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MINOXIDIL BEYOND TOPICAL USE

New routes of administration expand the treatment of androgenetic alopecia and reinforce the importance of individualized therapy

TRANSPLANTATION AFTER ONCOLOGICAL SURGERY

Case report and guidelines propose safe approaches for action in scenarios of greater clinical complexity

FUE: ORIGIN AND EVOLUTION

From the pioneering technique to current advances, a review of its consolidation and the challenges in clinical practice

Index



06

GUEST EDITORIAL

Dr. Nilofer Farjo shares her connection to Brazil and highlights the importance of the rapid exchange of knowledge among professionals.



09

CURRENT ARTICLES

Dr. Flávia Rodrigues Dias reviews the use of minoxidil in androgenetic alopecia, addressing different routes of administration, efficacy, and safety.



04

EDITORIAL

Dr. Henrique Radwanski and Dr. Marta Zollinger present the 36th edition of *O Fôlculo*.



07

EVENTS

Dr. Solon Eduardo G. Souza and Dr. Hudson Lázaro present the *Live Surgery Workshop 2026* in Islamabad, with strong Brazilian participation.



12

CLASSIC ARTICLES

Dr. Henrique Radwanski traces the origins of the FUE technique, from its early developments to its consolidation.





- 14** **TRICHOLOGY**
 Dr. Karen Fernandes de Oliveira discusses the importance of scalp biopsy in the diagnosis of alopecia.



- 25** **ARTICLE**
 Dr. Mauro Speranzini presents a critical analysis of the book *International Treatise on Hair Transplantation*, highlighting essential chapters.



- 17** **COMPLICATIONS**
 Dr. Rafael Reinert discusses hair transplantation after oncological scalp surgery.



- 20** **WHAT I'M READING**
 In a new column, Dr. Dirlene Roth explores the potential of stem cells in follicular regeneration, while Dr. Hilda Alfaro Osterne proposes interpretations based on a clinical complication.



- 27** **MARKETING**
 Dr. Rafael Reinert discusses medical reputation in the digital age, the role of algorithms, and ethics in medical marketing.

- 30** **CHRONICLE**
 Dr. Carlos Eduardo Leão offers a humorous reflection on the "grumpiness" of everyday life - an invitation to lightness in personal and professional relationships.

Editorial



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In this edition of *O Fôliculo*, we reaffirm one of the pillars that sustain our specialty: the continuous dialogue between science, clinical practice, and the medical community. Following a survey conducted with our members regarding our publication — for which we thank everyone who participated — we have begun implementing some changes to better serve our readers. These changes will already be noticeable in this and future editions. In this issue, for example, you will notice that the articles now include a brief introduction to the content, making it easier for readers to decide whether or not they wish to continue with a particular text, depending on their interests.

We open this edition with the international contribution of Dr. Nilofer Farjo, who, through her connection with Brazil, highlights the value of scientific societies and agile peer-to-peer education. Her external perspective reinforces something that may sometimes escape us in our daily routines: the importance of Brazilian scientific production and the collective construction of knowledge in hair transplantation.

This global dimension is also reflected in the coverage of the *Live Surgery Workshop 2026*, presented by Drs. Solon Eduardo G. Souza and Hudson Lázaro, who describe the meeting held in Islamabad, bringing together specialists from different countries for practical demonstrations and discussions of contemporary techniques. The significant Brazilian participation, recognized for its technical excellence, highlights not only the country's leadership role but also the responsibility to maintain high standards of training and safety.

In "Current Articles," Dr. Flávia Rodrigues Dias presents a review on the use of minoxidil in androgenetic alopecia, offering a practical and up-to-date approach to one of the cornerstones of clinical treatment. By exploring different routes of administration, limitations, and the importance of individualized treatment, the article reinforces the need for evidence-based decisions that are also adapted to the reality of each patient.

Revisiting the foundations of modern hair surgery, Dr. Henrique Radwanski retraces the origins of the FUE technique,

from its early developments to its consolidation, in "Classic Articles." More than a historical overview, the article invites reflection on the adoption of technologies: between market enthusiasm and the need for proper training, the commitment to careful indication and quality outcomes remains central.

At the intersection with trichology, Dr. Karen Fernandes de Oliveira discusses the importance of scalp biopsy, reaffirming the irreplaceable role of histopathological analysis, especially in challenging cases. In a scenario of increasing diagnostic sophistication, the article reminds us that clinical precision still depends on the integration of methods and rigorous investigation.

The "Complications" section addresses a sensitive and highly relevant topic explored by Dr. Rafael Reinert: hair transplantation after oncologic surgery. Through a case report and narrative review, the article proposes guidelines that contribute to decision-making in more complex situations, always grounded in oncologic safety and structured planning.

Expanding the focus to the intellectual production within the field, Dr. Mauro Speranzini presents a critical analysis of the book **International Hair Transplantation Treatise**, highlighting the strength of a collaboratively developed work with significant Brazilian participation, while also pointing readers toward essential pathways for those seeking deeper and more consistent knowledge.

In this edition, we also launch the column "What I'm Reading," featuring contributions from Drs. Dirlene Roth and Hilda Alfaro Osterne. While the former explores the therapeutic potential of stem cells in follicular regeneration, the latter reflects on real-life complications, reinforcing the value of literature as a tool for continuous learning and professional improvement.

In the "Marketing" section, Dr. Rafael Reinert brings forth a timely and necessary discussion about medicine in the algorithmic era, proposing a reflection on scientific reputation, artificial intelligence, and ethics in medical marketing. The author points toward a path in which visibility should be the consequence of quality and responsibility in the dissemination of knowledge.

Closing this edition, Dr. Carlos Eduardo Leão's chronicle reminds us, with lightness and irony, of an often-overlooked aspect: the impact of everyday tensions on the way we relate to others — and to ourselves.

More than simply bringing together content, this edition seeks to create connections. Between past and future, technique and reflection, science and practice. At a time of expansion and growing popularization of hair transplantation, maintaining this balance may be our greatest challenge — and also our responsibility.

Enjoy your reading!



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My Brazilian Connection



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It is an honour to be asked to write about my Brazilian experiences for the Foliculo journal. As past editor of the Hair Transplant Forum International I value the education that can be conveyed in a speedy manner between fellow professionals. So, congratulations on your society's publication!

My first experience of anything Brazilian goes back to my childhood in Canada. My father was an Allergist with a practice in downtown Toronto. His patients were mainly Portuguese speaking immigrants. The majority were from Portugal, but a significant number were also from Brazil. I remember working in the office from age 11 during my summer holidays and my father conversing in Portuguese with his patients. Not fluently by any means but he tried! When I was a bit older my parents travelled to Brazil for 3 weeks and came back with lovely memories, so it was always on my bucket list to visit. I have now had the chance to travel to Brazil several times for workshops and meetings, and on each occasion, I visited some amazing sites such as Iguazu Falls, Ouro Preto, Rio de Janeiro and the nearby coast, and this year we will explore the Amazon Forest.

On a professional level, there are many innovators in hair restoration and hair research from Brazil as mentioned in the last edition of the Foliculo. Like Russell Knudsen, it has been my honour to meet and work with many talented people. The highlight for me was the invitation to represent the ISHRS when I was President at the 8th Brazilian meeting of ABCRC in July 2022 in Rio. It was a wonderfully organised meeting of very high calibre with many new members in attendance. It was a joy to see the younger generation getting involved in education especially in these days of Black-Market clinics starting up all the time. And not to forget the 'experienced' generation, I met José Cândido Muricy for the first time, at 83 this year he is still active in hair transplantation, plays basketball and music. He rocked it with the band playing at the meeting!

