

# ISHRS Best Practices Survey Project

## MODULE: Anesthesia and Emergency

### SUMMARY ANALYSIS

#### Introduction

The International Society of Hair Restoration Surgery (ISHRS) has an ongoing project to define current and best practices in hair restoration surgery (HRS). This project is looking at all aspects of the HRS practice including diagnostic skills, patient education and consultation routines, surgical procedure routines, personnel utilization, and management of quality assurance and risk management. The aspects have been categorized into 14 modules. The goal of the project is to identify important learning objectives for ISHRS's continuing medical education programs by looking for the gap between "best practices" for the specialty, as identified by a core faculty of 58 experienced HRS surgeons ("expert"), compared with the "current practices," as defined by surveying the general membership of 600+ physicians ("general").

#### DEFINITIONS

**"Best Practices"** – Common practices of the expert group.

**"Expert" group** – 58 experienced member-physicians of the International Society of Hair Restoration Surgery who agreed to participate in the survey. Criteria included one or more of the following: attended 10 ISHRS meetings, ABHRS diplomate, active ISHRS educator, faculty appointment, significant number of years in practice, published in peer-reviewed journal, published in ISHRS's *Hair Transplant Forum International*.

**"Current Practices"** – Common practices of the general group.

**"General" group** – 600+ member-physicians of the International Society of Hair Restoration Surgery were invited to respond to the survey. Those responding constitute the general group.

**"Gap"** – The difference in practice based on response between the expert group (Best Practices) and general group (Current Practices).

The project is managed by the ISHRS's Continuing Medical Education Committee, Subcommittee Expert Panel, who is made up of senior surgeons and educators, whose charge is to survey the membership to determine current practices, and search the literature and opinions of experienced physicians to set the best practices.

This paper summarizes the module "Anesthesia and Emergency." This survey was designed to describe knowledge and use of anesthetics during surgery and emergency procedures. The CME Committee's opinion will be described as well, in order to allow program directors and faculty to align their core curricula with the educational needs of physicians practicing hair restoration surgery. This paper is organized as follows:

- Methods
- Results
  - ✓ Demographics
  - ✓ Use of Anesthetic Additives
  - \* Significant Differences

\* Non-Significant Differences

- ✓ Emergency Procedures
  - \* Significant Differences
  - \* Non-Significant Differences
- ✓ Staff Characteristics and Roles
  - \* Significant Differences
  - \* Non-Significant Differences

- Discussion
  - ✓ Identified Gaps
- Appendix

#### Methods

Physician "expert" members of the ISHRS were contacted by email during September 2011 and asked to complete an online survey. The survey included 50 multiple-choice questions reflecting demographics, use of anesthetics, emergency procedures, and staff characteristics and roles as they pertain to emergency procedures. See Appendix for survey items and highest response percentages for experts and general members. Physician "general" members of the ISHRS were polled on the same questions during the ISHRS's Annual Scientific Meeting in Anchorage, Alaska, September 14-17, 2011, utilizing a real-time audience response system. After the meeting, those general members who were not in attendance at the Anchorage meeting were sent an email invitation to complete an online survey with the same questions. Participation was voluntary. Data from the surveys were compiled, summarized in tables, and analyzed using chi-square tests at  $\alpha=0.05$ . Fisher's Exact Test was used in cases where the expected frequency counts were less than 5.

#### Results

*Note:* For a complete list of percentages reflecting response majorities for experts and general members, please see the Appendix on page 205.

#### Demographics

The survey was completed by 207 of 613 physicians, 34% of the ISHRS membership. Not all respondents completed all of the items. Of the expert group ( $n=45$ ), 86.7 % have been practicing HRS 16 years or more, and 20.0% have been practicing HRS for 31 years or more. Of the general group ( $n=158$ ), 33.6% have been practicing HRS for more than 16 years. In the expert group, 71.1% stated that more than 75% of their practice was focused in HRS, in the general group only 51.2% spent more than 75% of their practice in HRS.

#### Use of Anesthetics, Additives to Anesthetic Solutions, and Related Donor and Recipient Area Preparation

*Significant Differences.* This section discusses questions in which statistically significant differences between the general and expert physicians were observed.

## Summary Analysis from page 207

When asked which local anesthetic (lidocaine, Marcaine, lidocaine+Marcaine, buffered solutions of lidocaine, or other) was used most by expert and general groups, an overall significant difference was observed ( $p<0.05$ ). Pairwise comparisons evaluating each anesthetic against a combination of the other categories (e.g., lidocaine versus all others) revealed the following: general members used buffered solutions of lidocaine significantly more often than experts (14.2% versus 0%, respectively,  $p<0.01$ ). No other significant differences were observed. Experts mostly used lidocaine+Marcaine, 64.4%.

The expert and general groups also differed with regard to whether they sedated patients during lidocaine administration ( $p<0.01$ ). Respondents were given the following options: "No," "Yes, with oral benzodiazepines," "Yes, midazolam IV [intravenous]," "Yes, midazolam subcutaneous," "Yes, midazolam sublingual," "Yes, with other meds," or "Other." Pairwise comparisons revealed a significant difference between the expert (20.0%) and general (5.3%) groups for the "Other" category ( $p<0.01$ ). No other significant differences were observed. Highest response for experts was "Yes, with oral Benzodiazepines," 46.7%.

When asked whether they use tumescent solution in the donor area, 4.4% of experts and 18.1% of general members indicated "No" ( $p<0.05$ ). This tells us that the vast majority of experts (95.6%) and general (81.9%) do tumesce the donor area which is considered a best practice. A significant difference was also observed for a question on contents of tumescent solution for those who used it. Options included (a) saline or similar solution, (b) lidocaine or other local anesthetic, (c) epinephrine, or (d) triamcinolone. Experts used triamcinolone more often than general physicians, 58.1% versus 37.5%, respectively ( $p<0.05$ ). The groups did not differ with respect to whether they use tumescent solution in the recipient area.

**Non-Significant Differences.** This section discusses questions in which no statistically significant differences between the expert and general physicians were observed.

Approximately half of all physicians used tumescent solutions with epinephrine and lidocaine (50.0% and 44.7%, for experts and general physicians, respectively), with 36.4% and 39.3% using tumescent solutions with epinephrine only. Eleven percent of physicians in each group did not use tumescent solutions, and less than 5% used tumescent solutions with lidocaine only.

When asked whether they stage anesthetics by giving one dose for donor harvesting and one for recipient site creation, the majority of physicians responded "yes" (86.7% experts, 91.2% general).

The percentages of patients with a vaso-vagal episode leading to fainting during surgery were similar between groups, with 80.0% and 74.7% of experts and general physicians, respectively, indicating that less than 1% of patients experienced fainting.

Over half of physicians in each group indicated they use vibrators as distraction techniques during local anesthesia administration (57.8% and 50.7% for experts and general, respectively), followed by 28.9% and 38.4% indicating they did not use any distraction techniques. Other distraction techniques used were ice (8.9% and 17.1%) and hair pulling (13.3% and 12.3%).

