jerry Wong was one of the meeting highlights with outstanding cases being presented by Drs. Sara Wasserbauer, Jerry Wong, James Harris, Craig Ziering, Sheldon Kabaker, Parsa Mohebi, Michael Beehner, Tejinder Bhatti, and Jerry Cooley. ♦



Drs. Russell Knudsen and Robert Bernstein dialogue during the Difficult Cases II Panel, chaired by Dr. James Vogel.



Dr. Conradin von Albertini presenting during the Advanced Surgical Videos II session, chaired by Dr. John Cole.



Dr. Shelly Kabaker presenting during the Difficult Cases Panel.





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# 2013 Annual Scientific Meeting Committee

***Thank you to the 2013 Annual Scientific Meeting Committee  
for a great conference!***

## 2013 Annual Scientific Meeting Committee

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Bessam K. Farjo, MBChB, Newcomers Program Chair



### 2013 Annual Scientific Meeting Committee

(L to R) Bessam Farjo, Sara Wasserbauer (Local Liaison),  
Robert True, Diana Carmona Baez, James Harris,  
Sam Lam, Jon Ballon



**The many technicians who participated on the  
Tissue Prep Team**

### ***THANK YOU to the 2013 Tissue Prep Team and their Physicians!***

Diana Carmona Baez of Dr. Timothy Carman's office; Laura  
Burdine of Dr. Robert Elliott's office;

Carol Wade and Shannon Surgeson of Dr. Vance Elliott's  
office; Aileen Ullrich of Dr. Steven Gabel's office;

Deanne Barron, Jessica Garner, Marcy Heasman,

Wilson Mendoza, and Kathryn Morgan of Dr. John Gillespie's  
office; Tina Lardner of Dr. Jim Harris's office;

Emina Karamanovski of Dr. Sam Lam's office; Dan Leach and  
Kirsten Baetz of Dr. Bob Reese's office;

Brooke Graham of Dr. Alison Tam's office;

Laureen Gorham of Dr. Ken Washenik's office.



Dr. Carlos Puig (R) congratulates Dr. Robert True (L) for his  
efforts in chairing the 2013 Annual Scientific Meeting.

**THANK YOU**  
**to volunteer photographers**  
**Dr. Bob Haber and**  
**Dr. and Mrs. Kuniyoshi Yagyu!**



# ISHRS Leadership

**October 23-26, 2013 • San Francisco, California, USA**



## ISHRS 2012-2013 Board of Governors

Front (L to R): Victoria Ceh-Executive Director, Kuniyoshi Yagyu, Sharon Keene, Carlos Puig, Vincenzo Gambino, Jennifer Martinick

Back (L to R): Arthur Tykocinski, Alex Ginzburg, Bernard Nusbaum, Russell Knudsen, John Gillespie, Bessam Farjo, Paul McAndrews, David Perez-Meza, Ken Washenik



## ISHRS Past Presidents

(L to R) Jennifer Martinick, Robert Haber, Robert Leonard, Paul Rose, Russell Knudsen, Bessam Farjo, Edwin Epstein



## ISHRS 2012-2013 Executive Committee

(L to R) Jennifer Martinick (Immediate Past-President), Vincenzo Gambino (Vice President), Carlos Puig (President), Sharon Keene (Treasurer), Kuniyoshi Yagyu (Treasurer)



## Global Council of Hair Restoration Surgery Societies

Back (L to R): Kuniyoshi Yagyu (Japan, ISHRS), Kapil Dua (AHRS-India), Sotaro Kurata (Japan), Akira Takeda (Japan), James Harris (ABHRS), Robert Reese (ABHRS), Peter Canalia (ABHRS), John Gillespie (Canada), Rajesh Rajput (AHRS-India), Luis Ortega Peña (Iberic Latin American), Jorge Gaviria (Iberic Latin American), Paul McAndrews (ABHRS), Russell Knudsen (Australasian), Jerzy Kolasinski (Polish), Akio Sato (Japan), Arthur Tykocinski (Brazilian), Fernando Basto (Brazilian), Francisco Le Voci (Brazilian)

Front (L to R): Victoria Ceh (ISHRS), Greg Williams (BAHRS), Andrea Marliani-guest (Italy-SiTri), Pietro Lorenzetti (Italy), Franco Buttafarro (Italy), Vincenzo Gambino (Italy, ISHRS), Carlos Puig (ISHRS), Bessam Farjo (British, ISHRS Ambassador), Jennifer Martinick (Australasian), Nilofer Farjo (British, Forum Editor), William Parsley (ISHRS Ambassador), Ricardo Lemos (Brazilian)



## ISHRS Meeting Staff

(L to R) Matt Batt (Integrated Communications Manager), Melanie Stancampiano (Program Manager), Victoria Ceh (Executive Director), Jule Uddfolk (Meeting & Exhibits Manager), Amy Hein (Meeting Planner), Katie Masini (Registrar), Sue Reed (Registrar), Kimberly Miller (HQ & Administrative Manager)





# 2013 Awards



## 2013 Golden Follicle Award

For outstanding and significant clinical contributions related to hair restoration surgery.

**John P. Cole, MD**



## 2013 Platinum Follicle Award

For outstanding achievement in basic scientific or clinically-related research in hair pathophysiology or anatomy as it relates to hair restoration

**Sharon Keene, MD**



## 2013 Distinguished Assistant Award

Presented to a surgical assistant for exemplary service and outstanding accomplishments in the field of hair restoration surgery

**Ailene Russell, NCMA**



## Forum Editors

Dr. Nilofer Farjo, and Dr. Carlos Puig on behalf of Dr. William Reed, accept awards as outgoing Forum Editors, term 2011-2013.

