

ESSENTIALS OF PRP AND PRF TREATMENT

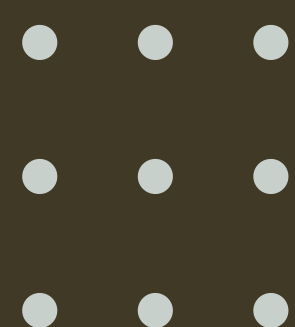
CBAM Aesthetic Mastery Series



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Dr. Reza Akef is a highly experienced and respected cosmetic physician, with over 15 years of experience in teaching and practicing cosmetic medicine. He is currently the Assistant Professor at McMaster University and the Chairman of the Canadian Board of Aesthetic Medicine (CBAM), where he shares his knowledge and expertise with other healthcare professionals to provide the best care for their patients.

Dr. Akef is board certified by the College of Family Physicians of Canada in both Family and Emergency Medicine. Additionally, he is deeply involved in interventional pain practice cooperation for the treatment of Migraines, chronic pain, TMJ, Myofascial pain, and Fibromyalgia. He is a leading cosmetic physician and an internationally recognized specialist in non-surgical cosmetic procedures.

Dr. Akef is dedicated to understanding his clients' concerns and creating personalized treatment plans that meet their needs and goals. He is committed to thoughtfully and strategically creating individualized combinations of leading, safe treatments that exceed client expectations. He is also the founder of Angel Gloss spa in Toronto, an established, leading destination for non-surgical cosmetic procedures for individuals seeking leading physicians with proven experience, the latest technology, and cutting-edge techniques.

Dr. Akef is actively involved in multiple training courses, webinars, and conferences all around the world, including prestigious international conferences such as IMCAS, AMWC, and Dubai Derma. He participates as a speaker at these events and is always looking to stay up to date with the latest developments in the field of cosmetic medicine.

Mohsen Talani is the Director of CBAM. He has over 18 years of experience teaching anatomy in Canada and internationally to students and healthcare practitioners in different fields of medicine such as physicians, dentists, nurses, chiropractors, and physiotherapists.

After graduating from medical school at a young age, he became a medical doctor in his home country, Iran, and practiced in the field of emergency medicine. While pursuing his Master's thesis in neuroscience at McGill University, he discovered his passion for teaching. Since then, he has been working in the field of medical science education, with a focus on anatomy.

He strongly believes that with the rapidly growing aesthetic industry, all practitioners should have a profound knowledge of skin basics, fat compartments, muscles, blood vessels, and nerves, in order to provide safe and effective care to clients and prevent or minimize post-treatment complications linked to lack of anatomy knowledge.

He is currently training healthcare practitioners who seek to have a deep knowledge of anatomy. He incorporates fun, innovative, and easy-to-understand methods of teaching in all of his classes, guest lectures, and presentations. Additionally, he supervises the cadaver lab dissections and hands-on practicals.



