

HAIR TRANSPLANT 360



VOLUME 4

HAIR TRANSPLANT 360

Follicular Unit Extraction (FUE)

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About the Cover

The circular design on this cover is an *enso*, a Japanese word that means “circle” and carries the meaning of enlightenment, strength, elegance, and the universe. It has multiple, layered meanings. First, it is a symbol of the 360 concept in that this book and the entire series are meant to be very comprehensive in scope on the subject of hair restoration. Second, the circle signifies partnership that is needed to complete any worthy task, like the teamwork of physician and assistant or in this book’s case the strength



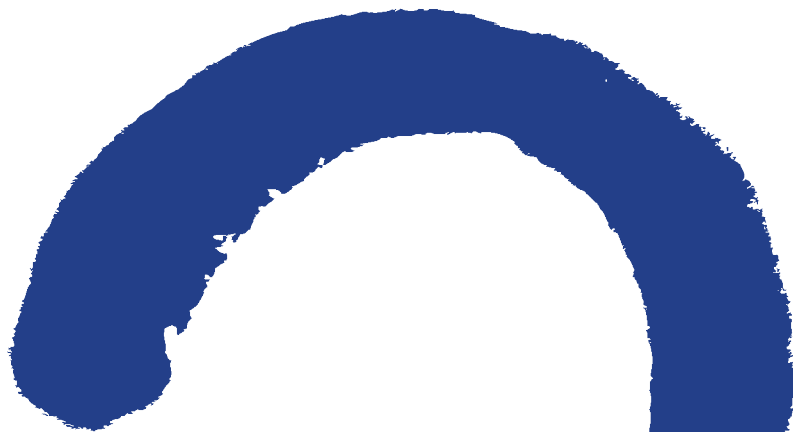
of two editors with unique sets of talents. Finally, the incomplete circle suggests that we all work on hair transplant or any subject about which we are passionate in an ever-improving journey, as mastery is an elusive and receding asymptote. Japanese Zen masters contend that the character of the artist is revealed through his interpretation of the *enso*, with artists who paint the *enso* on a daily basis as part of their spiritual journey.

My mission in life is not merely to survive, but to thrive; and to do so with some passion, some compassion, some humor, and some style.

Maya Angelou

Every great dream begins with a dreamer. Always remember, you have within you the strength, the patience, and the passion to reach for the stars to change the world.

Harriet Tubman



Dedication

To my dearest family whom I love and cherish every day, Carol, Richard, Vina, Matt, Celia, Gavin, Meredith, David, John, Denise, Bailey, Bryn, Cooper, Nora, Elsinore, Masako, Rick, Aya, and Kumo.

Samuel M Lam

To my parents, wife, and children, because of my love of country, God, and desire to cultivate virtue and charity amongst my fellow human beings.

Kenneth L Williams Jr

In Support of the Cicatricial Alopecia Research Foundation

This textbook is dedicated to our patients who have experienced hair loss because as hair-restoration surgeons we understand all too well the emotional and painful embarrassment of hair loss that our patients undergo. When we began this journey to share the collective experiences of international experts in FUE, we never believed financial remuneration should be personally received but instead should be shared with the hair-loss community. As the two editors, we are so pleased to dedicate all proceeds from this textbook to the Cicatricial Alopecia Research Foundation (CARF).

Cicatricial Alopecia Research Foundation (CARF) is the world's only voice for patients with cicatricial alopecia. They provide education and patient support, increased public knowledge, and advance and encourage research for patients suffering from this serious hair disorder. CARF has patients in 91 countries worldwide and is unlimited in their capacity of helping those with this hair-loss disorder. To the leaders of this organization we honor you.

