Hair's the Question*

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

Anagen effluvium is a less common cause of hair loss, yet it can mimic or even coexist with the more recognizable alopecias. Test your knowledge of this rarer, but remarkably relevant type of hair loss. Bear in mind that a detailed knowledge of the different phases of the hair growth cycle is useful in answering these questions.

Anagen Hair Loss

1. Which of the following statements regarding the anagen phase of hair growth are correct?
   A. Anagen actually consists of 5 stages.
   B. Anagen is the phase wherein stem cells produce a "new and different" hair from a single follicle each time.
   C. Melanocytes are inhibited from producing pigment in the anagen cycle.
   D. Anagen lasts 2-29 weeks on the scalp.

2. The percentage of hairs on the scalp in the anagen phase is:
   A. Highest in spring and lowest in autumn
   B. Lower in pregnancy
   C. 80 percent or lower
   D. Decreased in persons with androgenetic alopecia

3. Anagen hair loss:
   A. Always results in release of the hair
   B. May result in release of the hair or hair damage without release
   C. May be diagnosed by the hair pull test in young children
   D. May be diagnosed by the presence of club hairs on microscopic analysis

4. A young person presents to you with a history of not being able to grow their hair longer than about 10cm. On exam you are able to extract many blond hairs with gentle pulling, but not all of the hairs you tug on release. The patient states that their hair has always been this way and they think it is genetic. The most likely diagnosis is:
   A. Loose Anagen Syndrome
   B. Lichen Planopilaris (diffuse type)
   C. Discoid Lupus Erythematosis (DLE)
   D. Mercury or Lead toxicity

5. Chemotherapy-induced anagen hair loss:
   A. Is caused by any chemotherapeutic drug
   B. Is only caused by chemotherapy in combination with radiation treatments as well
   C. Is often feared by patients more than the other side effects of cancer treatment
   D. Is transient and usually occurs 1-2 months after the first dose of a causal chemotherapeutic agent

6. Anagen effluvium can be seen in patients with:
   A. Trichotillomania and heavy metal poisoning
   B. Hypertrichosis and cicatricial alopecias
   C. Traction alopecia but NOT loose anagen syndrome
   D. Alopecia areata but NOT radiation therapy

7. Effective anagen hair loss treatments have included:
   A. Minoxidil 2%, which can help speed recovery although this drug is not preventative
   B. Hypothermic caps (cooling caps) and tourniquets to reduce blood flow to the scalp as a preventative measure during chemotherapy
   C. Drugs known to cause hypertrichosis (Cyclosporin)
   D. Colchicine and various immunomodulators

8. All of the following are rare causes of anagen hair loss EXCEPT:
   A. Eating coco de mono seeds (monkeypods)
   B. Thallium and mercury
   C. Boric acid and copper
   D. *Arsenic and Old Lace*