When using tumescent solutions in the donor area, the majority of physicians indicated their solution contained saline (86.1% and 76.5% for experts and general, respectively), followed by epinephrine (65.1% and 55.9%), lidocaine or other local anesthetic (44.2% and 46.3%), and triamcinolone (14.0% and 15.4%).

The majority of expert and general physicians indicated they used tumescent solution in the recipient area, 70.5% and 77.3%, respectively.

Approximately three-quarters of physicians in both groups do not warm the local anesthetic solution to body temperature before injection, and 90.9% and 80.9% do not use topical anesthesia such as Emla or LMX prior to anesthesia of recipient or donor areas.

With regard to use of supraorbital nerve blocks for anesthesia of the recipient area, approximately one-quarter to one-third of physicians indicated "always or majority of cases," "rarely, less than 10% of cases," or "never." Approximately 10% of physicians indicated "sometimes, but less than half of the cases."

Eight questions were related specifically to use of triamcinolone. Approximately 58% of experts and 48.6% of general physicians add triamcinolone to the recipient area anesthesia solution or recipient tumescent solutions; 71.1% and 65.7% feel that added triamcinolone to the recipient area solutions will decrease forehead edema; 17.8% and 21.5% add triamcinolone to the donor area anesthetic solutions; for those who add triamcinolone to donor area anesthetic solutions, 87.5% and 56.6% do so to reduce swelling, 50.0% and 52.5% do so to improve scarring, and 50.0% and 23.0% do so to minimize pain; 70.0% and 59.5% think that adding triamcinolone to anesthetic solutions, if not properly used, can lead to fat atrophy, while 59.5% and 67.2% believe it could lead to delayed donor healing.

When it comes to corticosteroid regimens to control post-operative edema, a small majority use oral corticosteroids (35.6% and 42.5% for expert and general groups, respectively), followed by a combination of oral corticosteroids, injectable corticosteroids, or triamcinolone (28.9% and 14.2%), with the remaining physicians using either injectable corticosteroids alone, triamcinolone alone or none.

The majority of physicians (88.6% and 77.9% of experts and general physicians, respectively) vary the amount of tumescence from patient to patient based on differences that exist between patients in terms of their scalp anatomy (e.g., scalp thickness, depth of hair follicle, scarring).

A slight majority of physicians do not ask patients to score the pain or discomfort they experienced during surgery, at 60.0% and 53.5% for expert and general groups, respectively. The majority of physicians in both groups indicated the amount of acceptable pain for their patients was knowing something is happening but are relaxed and not complaining (37.8% and 55.5%), followed by no pain (28.9% and 16.8%) and discomfort but not withdrawing from injections (17.8% and 16.1%). Approximately 10% of physicians indicated pain was acceptable when patients were amnesic due to sedation, and under 5% indicated discomfort and occasional withdrawal from injections were acceptable.

The following two questions evaluated physicians' knowledge, and revealed no significant differences between groups. When asked what is the maximum total dose of lidocaine with epinephrine they would give for an average 70 kg male patient, assuming local anesthesia may be given incrementally over a 6- to 8-hour period, over half of expert and general physicians, respectively, indicated less than 500 mg (50.0% and 56.3%), followed by 500 to 600 mg (28.6% and 27.5%). Only 16.7% and 11.3% indicated 600 to 700 mg was acceptable, and approximately 5% indicated over 700 mg was acceptable. With regard to duration of initial anesthetic block in recipient area prior to reinforcement, 56.8% and 46.6% indicated 4-5 hours, followed by 2-3 hours (29.6% and 36.3%) and 6-8 hours (13.6%

and 14.4%). None of the experts and only 2.7% of the general physicians indicated the block would last between 8-10 hours.

### Emergency Procedures

**Significant Differences.** This section discusses questions in which statistically significant differences between the general and expert physicians were observed.

A significant difference between expert and general physicians was observed with regard to keeping an emergency kit in the office ( $p < 0.05$ ). A greater percentage of general physicians (29.7%) used primarily airway assist equipment compared to experts (8.9%,  $p < 0.01$ ). This difference may be explained by a significantly greater percentage of experts using both airway assist and defibrillator or automatic external defibrillator equipment compared to general members (77.8% versus 53.6%, respectively,  $p < 0.01$ ). That is, general physicians tend to use only one type of emergency kit, whereas experts utilize more than one. The reason for this may be that the experts perform a greater number of procedures and are therefore more prepared for emergencies.

Expert physicians also performed routine emergency practice drills for their staff more often than general physicians, 73.3% versus 47.9% ( $p < 0.01$ ).

**Non-Significant Differences.** This section discusses questions in which no statistically significant differences between the general and expert physicians were observed.

Over three-quarters of physicians in both groups indicated that patients have never experienced a life-threatening emergency during an HRS procedure (77.8% and 78.6% for expert and general groups, respectively). Of those whose patients did experience a life-threatening emergency, incidents included seizure, cardiac arrest, dull chest pain of myocardial infarction, stroke, asthmatic airway, anaphylactic reaction or shock, and other.

Nearly 80% of expert physicians and 65.7% of general physicians have a non-medical emergency evacuation plan (e.g., for fire, power outage, natural disaster), but 62.2% and 64.7%, respectively, do not keep an emergency evacuation kit of hair restoration tools and supplies in case physicians need to quickly evacuate with an unfinished patient.

Although there seems to be a difference between experts and general groups with regard to use of a protocol for identifying adverse reactions to local anesthesia (71.1% and 56.7%, respectively, indicated “yes”), this difference was not statistically significant. Similar percentages of expert and general physicians have a protocol for dealing with sudden loss of consciousness (73.3% and 72.0%).

Approximately two-thirds of physicians do not administer IV sedation (68.9% and 63.6% for expert and general groups, respectively). For those who do administer IV sedation, 24.4% and 28.7% have a designated person perform continuous monitoring of vital signs (BP, HR, RR). The remaining physicians either monitor the patient themselves (6-7%) or do not perform continuous monitoring of vitals (0-2%). For a typical hair restoration surgical procedure not involving IV sedation, 54.8% of expert and 49.3% of general physicians monitor vital signs during pre-op, post-op, and throughout the surgery. Approximately 20-25% monitor vitals during pre-op only, and 17-19% monitor during pre-op and post-op only.

With regard to use of epinephrine solution, such as superjuice, to promote hemostasis, 31.1% and 41.3% of expert and general physicians “always” or in the “majority of cases” use it, with over

half of physicians “rarely” or “never” using it, and approximately 10% using it in less than half of their cases.

The majority of physicians have not witnessed sustained hypertension relative to administration of epinephrine solution in tumescence or local anesthesia (86.7% and 73.5% of expert and general physicians, respectively).