One significant thing I learnt on that trip was the wonderful charitable work by many Brazilian doctors in treating victims of boating accidents in the Amazon. Changing people's lives for the better is highly commendable! I am really looking forward to this year's ISHRS meeting in Rio and having a few caipirinhas with my good friends. See you there.

Pakistan hosts *Live Surgery Workshop*



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What you will read in this article:

- The hosting of the Live Surgery Workshop 2026 in Islamabad, bringing together international specialists and establishing itself as a high-level scientific event.
- Strong Brazilian participation, highlighted by the presence of five surgeons and recognition of the country's expertise in hair transplantation.
- Practical demonstrations of different approaches, including variations of FUE techniques and the use of SVF.
- A parallel symposium for surgical assistants focused on technical training and patient safety.

EVENTS



Between February 13 and 15, 2026, the city of Islamabad, the capital of Pakistan, hosted the *Live Surgery Workshop*. The meeting was held at the Serena Hotel and organized by Dr. Rana Irfan and Dr. Uzma Irfan, supported by the *Hair Restoration Society of Pakistan* (HRSP) in partnership with the International Society of Hair Restoration Surgery (ISHRS) and the *American Board of Hair Restoration Surgery* (ABHRS), brings together specialists from various countries and establishes itself as a high-level scientific and technical forum.

Brazil had a significant presence at the event, with a delegation composed of five surgeons, four of whom were ABCRC members: Dr. Elson Viana, Igor Bottura, Hudson Lazaro and Solon Souza. Brazilian specialists played a prominent role in both the scientific program and practical activities, reinforcing the international recognition of the Brazilian school of hair transplantation.

In the academic field, the Brazilians gave lectures on a variety of current topics, ranging from surgical planning to technical refinements in hair and beard transplantation. Furthermore, they actively participated in live surgeries, one of the highlights of the workshop, with demonstrations of techniques such as shaved FUE, beard FUE, FUE with long hair, and SVF (*Stromal*

Vascular Fraction) collection and application, highlighting the versatility and evolution of surgical techniques.

Alongside the main congress, the Symposium for Surgical Assistants took place, co-organized by Solon Souza and Hudson Lazaro. The symposium featured a robust program of 24 lectures and included specific hands-on training in cardiopulmonary resuscitation (CPR) and *Basic Life Support* (BLS) maneuvers, emphasizing the importance of patient safety and the multidisciplinary training of surgical teams.

Another aspect widely highlighted by the participants was the hospitality of the Pakistani people, marked by receptiveness, organization, and attention to detail, as well as the quality and diversity of the international panel of speakers, which brought together renowned doctors from different continents. This scientific and cultural exchange strengthened institutional ties and promoted the sharing of experiences that are fundamental to the continuous advancement of hair restoration surgery, in addition to highlighting Brazil's leading role in an increasingly demanding and innovative global scenario. Visiting a country with a culture so different from Brazil's, such as Pakistan, is a transformative experience, capable of broadening one's world view and encouraging appreciation of both the differences and similarities between peoples.

Minoxidil in androgenetic alopecia: a practical and up-to-date therapeutic approach.



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Based on the article:

Dias FR, Yong SS, FitzGerald H, Sinclair RD, Bhoirul B. *Expanding the therapeutic landscape of minoxidil for androgenetic alopecia: topical, oral and sublingual formulations.*

Published in Frontiers in Pharmacology. Sinclair Dermatology, Melbourne, Australia.

What you will read in this article:

- Androgenetic alopecia (AGA) is the most common form of hair loss, progressive in nature and associated with significant psychosocial impact.
- The mechanisms of AGA involve follicular miniaturization, androgenic activity, and loss of the follicles' regenerative capacity.
- Minoxidil is the primary treatment, with proven efficacy, available in topical and oral forms, as well as through new administration routes currently under investigation.
- Differences between administration routes (topical, oral, and sublingual) and their implications for efficacy, absorption, and safety.
- Limitations of treatment, including variability in patient response (linked to the SULT1A1 enzyme) and the need for continuous use.
- The importance of individualized treatment, early intervention, and proper patient guidance to achieve better outcomes.



Androgenetic alopecia (AAG) is a chronic and progressive condition that represents the most usual form of non-scarring alopecia. With age-dependent expression, it affects most men and a considerable proportion of women, being clinically evident in approximately 80% of men and 50% of women by the age of 70. Although not associated with physical morbidity, the psychosocial impact of hair loss can be significant.

From a histological point of view, androgenetic alopecia (AAG) is characterized by a reduction in the number of terminal follicles and an increase in miniaturized follicles. Follicular miniaturization reflects a progressive imbalance in the cellular dynamics of the dermal papilla, influenced by androgen signaling and impairment of the regenerative mechanisms of the hair follicle. In men, the action of testosterone and dihydrotestosterone on androgen receptors plays a vital role in this process, while the progressive loss of dermal papilla cells contributes directly to the reduction in capillary caliber and density.

In this context, minoxidil remains one of the leading pharmacological therapies for AAG. Initially introduced as an oral antihypertensive agent, the drug aroused interest due to the frequent adverse effect of hypertrichosis, which led to its therapeutic repositioning in the treatment of hair loss. Currently, topical minoxidil continues to be considered a therapeutic mainstay, with a favorable safety profile and well-established efficacy. In recent years, low-dose oral minoxidil has been consolidated as an off-label alternative in several clinical scenarios, while sublingual formulations and prolonged-release oral presentations are under clinical investigation.

Minoxidil acts as a prodrug and is converted into minoxidil sulfate by the sulfotransferase enzyme SULT1A1 present in the hair follicle. The therapeutic response

is related to the activity of this enzyme. Proposed mechanisms of action include inducing the anagen phase, delaying catagen, increasing the speed of hair growth, modulating pro-survival cell pathways, positively regulating vascular endothelial growth factor (VEGF), and influencing pathways related to maintaining follicle growth. Experimental evidence also suggests increased cysteine uptake in the follicular matrix, a process potentially relevant to hair growth.

The pharmacokinetics of minoxidil vary by route of administration. When taken orally, more than 90% of the dose is absorbed in the gastrointestinal tract, with significant hepatic metabolism. Despite a half-life of approximately 4.2 hours, hemodynamic effects may persist for up to 72 hours. In topical form, average systemic absorption is low, around 1.4%, with local conversion to minoxidil sulfate and less influence from first-pass hepatic metabolism. Sublingual administration, in turn, allows for direct absorption through the oral mucosa, partially avoiding initial hepatic metabolism and promoting systemic bioavailability of the drug. In contrast, extended-release formulations aim to maintain more stable serum levels, avoiding peaks associated with cardiovascular effects.

Topical minoxidil remains the most widely used and validated therapeutic modality for AAG in both sexes. Available formulations include 2% and 5% solutions containing ethanol and propylene glycol, as well as a 5% foam, which offers better skin tolerability. Randomized clinical trials show a significant increase in hair count, particularly with the 5% formulation, in both men and women. However, approximately 60% of patients may have limited clinical response, in part due to variability of SULT1A1 enzyme activity. Adverse effects are often





mild and include transient shedding, scalp irritation, hypertrichosis, malleolar edema, and headache. Continuous treatment maintenance is essential, as interruption leads to a progressive loss of the results obtained.

Low-dose oral minoxidil, usually between 0.25 mg and 5 mg daily, has been used as an alternative in patients with unsatisfactory response to topical treatment or difficulty adhering. Retrospective and prospective studies and randomized clinical trials have shown improved hair density, reduced hair loss, and increased hair diameter. In men, doses between 2.5 and 5 mg show high rates of clinical improvement, while in women doses between 0.25 and 1 mg also demonstrate significant benefit. In clinical practice, it is recommended to initiate treatment with low doses — usually 0.5 mg daily in women and 0.5 to 1 mg daily in men — with gradual titration according to therapeutic response and tolerability.