Samuel M Lam
Kenneth L Williams Jr



Foreword

Is this the era of FUE? ISHRS physician surveys still place strip-excision procedures above follicular unit extraction as the most common hair-restoration procedure performed. These surveys, however, say FUE is gaining in popularity and that fact is very obvious to me. I have seen many changes over my 38 years of private hair-restoration practice. I have observed many surgical techniques come and go, but I believe we are witnessing another change happening right now before our eyes. The overriding feature of every transformation in medicine and surgery has been the patient benefits the most and that's what drives the change. FUE leaves less evidence of surgery. Yes, that is true with a brief momentary look. If all the round scars are measured end-to-end, however, they would add up to more surface area than the strip scar. The tiny punctate scars are less visible, though, and that's what the patients observe and the reason they choose to have FUE.



A few decades ago, in a noble attempt to help hair surgeons, I tried modifying scalp reductions with other doctors who were interested in these procedures in an effort to avoid criticisms that would be directed at them. In reality, however, the time for the demise of scalp reductions had come and we were only re-arranging the deck chairs on the Titanic.

Hair-restoration is a dignified cosmetic and scientific discipline. We enter this specialty because we care about our patients and outcomes. There are pros and cons for both strip and FUE donor-harvesting techniques, and it is our responsibility to properly inform our patients about the differences in the two harvesting procedures. Other arguments that must be considered by all hair surgeons and that cause me trepidation are the possibility of follicular transection, wandering into the "less permanent" zone of the donor area, and the lack of fatty tissue around the grafts as we place them into the patient's scalp. Further, the hair must be styled very short to undertake the FUE procedure. One by one all of these concerns are resolved or addressed in this world-class surgical hair textbook, as is witnessed by the outstanding contributions by FUE experts from around the globe. They answer the questions and mystery of FUE such as how can surgical hair restorations become less surgical or invasive? How convenient is FUE for the patient, and how minimal is the discomfort and the downtime? In a few words, the patient benefits and everyone wins once again.

A first-class surgical text that is dedicated solely to the FUE harvesting method is timely indeed. A lot has been written about FUE and those hungry for information may have found most of their needs by hard work and effort. Between the front and back cover of this book, however, is a plethora of facts and information about this new and upcoming donor-harvesting method. Quite simply, this textbook is the A to Z of FUE. Congratulations to Drs Lam and Williams and all the co-authors for putting it all together in a concise and readable manner. All hair-restoration surgeons offering FUE should have this text in their office.

Mario Marzola MD
Norwood, South Australia

A handwritten signature in blue ink, appearing to read 'Mario Marzola'.



Preface

This textbook represents the end of a two-year project and the culmination of a multiyear effort to complete the four volumes in this book series. When editing Volume 3 of this series, I endeavored to have FUE incorporated into that book but I came to recognize that this subject truly demanded a volume unto itself. This book stands as the only major textbook ever written on FUE and is the product of worldwide talent and labor. I would like to thank in particular my co-editor, Kenneth L Williams Jr, for his unwavering and diligent work that seemed to possess no bounds or limits. Without him, this book would never have been completed or bear the imprint of high quality that he so selflessly brought to the venture. The section editors, Vance and Emina, and the many authors have contributed their energy and expertise to advance our field I believe in a durable and substantive degree.

FUE represents the fastest growing segment in the hair-restoration field and has faced considerable controversy in terms of ethics, terminology, techniques, quality, and patient candidacy. This book does not resolve these controversies entirely but hopefully attempts to provide practical insight into overcoming the shortcomings of this technique and to celebrate the benefits of this methodology. The focus of this book series has always been on the pragmatic and clinical nature of hair transplantation, eschewing theoretical and arcane information. Accordingly, I have asked my authors and editors to include unapologetic bias and to write in a highly personal tone to convey what has worked or failed to work for that particular practitioner. With that objective in mind, I hope that this book will service the readership to improve patients' lives in meaningful ways rather than stand as a mere object of academic curiosity. I applaud all the many contributors for their pioneering work in this field and also exhort the reader of this book to improve one's skills everyday to achieve better aesthetic and technical outcomes for our most deserving patients.