There appeared to be no clear trend with regard to the point at which physicians treat hypertension prior to the onset of surgery. Approximately one-third of physicians in both groups cancel surgery if the patient has systolic hypertension, and approximately 10% never treat systolic hypertension during the anesthesia process. The remainder of physicians (10-25%) use various systolic BP cut-offs for treating hypertension (150-160 mmHg, 170-180 mmHg, 190-200 mmHg), with less than 5% using a cut-off of  $> 200$  mmHg.

Nearly half of physicians “always” alter use of epinephrine containing solutions when patients are using medications which can interact (46.7% and 44.7% for expert and general groups, respectively), followed by “sometimes” (20.0% and 24.2%), “rarely” (15.6% and 11.4%) and “never” (15.6% and 15.2%). Less than 5% of physicians in either group indicated they never use epinephrine in anesthesia or tumescence.

Physicians used a range of methods for managing hypertension observed during the anesthetic period, with experts and general physicians fairly closely-matched. Approximately one-third wait to see if sedation will bring the BP down or say it depends on the degree of hypertension. Sixteen percent and 20% of experts and general physicians, respectively, wait to see if BP comes down after the pain of anesthesia abates. The remaining physicians either ensure patients on antihypertensive treatments have taken their medications, administer hypertensive medication, or see if the patient needs to use the bathroom (for urinary sympathetic causes of hypertension).

With regard to use of IV line during the majority of surgery, 75.6% of experts and 66.4% of general physicians indicated “no.”

Less than half of physicians have an agreement with a local hospital to accept a patient for transportation and possible admission (44.4% and 47.0%).

### Staff Characteristics and Roles

**Significant Differences.** This section discusses questions in which statistically significant differences between the general and expert physicians were observed.

A significantly greater percentage of expert physicians required basic life support certification by their technicians compared to general physicians, 86.7% versus 70.1%, respectively,  $p < 0.05$ . Similarly, expert physicians required their nurses to be certified in advanced cardiac life support significantly more often than general physicians (27.4% versus 12.5%,  $p < 0.05$ ).

Staff roles with regard to who administers local anesthetic to patients were significantly different between the expert and general groups overall ( $p < 0.05$ ). More specifically, general physicians had a doctor or anesthetist administer local anesthetic significantly more often compared to experts (76.1% and 60.0%, for general and expert, respectively,  $p < 0.05$ ). Conversely, experts tended to use a licensed RN or LPN more often than general physicians, 22.2% and 8.7%, respectively,  $p < 0.05$ . There were no differences between the expert and general groups with regard to how often medical assistants, surgical technicians, or other personnel administer local anesthetic, 17.8% and 15.2%, respectively.

## Summary Analysis from page 209

**Non-Significant Differences.** This section discusses questions in which no statistically significant differences between the general and expert physicians were observed.

With regard to evacuation procedures during a medical procedure, the majority of physicians would escort the patient him- or herself (81.4% and 69.2% for expert and general groups, respectively), while 11.6% and 19.6%, respectively, would ensure a staff member escorted the patient. Fewer than 5% in each physician group would have the patient escort him- or herself, and 2.3% and 8.3% of expert and general physicians had no protocol.

With regard to certification, 62.2% and 58.1% of expert and general groups were certified in advanced cardiac life support, and 40.0% and 32.4% were certified in basic life support. Only 4.4% and 11.0% of expert and general physicians were not certified in either of the above.

## Discussion

The mission of the ISHRS is “To achieve excellence in patient outcomes by promoting member education, international collegiality, research, ethics, and public awareness” (Presidents Message. *Hair Transplant Forum Int’l.* 2011; 21(4):106). In an effort to “achieve excellence in patient outcomes by promoting education” the Board of Governors has adopted ACCME standards for development of ISHRS educational programs. Part of the ACCME educational standard is to develop processes that identify any gaps that may exist between the specialty’s current practices and the best practices, as defined by either professional experience or evidence-based medical investigation.

This survey has confirmed that most of the profession is practicing at or near the ISHRS Expert Panel best practice level relative to anesthesia and emergency procedures. However, gaps have been identified which would necessitate training programs aimed at reducing or eliminating the gaps between best practices and current practices relative to anesthesia and emergency procedures. Specifically, the following gaps have been observed:

- **Use of buffered solutions as local anesthetic:** None of the experts indicated that they utilize buffered solutions of lidocaine, while 14.2% of general physicians did. Although buffered solutions provide some pain relief and increased efficacy, edema and bleeding is more often associated with buffered versus nonbuffered solutions and is therefore frequently avoided in both the donor and recipient areas (Wolf, 2011). It is possible that the general physicians obtain much of their information from older textbooks that advocate buffering, thus highlighting the need for education on current practices for local anesthesia.
- **Use of tumescent solution in donor area:** Over four times as many general physicians indicated they do not use tumescent solution in the donor area compared to experts. The use of tumescent anesthesia has been shown to improve and prolong anesthesia (Gillespie, 2011), which may explain why experts are more versed in utilizing the solution.
- **Use of tumescent solution in recipient area:** When tumescent solution is used in the recipient area, a greater percentage of experts compared to general physicians use a solution with triamcinolone. It is likely that experts tend to use triamcinolone as part of the tumescent solution for the recipient area because it seems to decrease post-operative swelling.

- **Emergency procedures:** Expert physicians utilize emergency preparedness procedures (e.g., emergency kit, type of equipment, and staff drills) significantly more often than general physicians. Expert physicians perform a greater number of procedures than general physicians, so they likely have a greater understanding of the importance of emergency preparedness. It is critical that surgeons take maximum precautions and implement proper emergency processes to ensure the safety of their patients.
- **Staff training:** Similar to the trend for emergency preparedness, expert physicians appear to appreciate the need for necessary safety precautions by having their staff certified, as significantly greater percentages of experts require basic life support certification and advanced cardiac life support certification by their staff compared to general physicians. It is important for all staff to be trained, at minimum, in basic cardiac life support.

Collectively, the findings from this survey indicate a need for education on the topics listed above to ensure physicians are aligned with ISHRS CME Committee’s recommendations. The ISHRS is sharing this information to encourage program directors and program faculty to keep these issues in mind when preparing continuing medical education curriculum, so as to realize the organization’s mission.

## References

1. Wolf, B.R. Overview of Anesthesia. In: W.P. Unger, R. Shapiro, R. Unger, and M. Unger, eds. *Hair Transplantation*, 5th Ed. New York, NY: Informa Healthcare, 2011; 227-235.
2. Gillespie, J.D.N. Tumescent Anesthesia in Hair Transplantation. In: W.P. Unger, R. Shapiro, R. Unger, M. Unger, eds. *Hair Transplantation*, 5th Ed. New York, NY: Informa Healthcare, 2011; 235-237. ♦

⇒ Appendix page 211

# APPENDIX

## Survey Questions

*Note:* Responses in bold were selected by the majority of surgeons, with specific percentages for experts and general members in parentheses, respectively. If the majority response differs between groups, that of the experts is presented, with corresponding percentages for general members. Responses where this occurs are indicated with an asterisk.