**Nilofer P. Farjo, MBChB &  
William H. Reed, II, MD**

## THANK YOU TO OUR SPONSORS

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# 2013 Recognition

## Officer and Outgoing Board Members



Dr. Carlos Puig accepts the president's award and pin from Immediate Past-President, Dr. Jennifer Martinick.



Dr. Vincenzo Gambino accepts a plaque for service as Vice President.



Dr. Sharon Keene accepts a plaque for service as Treasurer for the past two years.



Dr. John Gillespie and Dr. Bernard Nusbaum accept awards for service on the ISHRS Board of Governors, terms 2007-2013.



An appreciation pen is presented to past-president Dr. Russell Knudsen for service on the ISHRS Board of Governors.



### Last Man Standing Club: Attended All 21 Meetings!

*The following members were acknowledged as having attended all 21 ISHRS Annual Scientific Meetings:*  
(L to R) Mario Marzola, Paul Straub, Russell Knudsen, Bob Haber, Paul Cotterill, Ivan Cohen, John Gillespie, Bessam Farjo, Ed Epstein, and not in photo: Ed Griffin, Bob Leonard

### Congratulations to the Daily Evaluation Winners!

The following were randomly selected as the winners of the daily evaluation incentive prize drawings! Each winner received \$100 off of an upcoming ISHRS annual meeting.

Thursday: Katsumi Ebisawa MD, PhD

Friday: Jorge Salazar, MD

Saturday: Truett Bridges, MD

The online Overall Evaluation winner received \$250 off of the 2014 Bangkok, Thailand Annual Meeting!

Overall Eval: Carlos Buenrostro, MD

Thank you to everyone who completed the evaluations. We appreciate your feedback and suggestions so we can continue to improve the Annual Scientific Meeting.







## Recorded Session from 2013 San Francisco Annual Scientific Meeting Now Available

We recorded one session that we thought the membership would find interesting. The recordings are available for viewing exclusively to ISHRS Members until April 1, 2014. Access the video links via the Members Only section at [www.ishrs.org](http://www.ishrs.org).

### Lunch Symposium 213: New Interventions That Can Improve Outcomes of Hair Transplant Surgery

Presented on Friday/October 25, 2013, 12:00NOON–2:00PM

Moderator: Francisco Jimenez, MD

#### Learning objectives:

- Describe the influence of holding solutions in hair graft survival. Evaluate the characteristics of the different holding solutions currently used in HRS. Discuss new substances under investigation that may increase graft survival or accelerate hair graft growth.
- Discuss the published scientific evidence for the use of PRP in hair loss disorders. Describe how to prepare PRP, how to inject it, and its usefulness in HRS.
- Describe the indications and method of application of porcine-derived extracellular matrix product in HRS.
- Formulate ideas for a future possible role of adipose-derived stem cells in hair loss therapy and HRS.



#### Factors Affecting Growth: Personal Perspective

12:33 running time

Jerry E. Cooley, MD

#### Different Graft Storage Solutions Currently Available for Hair Transplant Use: A Comparison

14:14 running time

Aby Mathew, PhD

#### What's the Future in Tissue Preservation?

9:21 running time

William D. Ehringer, PhD

#### Getting Started with PRP in a Hair Transplant Clinic

7:13 running time

Robert P. Niedbalski, DO

#### Platelet Rich Plasma: Does It Really Increase Hair Growth? Where Is the data?

29:07 running time

Francisco Jimenez, MD

#### Follicle Regeneration with ACell

6:59 running time

John P. Cole, MD

#### Adipose Derived Mesenchymal Stem Cell

8:31 running time

Mario Marzola, MBBS



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## Message from the 2014 Annual Scientific Meeting Program Chair

Damkerng Pathomvanich, MD Bangkok, Thailand [path\\_d@hotmail.com](mailto:path_d@hotmail.com)

We had a successful meeting at the ISHRS 21st Annual Scientific Meeting in San Francisco. The attendance was at an all-time high, and I wish the next meeting in Bangkok will be even more, so please mark the date on your calendar to attend November 12-15, 2014. Recently, I returned from India where I attended the AAHRS 2013 & HAIRCON 2013 Annual Scientific Meeting. Over 200 physicians attended and I was reassured that those who have been in practice many years will attend the Bangkok meeting. The attendees from Asia have increased yearly, and I believe we will see an even greater increase at the Bangkok meeting since it is very close to the neighboring Asian countries and there is easy access to visas to enter Thailand, which is an affordable world-famous tourist destination for shopping, sightseeing, and dining.

Hair restoration techniques have changed gradually. Next year's meeting will "reflect for ultimatum and evaluate the current and new trends in Hair Restoration Surgery for optimum outcomes." Newcomers will learn more from the Basics Course. For the experienced surgeons, there are the Advance Course and General Scientific Sessions. You will be happy to see unexpected



old friends, and of course, get to know new friends. We are in the process of planning a day-by-day schedule that will offer topics that are of interest to everyone plus research and advance in new technology in the field of hair restoration surgery.

I invite everyone to submit an abstract. All the abstracts will be rated blindly by the Scientific Meeting Committee. If your

abstract is selected for oral or video presentation, then you must send in PowerPoint (PPT)/video at least 6 weeks prior to the meeting to ensure that both the quality of the presentation and the learning objectives are being met. If your abstract is selected as a poster, then you need to send in a PPT presentation (or described format to be listed later) instead of the paper poster because we will have e-posters this year.