The sublingual route of minoxidil administration represents an emerging therapeutic approach and is currently being investigated in phase III clinical studies. Preliminary data indicate effective hair growth at reduced doses and favorable safety profile. Sublingual absorption allows direct administration through the oral mucosa and can reduce hepatic sulfation, favoring greater bioavailability of the drug in the hair follicle. Available studies show a progressive reduction in the clinical severity of alopecia, an increase in terminal hair count and an improvement in hair fiber diameter. In comparative trials with oral minoxidil at a dose of 5 mg, related results were observed in men with androgenetic alopecia.

High-dose, modified-release formulations are also under development. The aim of these presentations is to

maximize systemic exposure without exceeding serum concentrations associated with cardiovascular effects, particularly tachycardia. Preliminary data suggest an increase in total hair count in the short term; however, issues related to cardiovascular safety, fluid retention, and systemic hypertrichosis still require further investigation.

As for the safety profile, hypertrichosis is the most frequently reported adverse effect, especially in systemic formulations and with a higher incidence in women. Cardiovascular events and fluid retention are dose-dependent but remain uncommon at doses typically used in trichology. Large clinical cohorts demonstrate good tolerability of low-dose oral minoxidil, with a low incidence of tachycardia, edema, or presyncopal symptoms, and a rare need to discontinue treatment. Sublingual minoxidil has a similar safety profile, although the evidence base is still limited. In topical formulations, skin irritation remains the most common adverse effect, especially in products containing propylene glycol.

Risks associated with intoxication and overdose should also be considered. Accidental or intentional ingestion of large volumes of topical solutions may result in severe hypotension, tachycardia, circulatory shock, and cardiac ischemic events. Cases of oral overdose related to manipulation errors have also been described, with reports of major edema, syncope, infarction, and stroke. These events reinforce the need for careful prescribing, proper patient guidance, and safe storage of the drug.

In summary, minoxidil remains the most widely used pharmacological intervention in the treatment of androgenetic alopecia in men and women. The expansion of oral and sublingual administration routes broadens therapeutic possibilities and promotes more individualized strategies.

The main points of clinical application include: starting treatment with the lowest effective dose and gradually titrating up; starting therapy early for best results; advising the patient about possible initial shedding; recognizing that some patients have a limited response to topical treatment due to low SULT1A1 activity; considering that hypertrichosis is dose-dependent; and reinforcing the need for continuous maintenance of treatment to preserve therapeutic results.

BIBLIOGRAPHIC REFERENCE

Dias FR, Yong SS, FitzGerald H, Sinclair RD, Bhoyrul B. Expanding the therapeutic landscape of minoxidil for androgenetic alopecia: topical, oral and sublingual formulations. *Frontiers in Pharmacology*. 2026;16:1718208. doi:10.3389/fphar.2025.1718208.

The origin of the FUE technique



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What you will read in this article:

- The origins of the FUE technique: first presented in 2002, although it had been under development since 1989 by Ray Woods, who did not publish it scientifically.
- The role of Rassman and Bernstein in consolidating and popularizing the technique through publications and teaching.
- The early challenges of FUE: a more labor-intensive procedure, a long learning curve, and limited indications.
- Careful patient selection and the use of the “Fox Test” to assess procedural feasibility.
- The growing market interest in minimally invasive techniques — not always accompanied by adequate training and preparation.
- The evolution of FUE over the years, with technological advances that improved outcomes and expanded its adoption.



In medicine, the person who invents a technique or procedure often rushes to write an article and publish it in an indexed journal. That was not what happened in the case of follicular unit extraction.

The first presentation of this innovation took place during the 10th ISHRS Congress in Chicago in 2002. I had the privilege of being in the audience, attending my first International Society event, and I remember there was an immediate impact with Dr. William Rassman's lecture titled “The Fox Technique.” This was followed by an initial publication in 2002 and then, in 2004, a second publication that consolidated the concepts and principles of what would become, 15 years later, the universally performed procedure.

In fact, Dr. Ray Woods from Australia is widely recognized as the pioneer and inventor of both Follicular Unit Extraction (FUE) and Body Hair Transplantation (BHT) techniques, which he developed starting in 1989. However, probably for commercial reasons, he did not make any scientific disclosure of this surgical innovation. According to him, motivated by the Hippocratic principle of “do no harm,” he began researching and innovating in 1989 to create minimally invasive alternatives without linear scars.



CLASSIC ARTICLES

It fell to two dermatologists from New York, William Rassman and Robert Bernstein, to develop and publicize the novelty of extracting follicular units individually without tissue resection. They called this technique the *FOX Technique*, a semi-acronym for *FOLlicular EXtraction*. There is no mention in these publications of Ray Woods' work, which only confirms that the Australian physician made no disclosure of his invention.

It is interesting to revisit some of the principles that were introduced and to notice their initial difficulties:

- They acknowledged that the technique is tedious, requiring much more effort from the surgeon
- The learning curve is long, and results may not be ideal
- Not all patients are candidates for the procedure: the authors performed the Fox Test to assess ease of extraction, concluding that some patients were "FOX Negative" (i.e., great difficulty in extraction)
- They limited the indication for this technique: pa-

tients with good follicular reserve and more limited areas of alopecia; patients with multiple linear scars and no possibility of proceeding with another FUT session

In conclusion: the authors recognized a strong appeal for the minimally invasive approach, but also noted a great market interest in promoting this technique without proper training.

Like many other colleagues, over the past 15 years I have witnessed the evolution of the FUE technique (initially called EXTRACTION, later changed to EXCISION to emphasize that it is a surgical procedure). Machines and punches have been improved, dramatically reducing the transection rate and yielding results equal to or even superior to the FUT technique.

REFERENCES

Rassman, WR, Bernstein RM, McClellan R, Jones R et al. Follicular Unit Extraction: Minimally invasive surgery for hair transplantation. *Dermatol Surg* 2002; 28 (8): 720-7

Rassman, WR. Follicular Unit Extraction. *Hair Transplant Forum International*, Jan – Feb 2004, Vol. 14, No. 1



Scalp Biopsy: Diagnostic Importance in Alopecias and Scalp Dermatological Diseases



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Keywords: scalp biopsy; alopecia; dermatopathology; hair follicle; histopathological diagnosis.

1. INTRODUCTION

Diseases affecting the scalp are a frequent reason for dermatological consultation, particularly in cases of hair loss. Alopecias can be classified as cicatricial or non-cicatricial, depending on the presence of permanent destruction of the hair follicles.

Although clinical evaluation, trichoscopy, and laboratory tests provide relevant information, in many cases these tools are not sufficient to establish a definitive diagnosis. In such scenarios, scalp biopsy becomes an essential method, allowing microscopic analysis of the cutaneous structures of the scalp and hair follicles.

Histopathological analysis of the collected tissue provides important data on inflammation, fibrosis, structural changes in the follicle, and the presence of infectious agents, aiding in diagnostic definition and the selection of appropriate therapy.

2. INDICATIONS FOR SCALP BIOPSY

Scalp biopsy is mainly indicated when there is diagnostic uncertainty or when differentiation between different types of alopecia is required.

The main indications include:

- Suspected cicatricial alopecias

ABSTRACT

Scalp biopsy is a widely used diagnostic procedure in dermatology for the investigation of alopecias and inflammatory scalp diseases. Despite advances in clinical and dermoscopic methods, histopathological analysis remains essential for diagnostic confirmation, especially in cases of cicatricial alopecia and atypical clinical presentations. This article reviews the main indications, surgical procedure, method of analysis, and clinical relevance of scalp biopsy in the differential diagnosis of hair disorders.