### Demographics

- My primary location of practice:  
**United States (63.6% and 27.5%)\***  
 Canada  
 Mexico/Central & South America  
 Europe  
 Asia  
 Australia  
 Middle East  
 Africa  
 Other  
*\*Majority response for general members was "Europe," 31.9%.*
- What is your specialty?  
 Plastic Surgery  
**Dermatology (24.4% and 25.5%)**  
 Surgery (General/ENT/OBGYN/Surgical subspecialty)  
 General /Family Practice  
 Other
- I have been performing hair restoration surgery for:  
 Less than a year  
 1-2 years  
 3-5 years  
 6-10 years  
 11-15 years  
**16-20 years (33.3% and 17.1%)\***  
 21-25 years  
 26-30 years  
 31 or more years  
*\*Majority response for general members was "6-10 years," 23.4%.*
- Of your entire personal medical practice, roughly what percent is specifically devoted to hair restoration?  
 0-25%  
 26-50%  
 51-75%  
**76-100% (71.1% and 51.2%)**
- How many hair restoration surgeries do you perform per month?  
 0-3  
 4-15  
**16-25 (40.0% and 26.8%)\***  
 26 and over  
*\*Majority response for general members was "4-15," 40.8%.*

### Anesthesia & Emergency

- What local anesthetic do you use for hair restoration surgery?  
 a. Lidocaine  
 b. Marcaine  
**c. Lidocaine & Marcaine (64.4% and 51.4%)**  
 d. Buffered solutions of Lidocaine  
 e. Other
- Do you sedate your patients during lidocaine administration?  
 a. No  
**b. Yes, with oral Benzodiazepines (46.7% and 55.3%)**  
 c. Yes, Midazolam IV  
 d. Yes, Midazolam subcutaneous  
 e. Yes, Midazolam sublingual  
 f. Yes, with other meds. Which ones?
- Do you use tumescent solutions in hair restoration surgery?  
 a. No  
 b. Yes, with epinephrine  
 c. Yes, with lidocaine  
**d. Yes with epinephrine and lidocaine (50.0% and 44.7%)**
- Given that hair restoration surgery local anesthesia may be given incrementally over a period of 6 to 8 hours, what is the maximum total dose of lidocaine with epinephrine that you will give an average 70 kilogram male patient for HRS?  
**a. < 500mg (50.0% and 56.3%)**  
 b. ≥ 500mg but < 600mg  
 c. ≥ 600mg but < 700mg  
 d. ≥ 700mg
- Do you stage your anesthetic, give one dose for donor harvesting, and a second dose later for recipient site creation?  
**a. Yes (86.7% and 91.2%)**  
 b. No
- For your average patient, how long will your initial anesthetic block of the recipient area last before the patient experiences discomfort requiring that you reinforce the block?  
 a. 2 to 3 hours  
**b. 4 to 5 hours (56.8% and 46.6%)**  
 c. 6 to 8 hours  
 d. 8 to 10 hours
- What percentage of your patients in one month have a vaso-vagal episode that leads to fainting during surgery?  
**a. Less than 1% (80.0% and 74.7%)**  
 b. 1-5%  
 c. 6-10%  
 d. 11-20%  
 e. 21-30%  
 f. 31+%

8. Do you use distraction techniques during local anesthesia administration? (check all necessary)
  - a. No
  - b. Yes, ice
  - c. **Yes, vibrators (57.8% and 50.7%)**
  - d. Yes, hair pulling
9. Do you use tumescent solution in the donor area?
  - a. **Yes (95.6% and 81.9%)**
  - b. No
- 9.5 If you do, what does your solution contain? Check all that apply.
  - a. **Saline or similar solution (86.1% and 76.5%)**
  - b. Lidocaine or other local anesthetic
  - c. Epinephrine
  - d. Triamcinolone
10. Do you use tumescent solution in the recipient area?
  - a. **Yes (70.5% and 77.3%)**
  - b. No
- 10.5 If you do, what does your solution contain? Check all that apply.
  - a. **Saline or similar solution (77.4% and 82.0%)**
  - b. Lidocaine or other local anesthetic
  - c. Epinephrine
  - d. Triamcinolone
11. Do you ask your patients to score the pain or discomfort they experienced during your surgery?
  - a. Yes
  - b. **No (60.0% and 53.5%)**
12. What do you consider to be an acceptable pain experience for your average patient?
  - a. No pain at all
  - b. **Knows something is happening but relaxed and not complaining (37.8% and 55.5%)**
  - c. Is uncomfortable, but not withdrawing from injections
  - d. Is uncomfortable and occasionally withdraws or moves when injected
  - e. Experienced pain as noted above, but is amnesic for the event because of sedation
13. Have you ever had a patient experience a life threatening emergency during a HRS procedure? (check all necessary)
  - a. **No (77.8% and 78.6%)**
  - b. Yes, seizure
  - c. Yes, cardiac arrest
  - d. Yes, dull chest pain of myocardial infarction
  - e. Yes, stroke
  - f. Yes, asthmatic airway
  - g. Yes, anaphylactic reaction or shock
  - h. Yes, other \_\_\_\_\_
14. If you must evacuate a patient for a medical emergency, what is your protocol?
  - a. No protocol
  - b. Patient with staff
  - c. **Patient with doctor (81.4% and 69.2%)**
  - d. Patient by himself
15. Do you keep an emergency kit in the office?
  - a. No
  - b. Yes, with airway assist equipment
  - c. Yes, with defibrillator or automatic external defibrillator (AED)
  - d. **Yes, with all of the above (77.8% and 53.6%)**
16. Do you have your techs certify in basic life support?
  - a. **Yes (86.7% and 70.1%)**
  - b. No
17. What are your nurses certified in?
  - a. **Basic life support (63.6% and 61.7%)**
  - b. Advanced cardiac life support
  - c. None of the above
18. What are you certified in?
  - a. Basic life support
  - b. **Advanced cardiac life support (62.2% and 58.1%)**
  - c. None of the above
19. Do you have routine emergency practice drills for your staff?
  - a. No
  - b. Yes, every 3 month
  - c. Yes, every 6 months
  - d. **Yes, every year (37.8% and 27.1%)\***

