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A Side-by-Side Study of FUT vs. FUE Graft Availability in the Same Patients and Its Implications on Lifetime Donor Supply and Management

David Josephitis, DO, FISHRS | Minneapolis, Minnesota | drjosephitis@shapiromedical.com;
Ronald Shapiro, MD, FISHRS | Minneapolis, Minnesota

ABSTRACT

Introduction: One of a patient's most important goals is meeting expectations of coverage and density. Limited donor supply is a handicap in many patients with respect to achieving this goal. Choosing an approach that maximizes lifetime donor supply would be beneficial. Controversy exists over which technique, or combination of techniques, is best for maximizing donor supply. Some feel that FUE alone is sufficient, while others feel that the use of FUT in combination with FUE may be better in patients requiring greater numbers of grafts.

Objective: The goal of this study is to get a better understanding of the difference in donor supply available with FUE only, FUT only, or Combination ("combo") FUT/FUE.

Study Design: A side-by-side study was done in which two patients had FUE only harvested from one side (half) of the head, and FUT only from the other side (half). This "side by side" harvesting was done two times one year apart. The number of hair (grafts) obtained per technique on each side (after two sessions) was recorded along with the "residual hair" density on both sides. From this data, the total amount of hair that FUE only, FUT only, and Combination FUT/FUE could potentially obtain was calculated and compared. Hair Mass Index and Coverage Value were also determined to support the findings.

Conclusion: More hair and grafts were obtained using combination FUT followed by FUE than by either technique alone. Although many practitioners feel that using FUE only can take care of the hair loss needs of most patients, there may yet be a population of patients who will benefit from the ability to harvest a higher number of grafts. It is important for hair transplant surgeons to have options available to give patients maximal donor if desired.

INTRODUCTION

While every patient is unique, two critical goals are always the same during hair transplantation: to fulfill a patient's short- (and long-) term goals with respect to naturalness and density in the recipient area, while at the same time taking good care of the donor region. The degree of density and coverage that can be created is primarily a function of graft yield and available donor supply. Therefore, it would be beneficial to use a technique (or a combination of techniques) that ensures the best survival as well as the ability to harvest the maximum amount of grafts with minimal harm to the donor area. Although in the past concern existed over graft yield with follicular unit excision (FUE), recent studies have shown that with modern high-quality techniques, the yield of FUE and FUT (linear strip) are equivalent.¹ However, with respect to which approach is best for maximizing the donor supply over the life of the patient, differences of opinion continue to exist. One issue most physicians agree on is that limited donor supply is often a major obstacle to meeting patients' goals with respect to density and coverage.

How much hair can the donor area deliver? Each patient is different, which makes answering this question challenging. Donor area management has become a more prevalent topic as FUE has become a popular and powerful technique. Different ways of assessing the donor area have also emerged. Coverage Value (CV) and Hair Mass Index (HMI) are two such measurements of the "amount" of cosmetically useful available donor.

What is the optimum technique to use to obtain the most grafts (total hair) for a patient? Some feel that

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HAIR TRANSPLANT FORUM INTERNATIONAL

is published bi-monthly by the
International Society of Hair Restoration Surgery

First-class postage paid Milwaukee, WI and
additional mailing offices.

POSTMASTER Send address changes to:

Hair Transplant Forum International
International Society of Hair Restoration Surgery
1932 S. Halsted St., Suite 413
Chicago, IL 60608 USA
Telephone 1-630-262-5399
U.S. Domestic Toll Free 1-800-444-2737
Fax 1-630-262-1520

President	Arthur Tykocinski, MD, FISHRS president@ishrs.org
Executive Director	Victoria Ceh, MPA vceh@ishrs.org
Editors	Andreas M. Finner, MD, FISHRS Bradley R. Wolf, MD, FISHRS forumeditors@ishrs.org
Managing Editor & Advertising Sales	Cheryl Duckler, 1-262-643-4212 cduckler@ishrs.org
Controversies	Russell G. Knudsen, MBBS, FISHRS
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International Society of Hair Restoration Surgery,

1932 S. Halsted St., Suite 413
Chicago, IL 60608 USA

Printed in the USA.



