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BIO-REGENERATIVE TREATMENTS
BASED ON **COLLAGEN** AND **EXOSOMES**

ABSTRACT BOOK

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PREFACE

GUNA S.p.A. is an Italian pharmaceutical company with international reach, leading for over 40 years in the production of high-value scientific drugs, supplements, and medical devices.

Among its highlights are CE 0373 **Class III medical devices based on collagen** and natural ingredients, minerals, and vitamins, specifically designed for professional **aesthetic medicine**.

GUNA promotes *authentic beauty* through the “**Beauthentic™**” concept, offering **bio-regenerative** treatments that respect skin physiology.

The product line combines **collagen** action with **exosome** innovation to correct imperfections, support anti-aging processes, and counter photo-aging naturally and harmoniously.

5

This **Abstract Book** collects studies and clinical cases presented at major scientific congresses, providing concrete evidence of the effectiveness of **GUNA’s injectable collagen** as a bio-regenerative solution.

Abstracts are organized by treatment area for easier consultation.



FACE

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OCTOBER 09 - 11, 2025



BIOSTIMULATION AND DERMAL BIORECONSTRUCTION WITH COLLAGEN IN SKIN AGEING

Dr. Andrea Turchi, Aesthetic doctor



OBJECTIVES:

Skin aging is a complex involutional biological phenomenon that affects the skin, primarily involving the Extracellular Matrix (ECM). The ECM is a dynamic three-dimensional network of macromolecules that provides structural support to cells and tissues. Scientific evidence from the past decade has clearly demonstrated that the ECM plays important regulatory roles, enabling communication between cells, influencing their functions, properties, and morphology. Chronological and photo-induced skin aging begins with a reduction and natural degradation of collagen starting from the age of 35. Collagen loses its alignment and no longer supports fibroblast adhesion, leading them to become senescent cells. For this reason, a collagen injective approach may prove to be an effective therapy. To evaluate the biostimulatory effect of collagen in patients over the age of 35 who came under my care, 10 patients aged between 35 and 55 years were selected.

MATERIALS AND METHODS:

Ten patients underwent intradermal injections of 2 ml collagen (MD-TISSUE) in the face, neck, and lower periocular area, for a total of four treatments administered biweekly. Seventy percent of the patients experienced a marked functional improvement in the treated area.

Patient satisfaction was assessed using aesthetic improvement scales and photographic comparisons taken before and after treatment.

RESULTS:

Dermal biorestructuring through the use of MD-TISSUE collagen improved the external appearance of the skin and the plasticity of the extracellular matrix.

In patients with wrinkles, there was a noticeable improvement in wrinkle appearance, with visible tissue smoothing that enhanced tone and elasticity.



PRE-TREATMENT

POST-TREATMENT

CONCLUSIONS:

The use of collagen-based medical device enables natural-looking results by promoting biostimulation, the neosynthesis of new collagen, and the improvement of tissue tone and elasticity—qualities that begin to diminish after the age of 30, particularly in facial and neck areas.

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1. Salvatore L, Natali ML, Brunetti C, Sannino A, Gallo N. An Update on the Clinical Efficacy and Safety of Collagen Injectables for Aesthetic and Regenerative Medicine Applications. *Polymers*. 2023; 15(4):1020.
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TREATMENT WITH INJECTABLE COLLAGEN FOR POST-ADOLESCENT ACNE SCARRING

Dr. Arianna Squillante, Eden Siracusa Medical Center

OBJECTIVES:

Acne is a chronic dermatosis commonly seen during adolescence, with a significant percentage of cases progressing to permanent scarring. Atrophic scars result from inadequate collagen production during the healing process and respond well to regenerative treatments such as collagen, microneedling, PRP, and laser therapy. Post-acne scarring in young individuals has a significant impact on self-esteem and quality of life. Collagen helps remodel fibrotic tissue by stimulating fibroblasts and promoting neocollagenesis—where type I collagen replaces type III collagen, which is associated with scar formation. This case series aimed to evaluate the efficacy and tolerability of injectable collagen in improving post-acne scarring in adolescent subjects. The use of the MD-TISSUE medical device, based on collagen, represents an innovative and effective therapeutic option for treating these scars, which can otherwise result in deep and depressed areas if not properly managed.