*\*Majority response for general members was "No," 52.1%.*
20. Do you have a non-medical emergency patient evacuation plan in your office, e.g., for fire, power outage, natural disaster, etc.?
  - a. **Yes (79.6% and 65.7%)**
  - b. No
21. Do you keep an emergency evacuation kit of hair restoration surgery tools and supplies available in case you need to quickly evacuate your office with an unfinished patient?
  - a. Yes
  - b. **No (62.2% and 64.7%)**
22. Who administers local anesthetic to your patients?
  - a. **A doctor or anesthetist (60.0% and 76.1%)**
  - b. A licensed RN (registered nurse) or LPN (licensed practical nurse)
  - c. A medical assistant, surgical tech, etc.
  - d. Other (non-certified office or non-certified surgical assistant, etc.)
23. Do you have a protocol for identifying adverse reactions to local anesthesia?
  - a. Yes (71.1% and 56.7%)
  - b. No
24. Do you have a protocol for dealing with sudden loss of consciousness in a patient during surgery?
  - a. **Yes (73.3% and 72.0%)**
  - b. No
25. If you administer IV sedation during anesthesia/surgery, do you have a designated person to perform continuous monitoring of vital signs (BP, HR, and RR)?
  - a. **Not applicable. I do not administer IV sedation. (68.9% and 63.6%)**
  - b. No, I administer IV sedation but don't perform continuous monitoring of vital signs.
  - c. Yes, I have a designated person to do that.
  - d. No, I monitor the patient but no one else is specifically designated for this task.
26. For a typical hair restoration surgery procedure not involving IV sedation, do you monitor vitals (e.g., blood pressure, pulse, O2 saturation):
  - a. Pre-op only
  - b. Pre-op and post-op
  - c. **Pre-op, throughout the surgery, and post-op (54.8% and 49.3%)**
  - d. Other

27. Do you use an epinephrine solution, such as superjuice, to promote hemostasis?
  - a. **Always or the majority of cases (31.1% and 41.3%, experts were tied with response “d”)**
  - b. Sometimes but less than half of cases
  - c. Rarely, less than 10% of cases
  - d. **Never (31.1% and 28.3%, experts were tied with response “a”)**
28. Have you ever witnessed sustained hypertension relative to administration of epinephrine solution in tumescence or local anesthesia?
  - a. Yes
  - b. No (86.7% and 73.5%)
29. At what point do you treat hypertension prior to the onset of surgery?
  - a. Systolic BP > 150-160
  - b. Systolic BP > 170-180
  - c. Systolic BP > 190-200
  - d. Systolic BP > 200
  - e. I never treat systolic hypertension during the anesthesia process.
  - f. **I cancel surgery if the patient has systolic hypertension. (36.4% and 30.5%)**
30. Do you alter your use of epinephrine containing solutions when patients are using medications which can interact?
  - a. **Always (46.7% and 44.7%)**
  - b. Sometimes
  - c. Rarely
  - d. Never
  - e. Not applicable. I never use epinephrine in anesthesia or tumescence.
31. Which of the following is your usual first approach to manage hypertension observed during the anesthetic period?
  - a. **Wait to see if sedation will bring the BP down (35.6% and 30.2%, experts were tied with response “e”)**
  - b. Wait to see if BP comes down after the pain of anesthesia abates
  - c. See if the patient needs to use the bathroom (for urinary sympathetic causes of hypertension)
  - d. Make sure patients on antihypertensive Rx have taken their medications
  - e. **Depends of degree of hypertension (35.6% and 27.9%, experts were tied with response “a”)**
  - f. Administer antihypertensive medication
32. Do you keep an intravenous line in place for the majority of the surgery?
  - a. Yes
  - b. **No (75.6% and 66.4%)**
33. Do you add triamcinolone to your recipient area anesthesia solution or recipient tumescent solutions?
  - a. **Yes (57.8% and 48.6%)**
  - b. No
34. Do you feel added triamcinolone to the recipient area solutions will decrease forehead edema?
  - a. **Yes (71.1% and 65.7%)**
  - b. No
35. Do you add triamcinolone to your donor area anesthetic solutions?
  - a. Yes
  - b. **No (82.2% and 78.5%)**
36. If “Yes” to the above question, do you add triamcinolone to the donor solutions to:
  - a. Reduce donor area swelling? **Yes (87.5% and 56.3%)** or No
  - b. Improve scarring? **Yes (50.0% and 52.5%)** or No
  - c. Minimize pain? **Yes or No (50.0% and 77.1%)**
37. Do you think that adding triamcinolone to your anesthetic solutions, if not properly used, could lead to:
  - a. Fat atrophy? **Yes (70.0% and 59.5%)** or No
  - b. Delayed donor healing? **Yes (59.5% and 67.2%)** or No
38. Which corticosteroid regimen do you use to control post-operative edema?
  - a. **Oral corticosteroids (35.6% and 42.5%)**
  - b. Injectable corticosteroids
  - c. Triamcinolone
  - d. Combination of above
  - e. None of the above
39. Do you vary the amount of tumescence from patient to patient based on differences that exist between patients in terms of their scalp anatomy, i.e. scalp thickness, depth of hair follicle, scarring, etc.?
  - a. **Yes (88.6% and 77.9%)**
  - b. No
40. Do you have an agreement with a local hospital to accept a patient for transportation and possible admission?
  - a. Yes
  - b. **No (55.6% and 53.0%)**
41. Do you warm the local anesthetic solution to body temperature before injection?
  - a. Yes
  - b. **No (77.8% and 74.2%)**
42. Do you use supraorbital nerve blocks for anesthesia of the recipient area?
  - a. Always or a majority of the cases
  - b. Sometimes, but less than half of the cases
  - c. **Rarely, less than 10% of cases (35.6% and 21.6%)\***
  - d. Never

*\*Majority response for general members was “Never,” 38.9%.*
43. Do you use topical anesthesia such as Emla or LMX prior to anesthesia of recipient or donor areas?
  - a. Yes
  - b. **No (90.9% and 80.9%)**

## Meetings and Studies

Henrique N. Radwanski, MD *Rio de Janeiro, Brazil* [hnradwanski@hotmail.com](mailto:hnradwanski@hotmail.com)

Another great international hair restoration meeting was held, this time in Istanbul. The increasing number of participants impresses me; the demand for learning FUE is seemingly unlimited. Over 200 doctors gathered in Turkey, a burgeoning center for hair transplantation. By Dr. Ginzburg's colorful description of the event, this was the perfect setting for faculty and attendees alike. Between lectures, poolside conversation, and sightseeing, I am sure everyone found this to be an unforgettable experience.



## Review of the 3rd Mediterranean FUE Workshop June 25-27, 2015 • Istanbul, Turkey

Alex Ginzburg, MD *Raanana, Israel* [alex\\_ginzburg@yahoo.com](mailto:alex_ginzburg@yahoo.com)

The ancient city of Istanbul (formerly Constantinople, and a place considered throughout history as the crossroads of the world) formed a breathtaking backdrop for the 3rd Mediterranean FUE Workshop in June 2015. It was hosted by Drs. Alex Ginzburg, Jose Lorenzo, and Koray Erdogan. This workshop, the third to date held in the Mediterranean

area every two years, was previously preceded by one in Israel in 2011 and one in Spain in 2013.

Over 200 participants from across the globe, representing 47 countries and 6 continents, attended the conference.