- Differentiation between androgenetic alopecia and other diffuse alopecias (chronic diffuse alopecia areata or fibrosing alopecia in a pattern distribution)
- Quantification of the degree of inflammation in lymphocytic alopecias
- Diagnosis of autoimmune scalp diseases
- In general, the exam is requested when clinical evaluation alone does not allow a secure diagnostic definition.

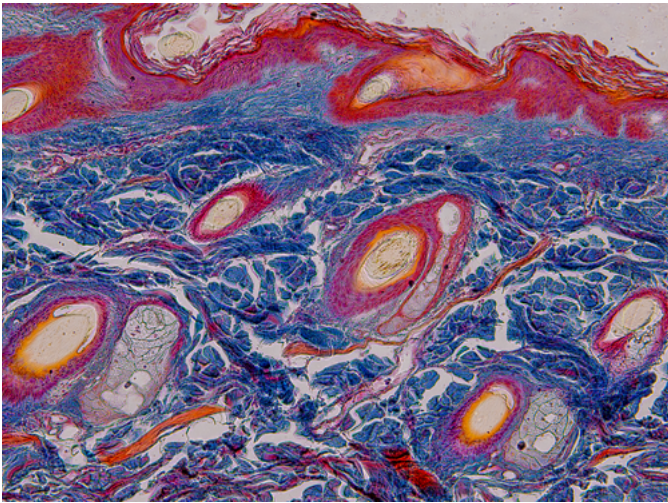
3. PROCEDURE TECHNIQUE

Scalp biopsy is usually performed in an outpatient setting under local anesthesia. The most commonly used method is punch biopsy, an instrument that allows the removal of a cylindrical fragment of skin.

The procedure follows basic steps:

1. Identification of a representative area of the lesion.
2. Application of local anesthesia with lidocaine.
3. Collection of the skin fragment using a punch, generally 4 mm in diameter.
4. Hemostasis and simple suture of the biopsied area.
5. Fixation of the tissue in formalin and submission for histopathological analysis.

In some cases, two samples may be collected, allowing histological sections in both vertical and horizontal planes, which improves the evaluation of follicular density and hair follicle architecture.



4. HISTOPATHOLOGICAL ANALYSIS

After collection, the material is processed in an anatomical pathology laboratory. Histological examination allows evaluation of various structural aspects of the scalp, including:

- Density and distribution of hair follicles
- Stages of the follicular cycle (anagen, catagen, and telogen)
- Presence of inflammatory infiltrate
- Degree of fibrosis
- Structural changes in the follicle
- Presence of microorganisms

Detailed analysis of these features enables differentiation among various conditions, such as primary cicatricial alopecias, androgenetic alopecia, and inflammatory scalp diseases.

5. CLINICAL IMPORTANCE

Scalp biopsy has great value in the differential diagnosis of alopecias. In cicatricial alopecias, for example, early diagnosis is essential, as follicular destruction can result in permanent hair loss.

Furthermore, histopathological examination helps identify the inflammatory activity of the disease, which can directly influence treatment choice and patient prognosis.

When combined with clinical evaluation and trichoscopy, biopsy significantly contributes to a more accurate diagnosis and individualized therapeutic planning.

6. COMPLICATIONS AND LIMITATIONS

Scalp biopsy is considered a safe procedure with a low rate of complications. Possible adverse effects include:

- Mild bleeding
- Local infection
- Small scar
- Temporary discomfort

However, some limitations should be considered, such as the inappropriate choice of collection site or the difficult histological interpretation in advanced stages of the disease. In the post-hair transplant context, especially in the first year, inflammatory findings can mimic lichen planus pilaris, reducing diagnostic utility in suspected cicatricial alopecia.

7. CONCLUSION

Scalp biopsy is an important diagnostic method in the investigation of hair disorders, especially in alopecias of uncertain etiology or cicatricial alopecias. Histopathological analysis of the tissue allows identification of structural and inflammatory changes in the hair follicles, contributing to accurate diagnosis and therapeutic decision-making.

Thus, when properly indicated and correctly performed, biopsy represents an essential tool in dermatological practice.



Check out this illustrative video of a scalp biopsy using a 4mm punch, kindly provided by Dr. Andressa Alcântara: <https://www.youtube.com/shorts/qYjD0fkEp8k>



REFERENCES

- Madani S, Shapiro J. The scalp biopsy: making it more efficient. *Dermatol Surg.* 1999 Jul;25(7):537-8.
- Miteva M, Tosti A. Dermoscopy guided scalp biopsy in cicatricial alopecia. *J Eur Acad Dermatol Venereol.* 2013 Oct;27(10):1299-303.



Hair Transplant After Scalp Oncology Surgery: Case Report, Narrative Review, and Proposed Clinical Guidelines



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What you will see in this article:

- **Clinical context:** hair transplantation after basal cell carcinoma excision requires rigorous evaluation of oncologic and vascular safety.
- **Case description:** a patient with advanced alopecia underwent tumor excision and reconstruction with an O-S flap, followed by an FUE transplant after 6 weeks.
- **Proposed clinical guideline:** timing criteria vary according to the type of reconstruction and vascular stability.
- **Practical recommendations:** density control in scarred areas and long-term patient follow-up.
- **Conclusion:** hair transplantation is feasible and safe in these cases when performed with structured planning and well-defined criteria.



Figure 01 – Skin tumor in the right parietal region, margins marked for excision in blue.



Figure 02: Closure of the lesion with an O-S flap

COMPLICATIONS

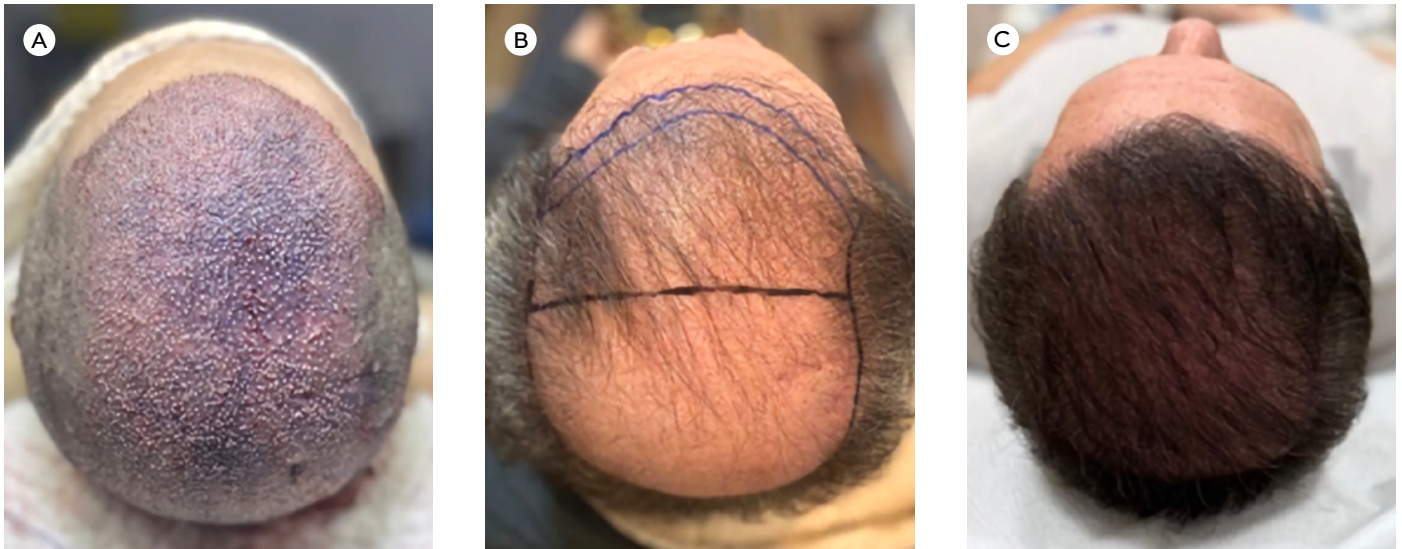


Figure 3: A – Pre-operative, B – Immediate post-operative, C – Late post-operative

SUMMARY

Background: Hair transplant following scalp cancer surgery requires rigorous oncological safety and vascular evaluation. The literature on ideal timing remains limited.