Official Publication of the
International Society of Hair Restoration Surgery



President's Message

Arthur Tykocinski, MD, FISHRS | São Paulo, Brazil | president@ishrs.org

The Day after FUE Crashes

This is NOT about Follicular Unit Excision (FUE) extinction, but about its reputation. This is inevitable: stocks, companies, agencies, countries, anything that grows

exponentially without proper quality control will suffer this, the crash. History is full of examples; there is a long list. The stock market crash of 1929 is enough to illustrate this.

Fraudulent, Illicit, Greedy Hair Transplant (FIGHT) clinics—also known as the “black market”—are at the root of the problem: easy money, misleading marketing, and greedy entrepreneurs is the recipe for the disaster. This explosive combo would be dangerous for any market, but in medicine? Wow, besides the fact that this black market is unethical, it could certainly tarnish HT's good reputation.

For sure the problem is not FUE itself, but the use some unprincipled practitioners are making of it. Though we originally reacted perhaps not boldly enough in our attempts to address this problem, we must take responsibility and assume that burden on our collective shoulders. We are moving fast now, and more aggressively, and we are more united than ever on this campaign. Today, by staying truly united, we have an opportunity to improve things.

We have also to thank the companies of FUE systems and supplies that did not embrace the FIGHT clinics and that remained focused on surgeons performing surgery, for the good of the patients. The problem is not the gun itself, but who is pulling it trigger.

So what does this mean? FUE will NOT disappear, that's for sure. But we have to be prepared with answers for the public, because we will be questioned by them: How could this happen? and Why did we allow it to? We need to offer great answers in order to restore our credibility on HT: Why should they trust us? Our first answer for this reflects our high ethical and professional standards: **“Only surgeons performing surgery”**—that is our ideal goal.

On the other side, FUE is not the only available technique and FUT is part of the equation for donor area management. As FUT would be a relevant part of the answer, we have to remember the “sins” made from FUT in the past—and maybe at the present—that finally, as a reaction, lead to FUE's huge popularity and caused FUT to decline.

FUT sins include the following:

- Multiple FUT small sessions
- Multiple stacked scars are produced
- Donor area distortions, nerve numbness, and vascular distortion can occur
- Donor area closing tension, leading to wide scars and donor area depletion caused by ischemia
- Improper graft cutting leads to poor hair growth.
- Implantation time is too long causing grafts to suffer and thinning hair

Fight The FIGHT

Fight the Fraudulent, Illicit & Grave Hair Transplants

#FightTheFIGHT

For conceptual purposes only; final logo still in development.

- Graft trauma can lead to such inflammatory reactions as lichen planopilaris, which affects the recipient area
- Improper FUT surgical training
- Improper FUT graft cutting supervision
- Large numbers of grafts with less hair per graft generates higher profits for the clinic, but no more hair for the patients

This is old time FUT. Therefore, if FUT will rehabilitate trust in the surgeon over HT, it is better for us to fix all its issues or we will keep running in circles and there will be no hope for anyone: patients or surgeons. We need to update to FUT 2.0, urgently. This is possible and some have done it already, but we need to face these problems. To start, FUT surgeons have to be humble and approach the list above and to craft a sustainable answer. Let's start this discussion at the approaching World Congress in Bangkok.

At the end of the day, we have two kinds of clinics:

1. the one that cares about the tomorrow of their patients or
2. the one that just cares about the patient for tomorrow: FIGHT, the black market clinics.

Are you ready to fight the FIGHT? ■

Please Join the ISHRS Annual Giving Fund and help in our Fight the FIGHT campaign with a donation! It is crucial that we have member support. Please make a donation to help support the battle against the unlicensed practice of medicine. To donate to the Fight the FIGHT campaign, go to:

<https://ishrs.org/make-a-donation/>

Co-editors' Messages

Andreas M. Finner, MD, FISHRS |
Berlin, Germany |
forumeditors@ishrs.org

As our next World Congress approaches, it is time to look back and make plans for the future. In recent years, we have further refined hair surgery. Dedicated colleagues have developed finer instruments. We use microscopes. Thus, we are now able to minimize trauma to the hair follicle and to the scalp. Digital imaging can help to assess the hair situation. Careful anesthesia can significantly reduce patient discomfort, as described in the article by Seema and Anil Garg.