MATERIALS AND METHODS:

Five patients (two aged 15, one aged 16, and two aged 17) presented with post-acne scars and underwent a series of injective treatments at the scar sites. A mesotherapeutic fan-shaped injection technique was applied beneath the scar, while a pinpoint technique was used at its center. A treatment cycle of five injections was performed—one session per week for five weeks—using a 13 mm, 30 G needle and two vials (4 ml) of collagen. Clinical and photographic evaluations were conducted, including a satisfaction scale. An oral therapy with *Dermoguna* tablets and a topical treatment with *Dermoguna* serum were also prescribed to improve smoothness and elasticity of the tissues, as well as to prolong the therapeutic effect.

RESULTS:

The patients showed significant improvement, documented by pre- and post-treatment images, both in the depth and appearance of the scars. A noticeable smoothing of the scars was achieved, thanks to the reparative and bioregenerative action of collagen, which also contributed to a more uniform skin texture. Efficacy was assessed using scales measuring patient satisfaction and aesthetic improvement (on a scale from 0 to 10; average score: 9). The positive results were also appreciated by both the physician and the patients' parents. No allergic reactions or discomfort were reported during or after the treatment.

CONCLUSION:

The injections of this Class III medical device—composed of collagen and excipients including vitamins C, B1, B2, B6, and magnesium gluconate with antioxidant properties—represents an effective and safe therapy for post-acne scars treatment in adolescents. This device has proven to be a bio-restructuring and bio-revitalizing therapeutic option capable of stimulating dermal remodeling through neocollagenesis and structural support.



PRE-TREATMENT



POST-TREATMENT

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FACIAL SKIN REJUVENATION WITH INJECTABLE COLLAGEN PROTOCOLS, WITH OR WITHOUT ADJUNCT MEDICAL PROCEDURES

DR. EGIDIO RIGGIO

Medical Director in Plastic Surgery at Fondazione IRCCS National Cancer Institute, Milan
Practices Plastic Surgery and Aesthetic Medicine in centers located in Milan and Palermo

INTRODUCTION AND OBJETIVES

Biomaterials and treatment protocols for skin rejuvenation are highly diverse.

Cutaneous aging manifests as a loss of tone and elasticity, with a marked reduction of the dermal extracellular matrix, primarily due to decreased collagen synthesis and increased collagen degradation after the age of 35.

In the youthful skin of younger individuals, not exposed to sunlight, collagen synthesis and degradation are in physiological balance, preserving skin integrity.

However, from around the age of 30, skin damage caused by exogenous pollutants, metabolic imbalances, and UV exposure leads to the formation of more or less pronounced wrinkles. Injectable collagen treatment may be indicated—either alone or in combination with other procedures—in the face and neck area to address wrinkles, restructure the subcutaneous and perivascular connective tissue, and improve connective tissue trophism.

A series of clinical cases treated with **MD-TISSUE** is presented based on my personal experience.



PRE-TREATMENT

POST-TREATMENT



PRE-TREATMENT

POST-TREATMENT

MATERIALS AND METHODS

A series of 13 patients (average age 53 years, range 45–70) with neck wrinkles (8), “barcode” lines (6), forehead wrinkles (3), and cheek wrinkles (3) were treated with collagen injections using the medical device **MD-TISSUE** (Guna SPA), a low molecular weight formulation supplemented with vitamins C, B1, B2, B6, and magnesium gluconate (2–4 ml). The injections were administered using a retrograde linear technique with 27–30-gauge needles, in multiple sessions ranging from 2 to 6 per year (mean 3), spaced 3–8 weeks apart.

RESULTS

In all cases, aesthetic improvement of wrinkles was reported, assessed through objective pre- and post-treatment photographic comparisons and patient satisfaction scores (scale 0–10; average score 8.5). No side effects were observed, except for transient erythema at the injection procedure.

In selected sessions, treatment with collagen was occasionally combined with other substances (polynucleotides, botulinum toxin, hyaluronic acid) in adjacent skin areas—but not at the same injection site as the collagen—according to the specific needs of the patient, in order to optimize the overall result.