This is our annual meeting, and I hope you will enhance your knowledge by attending the meeting. Please bring along your assistants so that they may attend the Surgical Assistants Program meeting, and also bring your family to enjoy Bangkok, one of the best destinations in the world to visit! ♦



## Message from the 2014 Surgical Assistants Program

Aileen Ullrich Hillsboro, Oregon, USA [aileen@gabelcenter.com](mailto:aileen@gabelcenter.com)

This year's annual scientific meeting will be held in Bangkok, Thailand, one of the world's top tourist destinations. This will be an opportunity to enjoy the city's rich culture and history with our colleagues and friends, expand our knowledge, share insights and techniques, and to learn of new developments within the field of hair restoration.

I am honored to be your 2014 Surgical Assistants Chair. It was only a few short weeks ago that we all gathered in San Francisco for the 2013 Program, which from the feedback I have received, was a great success.

We are currently in the planning phase of our surgical assistant's 2014 program. Our goal is to provide a valuable,



Photo from the Surgical Assistants Workshop at the 2013 Annual Scientific Meeting in San Francisco.

educational opportunity for all levels of experience. Hence, if there are any specific topics that you would like to have covered, please let me know. I want to hear your suggestions, ideas, and comments so we can do our best to incorporate them into the program. Additionally, if you are interested

in presenting at the meeting, I want to hear from you as well. You can contact me at [aileen@gabelcenter.com](mailto:aileen@gabelcenter.com).

I look forward to hearing from you! ♦



## Regional Societies Profiles

Your new editors strongly believe in the International aspect of ISHRS. To this end, we have introduced this new column to highlight the various Hair Societies around the world, one society per issue. We take a lead from the ethos of our Global Council of Hair Restoration Surgery, listed below:

### Benefits of a National Society

1. Bring awareness of one another.
2. Less denigration.
3. Share knowledge, exchange ideas.
4. Speak with an organized voice.
5. Handle challenges (e.g., dentists, artificial fibres, etc.).
6. Provide education/certification of new members.
7. Maintain a culture of CME in that country.
8. Deal with practitioners of clinics who continuously produce bad work.
9. Host national or international conferences and live surgery workshops to continuously raise standards.
10. Support live surgery workshops in less developed HRS countries.
11. Help to set up national societies in new countries.

### Benefits of the Global Council to National Societies

1. Share experiences; for example, One national society may have solved a problem facing another national society.
2. Help to regulate the calendar of yearly meetings to coordinate and avoid clashes.
3. Publish in the *Forum* on national society meetings
4. Provide a uniform educational and certification system
5. Offer strength in numbers for negotiations with other medical societies and government bodies (e.g., restrictions of practice)

We believe that all these points are valuable for experienced and new societies alike. Sharing our hair restoration surgery experiences will help to bring together individual members of each society, as well as the societies of each country. When we start our hair restoration career and know no one, or very few people, it is easy to think of our established colleagues as simply opposition and view them negatively. However, as we get to know them, we usually find the opposite to be true. Often, they become our friends and mentors.

Below we highlight the Italian Society of Hair Restoration (ISHR) in this short interview with its president, Dr. Franco Buttafarro (FB).

## Italian Society of Hair Restoration (ISHR)

Q: Dr. Buttafarro you are the 13th President of ISHR, can you tell us about your society?

FB: It began in Rome in 1994 at the time of great changes in hair restoration. Scalp reductions were still popular and grafts were getting smaller all the time. Microscopes and follicular units were new. There was a lot of interest in hair restoration in Italy amongst the public, but medical advertising was not allowed so we had a lot of issues. Forming a society was the best thing we ever did, for all the good reasons mentioned above, especially bringing the doctors together. To join the ISHR, 2 years' experience in hair restoration is needed. Currently, we have 44 members.

Q: Who are the other office holders?

FB: Pietro Lorenzetti is the incoming President, Marco Toscani is Past-President, Ciro De Sio is Treasurer, and the rest of the Board Members are Vincenzo Gambino, Piero Tesauero, Luigi Belliazzi and Michele Roberto Arbiter. Of course, we are very proud of Dr. Gambino, who is the current president of ISHRS.

Q: How often do you have meetings and workshops?

FB: Almost every year. In 20 years, we have had 15 meetings, congresses, or workshops. We have benefited from many international experts attending our meetings. Martin Unger, Bob Leonard, Ron Shapiro, Anthony Mollura, Joe Greco, Patrick Rabinneau, and Pierre Bouhanna to name a few, but there were many others. It's been absolutely crucial having this input as it helped to raise our standards quickly to the point where our members now frequently present at national and international meetings.

Q: Are there any restrictions in advertising?

FB: No this changed in 2005, but we have untrue or exaggerated advertising as the new problem. We have many new



practitioners from dental, gynecological, orthopedic, and aesthetic and other backgrounds entering the field with lots of advertising and little training. We are worried that all the hard work in raising standards and outcomes in the last 20 years in Italy is at risk. However, the market is increasing so all will be well if we rise to the challenge of maintaining our standards.

Q: FUT, FUE, robots, independent techs in Italy?

FB: Still about 70% of operations are FUT and 30% are FUE. Some doctors are offering large numbers of grafts per sitting, but these are still short of the super giga sessions offered elsewhere. I believe there is one ARTAS robot in Italy now, but no NeoGraft machines. However, there's no doubt this will grow in the future as in other parts of the world. There are a few independent techs, but not many at this time.