⇨ *Answers on page 154*

Hair's the Question from page 153

1. **B.** This is the explanation for your patient's questions about why their hair is changing over the years! Anagen actually consists of 6 stages (the last stage—anagen 6—is where the hair appears above the surface) so A is incorrect. Melanocytes are stimulated during anagen, so C is incorrect. Finally, anagen on the scalp lasts years, 2-7 according to Olsen,[1] but I have read up to 10 years from other sources. In D, 2-29 weeks is actually the anagen phase length for hair on the moustache, which I just thought was fun to know.
2. **D.** The percentage of hairs in anagen on the scalp is typically above 80% and seasonal variation does occur leading to shedding in the spring (i.e., anagen percentage is highest in the autumn and lowest in the spring—the opposite of what is stated in A). The percentage can be increased by antiandrogens in those genetically predisposed to androgenetic alopecia and by pregnancy (up to 95%).
3. **B.** If you got this one wrong, so did I at first. I was taught that anagen hair loss is sudden onset total loss of all hair. However, sometimes the insult to the follicle is not enough to disrupt the matrix cell division completely and thus weak hair growth is seen, sometimes with significant breakage. Toxins are classically implicated in this type of hair loss. Young children have varying numbers of hairs in the anagen phase and furthermore the hair is not held as tightly as it is in the anagen phase of adults so a pull test may not be diagnostic. Microscopic analysis of hair should show normal anagen hairs or even dystrophic, tapered, or "bayonette" hairs. Telogen hairs (normal shedding) appear club-shaped and unpigmented at the root. Good examples of this can be found in Olsen (page 79) and online.
4. **A.** This disease is fascinating. Anagen hairs may be easily plucked from the edge of the lesions in lichen planopilaris (there is no diffuse type that I know of, by the way, that one was made up) and DLE. Mercury poisoning and other heavy metals can cause anagen hair loss as well, but this patient does not have a history consistent with those diagnoses.
5. **C.** D is not true since the hair loss post-chemo can start 1-2 weeks after the first dose of chemo (although it may PEAK at 1-2 months post). Radiation treatments may cause hair loss all by itself, and the range of chemotherapeutic drugs is wide so there are definitely chemo regimens that don't cause hair loss.
6. **A.** Every other diagnosis listed actually is correct too,except for hypertrichosis, which is caused by prolongation of the anagen phase and is thus the opposite of anagen effluvium.
7. **A.** Minoxidil may be the only weapon in the medical arsenal at this point. Hypothermic caps and immunomodulators held a lot of promise, however, efficacy is not completely established. Cyclosporin does cause hypertrichosis and may work to prevent or treat anagen hair loss, but since it is an immunosuppressant, its usefulness is limited. Colchicine can cause anagen hair loss.
8. **D.** This is the one everyone should have picked even though arsenic poisoning can be picked up in the hair. *Arsenic and Old Lace* is a great classic movie with Cary Grant, but based on my exhaustive review of the medical literature, it has NOT resulted in any cases of anagen hair loss.

Reference

1. Olsen, E.A. Disorders of Hair Growth, Second edition. Chapter 9.◆

Call for ISHRS Fellowship Training Program Directors

The ISHRS has a long-standing and prestigious Fellowship Training Program in Hair Restoration Surgery whereby it has a rigorous process overseen by the Fellowship Training Committee that ensures Program Directors and Training Programs meet specific guidelines to provide exceptional opportunities and educational environments to acquire expertise in hair restoration surgery. Fellowships may be one or two years in duration. One-year programs are required to perform at least 70 cases per year per Fellow. Two-year programs are required to perform 50 cases per year per Fellow.

The list of ISHRS-sanctioned Program Directors is available on the ISHRS website. The trainees seeking to complete a fellowship inquire directly with the program directors for availability. The ISHRS issues certificates to Program Directors whose programs qualify, as well as to Fellows who complete the course of study.

For those who are interested in developing a program or have an existing program that may qualify, you are encouraged to consider completing the application process.

Application materials may be obtained at: http://www.ishrs.org/member-fellowship-training.php

Questions may be directed to Fellowship Training Committee Chair, Robert P. Niedbalski, DO at: drniedbalski@gmail.com

[Note of clarification: The term "Fellow" as used to describe those who complete an ISHRS-sanctioned Fellowship Training Program is not to be confused with the term "Fellow" category of ISHRS membership.]

Review of the Literature

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

Book Review:

Hair Transplant 360: Volumes 1, 2, & 3

Editor: Samuel Lam

Volume 1: 2011 Jaypee, ISBN-978-93-5025-178-2
Volume 2: 2011 Jaypee, ISBN-978-93-5025-179-9
Volume 3: 2014 Jaypee, ISBN-978-93-5125-070-2

This is a staggering compendium of information and experience from Dr. Samuel Lam as well as over 70 different experts in the field of hair restoration. What makes this publication unique is that it has three volumes, each dedicated to providing a different overview for a different set of readers. There is significant input also from the assistant perspective, which is valuable both to physicians and to other assistants who are learning the hair transplant techniques.