CONCLUSIONS

Collagen bio-stimulation, using the Class III medical device **MD-TISSUE** (Guna S.p.A.), has proven to be an effective method for counteracting the physiological deterioration of the skin and subcutaneous connective tissue, particularly in the treatment of wrinkles.

It offers an optimal cost–benefit ratio and a favorable safety profile, with product-related complications of minimal clinical relevance.

Combining collagen with other complementary injectable procedures in the tissue surrounding the wrinkle areas can further enhance results, providing a customizable therapeutic option for regenerative aesthetic medicine that is both effective and respectful of the patient’s individual characteristics.

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EYES



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TREATMENT OF DARK CIRCLES WITH INJECTABLE COLLAGEN: A REGENERATIVE APPROACH FOR A YOUNGER, BRIGHTER PERIORBITAL AREA

Dr. Arianna Squillante, Eden Siracusa Medical Center

OBJECTIVES:

Dark circles (infraorbital hyperpigmentation) are a common aesthetic concern in the lower periorbital region, affecting both young and adult individuals. Clinically, different types of dark circles can be distinguished: pigmented, vascular, structural, and mixed, with a multifactorial etiology. Treating dark circles is complex and requires personalized, multifaceted approaches.

In this case series, we evaluated a non-invasive regenerative protocol using a medical device based on collagen and excipients such as citric acid and niacinamide, administered with a fan-shaped injection technique in a series of patients.

Thanks to its regenerative and biostimulatory effects, collagen promotes positive outcomes in the periorbital area, resulting in skin that is brighter and more elastic.

MATERIALS AND METHODS:

Ten patients (four aged 40, two aged 35, three aged 25, and one aged 60) underwent a series of five injections with 2 vials (4 ml) of collagen combined with vitamins C, B1, B2, B6, and magnesium gluconate. The injections were performed using both a fan-shaped and a "drop" technique (following the contour of the orbital bone) on a weekly basis, with a 13 mm, 30-gauge needle.

Topical therapy with *Dermoguna* serum and arnica was applied during and after the treatment.

Results were evaluated through pre- and post-treatment photographic documentation, as well as subjective satisfaction scales completed by both patients and the physician.



PRE-TREATMENT



POST-TREATMENT



POST-TREATMENT

RESULTS:

Treatment of dark circles using this injective method, thanks to the biostimulatory properties of collagen, resulted in noticeable tissue improvement by the end of the treatment.

This was particularly evident in cases of structural dark circles associated with tear trough hollowness, providing a concealing effect on pigmented dark circles while demonstrating high patient tolerability.

Mild post-treatment redness or swelling was only transient.

CONCLUSIONS:

The injectable use of this Class III medical device based on collagen and excipients such as vitamins C, B1, B2, B6, and magnesium gluconate represents a promising and safe therapeutic option for the treatment of dark circles caused due to volume loss.

The associated topical therapy with serum was also helpful in supporting pigmented forms.

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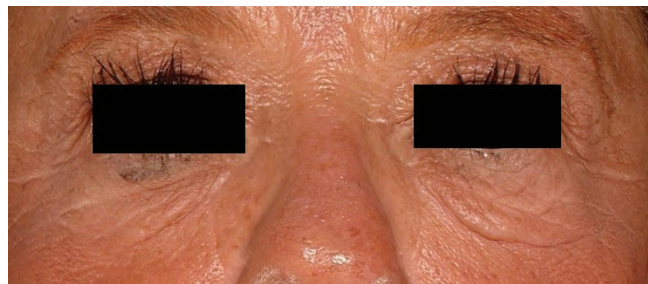
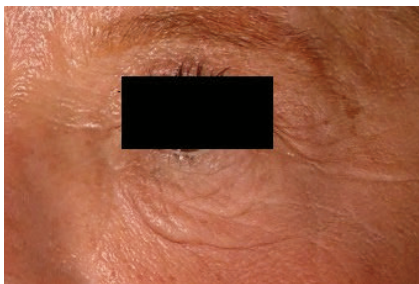
COLLAGEN NON-INVASIVE TREATMENT OF THE PERIOULAR AREA: FROM WRINKLES TO THE “SMILE IN THE EYES”