Q: Is PRP popular?

FB: Yes. It has been used in Italy for five years, but there seems to be little benefit.

Q: What could ISHRS do to help ISHR?

FB: The ISHRS could continue the excellent leadership, have more ISHRS members attend our meetings and have more ISHRS regional workshops (in Italy, of course).

Q: When is your next meeting?

FB: Our next meeting is in Syracuse (Sicily), 26-29 June 2014, hosted by Franco Buttafarro and Pietro Lorenzetti. See you there! ♦

# Hair's the Question\*





Sara Wasserbauer, MD Walnut Creek, California, USA [drwasserbauer@californiahairsurgeon.com](mailto:drwasserbauer@californiahairsurgeon.com)

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



After helping about 50 talented beginning surgeons learn at the "Recipient Sites" station in the Basics Course at the San Francisco ISHRS meeting, I have realized that after the first few hundred surgeries, the art of making recipient sites gets taken for granted. As most teachers will tell you, the young talent in the room taught me more than I taught them. With their revelations in mind, here is a review of the important BASIC concepts of what is a very complex topic: recipient site creation in the frontal scalp area. If you are a beginner (or just want a refresher), this question set is for you!

## Recipient Sites: BASIC Questions

- The three MAIN variables for a recipient site are:
    - Angle (to the scalp), direction, size
    - Direction, shape (curved or flat slits—especially important with curly hair), and depth of site incision
    - Pitch (rotation), coronal versus sagittal orientation, size
    - Size, angle, and proximity to its neighbor site
  - Outer diameter of a 19G needle is:
    - 0.75mm
    - 1.0mm
    - 1.07mm
    - 1.5mm
  - Outer diameter of a 20G needle is:
    - 0.8mm
    - 1.0mm
    - 0.91mm
    - 0.75mm
  - In order to compensate for the growth of the grafts, recipient sites should be created:
    - At a 50° down angle from the desired angle of growth
    - At a 15° down angle from the desired angle of growth
    - Precisely parallel to the desired angle of growth (i.e., matched angle to the existing hair)
    - At a slightly higher angle than the existing hair
  - This bent needle is used to make recipient sites and will be helpful in which of the following ways?
 
    - Correct direction and angulation of the implanted graft
    - Reducing hand fatigue for the surgeon due to the superior ergonomics of the bent needle
    - Limiting the depth of the incision site in order to minimize damage to the vascular bed
    - This needle would not be helpful and was probably dropped, thus creating the angle.
  - Coronal incisions refers to sites that are:
    - Made parallel to the direction of the hair growth
    - Made only in the crown (hence the name "coronal") in a whorl pattern
    - At lower risk for cutting the native hair growth beneath the surface of the skin and should thus be avoided in restoring temporal points
    - Made perpendicular to the direction of hair growth and can result in precise hair direction and angle control.
  - In general, the number of FUs per cm<sup>2</sup> that provides enough density for most patients is:
    - 20-30 FU/cm<sup>2</sup>
    - 30-45 FU/cm<sup>2</sup>
    - 90-100 FU/cm<sup>2</sup>
    - 10-20 FU/cm<sup>2</sup>
  - In studies of recipient-site density, which of the following consistently has the highest survival rates?
    - 10 and 20 FU/cm<sup>2</sup>
    - 20 FU/cm<sup>2</sup>
    - 30 FU/cm<sup>2</sup>
    - 35-45 FU/cm<sup>2</sup>
  - Which of the following is the best tool for making recipient sites?
    - 0.75-1.2mm Minde (minimum depth) site making tools (either angled 45° or chisel)
    - Chisel blades cut to size (0.5-1.0mm) from Personna prep blades
    - SP 89, 90, and 91 spear point blades
    - 18-, 19-, and 20-gauge needles
  - When in doubt for a recipient site's direction:
    - Create a hairline that splays at the sides (i.e., a radial pattern)
    - Match the direction of the existing hair, but if no hair exists or if the hair is small in diameter and likely to be lost with continued androgenetic alopecia, opt for an anterior facing direction (i.e., facing forward)
    - Anterior facing direction only
    - Rightward flow starting at the frontal forelock
- Bonus Question:*
- In order to obtain maximum density, recipient sites should be:
    - Staggered
    - Linear
    - Scattered randomly and then filled in with a smaller diameter site-making tool
    - Placed using implanter pens or similar devices