Volume 1, "Hair Transplant 360 for Physicians," provides 4 chapters and 170 pages of essential hair transplantation knowledge. With this book, Dr. Lam, as a single author, covers the etiology of hair loss, medical treatments for hair loss, and operative planning and procedure, as well as recipient site creation, graft placement, and post-operative management. Also, using a series of 4 DVDs (included with the book), Dr. Lam shows his techniques for hairline design, donor harvesting using a multi-blade device for strip excision, patient positioning, and recipient site creation and graft placement.

Volume 2, "Hair Transplant 360 for Assistants," provides 6 chapters and 117 pages of hair transplant knowledge written for the assistant. The author, Emina Karamanovski, is a physician herself (trained outside of the United States) who has 18 years of experience assisting in hair transplantation. This book addresses specific challenges and solutions that go with graft dissection and placement, such as popping, bleeding and oozing, white hairs, and ergonomics.

Volume 3, "Hair Transplant 360: Advances, Techniques, Business Development, & Global Perspectives," contains over 900 pages of the most cutting-edge tools and techniques, as described by the developers/authors themselves. Section 1, Hair Transplant Techniques, is edited by Dr. Vance Elliott and includes 17 chapters, each by different authors, that cover different extraction methods, long-hair transplant, eyebrow/eyelash/pubic hair transplants, and techniques for recipient site creation. Section II, edited by Dr. Robert Haber, includes 9 more chapters on techniques for hair repair, including tissue expanders, scalp micropigmentation, and the use of FUE. Section III covers important business considerations for the hair surgeon, with chapters on marketing, transitioning from solo to corporate practice (and vice versa), as well as adding hair to a cosmetic practice and vice versa. Section IV covers ancillary measures such as the platelet rich plasma (PRP), bimatoprost, graft storage solutions, low level light therapy (LLLT), and the trichoscan. In section V, difficult cases are explored. Sections VI and VIII are devoted to the surgical assistant, including a discussion of not only tools and techniques but also of making career choices. Another 4 DVDs accompany the 3rd edition, containing 16 videos by the respective authors.

Comment: Overall, this is a hefty read and an impressive contribution to the hair transplant literature. The color photos are wonderful and the editorial experiences will be valuable to all hair transplant surgeons, whether they are still early in their career or very advanced.◆

Toluidine Exposure and Cancer

Johansson, G.M., et al. Exposure of hairdressers to ortho- and meta-toluidine in hair dyes. *Occup Environ Med.* 2014; 0:1-8.

Toluidines are a group of chemicals used in hair dyes and as accelerators for cyanoacrylate glues. There are three different types: ortho-, meta-, and para-toluidines based on the positioning of the methyl group relative to the amino group on a benzene (aromatic) ring.

These toluidines have been linked with bladder cancer as well as non-hodgkin lymphoma and leukemia. For this reason, their use in cosmetic products has been prohibited in the European Union. However, traces of these compounds have been identified in commercial hair dye products both in the United States and in Turkey. Based on this, a large study was undertaken in Sweden to assess the exposure of hairdressers to such potentially carcinogenic compounds. Researchers used questionnaires about hairdresser's professional application of various products, as well as personal use of such products, combined with blood assays to assess long-term exposure to o-toluidine and seven other suspected carcinogenic aromatic amines.

They found that among hairdressers, there was a statistically significant increase in the concentration of o- and m-toluidine with greater numbers of weekly applications of hair waves and permanent hair dyes. There was also an association with increased frequency of light-color permanent hair dye treatments. There was no association with the personal use of such products.