What remains a constant challenge, though, is the correct application and choice of technique in each individual patient. The goal should be to avoid a one-size-fits-all approach and assembly-line surgery.

In this context, I applaud the excellent article by David Josephitis and Ron Shapiro calculating the possible yield with FUE, FUT, and a combination of both. It again proves the concept that a combination of both harvesting techniques will increase the number of potentially available donor hairs for many patients.

I actually addressed the same question in the talk I gave at the Hair Research World Congress in Barcelona in April. I measured the quality index of grafts obtained by FUE and FUT in the same patient (it was higher in FUT) and I also calculated the potential yield for different scenarios of FUE and FUT or their combination. I came to the same conclusion. Combining both techniques increases the graft and hair yield while decreasing the potential risk of overharvesting or harvesting outside of the safe zone in high-density FUE and a wide scar from multiple FUTs. Whether the first surgery should be FUE or FUT is another issue that has to be decided individually.

What are the practical consequences from this insight? All patients should be counseled about FUE and FUT. Hair surgeons should ideally master both techniques or cooperate with colleagues. In this way, they can offer more hair to many patients with (potentially) advanced alopecia. Starting with FUT or adding it to FUE is especially indicated in patients with a narrow safe donor area or fine and curly hair and those who never plan to wear their hair too short. Thus, FUT is definitely still a relevant and important part of the treatment spectrum for suitable patients. Hair surgery should be combined with medical treatment and can be complemented with scalp micropigmentation (SMP).

I am looking forward to trying new instruments and discussing new ideas during our World Congress and Live Surgery Workshop in Bangkok.

What are your personal thoughts and observations? Send them to forumeditors@ishrs.org. ■



Bradley R. Wolf, MD, FISHRS |
Cincinnati, Ohio, USA |
forumeditors@ishrs.org

When we began our term as Co-editors, our goal was to present the membership with the most current information. In this, our second to last issue, we do that by presenting a variety of current and avant garde topics. Bill Rassman reports on a new

"needleless microjet injector that uses laser pulse energy to inject tattoo pigments for scalp micropigmentation." Another in a long line of clever instruments from Bill. He thinks this device, or a future variant, is likely to replace the system he uses for SMP. Greg Williams, in another excellently written column, explores the ethics of robotics and automation. And in a third forward-looking piece, Vlad Ratushny reports on a study of human embryonic stem cells and human-induced pluripotent stem cells. This study is a little complicated but is a blueprint for the future. Familiarize yourself with the language; the subject of stem cells has been one of the most popular topics at recent meetings and will be heavily covered in Bangkok.

In our three years as Co-editors, most articles concerning surgery have been about FUE. In this issue, FUT makes a comeback. In his President's message, Arthur writes about FUT as "part of the equation for donor area management" and the "need to update to FUT 2.0...." Two of our feature articles do just that. Seema and Anil Garg present a study on techniques to decrease pain when performing FUT: decreasing strip width and injecting a long-acting anesthetic after strip excision. Our cover article by David Josephitis and Ron Shapiro is an ambitious and well-designed study taking place over two years in two patients who had two procedures, FUE and FUT, performed at the same time, twice. Their conclusions were that more grafts were obtained on the FUT side, residual donor density was greater on the FUT side, and FUT plus FUE yielded more grafts. When done properly, FUT is unarguably more efficient than FUE. That is important news! So why are some trying to relegate FUT to historical footnote status?

Both studies above and my experience (see my editor's note on page 188) indicate that a strip of no greater than 1.5cm wide yields at least 2,000-3,000 grafts, causes less pain, and yields acceptable donor scars compared to wider strips. Although strip width and graft numbers can't be regulated, to prevent wide scars and reduce pain, strips over 1.5cm wide and sessions of over 3,000 grafts should probably be discouraged. I would add this to Arthur's "FUT 2.0 update."

This year all roads and flight paths lead to Bangkok. Robin, Victoria, and the program chairs have been hard at work creating another Congress likely to be the best ever. Preliminary numbers indicate it could be the biggest meeting yet. Safe travels and I look forward to seeing all in Thailand. ■