

SILK

your most beautiful age is now
P

A background image showing a microscopic view of hair cells, likely from a scalp biopsy, with various circular and oval structures and cellular details visible.

MIDSS
DESIGNERS
OF
TIMELESS
REGENERATION

presents

salmostim

by **Pluryal**

—————
—————
—————
DENSIFY
SILK
HAIR DENSITY

MD SKIN SOLUTIONS
LABORATORIES
at a glance

SINCE **2009**

29
PRODUCTS

75
COUNTRIES

5
TECHNOLOGIES

>25M
TREATMENTS

SILK
improves delicate areas

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1. *about* MD SKIN SOLUTIONS

With over a decade and a half of expertise in the aesthetics industry and a remarkable track record of outstanding results, **MD Skin Solutions** is a trusted company representing a holistic aesthetic approach focused on providing professionals around the world with innovative solutions enabling their patients to achieve healthy, radiant skin without surgical interventions.

MD Skin Solutions is home to two main brands: **Pluryal**, a trusted provider of medical aesthetic products available in over 75 countries worldwide, and as newest addition, **meso'me**, a range of at-home cosmeceutical therapies inspired by professional mesotherapy, which allows to continue treatments any place, any time.

Currently, **MD Skin Solutions'** portfolio includes 29 products in 5 ranges at the forefront of science and technology. From dermal fillers to collagen biostimulators and densifiers, mesotherapy treatments, as well as complementary home-use microneedling, **MD Skin Solutions** is dedicated to bring the world exceptional aesthetic solutions that address patients' unique skin concerns.

2. *why* SALMOSTIM?

Today's skincare landscape is shifting from traditional dermal fillers to treatments that promote overall well-being and skin health.

Patients are increasingly seeking:

- Well-aging and natural-looking results.
- Solutions for skin texture concerns and flawless appearance.
- A fresh, radiant look that reflects skin vitality.

Moreover, younger patients are adopting **preventive approaches** using gentle, biologically active solutions.

Among biostimulators, **polynucleotides (PNs)** are gaining prominence for their high safety profile, excellent tolerance, and natural origin—unlike synthetic alternatives.

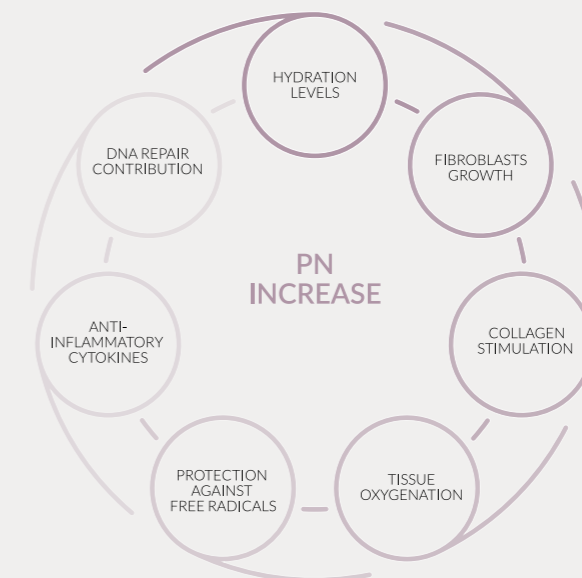
3. *what are* POLYNUCLEOTIDES (PNs)?

Polynucleotides are purified DNA fragments composed of repeating units of nucleotides, each consisting of a phosphate group, sugar and nitrogenous base.

At Pluryal, these biopolymers are extracted from **salmon DNA**, known for its biocompatibility with human tissues. They are:

- Ultra-purified, protein-free, and non-allergenic.
- Fully absorbable and immunologically inert.

Upon injection, PNs bind to **toll-like receptors (TLRs)**, triggering a cascade of tissue repair and regeneration^[1,2] through the activation of **growth factors** and **cytokines**.



4. *what is* SALMOSTIM® TECHNOLOGY?

SALMOSTIM® is an advanced extraction and purification technology for injectable-grade polynucleotides, developed to ensure maximum safety, purity, and regenerative performance.