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INTRODUCTION



Introduction

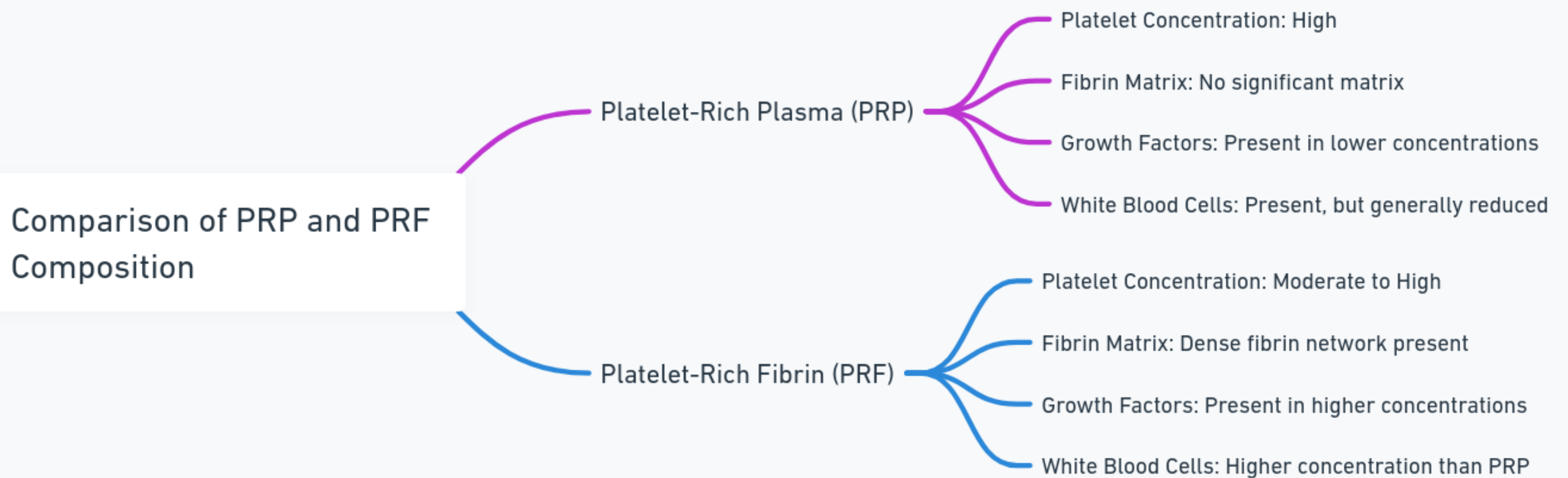


Fig I.1. Comparison of PRP & PRF composition

Purpose and Scope of the Book

Platelet-Rich Plasma (PRP) and Platelet-Rich Fibrin (PRF) have emerged as revolutionary tools in aesthetic medicine, offering minimally invasive solutions for skin rejuvenation, hair restoration, and beyond. Unlike traditional treatments that may mask the effects of aging temporarily, PRP and PRF work to stimulate the body's natural regenerative processes, providing results that can be both natural and long-lasting. *Essentials of PRP and PRF in Aesthetic Medicine* provides a comprehensive guide to

understanding and implementing these therapies effectively, helping practitioners harness the full potential of PRP and PRF for aesthetic applications.

This book is designed for beginners and intermediate practitioners, including nurses, doctors, and aesthetic professionals who are interested in incorporating regenerative treatments into their practice. Each chapter is crafted to balance scientific rigor with practical insights, making complex information accessible and directly applicable. By the end of this book, readers will have a solid foundation in PRP and PRF science, preparation

techniques, clinical applications, and ethical considerations, ensuring they are well-prepared to provide these treatments safely and effectively.

Overview of PRP and PRF in Aesthetic Medicine

PRP and PRF are derived from a patient's own blood, containing high concentrations of platelets, growth factors, and bioactive molecules that promote healing and cellular regeneration. PRP, created by isolating platelets through centrifugation, has been widely used in both medical and aesthetic applications to improve skin texture, reduce wrinkles, and stimulate



Fig I.2. An important benefit of PRP and PRF: hair restoration.



Fig I.3. An image showing the process of generating PRP and PRF, featuring centrifugation.

hair growth. PRF, a newer generation of platelet therapy, is also produced through centrifugation but at lower speeds, allowing for a more natural concentration of platelets and fibrin. PRF releases growth factors more gradually, making it a promising choice for treatments requiring sustained release.

These therapies are particularly valuable in aesthetic medicine due to their ability to enhance collagen production, improve skin elasticity, and accelerate tissue repair—all without synthetic fillers or chemicals. In addition, PRP and PRF offer a versatile approach that can be combined with other treatments, such as microneedling, laser therapy, and dermal fillers, to optimize results.

- **Stem Cells:** Undifferentiated cells that can develop into different types of cells in the body, contributing to tissue regeneration. Found in higher concentrations in PRF compared to PRP.
- **Angiogenesis:** The process of forming new blood vessels, often stimulated by growth factors in PRP and PRF to promote tissue healing.
- **Microneedling:** A minimally invasive procedure that uses tiny needles to create micro-injuries in the skin, enhancing the absorption of PRP or PRF for skin rejuvenation.

Appendices

Appendix B: Further Reading and Resources

For readers interested in expanding their knowledge of PRP, PRF, and regenerative medicine, this section includes recommended books, research articles, and online resources.