Dr. Sonia Ciampa, Aesthetic Physician at Rimedical Outpatient Clinic, Rimini



OBJECTIVES:

The periocular region is a facial area prone to aging, loss of elasticity, fine wrinkles, and changes in pigmentation. Treatment of the periocular area—including dark circles, puffiness, and pigmentary alterations due to melanin deposition—is a key aspect of facial aesthetics, often affected by imperfections in both young and adult individuals. The aim of this work is to evaluate the effectiveness of non-invasive treatment of the periocular area, which is prone to early signs of aging such as laxity, fine lines, and loss of tone. A non-invasive approach using collagen may offer a new and effective solution for dermal biostimulation, improving skin tone, hydration, and brightness.



MATERIALS AND METHODS:

A non-invasive technique using resonance magnetophoresis was employed for the treatment of the periocular area, allowing transdermal delivery of the Class III medical device composed of collagen, citric acid, and niacinamide. Resonance magnetotherapy is a technique that enables the painless transcutaneous administration of active ingredients through the use of low-intensity magnetic fields. This method allows the chemical and electrical information of the medical device to be delivered to the targeted tissues in a specific and selective manner. The 10 patients included in the study also took oral *Dermacollagene Neorland*, rich in exosomes, horsetail extract, and vitamins C, E, B2, and niacin, and applied a topical serum containing the same collagen, vitamin C, vitamin E, and Rosa Centifolia flower water. Patients were treated weekly for five sessions. After proper skin cleansing, the medical device under study (suitable for both injectable and transdermal use) was mixed with a specific gel and applied with a spatula to the periocular skin for transdermal delivery via resonance magnetophoresis.

RESULTS:

At the end of the treatment cycle, firmer skin was observed in the treated area, with reduced static wrinkling and a significant reduction in dark circles. The complete absence of side effects made the treatment well tolerated and easily applicable even during the summer season.

CONCLUSIONS:

Transdermal delivery of the medical device containing collagen, citric acid, and niacinamide via magnetophoresis proved effective in improving the skin quality of the periocular area, offering a safe, effective, and well-tolerated solution for patients.

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EFFICACY OF INJECTABLE COLLAGEN BIOSTIMULATION IN THE TREATMENT OF PERIOCCULAR DARK CIRCLES

Dr. Andrea Turchi, Aesthetic doctor



OBJECTIVES:

Dark circles can have genetic or vascular causes, or result from oxidative stress or photo-exposure. They are characterized by a dark, hollow, and sometimes swollen area under the eyes.

Dark circles are classified as pigmented (brown in color, due to melanin accumulation), vascular (blue-violet, due to visibility of subcutaneous blood vessels), structural (hollowed, shadowed, with loss of periorbital fat volume), or mixed (combining pigmentation, vascular components, and hollowing).

The demand for safe, effective, and minimally invasive treatments has led to the use of natural, biorevitalizing, and biorestructuring substances, such as the Class III injectable medical device based on collagen that we have applied in our patients, both younger and older.

The synthesis of new collagen induced by exogenous collagen restores tone and elasticity to the tissues, also improving hyperpigmented areas with thinned and often pigmented skin.

Subcutaneous injective treatment with collagen in the periorbital region improves both skin texture and aesthetic appearance.

MATERIALI E METODI:

Six female patients, aged 30 to 50 years, presenting with dark circles related to vascular stasis—and, in two cases, also to hyperpigmentation—were treated with intradermal injections.

A cycle of five weekly infiltrations using collagen was performed. The first two infiltrations were carried out with MD-MATRIX (containing citric acid and niacinamide), 1 vial of 2 ml, to prepare the extracellular matrix. The subsequent three infiltrations were performed with MD-TISSUE (containing vitamins C, B1, B2, and B6), 1 vial of 2 ml, to act on the often hyperpigmented skin.

MD-MATRIX is based on collagen and excipients such as citric acid (an exfoliant that promotes cellular renewal and counteracts skin imperfections) and niacinamide (an antioxidant that positively influences dermal blood flow and microcirculation, improving skin appearance by lightening and reducing pigmentation).