Samuel M Lam
Dallas, Texas, USA



Preface

Since recorded history, hair loss as a medical disorder has impacted millions of men and women worldwide. Advances in the art and science of hair-restoration are a result of the dedication by academic-based researchers and physicians. Prior to World War II, Japanese physicians began transplanting hair-bearing grafts with success using large 4-mm circular sharp punches. Unfortunately due to the war, the medical literature did not reflect the initial efforts of these early pioneers in hair surgery. What is considered modern-day hair surgery began with Norman Orentreich's classic publication in 1959 in the *Annals of New York Academy of Sciences* using 4-mm circular sharp punches. Unfortunately, aesthetic results could not always be reproduced with large circular punches.

Hair surgery has come a full 360° from Orentreich's original punch-grafting technique. Various hair surgical restoration techniques such as alopecia reduction, flaps, mini-micro grafting, and strip have followed. Of all the harvesting techniques, strip excision with stereo microscopes and follicular unit extraction (FUE) remain as the two most often used hair-restoration harvesting methods. Unlike our Japanese predecessors and their punch grafting methods using large sharp circular punches, state-of-the-art FUE consists of using considerably smaller circular punches and has demonstrated consistent, favorable cosmetic outcomes.

I love history because if we do not learn from our past mistakes, we are bound to repeat them. In reviewing journals such as the *Hair Transplant Forum International* immediately after Bernstein and Rassman's sentinel manuscript in 2002, I found numerous unpleasant references and descriptions of FUE. In retrospect during the past decade when FUE was in its infancy, there was considerable peer pressure against adopting FUE donor harvesting with smaller circular punches. Numerous statements in the literature abound describing FUE as a "magic trick", "follicular homicide", and even a thought-provoking warning predicting "FUE represents a major step backwards from progress...a road that should not be taken".

I am eternally grateful for the efforts of FUE visionaries and pioneers such as John Cole, James A Harris, Robert H True, Brad Wolf, Paul Rose, and Jose Lorenzo just to name a few, who were not sidetracked from advancing FUE during this time period when it was unpopular. Without their collective efforts, FUE would not be considered today as standard of care and as a state-of-the-art donor-harvesting technique.

The purpose of this hair-restoration textbook is to deliver "state-of-the-art" material from international teachers and thought leaders of FUE. *Hair Restoration 360, Volume Four* represents the tireless efforts of authorities and pioneers in FUE. I am so thankful and grateful for the opportunity to have a role in the preparation of this textbook. I want to acknowledge my mentor, colleague, and dear friend, Sam Lam, who asked if I would assist him on completing his fourth medical textbook in the *Hair Restoration 360* series. After much determination and labor, we were able to bring the experience and knowledge of numerous international experts on FUE hair-restoration that is now documented within this medical textbook. I want to thank each and everyone of our chapter authors for their hard work and dedication.

Allow me to finally acknowledge my dear wife, Janet, who has been so supportive of my editing labors and the numerous workshops I attended either as a student or faculty over the last several years. She is amazing and I am so blessed to have her as my wife.

Kenneth L Williams Jr
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Acknowledgments

A book of this size and scope is never a solitary project but a collective effort from many individuals whose unique talents reach both profoundly and broadly. We would like to sincerely thank the dedicated section editors and authors who have committed their substantial personal time to making this book a reality that you now hold in your hands. The vision was initially shaped on October 23, 2013, at the 21st Annual Meeting of the International Society of Hair Restoration Surgery held in San Francisco, California. That first, late-night meeting forged the foundation of the book and spurred us to work tirelessly until its completion. We would also like to thank the publisher Jaypee Brothers Medical Publishers (P) Ltd for their undying commitment to this extended book project and not only supporting the vision but also allowing complete artistic freedom in the design and execution of these books. The content is king but the design and presentation of that content allows the content to flourish, to be relished, and to nourish the soul. Specifically, we would like to thank Mr Jitendar P Vij (Group Chairman), Mr Ankit Vij (Group President), Ms Chetna Malhotra Vohra (Associate Director), Ms Sheetal Arora Kapoor (Development Editor), and the production team of Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India.

Samuel M Lam

Kenneth L Williams Jr






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