Objective: To describe a case of hair transplantation after complete excision of basal cell carcinoma of the scalp (BCC) with closure of the O-S flap and to propose a clinical guideline for timing and vascular safety.

Methods: After histologically confirmed clear margins, hair transplantation was performed for 6 weeks post-operatively, using a multi-site donor strategy.

Conclusion: Transplantation after BCC excision is feasible when oncologic clearance and vascular stability are confirmed. A structured timing algorithm is proposed.

INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin cancer

worldwide. Scalp involvement is common in male bald patients due to chronic sun exposure. Although surgical excision remains the gold standard treatment, reconstructive planning in patients with advanced androgenetic alopecia presents additional challenges.

CASE REPORT

A male patient with Norwood stage VI–VII androgenetic alopecia underwent excision of an approximately 5 cm lesion on his scalp on May 27, 2025 (Figure 01). She reported a history of hair transplant performed a year prior at another facility, with unsatisfactory results due to slow hair growth.

The closure was performed using an OS flap technique (Figure 02). Histopathology confirmed basal cell carcinoma with clear margins.

Six weeks later, a hair transplant using the follicular excision technique (FUE) was performed (Figure 03). A total of 8,184 follicular units were harvested (6,478

scalp; 1,278 beards; 428 chest). The density was limited to 50 FU/cm² in areas with scars.

O-S FLAP TECHNIQUE AND VASCULAR CONSIDERATIONS

The O-S flap is a local rotating advancement flap designed to close circular scalp defects. It converts a round defect into a curvilinear closure, redistributing tension and preserving the integrity of the subdermal vascular plexus. Its main advantages include better vascular preservation, reduced tension necrosis, and improved aesthetic integration.

Intraoperative assessment is essential to confirm adequate tumor clearance, appropriate safety margins, flap perfusion, and the absence of excessive tension.

NARRATIVE REVIEW: TIMING OF HAIR TRANSPLANTATION AFTER ONCOLOGICAL SURGERY

Wound healing follows inflammatory, proliferative and remodeling phases. Functional neovascular stabilization occurs between

COMPLICATIONS



4 and 6 weeks post-surgery. Performing the transplant too early increases the risk of ischemia, while excessive delay can increase the density of fibrosis.

The literature shows low recurrence rates for BCC with clear margins (2–5% in 5 years). There is no evidence that hair transplantation increases the risk of recurrence when proper follow-up is maintained.

PROPOSED CLINICAL GUIDELINE

Step 1 - Confirm oncological clearance (clear margins).

Step 2 - Determine the type of reconstruction:

- **Primary closure:** ≥ 4 weeks;
- **Local flap (O-S):** 4-8 weeks;
- **Complex flap:** 8-12 weeks;
- **Skin graft:** ≥ 12 weeks.

Step 3 - Assess vascular stability clinically.

Step 4 - Limit the density in the scar tissue to 35-50 FU/cm².

Step 5 - Maintain dermoscopic follow-up for at least 5 years.

DISCUSSION

This hybrid case report and review propose a biologically based timing strategy. The O-S flap preserves vascular continuity, facilitating secondary follicular implantation. A 6-week interval balances oncological safety and vascular stabilization.

BIBLIOGRAPHICAL REFERENCES

1. Cameron MC e outros. *Eu Sou Acad Dermatol*. 2019;80(2):303–317.
2. Rowe DE e outros. *J Dermatol Surg Oncol*. 1989;15:315–328.
3. Cozinheiro J. *Cirurgia Dermatol*. 2005;31:143–149.
4. Mustoe TA e outros. *Cirurgia De Reconstrução Plast*. 2002;110:560–571.
5. Unger WP. *Cirurgia Dermatol*. 2004;30:771–784.
6. Bernstein RM, Rassman WR. *Clínica Dermatol*. 1999;17:277–295.

Reading recommendation by Dr. Hilda Osterne



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What you will read in this article:

- Following an unexpected postoperative evolution after a *Long Hair* hair transplant procedure, with an extensive and severe case of folliculitis, the author recommends the reading of two articles previously published in *O Folículo*.

Recently, I performed a hair transplant surgery using the Long Hair technique and observed an unexpected postoperative evolution, with an extensive and severe presentation of folliculitis. Faced with this situation, I sought a deeper review of the subject in the literature, which led me to read two articles from previous editions of *O Folículo* that complement each other in a very interesting way:

- [O Folículo, Issue 18](#): Post-Hair Transplant Folliculitis, published in April 2021 by Dr. Adele Gonzales;
- [O Folículo, Issue 2](#): Introduction to the Use of Implanters in Hair Transplant Surgery, published in December 2015 by Dr. Maria Angélica Muricy Sanseverino.

In the first article, Dr. Adele Gonzales addresses post-hair transplant folliculitis in a comprehensive and detailed manner, presenting a review that highlights its multifactorial nature. One of the most striking aspects is the broader perspective regarding the causes of this complication, which is often attributed solely to local infection resulting from inadequate aseptic and antiseptic practices or improper graft implantation. The author demonstrates that factors such as trauma to the recipient area, implan-

tation depth, and even the presence of exogenous substances on the scalp — such as particles originating from materials used during the procedure, including glove powder itself — may act as triggers for the inflammatory process.

Furthermore, the article reinforces the importance of systematically reviewing all aspects involved in the hair transplantation procedure when facing a case of folliculitis. Among these aspects are sterilization protocols, with particular emphasis on proper maintenance and control of autoclave internal temperature variables, since failures in these parameters may compromise material sterilization. The importance of evaluating the surgical environment is also emphasized, including particle control, cleaning procedures, and maintenance of ventilation systems. Technical factors, such as trauma caused by instruments and the follicular implantation technique, are likewise highlighted, reinforcing the need for a careful and comprehensive approach by the entire team involved.

From this perspective, and considering that this was a procedure performed using the Long Hair technique, it became essential to revisit Dr. Maria Angélica Muricy Sanseverino's article on the introduction of implanters in hair transplant surgery. Although introductory in nature, the article reinforces fundamental principles that remain highly relevant today,





especially regarding proper graft positioning. One key point highlighted is the importance of preserving the integrity of the follicular unit by keeping the epidermis properly aligned with the skin surface, thus avoiding deep implantation and overlap of follicular grafts — factors that may increase the risk of postoperative folliculitis.

These readings made it possible to carefully reassess not only the technical aspects of implantation — including graft loading into implanters — but also aseptic protocols, follicle handling, and the training of the team involved in the preparation and implan-

tation stages, considering that part of these steps is delegated to the assisting staff.

The combined analysis of these articles reinforces that the success of hair transplantation goes beyond the surgical procedure itself, involving rigorous attention to technical details, the surgical environment, and operational processes. Complications such as folliculitis highlight the importance of continuously reviewing adopted practices, demonstrating how the integration of theoretical knowledge and clinical experience contributes to improved outcomes and patient safety.