Why Farmed Salmon Matters?

Pluryal uses **controlled, certified farmed salmon milt** as its source of DNA.

This ensures:

- **Full traceability and safety oversight:**
Controlled aquaculture standards reduce biological variability and minimize the risk of contaminants often associated with wild-caught sources.
- **Consistent quality across batches:**
Standardized feeding, environment, and reproductive cycles deliver stable nucleic-acid profiles ideal for medical-grade purification.
- **Reduced allergenic potential:**
Farmed salmon allows strict pre-processing controls to ensure the DNA is free of proteins, lipids, and immunogenic residues.
- **Higher sustainability and ethical sourcing:**
Controlled farming avoids ecological disruption and enables more responsible large-scale production.

SALMOSTIM® Purification Advantages

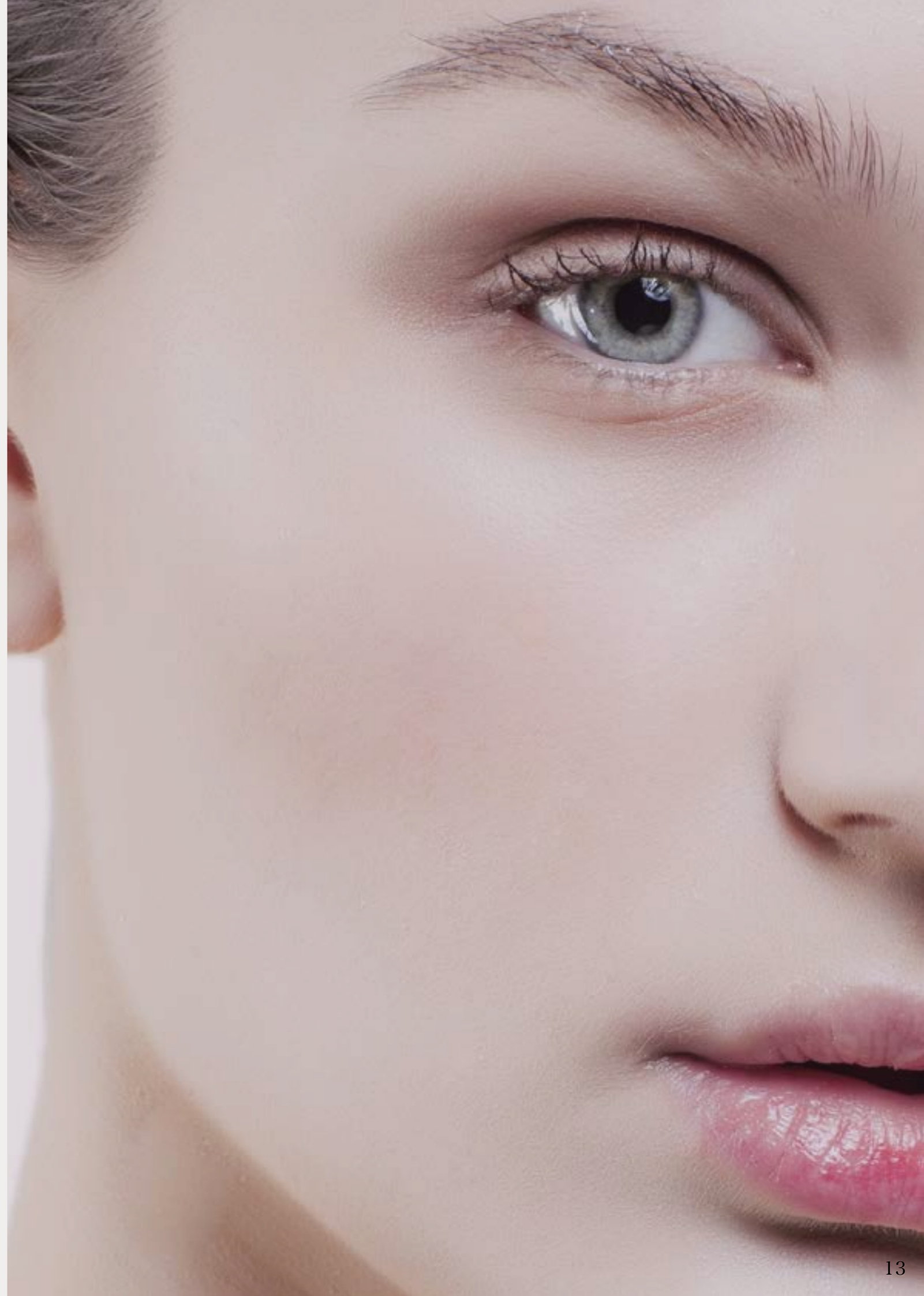
Through multi-stage refinement, SALMOSTIM® technology provides:

- **High Purity:**
Advanced filtration eliminates proteins, lipids, and impurities for ultra-clean, injectable-grade PN.
- **Biological Safety:**
Protein-free, non-allergenic, fully absorbable.
- **Certified Quality:**
Manufactured under ISO 13485 standard and Medical Device CE certification.
- **Molecular Integrity:**
Maintains the long-chain structure of polynucleotides required for hydration, ECM remodeling, and fibroblast stimulation.
- **Batch-to-Batch Consistency:**
Guaranteed performance and reproducibility, essential for clinical reliability.

5. *how do* POLYNUCLEOTIDES REGENERATE THE SKIN?

Polynucleotides support skin renewal through a multifaceted approach:

- **Deep Hydration:** Attract water due to their polyanionic structure^[3].
- **Collagen Stimulation:** Activate fibroblasts for collagen and elastin synthesis^[4, 5, 6].
- **Angiogenesis:** Promote new capillaries to improve oxygenation and circulation^[7].
- **Antioxidant Defense:** Neutralize reactive oxygen species (ROS) and protect DNA^[8, 9, 10].
- **Anti-Inflammatory Action:** Reduce inflammatory cytokines and boost IL-10.
- **DNA Repair:** Provide raw material for DNA synthesis and cellular recovery^[11].



6. PLURIAL[®] SILK - *fact sheet*

Composition (per 2 ml syringe):

Ingredient	Concentration
Polynucleotides (PN)	15 mg (7.5 mg/ml)

AS
SOFT
AS
SILK

Presentation:

- Sterile prefilled 2 ml syringe.
- Includes two 30G needles.
- CE marked,
for professional use only.

Indications:

- Priming and repairing
treatments.
- Delicate skin areas.
- Scars and stretch marks.

Treatment Areas:

- Peri-orbital and peri-oral regions.
- Neck and décolleté.
- Body: inner arms, chest, abdomen.

7. PLURYAL® SILK - *unique benefits*

Specifically formulated for delicate skin zones, Pluryal® SILK offers:

- **Skin Regeneration:** Stimulates cellular repair and renewal.
- **Inflammation Modulation:** Reduces redness on the long term.
- **Collagen Induction:** Improves skin firmness and density.

The optimal concentration of PNs ensures a **safe, gentle approach** for treating the most sensitive areas, including the under-eye and lip areas.

8. *proven efficacy of* PLURYAL® SILK

The skin-regenerating efficacy of Pluryal® SILK is supported by both clinical and laboratory studies:

- **A prospective clinical study** conducted by Dr. Ziade evaluated the effectiveness of Pluryal® SILK in treating under-eye wrinkles and crow's feet in 42 patients, **demonstrating visible rejuvenation** in delicate facial areas.
- **An ex vivo study** on human skin confirmed **a notable increase in the total collagen content**, supporting the biostimulatory action of polynucleotides at the dermal level.

CLINICAL *study*

Efficacy of Polynucleotides for Undereye Rejuvenation

A prospective clinical study^[12] conducted by **Dr. Ziade** and al. evaluated Pluryal® SILK (7.5 mg/ml PN) in the treatment of undereye wrinkles and crow's feet.

42 patients were treated with two intradermal sessions, spaced three weeks apart, and monitored over 6 months.

Visible Improvement After the First Session:

- Significant reduction in lower eyelid wrinkles and crow's feet at **1 month**.
- **Improvements continued** to rise following the second session.