### Thursday/June 25, 2015

The workshop began with a typically bountiful Turkish buffet breakfast at the hotel, followed by the showing of the comical promotional workshop video developed by Dr. Erdogan and his team, plus a warm welcome to Istanbul from Dr. Ginzburg, director of the workshop and Dr. Erdogan, host of the workshop.

The morning progressed with lectures by the 11 faculty members including Drs. Jean Devroye (Belgium), John Cole (USA), Robert True (USA), James Harris (USA), Emorane Lupanzula (Belgium), Hassan Rahal (Canada), Bijan Feriduni (Belgium), Alex Ginzburg (Israel), Jose Lorenzo (Spain), and Koray Erdogan (Turkey).

Dr. Lorenzo began with a great talk about the anatomy of the follicular unit (FU), and Dr. Cole explained the difference between FU, FU family, and partial FU family harvesting. Dr. Devroye spoke about follicle transection, and the meanings of capping, paring, broken follicle, and missing graft. The advantages and disadvantages of using different FUE tools were explained by Drs. Lorenzo, True, Cole, and Harris.

In discussion of the donor area, Dr. Lorenzo spoke about the assessing the quality of the donor area and predictive points. Dr. Lupanzula then enlightened us on the safe and unsafe donor area and the limits thereof. Dr. Feriduni demonstrated the easy pre-operative technique to evaluate the "maximum" and "safe" donor availability. Dr. Erdogan explained how to calculate the



Meeting faculty (left to right): Drs. Bijan Feriduni, Robert True, Jerry Wong, Emorane Lapanzula, John Cole, Alex Ginzburg, Jean Devroye, Hassan Rahal, James Harris, and Koray Erdogan

density and caliber of the follicles of the donor area. Dr. True spoke on practical approaches to beard and body harvesting.

Following a break, graft placement with implanters was demonstrated by Dr. Lorenzo, Dr. Ginzburg showed different forceps techniques, and Dr. Wong explained the difference between lateral versus sagittal incisions.

At the end of the morning, Dr. Lorenzo demonstrated his manual step technique, and Dr. Feriduni demonstrated his manual coring method. Dr. Ginzburg then demonstrated his technique with a battery cordless machine, and Dr. True his powered motor technique.

Following the lunch break, surgical observation sessions at the ASMED Surgical Medical Center began via rotation through four surgical rooms with different faculty surgeons (Drs. Ginzburg, True, Feriduni, and Erdogan). They performed extraction and implantation surgery on four different patients, each with diverse conditions and using forceps or implanters. Dr. Wong also demonstrated his technique to create incisions.

The first day's program concluded with a poolside Welcome Cocktail Reception at the Radisson Istanbul Asia Hotel where participants were afforded a casual opportunity to meet colleagues from around the world and to share their observations, experiences, and knowledge.

### Friday/June 26, 2015

As some late arrivals trickled into the lecture hall on Friday morning following flight delays and the rearrangement of their personal schedules, the breakfast buffet was being reset for a coffee break of traditional Turkish pastries and sweets while discussion had already begun with Dr. Devroye's talk on the differences between dull and sharp punches and Dr. Harris's on robotic FUE.

The talks continued with Dr. Ginzburg describing pre-op dermatologic evaluation and variation in extraction technique in different ethnicities.

Dr. Harris then continued with the pitfalls, problems, and remedies of FUE, and Drs. True and Feriduni on preserving the donor area with the FUE technique.

The following session focused on mega-sessions where Dr. Wong spoke on the FUT technique and Drs. Lorenzo, Erdogan, and Feriduni on the mega-session in FUE. This was followed by a description of the faculty's individual video techniques including Dr. Harris's Safe System, Drs. Devroye and Rahal's motorized FUE, Dr. Lupanzula's manual step technique, Dr. Cole's motorized FUE (PCID), and Dr. Erdogan's manual sequential method. Workshop participant surveys were also distributed and the outcome statistics contributed to faculty discussion, appraisal, and comparison.

The afternoon progressed with another plentiful buffet lunch in the ASMED garden followed by surgical observation rotations, again in four surgical rooms with surgeries being performed by faculty members including Drs. Erdogan, Harris, Lorenzo, and Lupanzula, and Dr. Cole who demonstrated his skill in performing extractions on non-shaven patients.

After a few hours of relaxation, participants and their guests boarded buses and traveled along Istanbul's Asian Bosphorus Sea coastline to the resplendent Adile Sultan Palace for a Gala Dinner. The palace was the former residence of the Ottoman princess Adile and affords magnificent views, especially at sunset, of the Bosphorus Sea and the Istanbul skyline from its perch high on a cliff. While cocktails were being served on the patio overlooking the sea, the palace staff was preparing for a delicious gourmet meal of local dishes and the stage was being set for a very special and reverent display of ancient Turkish tradition. Soon after, participants were ushered in for dinner, the lights were dimmed, and the room became silent in respect for the sacred ritualistic swirling of the Sufi Whirling Dervishes, known throughout the world for their practice of whirling as a form of meditation and connection to Divine love.

As the evening progressed, each faculty member was graciously presented with a participatory plaque by hosts Drs. Ginzburg, Lorenzo, and Erdogan, and the enthusiasm and clapping was instantly transformed into magical energy that lit up the dance floor. The merriment could have easily progressed into the early morning, but alas, there was still a day of learning and sharing ahead.

### Saturday/June 27, 2015

In spite of the late return to the hotel the night before, all participants were present and attentive to gain more insight and understanding into the world of FUE. Lectures began with Dr. Lupanzula discussing scar repair from a previous strip and after burned scalp



Faculty Q&A panel



The workshop's attentive audience



Live surgery with Dr. Erdogan



Closing remarks by Drs. Ginzburg, Erdogan, and Lorenzo

using FUE, and a presentation by Drs. True and Lorenzo on graft survival. In his lecture, Dr. Erdogan emphasized the importance of hairline design and restoration while Dr. Ginzburg continued with a lecture on the post-op period. The complications and disadvantages of FUE in certain patients with certain conditions was a topic addressed by several faculty members including Drs. Devroye, Lorenzo, and Feriduni. The morning session concluded with a faculty debate on FUE versus FUT and storage solution options. Workshop participant surveys were again distributed and the outcome statistics on those topics contributed to faculty discussion, appraisal, and comparison.

Surgical cases for the day included FUT scar revision surgery performed by Dr. Erdogan and extractions and implantations performed by Drs. Lorenzo, Devroye, and Ginzburg. All surgeries (FUE) were performed by the doctors themselves, who were then aided by the technicians for follicle implantation.

In the evening's event, a dinner cruise along the Bosphorus Sea, the threatening clouds were eventually replaced by a glorious sunset amidst balmy summer breezes as the specially chartered Prime Time ship sailed past some of the city's most renowned historical landmarks including an ancient fortress and elegant palaces and villas. Traditional dancing on deck and an amazing evening of music and entertainment shadowed a delicious fish dinner as the outstanding three days of learning, sharing, gaining insights, and encouraging innovation came to an end.