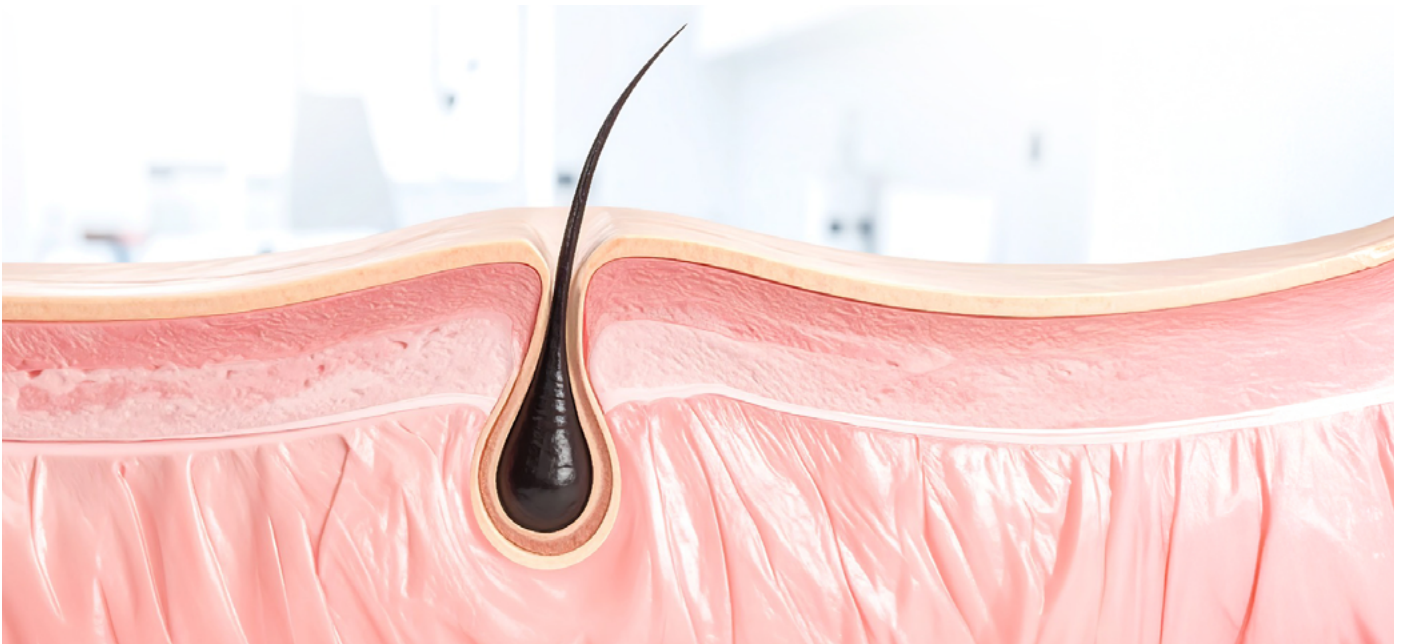
Reading recommendation from Dr. Dirlene Roth



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What you will read in this article:

- Therapeutic Potential of Mesenchymal Stem Cells and Their Secretome in Hair Follicle Regeneration — an analysis of the study [“Fully functional hair follicle organ regeneration using organ-inductive potential stem cells with an accessory mesenchymal cell population in an in vitro culture system”](#), which was featured in an article published by the portal [Olhar Digital](#) in March.



Tissue regeneration has become a major focus in regenerative medicine research. Improving organ survival may enable human beings to live longer lives with better quality of life.

Recent biotechnological advances have identified Mesenchymal Stem Cells (MSCs) — particularly those derived from the dermis and human umbilical cord

(hUC-MSCs) — as a transformative approach for the treatment of Androgenetic Alopecia (AGA) and other hair loss conditions.

While traditional treatments such as Minoxidil and Finasteride are limited by unpredictable efficacy and significant side effects (such as contact dermatitis and hormonal imbalances), MSC-based therapies use paracrine signaling to restore the hair growth cycle.



WHAT I'M READING

The research presented demonstrates that MSCs and their secretome — specifically exosomes — effectively trigger the transition from the telogen (resting) phase to the anagen (growth) phase. This is achieved through activation of the Wnt/ β -catenin signaling pathway, which acts as a “master switch” for follicular regeneration. Key findings include:

Superior growth induction: in vivo mouse models show that mesenchymal stem cell (MSC) secretome may outperform minoxidil in parameters such as hair length, weight, and density;

Cellular protection: MSCs attenuate damage caused by dihydrotestosterone (DHT) by reducing apoptosis (cell death) in dermal papilla cells (DPCs) and stimulating proliferation of hair follicle stem cells (HFSCs);

Molecular mechanisms: specific microRNAs (miR-21-5p and let-7b-5p) and Wnt ligands present in MSC-derived exosomes target genes such as cyclin D1 and LEF1 to facilitate hair shaft growth.

CHALLENGES IN CURRENT PHARMA COTHERAPY FOR ALOPECIA

The studies highlight a critical need for alternative therapies due to the limitations of currently FDA-approved treatments for androgenetic alopecia:

Efficacy and Persistence: both minoxidil and finasteride require continuous, long-term use. Their effectiveness is often unpredictable across different patient populations;

Adverse Effects: treatments are associated with several complications, including reduced libido, ejaculatory disorders, and localized skin irritation;

Pathological Focus: conventional medications often fail to address the underlying follicular miniaturization caused by elevated DHT levels, which disrupt the microenvironment necessary for hair growth.

THE MECHANISTIC ROLE OF MESENCHYMAL STEM CELLS (MSCS)

MSCs are multipotent cells capable of self-renewal and differentiation into multiple lineages (osteoblasts, adipocytes, and chondrocytes). Their therapeutic value in hair regeneration derives primarily

from their paracrine properties rather than direct cellular replacement.

THE SECRETOME AND EXOSOMES

The “secretome” refers to the collection of bioactive factors secreted by Mesenchymal Stem Cells (MSCs), including cytokines, growth factors, and extracellular vesicles known as exosomes:

Exosomal Content: exosomes derived from human umbilical cord MSCs (hUCMSCs) are enriched with microRNAs, specifically miR-21-5p and let-7b-5p;

Molecular Targeting: these microRNAs regulate critical genes such as Cyclin D1, c-MET, and LEF1, which together promote the functional differentiation of dermal papilla cells;

Angiogenesis: MSCs promote the formation of new blood vessels, ensuring follicles receive the oxygen and nutrients necessary for healthy growth.

ACTIVATION OF THE WNT/ β -CATENIN SIGNALING PATHWAY

A central theme across all sources is the restoration of the Wnt/ β -catenin pathway, which is typically inhibited in patients with androgenetic alopecia (AGA) by androgens such as DHT.

The “Master Switch”: Wnt/ β -catenin signaling is essential for follicular development. Inhibition of this pathway leads to follicular atrophy and hair thinning.

Role of Wntless (Wls): secretion of Wnt ligands by MSCs is mediated by the transporter protein Wls. Silencing Wls significantly reduces the therapeutic efficacy of MSCs, proving that Wnt secretion is a primary driver of regeneration.

Nuclear Translocation: MSC treatment promotes β -catenin translocation into the cell nucleus, increasing Myc expression and stimulating cellular growth.

EVIDENCE FROM IN VIVO MODELS

Studies involving C57BL/6 mice demonstrated the following results after 21 days of treatment with MSC secretome or hUCMSCs:

WHAT I'M READING

IMPACT ON FOLLICULAR CELLULAR DYNAMICS

Mesenchymal Stem Cell (MSC) therapies fundamentally alter the behavior of key cells within the hair follicle niche:

Cellular Component	Impact of MSC Treatment
Dermal Papilla Cells (DPCs)	Reduces DHT-induced apoptosis; restores secretion of growth factors such as VEGF and FGF7
Hair Follicle Stem Cells (HFSCs)	Stimulates proliferation; promotes entry into the S phase of the cell cycle for DNA replication
Follicular Structure	Increases follicular density, skin thickness, and hair bulb diameter

Phase Transition: accelerated progression from the telogen phase (identified by pink skin) to the anagen phase (identified by bluish-gray melanin deposition in the skin);

Physical Parameters: significant increases in hair coverage rate, hair length, and hair weight compared to control groups;

Comparison with Minoxidil: MSC secretome showed superior results in stimulating rapid emergence of new hairs and maintaining follicular integrity.