Hair's the Question *from page 31*

## Answers

1. **A.** This is most fundamental to a beginner's understanding of this process. If you get these three right, you have a good chance at giving your patient a reasonable result. However, ALL of the variables listed are important considerations.
2. **C.** If you are using needles for making your recipient sites, you need to know this kind of information in order to match your sites to the graft size. There is a great resource for this kind of information on the web at <http://www.sigmaaldrich.com/chemistry/stockroom-reagents/learning-center/technical-library/needle-gauge-chart.html>.
3. **C.** I just did this to check if you went to the site I referenced in the last answer. . . . Actually knowing the size of the sites that you are making and taking the time to tailor them to the grafts is an integral part of a good hair transplant. For beginners, this is a habit that should be cultivated.
4. **B.** Hairs tend to lift as they grow in!
5. **C.** The needle was NOT dropped (and if it were, would you be using it?). Attention to direction and angulation is still needed when using this little trick, however, because if you do not monitor your direction, you might end up making the sites parallel to the shaft of the needle instead of the tip that is making the site! In particular, if the bends are not made at precisely 90 degree angles, this will introduce small variations into your recipient sites and the grafts will grow in an unintended direction.  
The best way to reduce hand fatigue is to use larger diameter holding mechanisms for whatever recipient-site-making tool you are using. Dentists deal with this same problem all the time, and there is a great online resource at <http://www.ada.org/sections/educationAndCareers/pdfs/ergonomics.pdf>. Check out the suggestions at the top of page 3, they are the most relevant to a hair surgeon.
6. **D.** Though D is correct, keep in mind that there is a higher risk of transecting native hair beneath the skin surface when compared to sagittal incisions (which are made parallel to the direction of the hair growth.) For this reason, coronal incisions should be created with care, especially if you are just starting your hair transplantation career. Situations that respond very well to coronal incisions are 1) transplanting into scars and 2) for restoring areas with very sharp angulations (like temporal points or sideburns).
7. **B.** Argue as much as you want (and as hair surgeons, our arguments are more entertaining than most), but when you review the last decade or so of all that has been written by the most experienced surgeons in our field, this is the range that consistently appears.
8. **A.** And this is the real crux of the matter, isn't it? You try to make the recipient sites as dense as possible for good results for the patient (see the answer in the last question), but studies have shown that 10-20 FU/cm<sup>2</sup> has 97% and 94% survival (and here I am referring to many reports but specifically the 2002 Live Surgery Workshop as reported at the Puerto Vallarta ISHRS meeting). There are those who have obtained excellent growth with more FUs per cm<sup>2</sup>, but the preponderance of the data seems NOT to favor dense packing as a method of assuring high graft survival rates, and the question was about survival rates.

9. Trick question! You cannot answer this question for anyone but yourself. I have used all of them to good effect and in the final analysis; my advice to the newbies out there is to pick your own favorite and make the sites as small as you can while still fitting chubby grafts into them.
10. **B.** This is the generally accepted best practice. The sunburst or radial pattern has the tendency to create "parts" and separate artificially. Many frontal areas will have a rightward flow, and anterior facing hair will have superior coverage because it will hang below the hairline if it has any length to it. However, when in doubt, the strategy detailed in answer B contains the best guidelines to follow.
11. **A** (with credit for D as well). This question is in the quiz mainly to make readers think about how they make their sites. What is the best way? Implanter pens (answer D) MAY be the best, and in some surgeon's hands they are certainly superior to my own technique! If you make sites by scattering randomly and then reviewing, there may be gaps where you could have fit more sites that cannot be filled. Linearly placed recipient sites run the risk of connecting and forming a bigger site than intended (like a "slot graft site"), which is not optimal. ♦



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# *In fond memory Dr. Neil F. McLeod*



In our specialty, some surgeons make a big “splash” in a short time and rapidly fade from view. Others make subtle changes that remain with us for decades without their contribution being fully appreciated.

So it was with Neil Francis McLeod who was born in New Zealand on 9th November 1926 and died of cancer on 28th December 2013. He worked as a successful GP in Christchurch for 20 years until, after having a hair transplant for his type VI baldness around 1971, he started performing the procedure himself. In March 1975, after the tragic death in a plane crash of his teacher and mentor, Dr. Tom Pirotta, Neil bought his practice and became a full-time HT practitioner in New Zealand and Australia, where I was his main competitor in those early days.

During this period, Neil, a fine classical pianist and a perfectionist by nature, was constantly trying to improve the techniques of the old 4mm plug operation. As a patient himself, he had quickly realized that pre-medication was far superior to “cold-turkey,” and he convinced me to administer 5mgm of intravenous diazepam to my patients prior to surgery. I was impressed, and it became standard practice in Australia as more surgeons entered the field. When midazolam, with its much shorter half-life, became available in 1985, we changed to that drug. This required routine pulse-oximetry to avoid the potential hazard of respiratory depression.

Neil was quick to realize the advantages of the Australian carbon steel punches, and understanding that they had to be

kept razor sharp, he devised a do-it-yourself (DIY) apparatus for doing this at his office. Neil described his sharpening techniques on pages 267-274 in *Hair Transplant Surgery*, 2nd Ed. by Norwood & Shiell (published by Charles C Thomas, 1984). These techniques were used by many offices throughout the world until punches were supplanted by grafts dissected from scalpel-cut strips in the early 1990s. For those surgeons having trouble keeping FUE punches sharp, his chapter could be revisited or reprinted.

Neil’s greatest contribution to our profession was probably as mentor to our esteemed former ISHRS President, Dr. Mario Marzola (Golden Follicle Awardee and now Co-editor of the *Forum*). He was deservedly proud of the achievements of his former pupil who, like Neil, claims to have been “in love with his work” since his very first case over 30 years ago.

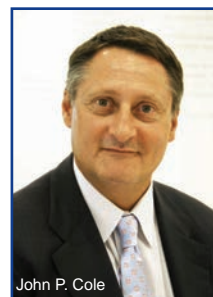
The loss of his wife Mary to cancer in 2001 was a great blow to Neil, but he carried on working part-time with one assistant for a few more years, finally retiring in 2005 at age 79. He maintained a multitude of intellectual interests and played Chopin and Bach on his Steinway grand piano, until near the end in 2013. He leaves five children and many grandchildren.

The few of us who knew him well and loved his gentle nature and giant intellect will miss him greatly.