Comment: There is a concerning lack of transparency in the hair care industry. Despite protective regulations by the EU and the U.S. FDA, manufacturers continue to use ingredients such as toluidine dyes that can have potentially carcinogenic effects on the hairdressers who are exposed to them on a daily basis. Manufacturers of the "Brazilian Blowout" hair straightening products have faced fines and litigation for using higher than allowed levels of formaldehyde (or its room temperature equivalent, methylene glycol) in their products. Formaldehyde also has been linked to non-hodgkin lymphoma, leukemia, and nasopharyngeal carcinoma. Until more data is available, hairdressers should use caution (gloves, masks, etc) in all hair treatment processes.◆

Message from the 2014 Annual Scientific Meeting Program Chair

Damkerng Pathomvanich, MD *Bangkok, Thailand* path_d@hotmail.com

It is only three months away from the 22nd ISHRS Annual Scientific Meeting that will take place in Kuala Lumpur, the beautiful city of Malaysia. I'm very excited to inform you that for those who have submitted abstracts, soon you will receive the letter from the ISHRS as to whether your abstract was selected as an oral or a poster presentation. I'm in the process of finalizing the outline, and I assure you that the contents offer top educational opportunities that you won't want to miss.

All the featured speakers have confirmed: Professor Rodney Sinclair will talk on ***Erector pili muscle: the new insight in hair biology***, Professor Desmond Tobin on ***Aging scalp and its hallmark of grey hair***, and Professor Valerie Randall on ***Is a glaucoma drug the next treatment for hair loss?***. Since the volume of women seeking hair loss treatments is increasing, we decided to add one more feature speaker. Dr. Tom Dawson, whose interest is in treating aging hair loss in women, will talk on ***Female aging hair & care for your hair—making the most of what you have***. I hope everyone will enjoy all the talks.

The popular FUE workshops remain. New this year, we have added an FUT workshop for those who are interested to learn how to excise the strip and closure with minimal transection and scar. Please register early, seats are limited.

From the past evaluation, Breakfast with the Expert was well attended and was of high interest to most attendees, so we are maintaining the session; however, this year, it will fall under the newly named **Morning Coffee with the Expert**. The session is on Saturday morning, from 8:00-9:00AM. Each table will offer an interesting topic for discussion; as usual, feel free to change tables during the hour. There is also **Afternoon Coffee with the Expert**. The session will take place Friday afternoon from 4:15-5:15PM and will maintain the same format as last year.

This year the ISHRS will offer simultaneous translation in three languages: Japanese, Spanish, and Korean. I hope this will attract more attendees from Japan, Korea, and Spanish-speaking countries to attend the meeting.

Please mark on your calendar and plan to attend 22nd Annual Meeting meeting this October 8-11 in the beautiful city of Kuala Lumpur.◆

Message from the 2014 Surgical Assistants Program Chair

Aileen Ullrich *Hillsboro, Oregon, USA* aileen@gabelcenter.com

In 1822, the first record of a successful hair transplant to treat alopecia was published in Wurzburg, Germany, according to the ISHRS website. Since then, innumerable developments and improvements have been made within the field of surgical hair restoration. Lead by many passionate individuals with open minds and a constant aim for improvement, hair restoration has evolved to the level that it has today—producing ultra-refined, natural results.

Our Surgical Assistants Program helps to further these advances by providing a platform from which to share techniques, reinforce fundamental principles, expand our knowledge, and foster collegiality. Experience is a wonderful teacher and through our collective experiences and knowledge, we all have so much to gain from these meetings.

Please join me along with our experienced colleagues for the 2014 Surgical Assistants Program in Kuala Lumpur, Malaysia!◆

Operating Room (O.R.) Decorum and Patient Comfort

Ailene Russell, NCMA *Charlotte, North Carolina, USA* arussell@haircenter.com

Each office must comply with government regulations such as HIPAA, OSHA, and FDA rules in the United States. Different countries have their own rules but each office must adhere to the laws in their respective locale. This sets the minimum standard and ensures patient safety and confidentiality. But what can be done to ensure patient comfort?

Why would some offices have strict rules for acceptable uniforms worn by the staff? The answer is that a patient will feel reassured seeing a clean professional appearance in their caregiver. Likewise, if the O.R. is clean and well organized, this will help set the patient's mind at ease going into the procedure. Remember, patient comfort is often much more than a physical feeling. Comfort can start with that first impression. A calm, confident, knowledgeable staff leads to a calm, confident patient.