Amongst hugs, expressions of gratitude, and promises to see each other soon filled the air, the ship docked leaving behind wonderful memories of Istanbul, the hosts, the faculty, and the wonderful ASMED team that managed to cover every detail and address every necessity with smiles and enthusiasm.

Drs. Koray Erdogan, Jose Lorenzo, and I wish to thank everyone for participating, and most importantly, for coming from far and wide to share in this most exciting and important educational event. From the shores of ancient Istanbul, we once again launched our ship of knowledge into the infinite sea of learning, creativity, and innovation, and hope to see all participants soon at the next Mediterranean FUE Workshop.

I personally wish to express my heartfelt thanks to all faculty who joined us from all over the globe and shared with us their knowledge and expertise. Special thanks to my dear friend Jose Lorenzo for organizing our incredible scientific program, and to my wonderful friend Koray Erdogan and his team in preparing all details and making this FUE workshop the magnificent success that it was. ♦

## Letter to the Editors

Michael Beehner, MD, FISHRS, ABHRS *Saratoga, New York, USA*  
[mlbeehner@saratogahair.com](mailto:mlbeehner@saratogahair.com)

**Re: Benefiting from early pioneers**

I appreciate all the feedback I received concerning my Editor Emeritus column last year on the subject of MFU grafts and Strip Harvesting, but I would like to correct an omission in my discussion of this topic. I believe Dr. Carlos Uebel of Brazil deserves a lot of credit for first seeing the wisdom of a “combination”

approach using both FU-size grafts along with multi-follicular grafts. His landmark paper was entitled, “Micrografts and Minigrafts—A New Approach for Baldness Surgery,” which was published in the *Annals of Plastic Surgery* in 1991 (27:476). And, of course, much credit goes to Dr. Bobby Limmer of San Antonio, Texas, for his early advocacy of strip harvesting with “slivering” and microscopic dissection of grafts. All of us have benefited from the footsteps of these early pioneers. ♦



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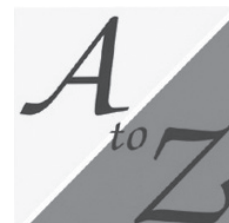


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# Message from the ISHRS 2016 World Congress Program Chair

Marcelo Pitchon, MD *Belo Horizonte, Brazil* [marcelopitchon@gmail.com](mailto:marcelopitchon@gmail.com)

I would like to thank our president, Dr. Kuniyoshi Yagyu, the Board of Governors, the Executive Committee members, and the ISHRS membership for the invitation to be the chairman of the 24th World Congress of the International Society of Hair Restoration Surgery.

Congratulations to all the ISHRS founders, members, assistants, staff, exhibitors, collaborators, and our families.

From those like myself, who attended the very first annual meeting of the ISHRS in 1993, in Dallas, to those who attended their first meeting in Chicago only this year: CONGRATULATIONS!! You are the ones who made it possible for the ISHRS to achieve our present position and leadership in the global scientific scenario of the hair restoration field.

Our Society has become stronger since its beginning, and the time for change has come. For 23 years we have called our meeting, every year, the “Annual Scientific Meeting of the ISHRS”. I have the honor and pleasure to announce that the Annual Scientific Meeting of the ISHRS, will be, from now on, named the World Congress of the International Society of Hair Restoration Surgery. So welcome to the ISHRS 2016 World Congress, the 24th annual meeting of our Society.

We all deserve this important change. Every meeting we have attended, every abstract we have submitted, every presentation we have done, every article we have published in our Forum, every technique we have shared or learned, every live surgery we have performed, every new friend we have made, every novice we have taught—all that and more—has made this change pertinent and fair.

So, I invite you to actively participate in this historic moment in the life of the ISHRS. Together, let's put up a fantastic meeting, and let's make the 24th World Congress of the ISHRS an event to celebrate and to make history. We'll meet in Panama City, Panama, at the Westin Playa Bonita Hotel, October 19-22, 2016. Here, we'll share with our colleagues what we are doing, what are we creating and innovating, and how we are making hair restoration more efficient, scientific, artistic, safer, and sustainable for our patients.

The venue we have selected is for sure one of the best hotels in our meeting's history. Check that for yourself. Visit the hotel's website at <http://www.starwoodhotels.com/westin/property/overview/index.html?propertyID=3386> and visit the hotel pictures. But do also something else you will get impressed with—visit the hotel videos at <http://www.starwoodhotels.com/westin/property/videos/index.html?propertyID=3386&videoID=2860175798001> and check what is waiting for us, our friends, our children, grandchildren, and our families.

The name “Playa Bonita” speaks for itself, in Spanish, the local language: “Beautiful Beach!” (See the pictures here.)

The hotel has its own private white sand beach, 4 breathtaking infinity edge pools overlooking the Pacific Ocean, 6 restaurants, the Sensory



**I have the honor and pleasure to announce that the Annual Scientific Meeting of the ISHRS, will be, from now on, named the World Congress of the International Society of Hair Restoration Surgery.**



The Playa Bonita



Spa, and Salsa lessons to name but a few of the amenities. The 24-hour Fitness Studio even offers, through a partnership with New Balance, shoes and clothing so that you can pack light. The Westin Kids Club, which offers carefully supervised activities at the pool, beach, and playground, is free of charge.

Children can spend the day making sandcastles, singing karaoke, learning dances, hunting for treasure, decorating cookies, playing with bubbles, and much more. The club also has a playroom with a TV, Sony PlayStation® PS3™, painting board, costumes, and board games for indoor fun.

Children can take Spanish classes as well as dance classes with popular songs. Complimentary snacks are provided throughout the day.

So, all this was said because it is at the same time a professional meeting hotel, a place for romance, and a place for the family. In Panama, it will be possible to associate formal medical education with actual vacations. I, my wife Fernanda, my kids Dan, 5, and Liz, 3, my family, and the ISHRS family are looking forward to staying at this dream place, with you.

Our scientific programs have been historically and traditionally recognized as excellent ones, and we will make all our efforts to maintain our quality level, always thinking of improving it. You will make the difference—either again or for the first time. I do ask you to take an active part. I do ask you to participate and to send in your abstracts, which will be rated blindly by the Scientific Meeting Committee. Our submission deadline will be briefly informed.

If you are a novice and are seriously thinking of entering the prosperous hair restoration field, you will be welcomed by our Society. A hair transplant looks, at a first glance, to be an easy procedure. But believe me, it definitely is not. Don't underestimate it. It is one of the most technically and artistically complex of the aesthetic or reconstructive procedures. It is also a very delicate process at the subjective level. Limitations, realistic expectations, and potential results must also be very clearly discussed, understood, and managed by both surgeon and patient. Textbooks are also essential, but it is through attending the ISHRS meetings that all of us have learned and keep learning both the actual sensational benefits and how to manage the risks of hair transplantation.