Peak Rejuvenation at 3 Months:

- The greatest improvement in wrinkle appearance was recorded at 3 months, showing:

Lower eyelids: +9.5-point improvement (FACE-Q™).

Crow's feet: +10.6-point improvement.

- Patients reported **their highest satisfaction** with skin smoothness, radiance, and overall appearance at this time point.



Before

After

Long-Lasting Effects at 6 Months:

- Results remained **significantly better than baseline** at 6 months.
- A slight decrease from the 3-month peak indicates the ideal timing for **maintenance treatment**, consistent with the recommended SILK protocol.

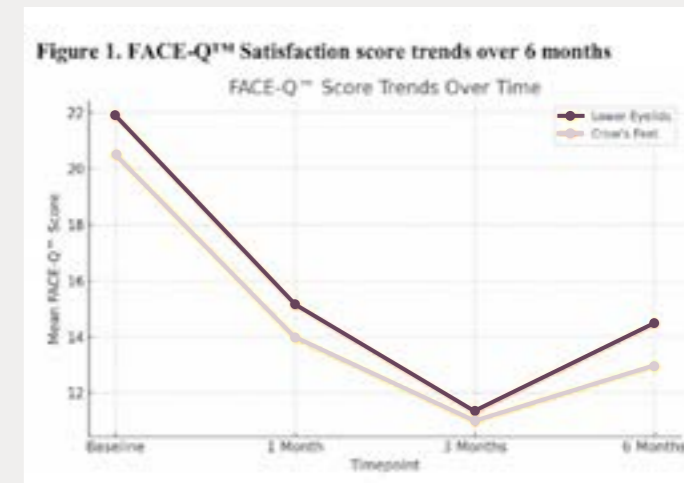
Excellent Safety Profile:

- Only **mild, transient swelling or bruising** observed.
- **No significant** adverse events reported.
- Demonstrates the suitability of Pluryal® SILK for **delicate periorbital skin**.

Conclusion: Pluryal® SILK delivers **clinically proven rejuvenation** of the undereye area, providing:

- Smoother and firmer skin
- Reduced fine lines and crow's feet
- A more refreshed, youthful appearance
- High patient satisfaction with minimal downtime

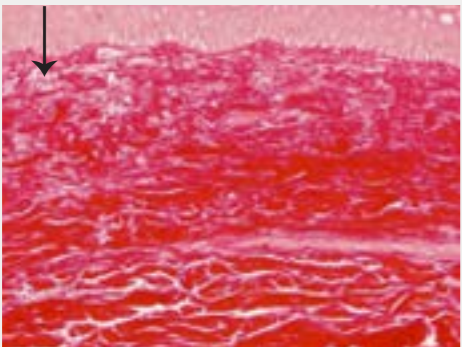
This study confirms Pluryal® SILK as a **safe and effective regenerative treatment** for sensitive skin zones, particularly the under-eye area.



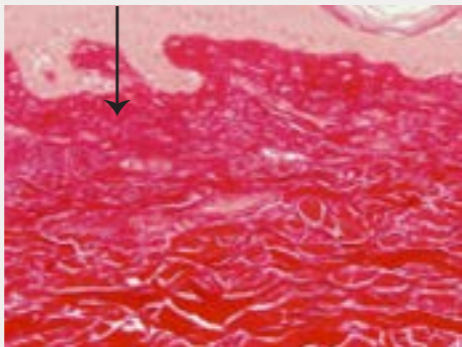
EX-VIVO *study*



Activity in terms of collagen
(assessment of total collagen content in the dermis after staining with Sirius red)