The surgeon assumes responsibility for patient comfort by delivering the local anesthesia in such a way as to minimize discomfort, and ensuring that this has taken effect prior to starting. The assistant can and should monitor the patient's reaction to make sure the anesthesia is working.

Even if the patient is sedated, it should never be assumed that they can't hear or won't remember what is discussed or said during the procedure. Conversation that is personal is probably at the top of the list of mistakes that are commonly made. There are the standard topics that are taboo such as religion and politics; but, let's think about the patient…listen, get a sense of who they are and what they are like. Perhaps discussions of diapers or dog messes may be something they find distasteful. There should not be discussions about other patients in front of the current patient. While it may feel therapeutic to complain about what a pain in the butt yesterday's patient was, such talk may make the current patient uncomfortable. Body language tells you a lot about a patient. It will also clue you in on their physical comfort, but it could also mean they don't approve of something around them.

Don't wait until patients are so uncomfortable that they tell you about it. If they begin to doze off, you know they are not in pain, but if they are moving, this could be a good indicator that something needs to be adjusted. It could be as simple as asking if they need to visit the restroom or just moving them on the surgery table. The surgeon may be out of the surgery room and not aware of the patient's unrest or the atmosphere in the room; they won't be pleased to find out later from a patient that he or she was uncomfortable throughout the procedure.

Everyone wants to be acknowledged as a person and wants to feel at home and good with their decision about doing a procedure, especially when the decision is about a cosmetic problem such as a hair transplant. A happy, reassured patient going into surgery is usually an easy patient to work on, which, of course, makes life easier for the assistant and ultimately the surgeon!

Each patient is unique. Each patient will have different thresholds for pain or distress. Comfort, both emotional and physical, is key to a happy patient during the procedure. Patient comfort on the day of the procedure also leads to a confident patient during the difficult time while they are waiting to see the fruit of their investment!◆

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ISHRS 22ND ANNUAL SCIENTIFIC MEETING

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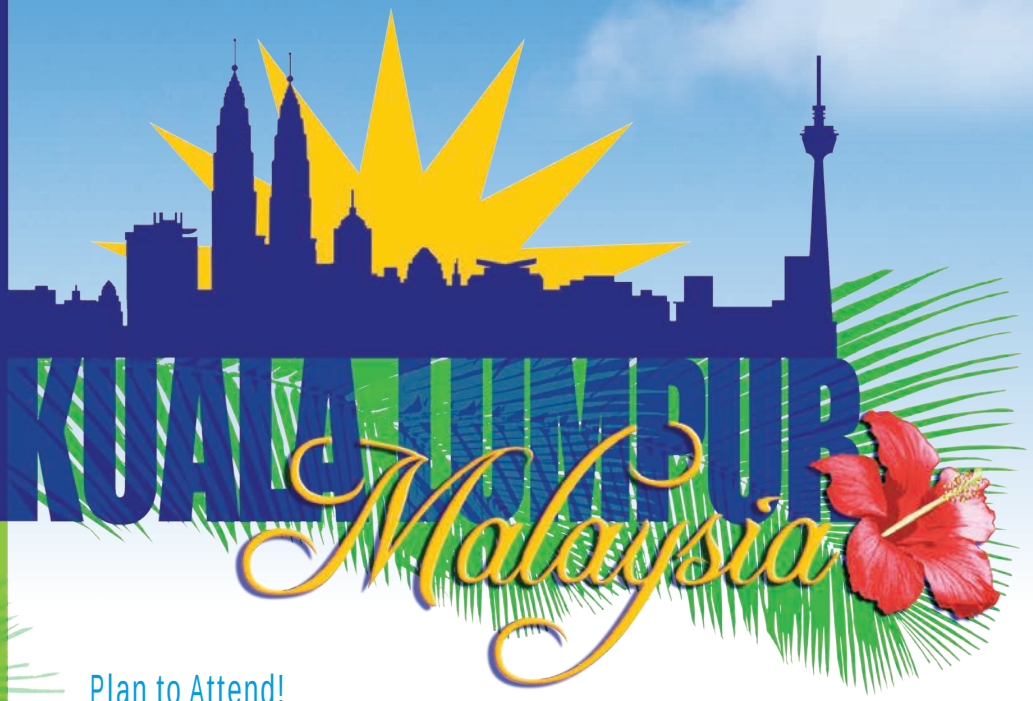