*Richard C. Shiell, MBBS*  
Melbourne, Australia

## Cyberspace Chat

John P. Cole, MD *Alpharetta, Georgia, USA* [john@forhair.com](mailto:john@forhair.com), and  
Bradley R. Wolf, MD, *Cincinnati, Ohio, USA* [wolf@wolfhair.com](mailto:wolf@wolfhair.com)



John P. Cole



Bradley R. Wolf

## To Dye or Not to Dye

Dyes, including gentian violet and methylene blue, have been used during hair transplant surgery for staining to facilitate microscopic dissection, recipient site creation, and graft placement. In patients with darkly pigmented skin, recipient incisions may be seen easier for graft placement after staining the recipient skin. Staining white or non-pigmented hair during strip dissection may help visualize the follicles and reduce transection. Staining the external shafts of white or non-pigmented hair can make them easier to visualize during the procedure.

*In an internet communication, Melvin Mayer asked:*

Are any of you aware of studies that have been done to evaluate graft production staining sites with gentian violet? Living in San Diego, I have many darker skinned patients. We are also using smaller recipient sites. These factors have led me along with my staff to use more staining. I don't think it is affecting my production, but occasionally a patient comes back not getting the production I would expect and I wonder if the staining has had a negative effect.

*Bradley Wolf replied:*

If you are experienced at placing and use high magnification (4.0 or greater), there is no need for staining. A slight alteration in the scalp surface, lack of resistance to the tip of the forceps, and knowledge of the incision pattern show you where the incisions are and aren't. I've never used any staining.

*John Cole reported:*

I agree with Brad Wolf. I believe that with high power magnification, staining the recipient sites is unnecessary for graft placing. I've never used any staining.

*Bob Haber added:*

I've been using 1% methylene blue in almost all my cases for several years. Occasionally, I use 5%. We generally enjoy excellent growth, so the occasional case of less than optimal growth I do not feel is related to the use of the stain. I used gentian violet for a year or so before switching to the methylene blue. While my staff appreciates the improved visibility of the sites with the stain, I find that applying stain when I have 500 or so sites left to make reveals many small gaps in my pattern, and allows me to refine my sites. I will then reapply the stain after all sites are made. I'm not aware of any studies looking at toxicity.

*Bessam Farjo, Michael Beehner, Paul Rose, and Bob True added:*

*Bessam Farjo:* I agree with Bob and share the same experience. Without a doubt, it speeds up the placing. I believe its gentian violet rather than methylene blue that has toxicity question marks against it.

*Michael Beehner:* I've done around 30 cases with gentian violet, usually the full strength, and have had no problems with poor growth. I've used methylene blue around the same

number of times and again no problems. I dilute it usually 1:1 with saline.

*Paul Rose:* I would think that the gentian violet is toxic. It is used as an antiseptic. We use the methylene blue, as does Dr. Haber.

*Bob True:* I also use methylene blue, but only in very dark skinned patients. I have not observed this to reduce yield. Typically, the stain is washed away completely with spraying during the procedure. I use gentian violet rarely to control donor incision oozing.

*Melvin Mayer followed up:*

What I have been using is 1% gentian violet. I also use 2 drops in 30cc normal saline and place the "white hair" slivers in it. My techs think this is very helpful identifying the white hair. I also, as many of you do, dye the hair dark brown or black to better identify the external portion of the hair. Most seem to use methylene blue and I am going to switch because of occasional questionable production with gentian violet. It seems that none of us are aware of any comparative studies regarding production and the use of stain.

### Comment

Gentian violet or crystal violet is a triarylmethane dye. The dye is used as a histological stain and in Gram's Method of classifying bacteria. Gentian violet has antibacterial, antifungal, and anthelmintic properties, and was formerly important as a topical antiseptic. The medical use of the dye has been largely superseded by more modern drugs, although it is still listed by the World Health Organization. The name "gentian violet" refers to its color, being like that of the petals of a gentian flower; it is not made from gentians or from violets.

One study in mice demonstrated dose-related carcinogenic potential at several different organ sites.<sup>1,2</sup> The U.S. Food and Drug Administration has determined that gentian violet has not been shown by adequate scientific data to be safe for use in animal feed (to prevent mold). Use of gentian violet in animal feed causes the feed to be adulterated and is a violation of the U.S. Federal Food, Drug, and Cosmetic Act. On June 28, 2007, the U.S. food and Drug Administration issued an "import alert" on farm raised seafood from China because unapproved antimicrobials, including gentian violet, had been consistently found in the products. The FDA report states: "Gentian violet is readily absorbed into fish tissue from water exposure and is reduced metabolically by fish to the leuco moiety, leucocrystal violet (LCV). Several studies by the National Toxicology Program reported that the carcinogenic and mutagenic effects of gentian violet in rodents. The leuco form induces renal, hepatic and lung tumor in mice."<sup>3</sup> It has even been applied to the mouth



and lips of premature infants, and has a long history of safe use. La Leche League recommends gentian violet for thrush on the nipple.<sup>4</sup> However, in large quantities, gentian violet may lead to ulceration of a baby's mouth and throat and is linked with mouth cancer.<sup>5</sup> Gentian violet has also been linked to cancer in the digestive tract of other animals.<sup>6</sup>