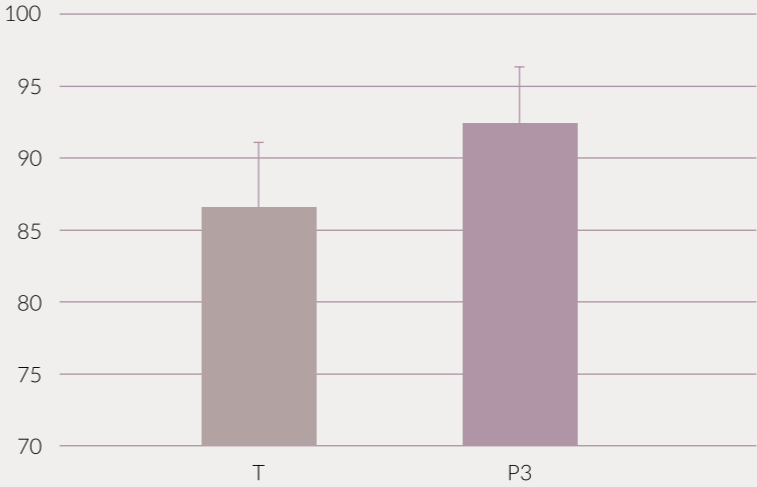


Control
Day 9



PLURYL[®] SILK (P3) on Day 9
Increase in collagens in the papillary and upper reticular dermis

Percentage of the surface occupied by total collagens in the dermis



Total collagens in the dermis
(% surface)

	TD9	P3D9
Average	87.0	92.7
Standard Deviation	3.8	2.7

Conclusion: PLURYL[®] SILK (P3) induces a significant increase of 7%. (p<0.01 or significant at 99%).

Given that the high quantity of total collagens in the dermis, the increases of total collagens usually range from 5 to 8%.

A significant increase of 7% is a very good result for this parameter.

*Assessment of activities of injectables products on human skin explants ex vivo, Laboratoire Bio-EC, 2019

9. *injection* TECHNIQUES & PROTOCOL

Injection Depth: Intradermal.

Techniques: Multi-Puncture, Micro-Droplet, or Point-by-Point.

Protocol:

- 1 session every 21 days.
- Total: 3 sessions.
- Maintenance: Repeat every 6 months.

Recommended Areas:

- Peri-orbital region (eyelids, dark circles, crow's feet).
- Peri-oral area.
- Neck and décolleté (thin skin).
- Stretch marks and flaccid areas (arms, chest, abdomen).



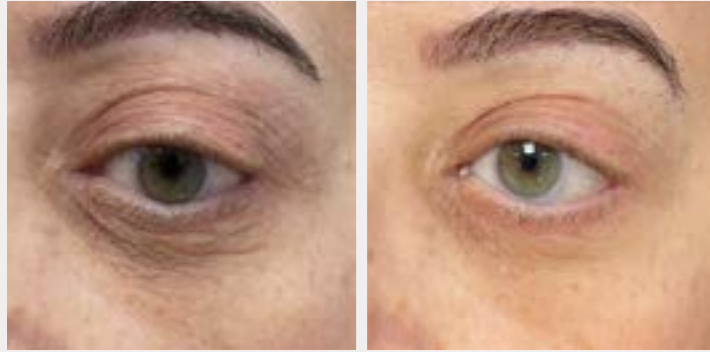
10. CASE *studies*

Case 1:

Dark circles and under eyes wrinkles.

Courtesy of:

Dr. Georges Ziade
Facial Plastic Surgeon (Lebanon/UAE)



Before

After

1ml on each side
2 procedures at 3-week intervals

Case 2:

Dark circles and under eyes wrinkles.

Courtesy of:

Dr. Georges Ziade
Facial Plastic Surgeon (Lebanon/UAE)



Before

After

1ml on each side
2 procedures at 3-week intervals

Case 3:

Dark circles and under eyes wrinkles.

Courtesy of:

Dr. Vladlena Averina
Dermatology (Ukraine)



Before

After

1ml on each side
3 procedures at 3-week intervals

Case 4:

Dark circles and under eyes wrinkles.

Courtesy of:

Dr. Karolina Ungert
Aesthetic Medecine (Poland)



Before

After

1ml on each side

Pluryal® SILK is a class III medical device which must only be used by doctors who have received specific training on the intradermal injection techniques. Read the instructions before use. Inform the patients about possible side effects.

Sources:

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EMPOWER
YOUR
SKIN
TO
REGENERATE

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