BIO ALPHA

AestheFill®

REGEN Biotech, Inc.



AestheFill®

THE ART OF REGENERATIVE AESTHETICS

Poly-D,L-lactic Acid + Carboxymethylcellulose

ISO CE

REGEN Biotech, Inc.

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RESTORE THE GLOW.
REFINE THE SHAPE.
RENEW FROM WITHIN.

AestheFill®

Modern aesthetics is moving beyond conventional volume correction. Regenerative aesthetics asks a deeper question: how can the tissue be supported in a way that helps aesthetic results appear more harmonious, more integrated and more enduring over time?

AestheFill® and PowerFill® are positioned for this evolution. They reflect a new aesthetic standard – not overcorrection, not temporary excess, but refined support that respects individuality and evolves through collagen-supported renewal. The most sophisticated outcomes are created when radiance, structure and contour are considered as one continuum aesthetic journey.



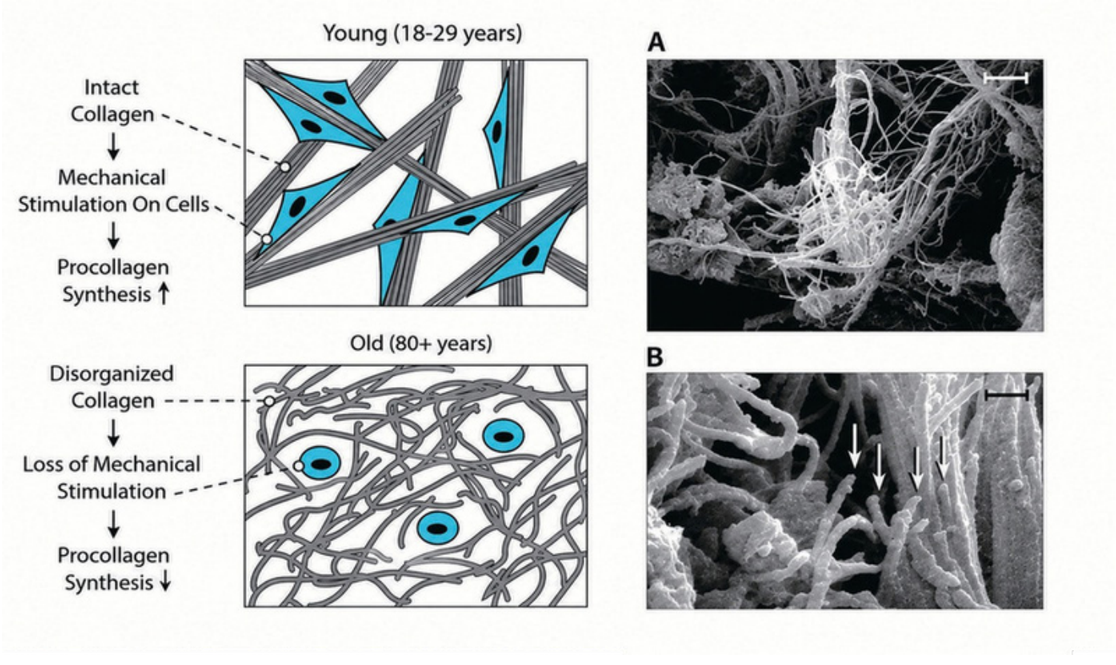
COLLAGEN
THE FOUNDATION OF AESTHETIC QUALITY

Collagen is central to the structure and quality of youthful skin and soft tissue. It helps support density, elasticity, resilience and the smooth transitions that allow facial and body contours to appear naturally balanced.

With aging, collagen production decreases, collagen fragmentation increases, and the extracellular matrix becomes less organized. These results may become visible as thinner-looking skin, softened contours, fine lines, folds, laxity and reduced structural support.

A regenerative aesthetic approach therefore addresses more than volume alone. It aims to support the tissue environment where quality and structure can be restored progressively.

- Collagen supports skin density and soft-tissue resilience
- ECM disorganization contributes to the visible signs of aging
- Regenerative planning connects surface quality with structural support

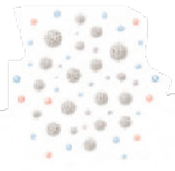


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PDLLA + CMC
TECHNOLOGY PLATFORM

AestheFill® and PowerFill® share a material system built upon Poly-D,L-lactic Acid (PDLLA) microspheres and Carboxymethylcellulose (CMC).

PDLLA porous microspheres provide a temporary three-dimensional scaffold, while CMC supports hydration, homogeneous dispersion, smooth injectability and an initial volumizing effect. Together, they form a product platform designed to support consistent preparation, controlled delivery, and a predictable regenerative treatment experience.



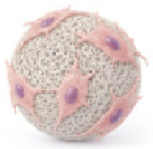
PDLLA Microspheres

Biodegradable polymer microspheres engineered to provide temporary structural support while supporting tissue interaction associated with collagen formation.



CMC Carrier System

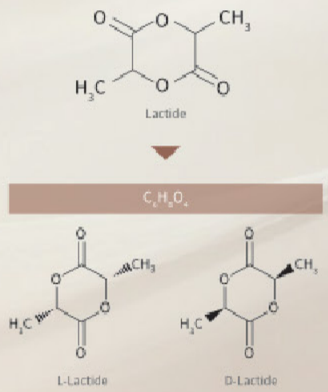
A hydration-supporting carrier that facilitates homogeneous dispersion, smooth injectability and early volumizing support.



Microsphere Architecture

An interconnected porous surface and an internal sponge-like structure designed to maximize the tissue-particle interface and support cellular attachment, tissue integration and extracellular matrix remodeling.