Methylene blue (MB) is a heterocyclic aromatic chemical compound. It has many uses in a range of different fields, such as biology and chemistry. At room temperature, it appears as a solid, odorless, dark green powder that yields a blue solution when dissolved in water. Methylene blue is a remarkable compound in the history of pharmacology and chemotherapeutics. MB was the first phenothiazine compound developed and it has active biological properties that have been under investigation for over 120 years. Methylene blue was first prepared by Caro in 1876 as an aniline dye that became the first synthetic chemical tested in human patients, which Ehrlich demonstrated in 1891 as effective in malaria treatment. The early works of Ehrlich lead to a great interest in the use of methylene blue for numerous therapeutic applications, from microbiology to psychiatry. For example, methylene blue is a therapeutic dye with antimicrobial activity, supravital staining and diagnostic histopathological uses, blood staining activity, medicinal photosensitizer action, cancer chemotherapeutic uses, and psychoactive uses in dementia and psychosis. Currently, some of the most important clinical uses of methylene blue include the therapy of methemoglobinemia, septic shock, encephalopathy, and ischemia.<sup>7</sup>

In an interesting article in *Biochemical Pharmacology*, the authors propose the use of methylene blue as a means of suppressing the production of superoxide radicals O<sub>2</sub><sup>-</sup> by acting as an alternative electron acceptor for xanthine oxidase. Accordingly, they propose that methylene blue may represent a new class of antioxidant drugs that competitively inhibit reduction of molecular oxygen to superoxide by acting as alternative electron acceptors for tissue oxidases.<sup>8</sup>

## Summary

Dyes are used by some hair transplant physicians to stain the skin, helping to visualize incisions for recipient sites and to visualize white or non-pigmented hair during graft dissection and placement. This may speed up placing and decrease transection. Staining to identify where incisions have and have not been made allows additional incisions to be made to create greater density. Staining white or non-pigmented external shafts can make them easier to see during the procedure. Some physicians use high magnification to facilitate these tasks precluding the use of dyes. Some use commercial hair dyes to color external shafts. While no studies with respect to toxicity have been performed in the hair restoration field, studies described above have been performed on gentian violet and methylene blue stains. While methylene blue has been used extensively internally without toxicity at indicated doses, gentian violet has been shown to be carcinogenic in animal studies. While Melvin Mayer's original question as to whether staining recipient sites with gentian violet affects the growth of the transplanted hair has not been fully answered, it is our experience and opinion that staining of recipient sites is not necessary. However, if a surgeon chooses to use a dye, methylene blue should be used to stain skin or tissue rather than gentian violet. If it is necessary to dye the external hair shafts, a commercially available hair dye should be used. It is interesting

that methylene blue may reduce ischemia/reperfusion injury. Further studies using methylene blue in graft storage solution may be warranted and would be interesting.

**Editors' Note:** In the course of this discussion and investigation, there was an incidental revelation of possible further potential application of methylene blue in hair restoration surgery. So, we want to include this comment from Dr. John Cole:

*"I think that it is important to encourage a study using methylene blue as an antioxidant to evaluate its potential role in hair restoration surgery beyond its function as a visual aide. The primary reason we use liposomal ATP (LAMP) is to prohibit the production of ATP through anaerobic means. Of course, LAMP is very expensive. Minimizing the production of ATP anaerobically limits the production of hypoxanthine. Hypoxanthine is subsequently converted to hydrogen peroxide, super oxide, and the most damaging of all free radicals, the hydroxyl free radical. Minimizing this conversion by xanthine oxidase has the potential to either augment the benefits of LAMP or even replace LAMP at a more economical price point. LAMP may not be allowed or available in many countries as well. We should look more closely at methylene blue with a focus on its potential to improve yields due to its anti-oxidative properties. I think this is clearly far more interesting than its capacity to stain the skin."*

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## Review of the Literature

Jeff Donovan, MD, PhD Toronto, Ontario, Canada [jeff.donovan@ymail.com](mailto:jeff.donovan@ymail.com)



Chao-Chun, Y., et al. Higher body mass index is associated with greater severity of alopecia in men with male-pattern androgenetic alopecia in Taiwan: a cross-sectional study. *J Am Acad Dermatol*. 10.1016/j.jaad.2013.09.036

There is accumulating evidence that androgenetic alopecia (AGA) is associated with an increased risk for cardiovascular disease and “metabolic syndrome” in general. Metabolic syndrome includes a number of risk factors that increase one’s risk for cardiovascular disease including obesity, dyslipidemia, hypertension, and abnormal glucose tolerance. Whether obesity is independently associated with AGA is unclear.

Researchers from Taiwan set out to determine if there was a relationship between body mass index (BMI) and the severity of AGA. They studied 142 men (average age 31 years) with male pattern baldness who were not using minoxidil or finasteride. Approximately 60% had normal BMI and 40% were overweight or obese (defined as BMI  $\geq 24$  kg/m<sup>2</sup>).

Men with more severe hair loss (Hamilton Norwood grade V-VII) had a higher BMI than those with less severe hair loss

(grade I-IV) (25.1kg/m<sup>2</sup> vs. 22.8kg/m<sup>2</sup>). After adjusting for various other factors such as age, smoking, and hypertension, the authors showed that men who were overweight or obese had an approximately 3.5-fold greater risk for severe hair loss than men with normal BMIs. In addition, young overweight or obese men under 30 years of age had a nearly 5-fold increased risk of severe hair loss.

**Comment:** This data supports the notion that obesity is one of the metabolic syndrome parameters that is independently associated with severity of balding. Further studies are needed to determine if being overweight or obese is directly causal in the pathogenesis of male balding, and whether encouraging weight loss in our overweight or obese patients could impact the progression of AGA or the effectiveness of treatments. ♦



Kim, H., et al. Low-level light therapy for androgenetic alopecia: a 24-week, randomized, double-blind, sham device-controlled multicenter trial. *Dermatol Surg*. 2013; 1177-1183.