MD-TISSUE is based on collagen and excipients including vitamin C (for amino acid and collagen biosynthesis), magnesium gluconate (accelerates protein metabolism), vitamin B1 (activates cellular metabolic functions), vitamin B2 (protects cellular tissue from oxidative damage), and vitamin B6 (supports energy balance and amino acid metabolism).

The combined protocol using these two devices allows MD-MATRIX to prepare and optimize the extracellular matrix (ECM) structure, followed by MD-TISSUE to act on the tissues, enhancing their regenerative and biostimulatory response.

The aesthetic improvement scale showed significant progress, with patient satisfaction rated 8 out of 10 and physician satisfaction rated 10 out of 10.

RESULTS:

In the six patients, an effective outcome was achieved, evident by increased dermal-epidermal thickness, reduced visibility of the superficial venous area, and a decrease in hyperpigmented regions.

CONCLUSIONS:

The injectable medical device based on collagen represents a promising therapy for periorbital biostimulation in the presence of dark circles.

Its action on skin tone, firmness, and brightness allows it to be used either alone or in combination with other treatments such as peels, fillers, carboxytherapy, and laser therapy in areas where collagen begins its natural degradation.



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NECK

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MEDICAL DEVICE, MD-TISSUE COLLAGEN IN FACIAL SKIN REJUVENATION



Dott. Egidio Riggio, Medical Director of the Plastic & Reconstructive Surgery IRCCS Istituto Nazionale dei Tumori Milan

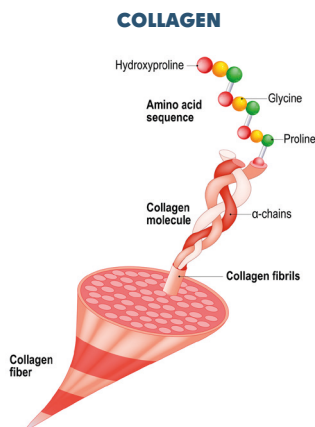


INTRODUCTION AND OBJECTIVES:

Skin ages by reducing tone and elasticity with marked reduction in the dermal extracellular matrix essentially due to less collagen synthesis after the age of 35 and increased collagen degradation by the proteolytic action of MMPs (matrix metalloproteinases) enzymes that degrade collagen type I and III. Differently, in juvenile skin not exposed to sunlight, collagen synthesis and its degradation are in physiological balance preserving skin integrity. Heterologous collagen acts as a bioscaffold by stimulating fibroblast migration and production. An injection treatment based on porcine collagen type-I can find therapeutic indications, used singly or associated with other methods in the face-neck district to treat: wrinkles; restructuring of subcutaneous and perivascular connective tissue and connective trophism damaged by exogenous pollutants/dismetabolisms.

MATERIALS AND METHODS:

A series of 12 patients (mean age 53; 45-70) with neck (8), barcode (5), forehead (3), cheek (2) wrinkles were treated with injections of collagen type I, porcine-derived medical device, MD-TISSUE low-molecular weight supplemented with vit. C+B1-B2-B6 and magnesium gluconate with retrograde tunneling technique using 27-30 gauge needles, with multiple sessions of 2 to 6 per year (average 3), spaced 3-8 weeks apart.



PRE TREATMENT



POST TREATMENT

RESULTS:

In all cases, cosmetic improvement of wrinkles was achieved by objective pre-post photographic comparison and by rating patients' degree of satisfaction on a scale of 0 to 10 with mean of 8.5. In some cases and in single sessions the product was combined in contiguous sites but not in the same as collagen with other topical treatments.

CONCLUSION:

Biostimulation with collagen as a class III medical device contains physiological deterioration of the skin and subdermal connective tissue, with optimal cost-effectiveness and product-related complications of no clinical significance.

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BREAST

Healthspan versus Lifespan

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TYPE I PORCINE COLLAGEN FOR SUBCUTANEOUS INJECTION USE IN THE TREATMENT OF COMPLICATED BREAST SURGICAL SCAR.

Dott.ssa Liliana Sgarbi, Director Unit of Specialized Rehabilitation Presidio Fatebenefratelli Milan



Ospedale
Fatebenefratelli e Oftalmico

Sistema Socio Sanitario

Regione
Lombardia

ASST Fatebenefratelli Sacco

INTRODUCTION:

In surgical wounds healing by second intention, the inflammatory response and granulation tissue production are more prominent than in healing by first intention. Connective tissue production is more conspicuous but collagen fibers show poor alignment.