Books

- Everts, P., & Onishi, K. (2020). *Platelet-Rich Plasma and Regenerative Therapy*. Springer.
- Marx, R. E., & Garg, A. K. (2005). *Applications of Platelet Concentrates in Surgery and Aesthetics*. Quintessence Publishing.
- **"Platelet-Rich Plasma in Aesthetic Medicine"** by Joseph S. A. and Manish R. (2020)
- **"Aesthetic Medicine: A Practitioner's Guide"** by David J. Goldberg and David W. McDaniel (2016)

Journal Articles:

1. **"Platelet-rich fibrin in soft and hard tissue regeneration"** – Journal of Periodontology (2018)

Key Research Articles

- Gentile, P., & Garcovich, S. (2019). **Clinical review of PRP and PRF applications in aesthetic dermatology.** *Aesthetic Plastic Surgery*, 43(2), 491-507.
- Andia, I., & Maffulli, N. (2018). **Regenerative applications of PRP in musculoskeletal and aesthetic medicine.** *BioMed Research International*, 2018, 1-12.

Online Resources

- **International Society for Regenerative Medicine:** isrm.org – A leading organization promoting regenerative medicine research.
- **FDA Guidance on PRP:** fda.gov – Information on U.S. regulatory guidelines for PRP and PRF.
- **Health Canada – Biologics and Radiopharmaceuticals:** canada.ca – Canadian regulatory information for biologic products.
- **American Academy of Aesthetic Medicine (AAAM)**
- www.aaamed.org
- **The Aesthetic Society (American Society for Aesthetic Plastic Surgery)**
- www.surgery.org
- **PubMed**
- www.pubmed.ncbi.nlm.nih.gov

This section provides step-by-step protocols for preparing and applying PRP and PRF, with best practices for quality control and patient safety.

1. Protocol for PRP Preparation and Application

Preparation:

- Draw blood using a sterile, single-use syringe, typically 10-20 mL per session.
- Place the blood sample in a centrifuge. Set the centrifuge to a high speed to separate the plasma and concentrate platelets.
- Extract the PRP layer and transfer it to a sterile syringe for injection or topical application.

Application:

- Inject PRP at target sites, such as tear troughs, nasolabial folds, or scalp (for hair restoration), using a fine needle.
- Alternatively, use PRP topically after microneedling to enhance absorption.

Aftercare:

- Advise patients to avoid touching the treated area for 24 hours and protect it from direct sunlight.

Appendices

Appendix C: Protocols for PRP and PRF Preparation and Application

2. Protocol for PRF Preparation and Application

Preparation:

- Draw 10-15 mL of blood, ideally using a vacuum blood collection tube.
- Place the sample in a centrifuge set to a lower speed to allow fibrin formation, which creates a dense matrix of platelets and white blood cells.
- Extract the PRF clot, which will be used directly without further manipulation, preserving its natural growth factor release profile.

Application:

- For facial rejuvenation, inject PRF into the under-eye area or nasolabial folds to provide a gradual filling effect.
- For hair restoration, inject PRF into the scalp to stimulate hair follicle activity and promote new growth.

Aftercare:

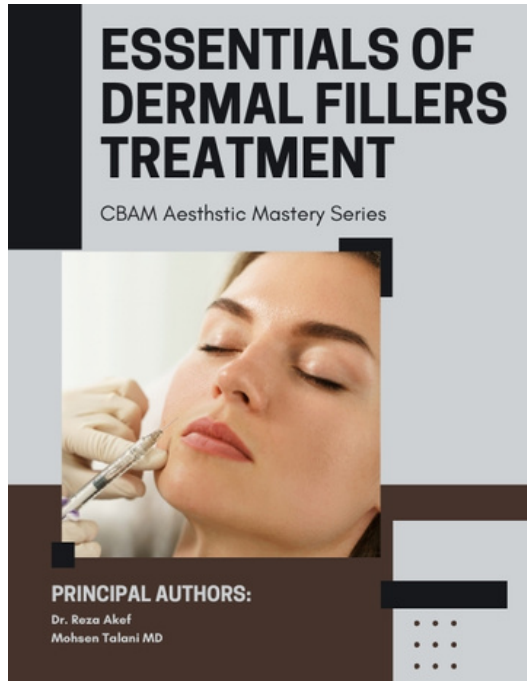
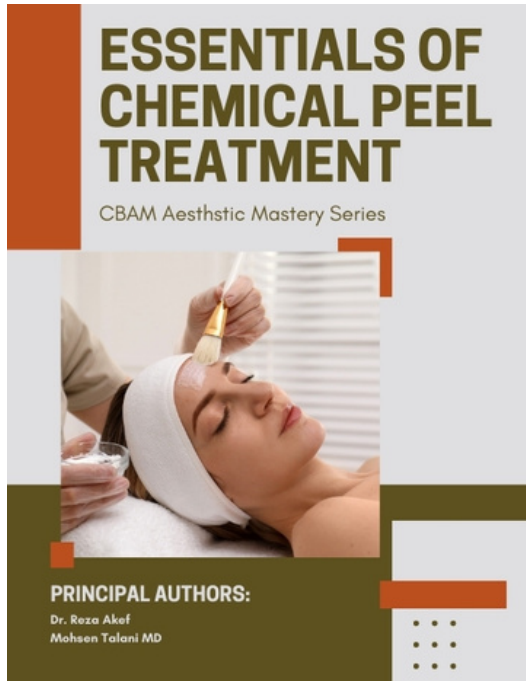
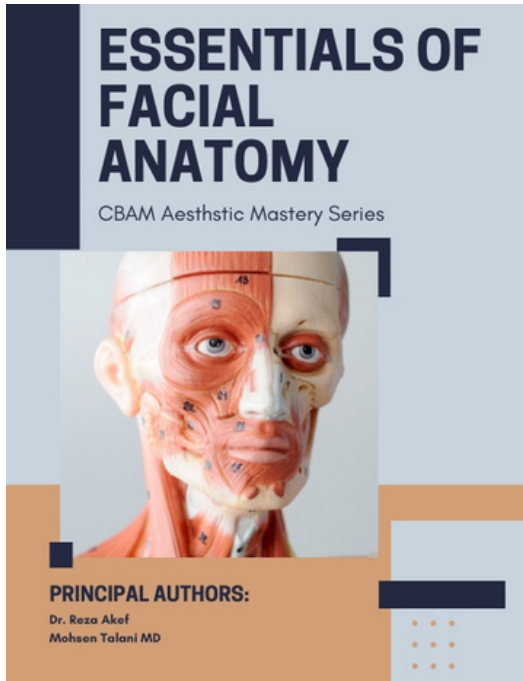
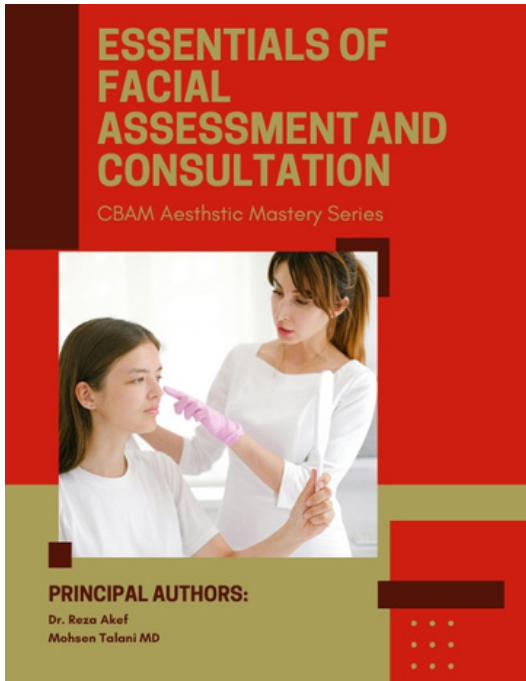
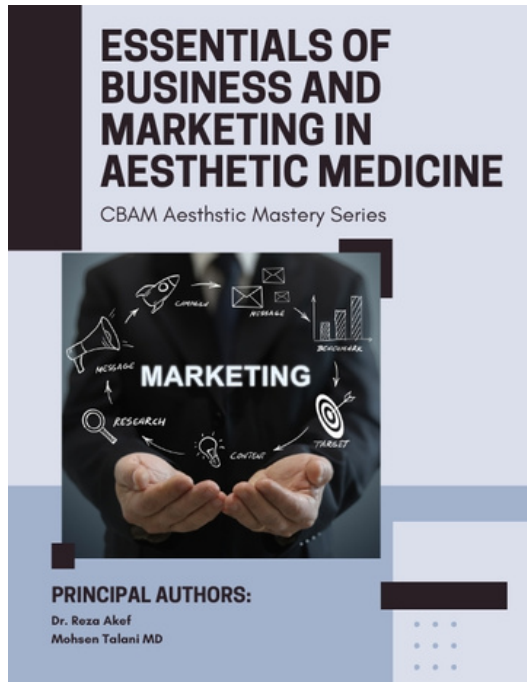
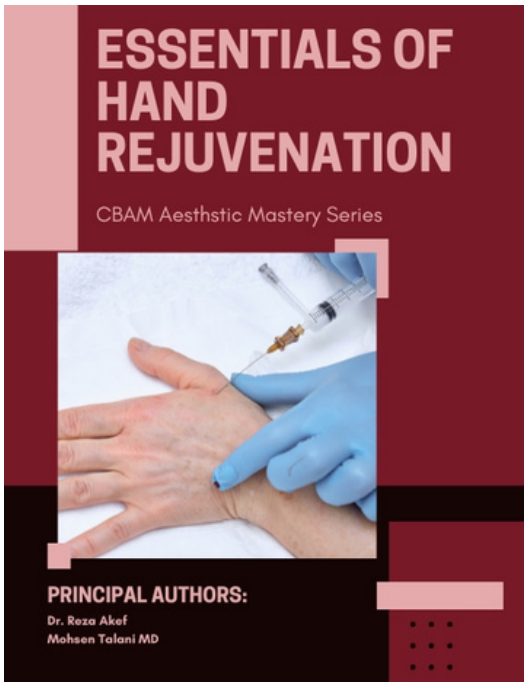
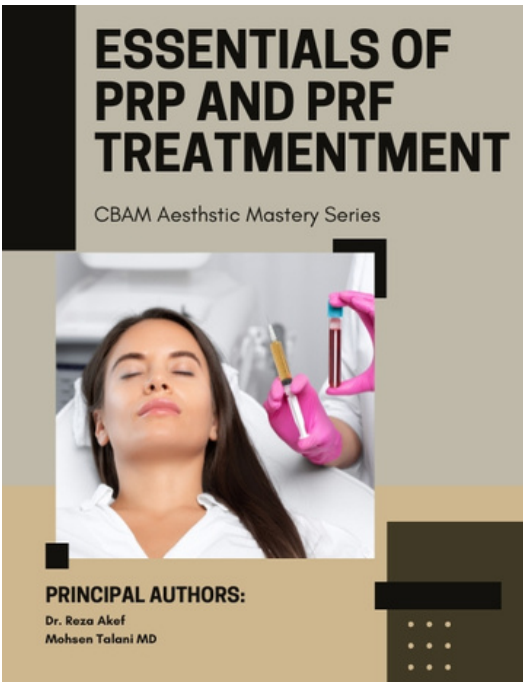
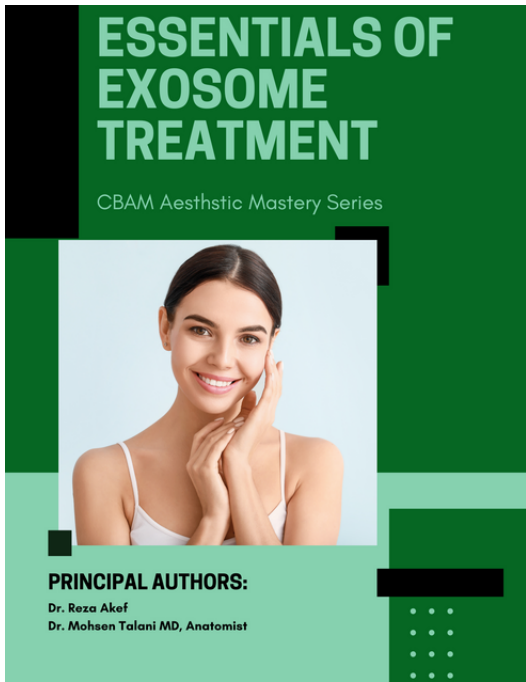
- Patients should follow the same post-treatment guidelines as with PRP, avoiding excessive heat or sun exposure.

Appendices

Appendix D: Summary Table of PRP vs. PRF Protocols

Step	PRP Protocol	PRF Protocol
Blood Collection	10-20 mL, anticoagulant tubes	10-20 mL, PRF tubes (no anticoagulant)
Centrifugation Speed	1500-2000 RPM for 10-15 minutes	700 RPM for 10-15 minutes
Final Product	Plasma rich in platelets and growth factors	Fibrin matrix with platelets, WBCs, stem cells
Activation	Calcium chloride or thrombin	No activation needed
Application Method	Microneedling, mesotherapy, direct injection	Injection or mesotherapy

CBAM Aesthstic Mastery Series



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