So save the date: October 19-22, 2016. Come with us to the ISHRS 2016 World Congress. See you in Panama! ♦



## Fellow of the ISHRS (FISHRS)

In 2012, the designation of Fellow was established in order to recognize members who met 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, 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.

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

Qualifications and process can be found in the Members Only section of ISHRS website at: <http://www.ishrs.org/members-only/ishrs-fellow-category>.

### Congratulations to the 10 Fellows of the ISHRS Approved at the Recent 2015 Annual Scientific Meeting!



Michael L. Beehner, MD, FISHRS

Ekrem Civas, MD, FISHRS

Marcio Crisostomo, MD, FISHRS

Jeff Donovan, MD, PhD, FISHRS

Brian O. Goertz, MD, FISHRS

Robert Jones, MD, FISHRS

Venkataram N. Mysore MD, FISHRS

Nicole E. Rogers, MD, FISHRS

William M. Parsley, MD, FISHRS

Ken L. Williams Jr., DO, FISHRS

The full list of 92 FISHRS as of September 13, 2015, may be found at: <http://www.ishrs.org/content/fellows-fishrs-international-society-hair-restoration-surgery>.

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The North American Hair Research Society (NAHRS), with participation from the Australasian Hair & Wool Research Society, the European Society for Hair Research, the Hair Research Society of India, the Japanese Society for Hair Research, and the Korean Hair Research Society, will host the **9th World Congress for Hair Research**, which will bring together hair biologists, dermatologists, cosmetic scientists and hair transplantation surgeons for this three and a half day comprehensive hair research meeting.

International colleagues will present new research, share experiences, and discuss new directions for the advancement of knowledge in hair growth, hair and scalp disease, and clinical care.

The Congress will include general sessions, scientific posters, pre-Congress workshops, networking opportunities, a full exhibits program, company sponsored satellite symposia, and more. **We invite you to attend!**

Sincerely yours,  
Congress Scientific Planning Committee

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**SAVE THE DATE!****November 19-22, 2015**

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Samuel M. Lam, MD, FACS, FISHRS

**Honored Guest:**

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Vance Elliott, MD, CCFP, FISHRS  
James A. Harris, MD, FACS, FISHRS  
Nicole Rogers, MD, FAAD  
Lawrence E. Samuels, MD  
Robert H. True, MD, MPH, FISHRS  
Ken L. Williams, Jr., DO

**Assistant Course Director:**

Emina Karamanovski Vance, MD

**Assistant Faculty:**

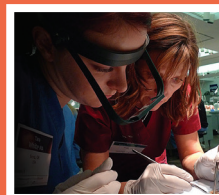
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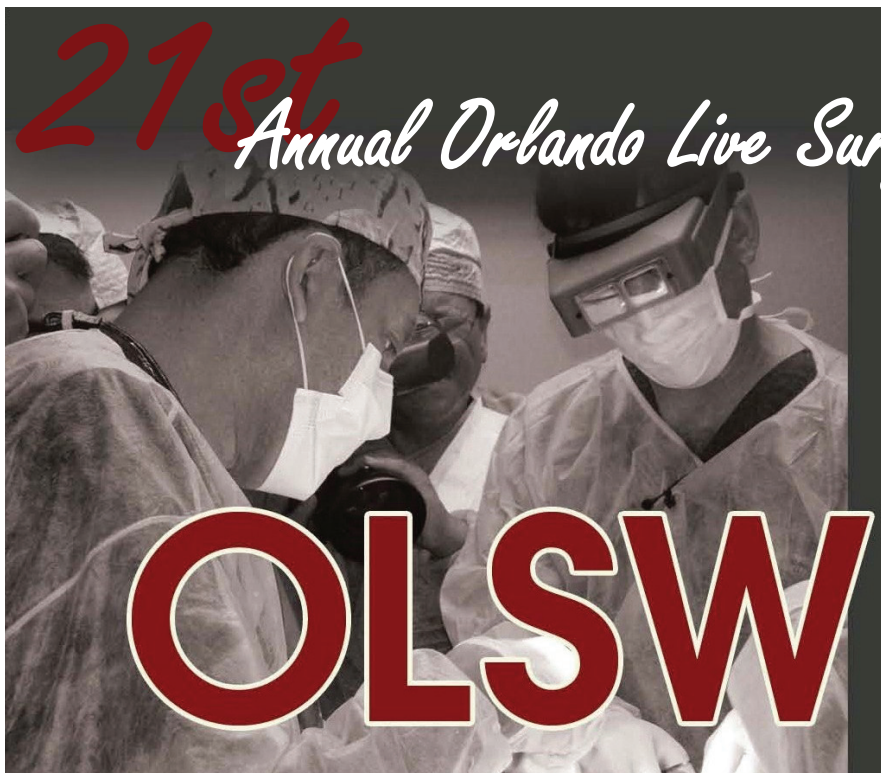


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**Program Director** James A. Harris, MD, FACS, FISHRS

**Workshop chairs** Tina Lardner and Emina Karamanovski Vance

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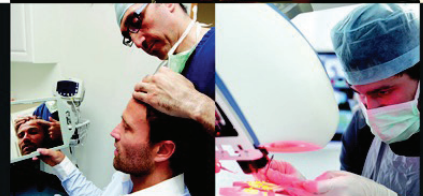
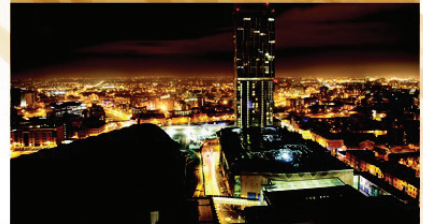
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June 10-12, 2016



**Beginner's Program: June 9, 2016**

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**Clinic sponsor:** Hair Sciences Center of Colorado

**Target audience:** Hair restoration surgeons from beginner to advanced who desire the opportunity to learn about mechanized FUE devices

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- Understand the basic concepts of donor area management, unique FUE graft qualities, limitations, and complications of FUE, and the basics of body FUE.
- Employ the different methodologies and instrumentation for FUE.
- Discuss the advantages and disadvantages of each type of device.
- Understand the basic aspects of FUE with these devices in order to successfully and safely perform this procedure.

**Faculty and devices:** Faculty list to be announced at a later date. The devices to be available are the powered SAFE System, the CDD-Vortex, several motorized sharp punch systems, and the ARTAS System robot. There will also be a hands-on lab with skin tissue models for those attendees who do not have a United States medical license.

**Registration:** Registration will open in December. Details will be available at [www.ishrs.org/content/educational-offerings](http://www.ishrs.org/content/educational-offerings). To be placed on the mailing list for first opportunity to register, send your contact details to [jlmccasky@hsccolorado.com](mailto:jlmccasky@hsccolorado.com).

**Questions:** Contact Janiece McCasky at [jlmccasky@hsccolorado.com](mailto:jlmccasky@hsccolorado.com).

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