Reflections for
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www.ISHRS.org/AnnualMeeting.html

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- The Future of Hair Transplantation
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- Hairline Design Panel
- Unique Issues in Ethnic Transplantation
- Small Group Discussion Tables on a Variety of Topics
- Storage Solutions
- Non-Surgical Adjunct Therapies
- Live Patient Viewing
- Surgical Pearls to Achieve the Best Results

OTHER OFFERINGS

- Daily Lunch Symposia and Friday Morning Workshops
- FUE and FUT Hands-On Mini-Courses
- Basics in Hair Restoration Surgery Course
- Advanced/Review Course
- Surgical Assistants Program
- M&M Conference
- Exhibits Program
- E-Poster Exhibits
- Social program including optional tours and activities, Welcome Reception, Gala Dinner/Dance

NEWCOMERS ARE WELCOME!

We offer a "Meeting Newcomers Program" to orient those who are new to the ISHRS annual meeting. Newcomers will be paired with hosts. We want to welcome you, introduce you to other colleagues, and be sure you get the most out of this meeting.

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Dates and locations for future ISHRS Annual Scientific Meetings (ASMs)

2014: 22nd ASM
October 8-11, 2014
Kuala Lumpur, Malaysia

2015: 23rd ASM
September 9-13, 2015
Chicago, Illinois, USA

2016: 24th ASM
October 19-22, 2016
Panama City, Panama

HAIR TRANSPLANT forum INTERNATIONAL

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Upcoming Events

Date(s)	Event/Venue	Sponsoring Organization(s)	Contact Information
September 19-21, 2014	HAIRCON 2014 *Marriott Resort & Spa, Goa, India* *http://www.ahrsindia.org/Hair%20Con%202014_Final%20Art%20Work.pdf*	Association of Hair Restoration Surgeons–India *http://www.ahrsindia.org/index.html*	Dr. Sandeep Sattur, Congress President Tel: +91 9821259300 *drsattur@hairrevive.com*
October 8-11, 2014	22nd Annual Scientific Meeting of the International Society of Hair Restoration Surgery *Kuala Lumpur, Malaysia*	International Society of Hair Restoration Surgery *www.ishrs.org*	Tel: 1-630-262-5399 Fax: 1-630-262-1520
October 23-26, 2014	6th Annual Hair Restoration Surgery Cadaver Workshop *St. Louis, Missouri, USA*	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 *http://pa.slu.edu*	*http://pa.slu.edu*
November 23-24, 2014	19th Annual Meeting of the JSCHR *Okayama, Japan*	Japan Society of Clinical Hair Restoration (JSCHR) Hosted by Shinsaku Kawada, MD	Shinsaku Kawada, MD, Program Chair *kawada@kawada-keisei.gr.jp* *www.jschr.org*
December 5-6, 2014	20th Annual Meeting of the JSCHR *Kochi, Japan*	Japan Society of Clinical Hair Restoration (JSCHR) Hosted by Ryuichiro Kuwana, MD	Ryuichiro Kuwana, MD, Program Chair *der-r-kuwana@mte.biglobe.ne.jp* *www.jschr.org*
December 13, 2014	First Seminar of Circadian Rhythms in the Skin and Hair *Milan, Italy*	International Hair Research Foundation (IHRF) *www.ihrf.it*	Marta Buffa *segreteria@ihrf.eu*