Long-Term Safety: more robust, large-scale clinical trials are needed to fully validate long-term safety, particularly regarding immunogenicity and tumorigenic potential;

Personalization: future research is moving toward the use of biomarkers to identify ideal candidates for autologous mesenchymal stem cell therapies (derived from the patient's own cells) in order to reduce the risk of immune rejection.

CONCLUSION

The synthesis of current research confirms that Mesenchymal Stem Cells and their derived exosomes offer a powerful biological intervention for alopecia. By neutralizing the inhibitory effects of DHT and reactivating the Wnt/ β -catenin signaling pathway, MSCs not only promote hair growth but also improve the follicular microenvironment as a whole. This paracrine-based approach offers a more comprehensive and potentially more effective solution than traditional pharmacotherapy.

CLINICAL PERSPECTIVES AND IMPLEMENTATION CHALLENGES

Although MSC therapy represents a “revolutionary alternative” for hair regeneration, several obstacles remain before widespread clinical adoption can occur:

Standardization: there is significant heterogeneity in protocols for MSC isolation, expansion, and administration. Standardization of these processes is essential for reproducible results;

Economic Barriers: the complexity of stem cell collection and manipulation results in high therapeutic costs, which may limit access in developing healthcare systems;

BIBLIOGRAPHIC REFERENCE

TOYOSHIMA, Koh-ei et al. Fully functional hair follicle organ regeneration using organ-inductive potential stem cells with an accessory mesenchymal cell population in an in vitro culture system. *Biochemical and Biophysical Research Communications*, v. 810, p. 153459, 2026. <https://doi.org/10.1016/j.bbrc.2026.153459>

Summary of the Critical Review of the book “Critical Evaluation of the International Hair Transplantation Treatise”



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The book Critical Evaluation of the International Hair Transplantation Treatise, by Gustavo Martins and Claudia Cherin, is a highly relevant contribution to the hair transplantation literature. Featuring 52 Brazilian authors and 7 international contributors, it offers a multidisciplinary and up-to-date perspective. Several chapters present strong scientific foundations and an excellent synthesis of consolidated knowledge.

Chapters I consider essential reading:

- Chapter 1 – “The Forty Steps of Follicular Excision” (co-authored by myself and Cristina Nakano) → An award-winning work published in several reference publications.
- Chapter 2 – Graft Quality Control (Claudia Cherin) → Excellent literature review (GQI, Park, Gandelman, Ming Lei); advocates for implanters over forceps and preservation at room temperature (rather than 4 °C).
- Chapter 3 – Hairline Reconstruction (Antônio Ruston) → Good, but incomplete (missing reference points, hairline designs, follicular unit selection by region, and incision/placement techniques).

- Chapter 8 – Principles of Anesthesia (Gustavo Martins) → Comprehensive and practical.
- Chapters 11 and 12 – Ergonomics (Jae Hyun Park and Gustavo Martins) → Important for surgeons’ health; advocates seated positioning and ergonomic loupes.
- Chapter 18 – Hair Transplantation in Black Patients (Marta Zollinger) → Excellent; addresses technical challenges, 30% lower density, larger punches (1.10–1.25 mm), and specific postoperative care.
- Chapter 19 – Normal versus Hyperelastic Skin (Igor Azevedo Bottura) → A rarely discussed and highly relevant topic.
- Chapter 20 – No-Shave FUE (Baltazar Dias Sanabria).
- Chapter 21 – Long Hair FUE (Otávio Boaventura).
- Chapter 23 – Morphological Classification of the Beard (Solon Eduardo) → Award-winning work with major impact.
- Chapter 24 – Beard Transplantation (Ito Meirelles Filho).
- Chapter 26 – Eyebrow Transplantation (Rene Rodrigues).

MAIN TOPICS AND MY PERSPECTIVE (RECURRING AGREEMENTS AND DISAGREEMENTS)

→ Cosmetic Density versus Ultra-High Density

- I strongly advocate the concept of “cosmetic density” (Alan Wells, Maira Merlotto): excellent results can be achieved with moderate densities. Very high densities

(>50 FU/cm²) increase the risk of necrosis, reduce graft survival (“take”), prematurely exhaust the donor area, and are unnecessary in most cases.

- I criticize chapters that advocate megasessions (7,000–15,000 follicular units) or extremely high densities, which I view as either marketing-driven or technically misguided.

Punch Size / Chubby versus Skinny Grafts

- I prefer “larger punches” (generally >0.9 mm, up to 1.1–1.25 mm in difficult cases), → as they produce more robust grafts (“chubby grafts”) with better survival rates.
- I consistently criticize the use of very small punches (0.7–0.85 mm), as they generate “skinny” grafts, increase transection rates (both visible and hidden), and lead to poorer integration.

Graft Preservation Temperature

- I advocate preservation at room temperature (based on scientific evidence).
- I criticize cooling grafts to 4 °C (a practice defended by several authors in the book).

Implantation Techniques

- I prefer implanters (as do most specialists) and criticize the routine use of forceps in FUE procedures.
- I accept pre-made incisions and sharp implanters depending on the case; I do not see absolute superiority of one method over another.

Safe Donor Area

- I agree that there is no truly “safe” donor area; safety is always relative due to the progression of androgenetic baldness.
- I value homogeneous extraction patterns and irregular transitions to better camouflage sequelae.

Specific Techniques

- Manual FUE without motorized devices: I acknowledge good results in experienced hands, although the method is increasingly less used due to slowness and physical strain.
- ARTAS Robot: I highlight several practical disadvantages (cost, limitations with curly/angled hair, lack of mobility, and absence of backup systems).

- Long Hair FUE / No-Shave FUE: useful for patients unwilling to shave their hair, but more difficult, time-consuming, and limited (shedding and fewer viable grafts).
- Body Hair Transplantation: reserved for exceptional cases; results are generally poor (except beard-to-beard procedures).
- Repair procedures, eyebrow, eyelash, beard, and crown transplantation: chapters considered high quality when well-supported scientifically.

Other Recurring Critical Observations

- Many chapters suffer from important omissions (hairline reference points, designs, follicular unit selection by region, and real complications associated with high densities).
- Some proposed figures (15,000 follicular units, 60–70 FU/cm²) are considered exaggerated or unrealistic in my practice.
- There are internal contradictions within the book (for example, authors who advocate high density while admitting it reduces graft survival).
- Several chapters lack medium- and long-term follow-up photographs.

Conclusion

Despite certain gaps and specific disagreements — particularly regarding density, punch size, graft cooling, and megasessions — the book is an essential reference work in the field of hair transplantation in Brazil and Latin America, with many chapters of excellent technical and scientific quality, as well as significant international contributions.

It is a valuable and up-to-date work, with notable strengths in quality control, ergonomics, hairline design, special cases (Black patients, beard and eyebrow transplantation), and repair procedures. However, it also presents controversial views regarding extreme density, small punches, and graft cooling — topics on which the reviewer disagrees based on scientific evidence and clinical experience.



[Click to read Dr. Mauro Speranzini's full review in Portuguese.](#)



Medicine in the Algorithmic Age

Scientific Reputation, Artificial Intelligence, and the Ethics of Medical Marketing



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What you will read in this article:

- The transformation of medical reputation: from the traditional academic environment to the digital landscape, where online presence influences patients' choices.
- The role of algorithms as new intermediaries, determining the visibility and reach of medical content.
- The importance of ethical medical marketing as a form of reputation management, rather than simple self-promotion.
- The difference between marketing and advertising, emphasizing the educational and informational nature required in medicine.
- The use of artificial intelligence as a tool to expand the reach and understanding of scientific content.
- The central idea that a solid reputation depends on quality and responsibility in the communication of knowledge.