Disordered organization of scar tissue can result in cosmetic and/or functional damage.

The use of medical devices based on type I collagen in the treatment of scars allows to provide substrate, to the extracellular matrix, to improve the contractile and therefore productive capacity of fibroblasts and to optimize the alignment of the collagen fibers produced.

CLINICAL CASE:

Patient aged 44 years, suffering from breast carcinoma. Underwent breast quadrantectomy with axillary dissection. Surgery complicated by subcutaneous breast abscess, drained with subsequent healing by second intention.

OBJECTIVE EXAMINATION:

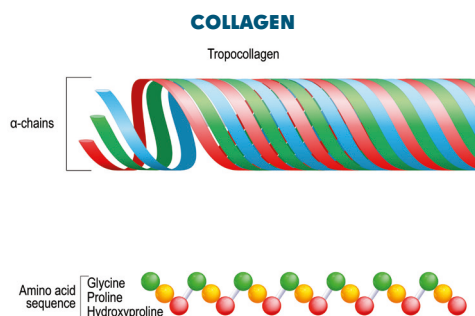
Surgical scar reddened, dyschromic; adherent to underlying planes; depressed in central portion with longitudinal hypertrophic cord (Vancouver scale score 9).

MATERIALS AND METHODS:

Subcutaneous mesotherapy injection treatment with MD-TISSUE GUNA collagen performed every 7 days for a total of 5 sessions.

Follow up at 3 and 10 days after completion of treatment.

Administered Vancouver scale before treatment and at follow-ups.



RESULTS:

Objective examination in the follow-ups: increased homogeneity of pigmentation and a lightening of coloration. Resolution of adherence to the underlying planes in the central portion of the scar (Vancouver scale score 4).

CONCLUSIONS:

The use of this medical device is an innovative, minimally invasive and favorably cost-effective treatment option. However, further supporting scientific evidence is needed.



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ARMS

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REGENERATIVE TREATMENT BASED ON INJECTABLE COLLAGEN FOR SKIN LAXITY

Dr. Michela Zazzaron, Aesthetic doctor - Treviso

OBJECTIVES:

Skin laxity of the face and body (arms, knees) is a common condition, often associated with chronoaging, photoaging, significant weight loss, and hormonal changes.

In these areas, loss of tone, volume, firmness, and elasticity contributes to cellular aging of the skin.

Treatment with a Class III medical device collagen-based was proposed to patients under my care as a biostimulant and regenerative therapy aimed at improving tissue quality, considering the natural degradation of collagen starting around the age of 30-35.

MATERIALS AND METHODS:

Ten patients with skin laxity in the brachial region, knees, neck, and abdomen were treated with a cycle of five weekly infiltrations, using a total of 6 ml per session:

- 4 ml MD-MATRIX (containing collagen, citric acid, and niacinamide) to create a protective barrier against free radicals, counteract the physiological aging of connective tissue, and support firming of the subcutaneous layer.
- 2 ml MD-TISSUE (containing collagen, vitamins C, B1, B2, B6, and magnesium gluconate) for antioxidant and metabolic effects on the cells.

Outcomes were evaluated using a skin firmness scale and comparative photographic analysis before and after treatment.



PRE-TREATMENT



POST-TREATMENT

RESULTS:

Satisfactory results were achieved in terms of restored skin firmness, improved histological skin structure, and enhanced dermal volume and compactness. These outcomes were driven by the regenerative action of collagen and its ability to support cellular adhesion and migration. In the treated areas, collagen helps counteract the natural aging process of the skin.

CONCLUSIONS:

The injectable collagen treatment proved to be well tolerated and cost-effective compared to other therapies.

A significant and noticeable clinical improvement was observed by both the patient and the physician, in terms of tissue repair and regeneration.

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GUNA S.p.a.

Via Palmanova, 71 - 20132 Milan - Italy
T. +39 02 280181 - medical.devices@guna.it
collagenmd.guna.com

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