Low level light therapy (LLLT) has been used in the treatment of androgenetic alopecia (AGA) for a number of years. Some previous studies with LLLT devices showed a statistically significant increase in hair density or hair caliber in a small target area following treatment, whereas other studies did not. In some studies, this translated into patients or blinded investigators detecting an improvement in hair density with use of LLLT, whereas in other studies these improvements were not seen.

A study from South Korea evaluated the efficacy and safety of a helmet-type LLLT device (Oaze, Won Technology, Daejeon, Korea) in men and women with AGA. They conducted a 24-week randomized, double-blind study with use of a sham device. The primary endpoint of the study was the change in hair density in a 70mm<sup>2</sup> target area from baseline to 24 weeks. Secondary endpoints included changes in the hair shaft diameter and the degree of satisfaction of the subjects.

A total of 29 subjects completed the study, including 15 in the LLLT group and 14 using the sham device. The device was safe

with no reports of severe adverse reactions. Subjects using the LLLT device had a statistically greater increase in hair density (approximately 19 hairs/cm<sup>2</sup>) and thickness (approximately 9µm) compared to those using the sham device. Investigators detected a statistically significant increase in hair density in those using the LLLT device compared to those using the sham device. However, there was no difference in subjects’ perception of improvement or satisfaction ratings between LLLT and sham users.

**Comment:** This study adds to a number of studies supporting a stimulatory effect of LLLT on hair growth and production of thicker caliber hairs. However, whether this translates into an LLLT user feeling that his or her hair looks better with use of the device and whether this translates into an LLLT user projecting to the world better scalp coverage requires further meticulously designed studies. Given the differences that exist in male and female AGA, separate studies of LLLT in men and women will be important. ♦



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Facial Plastic Surgery Clinics of North America: Hair Restoration. Raymond J. Konior and Steven P. Gabel, Eds. J. Regan Thomas, Consulting Ed. Elsevier, 2013. ISBN-13:9780323186032

This new textbook was written by and for members of the hair transplant community. The last version of this text was published in 1994. Because of that, the editors describe their goal as to capture the last 20 years of hair transplant achievements. And indeed, they ambitiously packed all of the most cutting-edge techniques into 21 colorful and easy to read chapters. Despite the fact that “pluggy” results have long been surpassed by more natural and aesthetic results, this book updates readers on the amazing breakthroughs that continue to be made in the field of hair transplantation.

From the outset, this book guides readers about natural hairline phenotypes, how to avoid transplanting AGA-imposters, and how to best incorporate medical management of hair loss. It goes on to review the essentials of patient selection, hairline design, and graft harvesting with an emphasis on natural, safe results. There are also chapters on how to treat advanced hair loss, as well as separate chapters on dense packing and megasessions. Whereas few doctors were even performing follicular unit extraction (FUE) in

1994, this book features two important chapters by experts in this technique.

Particularly innovative are the chapters on scalp micropigmentation (SMP), body hair transplantation, and techniques for optimal graft growth. The frontier includes and advancements in regenerative hair techniques and robotic harvesting of grafts (ARTAS).

The book is slim and lightweight (ships at 1.6 pounds) despite its 550 pages. The photos and diagrams are excellent. Overall, I believe this text is a must-have for every hair surgeon's library, regardless of their area of specialization. The reviewer's favorite pearl from Dr. Konior was to ask patients “What is your goal?” during the consultation. By asking this, we as surgeons can identify patient expectations as quickly and easily as possible, without passing judgment or eliciting confusion.

**Editors' Note:** Dr. Rogers was a contributing author for a chapter in this textbook. ♦





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After several years of consideration by the Board of Governors followed by ratification by the membership of the International Society of Hair Restoration Surgery (ISHRS), the designation of Fellow has been established in order to recognize members who meet its exceptional educational criteria. In order to be considered, the hair restoration surgeon must achieve a specific level of points in a system of various educational parameters such as serving in leadership positions, American Board of Hair Restoration (ABHRS) certification, writing of scientific papers, and/or teaching at scientific programs, among others.

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

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- 2015: 23rd ASM  
September 9-13, 2015  
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- 2016: 24th ASM  
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April 9-12, 2014	20th Annual Orlando Live Surgery Workshop <i>Orlando, Florida, USA</i>	International Society of Hair Restoration Surgery Hosted by Matt L. Leavitt, DO	Valarie Montalbano, Workshop Coordinator <a href="mailto:HValarieM@leavittmgt.com">HValarieM@leavittmgt.com</a>
May 21-24, 2014	5th Brazilian Meeting of Hair Restoration Surgery <i>Maresias Beach, Sao Paulo, Brazil</i>	Brazilian Society of Hair Restoration Surgery (ABCRC) <a href="http://www.abcrc.com.br/congresso">www.abcrc.com.br/congresso</a>	Arthur Tykocinski, MD, Program Chair <a href="mailto:arthur@cabelo.med.br">arthur@cabelo.med.br</a>
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October 23-26, 2014	6th Annual Hair Restoration Surgery Cadaver Workshop <i>St. Louis, Missouri, USA</i>	Practical Anatomy & Surgical Education (PASE), Center for Anatomical Science and Education, Saint Louis University School of Medicine In collaboration with the International Society of Hair Restoration Surgery <a href="http://pa.slu.edu">http://pa.slu.edu</a>	<a href="http://pa.slu.edu">http://pa.slu.edu</a>
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