INTRODUCTION

For centuries, medical reputation has been built within an academic and institutional ecosystem. The recognition of a professional arose through his training, his scientific production and the confidence transmitted in daily clinical practice. The choice of doctor was heavily influenced by referrals from colleagues or direct recommendations from patients.

However, in the last two decades, the digital revolution has profoundly changed this scenario. Today, even before entering a doctor's office, many patients conduct searches on digital engines, explore content on social media, and analyze the professional's online presence.

This transformation has created a new dynamic of medical visibility. In this context, medical marketing is no longer just an advertising strategy, but a process of ethical management of professional reputation in digital environments.

However, it is essential to understand that the doctor's digital presence must strictly respect the principles established by the Federal Council of Medicine, especially regarding medical advertising and the prohibition of sensationalism or promises of results (CFM, 2023).

ALGORITHMS: THE NEW INTERMEDIARIES OF MEDICAL REPUTATION

Historically, medical reputation was mediated by academic institutions, scientific societies, and patient referral networks. In the digital age, however, a new intermediary agent has emerged in this process: algorithms.

Digital platforms and search engines use artificial intelligence systems capable of selecting which content will be shown to the user. These systems analyze factors such as thematic relevance, consistency of publications, perceived authority of the author and level of public interaction.

Indirectly, algorithms have come to perform a function like that of a curator of medical knowledge,

selecting which information is most likely to reach the patient seeking advice.

THE HAIR TRANSPLANT ANALOGY: SOWING CONFIDENCE

An interesting analogy for understanding ethical medical marketing can be found in the field of hair transplantation itself.

During a hair transplant procedure, the surgeon does not implant all the follicles at a single point expecting immediate growth. On the contrary, it distributes follicular units with planning, respecting density, direction, and hair physiology.

Building a medical reputation follows a similar logic. An ethical digital presence is built gradually through the continuous implementation of scientific and educational content that, over time, generates organic growth in credibility.

Just as a well-executed hair transplant requires technique and planning, building a digital reputation requires consistency, ethics, and respect for the patient's intelligence.

MEDICAL MARKETING IS NOT ADVERTISING

A fundamental conceptual distinction needs to be established between marketing and advertising.

Advertising aims to persuade consumers to purchase a product or service. Marketing, on the other hand, involves strategies that make it possible to understand needs and establish lasting relationships with the public (Kotler & Keller, 2019).

In the context of medicine, marketing should be understood as responsible scientific communication aimed at informing and guiding the public.

CFM Resolution No. 2.336/2023 establishes clear limits for medical advertising, prohibiting practices such as promising results, sensationalism, and abusive self-promotion.



MARKETING

ARTIFICIAL INTELLIGENCE AS A STRATEGIC TOOL

Tools based on artificial intelligence can assist professionals in organizing scientific knowledge, analyzing search trends, and translating technical content into accessible language.

According to Topol (2019), artificial intelligence does not replace the doctor but expands their capacity for analysis and communication. In the context of ethical medical marketing, AI can help ensure that high-quality scientific content reaches a wider audience.

LOCAL PRESENCE AND GLOBAL REACH

Digital communication allows a doctor to exert influence simultaneously on two scales: local and global.

Locally, the professionals maintain their clinical practice and direct relationship with patients. Globally, its content can reach individuals in different regions.

This dynamic creates a true system for disseminating medical knowledge, allowing scientific information to circulate widely in the digital environment.

FINAL CONSIDERATIONS

Contemporary medical marketing should be understood as the ethical management of professional reputation in a digital environment mediated by algorithms and artificial intelligence.

Just as in hair transplantation the growth of hair depends on the quality of the implanted grafts, medical reputation depends on the quality of the knowledge shared.

A doctor who communicates science responsibly builds a solid presence over time, both in the physical and digital environments.

BIBLIOGRAPHICAL REFERENCES

- Kotler P., Keller K. Marketing Management. 15th ed. São Paulo: Pearson; 2019.
- Kotler P., Kartajaya H., Setiawan I. Marketing 4.0: from traditional to digital. Rio de Janeiro: Sextante; 2017.
- Minadeo R. Marketing para Serviços de Saúde. Rio de Janeiro: Elsevier; 2010.
- Kuazaqui E., Tanaka L. Marketing e Gestão Estratégica de Serviços de Saúde. São Paulo: Thomson; 2008.
- Hoffman K., Bateson J., Ikeda A., Campomar M. Princípios de Marketing de Serviços. São Paulo: Cengage Learning; 2010.
- Conselho Federal de Medicina. Resolução CFM nº 2.336/2023 – Publicidade Médica.
- Topol E. Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again. Basic Books; 2019.

Grumpiness got you



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Dealing with annoying things and annoying people gradually erodes our patience, potentially turning us into real grouches. You cannot be too careful!

I believe that the more we mature, the more critical, demanding, selective, and, why not, grumpy we become? Grumpiness is a trait acquired through living with... Annoying people of life - a rising phenomenon worldwide - and their equally annoying theories, manners, and habits. And since man is a product of his environment, everyone who is grumpy is, therefore, boring.

In this text, I share some of my many precautions against certain annoyances that drive me crazy or, let us say, sharpen my tendencies toward grumpiness.

One of them is of a religious nature. Forgive me, beliefs, and believers of any faith, but holding hands with your neighbors in church and hugging them while wishing them peace and love is, at the very least, embarrassing. If it only stayed between the neighbors on the right and the left, it would just be boring. But there are those "brothers" who leave their seats, two or three rows ahead, and go around embracing the entire church. I am sorry, but that goes beyond being annoyed and becomes a sin.

Along the same lines, I also do not understand the little kiss that most people give their finger

index finger of the right hand immediately after making the Sign of the Cross. I also wonder what it is to repeat the gesture three times quickly? Can someone explain it to me, please?

Changing the subject, although the gestures above are all related to them, one thing that intrigues me is

the need that soccer players must curry favor with their partners by kissing their wedding rings when celebrating a goal. Tough, huh?

What about the little heart made with your hands, torn out of your chest, and thrown towards the crowd? It is awful! I prefer not to comment on the ball under the shirt simulating a pregnancy, lest my inspiration disappear and I will not be able to finish this column.

Another masterpiece. I am convinced that those who tie the end of their tie inside the pants are unlikely to reach the kingdom of heaven. And what about those who leave it above the navel, making it look more like a bib than a proper tie? Does it have a base?

Nothing strengthens us more spiritually than having patience with verbose people, those same people who, when greeted, respond by explaining, in minute detail, why they are well or unwell.

And when they speak while holding us or squeezing us, or spitting on us or even pushing us, the absolute certainty of our salvation is irreversible.

Some linguistic quirks are, to say the least, intriguing. I am talking about those people who we say, "Thank you very much" and they reply with "No worries!". Worry about what? It is not implication, I swear! But much worse than that are those who instead of saying "thank you", say "gratitude". It is something intangible!

What could be more grotesque than living with people who chew gum and have their mouths semi-open? I have the impression that every gum chewer greets with that limp hand during a handshake, another habit that only Freud can explain, besides embarrassing those with a strong handshake.

Another example from the "Only Jesus can fix this" series is walking around the streets, going to the movies, church, or work with small bottles of water, sipping them every five minutes. It is enough to make anyone hate it.

I conclude by alluding to those who say goodbye by sending "a kiss to your heart". I saved it for

Finally, if I started with that ultimate cheesiness, I am sure no one would get to the end of this reading.



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