PDLLA, Designed for Lasting Support



PLA-based biostimulators can differ considerably in their material properties and behavior. PDLLA contains both D- and L-lactic acid stereounits. Their irregular arrangement limits crystallinity, giving the polymer an amorphous structure that supports rapid reconstitution, uniform particle dispersion and a balanced biodegradation profile.

Compared with more crystalline PLLA and slower-resorbing PCL, PDLLA offers a well-defined balance between scaffold duration and material resorption.

Material Persistence ≠ Duration of Aesthetic Outcome

The temporary scaffold offers support throughout the active regenerative phase and is gradually replaced as collagen formation and tissue remodeling progress. The aesthetic improvement can continue beyond the material's degradation, as the scaffold is progressively substituted by newly formed collagen-supported tissue.

Polymer	Degradation time (Months)
Poly(L-lactic acid), PLLA	>24
Poly(D,L-lactic acid), PDLLA	**12-16**
Poly(glycolic acid), PGA	6-12
Poly(caprolactone), PCL	>24

1. **Amorphous polymer structure** with a biocompatible and biodegradable profile
2. **Porous microsphere architecture** for an expanded tissue-particle interface
3. **Temporary scaffold** support during the regenerative phase
4. **Progressive collagen remodeling** as the material is gradually resorbed

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PATENTED
MICROSPHERE TECHNOLOGY

The PDLLA microspheres in AestheFill® and PowerFill® are designed with a porous external surface and a sponge-like internal structure. This three-dimensional design allows fibroblasts to promote collagen fiber formation around, between and within the microspheres.
This microsphere design helps support the products' aesthetic profile: natural-looking support, progressive renewal and controlled distribution when prepared and administered.



Spherical architecture supports uniform suspension and distribution when properly reconstituted.

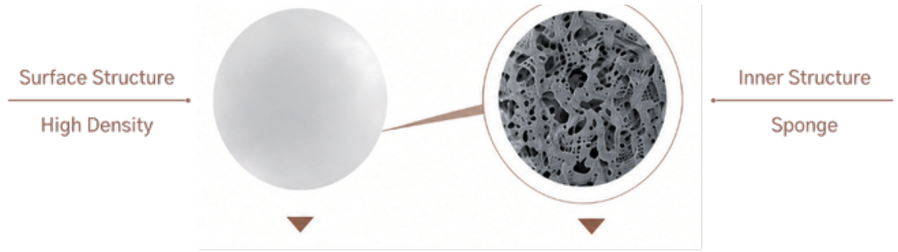
External porosity increases contact surface and supports cellular attachment.

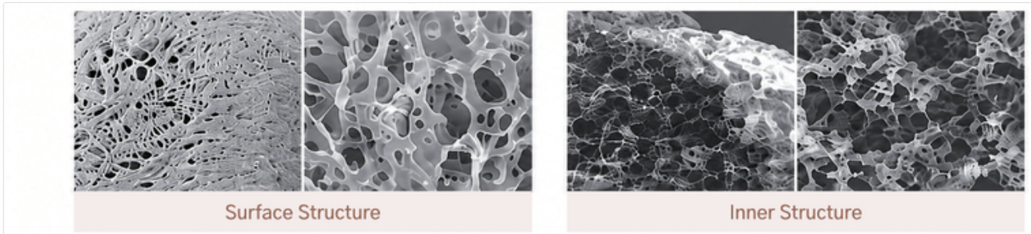
Internal sponge architecture provides space for cellular ingrowth and collagen deposition.

Three-dimensional scaffold supports collagen formation around, between and within the microspheres.

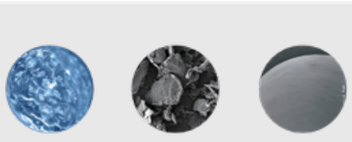
Porous surface friction and cellular anchoring support stable integration within the surrounding tissue when appropriately administered.

PDLLA Scaffold-Led Biostimulation





Compared with conventional volumizing approaches, AestheFill® and PowerFill® offer a more flexible regenerative approach through customizable preparation, porous microsphere architecture, simplified post-procedure guidance that does not routinely require massage according to standard professional education. The result is a natural-looking result that develops progressively over time.





Compared with HA	Moves beyond gel-led volumization toward scaffold-guided tissue response
Compared with traditional PLLA	Offers a faster preparation process, supported by a distinctive porous PDLLA microsphere architecture
Compared with solid microspheres	Expanded internal and surface interface for cellular interaction

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CMC Suspension Carrier

Carboxymethylcellulose (CMC) functions as the suspension carrier in AestheFill® and PowerFill®. It supports hydration, uniform dispersion and smooth injectability, helping deliver PDLLA microspheres evenly within the intended tissue plane.

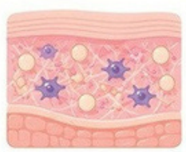
During the early phase after injection, CMC provides physical presence and helps maintain uniform microsphere distribution. As the carrier gradually dissipates, the porous PDLLA surface becomes increasingly accessible to the surrounding tissue, creating favorable conditions for cellular attachment, infiltration, and the subsequent collagen formation.



Promotes efficient hydration and homogeneous suspension.



Maintains uniform microsphere dispersion for smooth injectability.



Provides early physical presence as PDLLA initiates the regenerative response.



Facilitates PDLLA–tissue interaction, cellular attachment and infiltration.

Dual-Phase Aesthetic Response

After reconstitution and injection, the suspension provides early physical presence within the intended tissue plane. As hydration changes and the carrier phase dissipates, the PDLLA scaffold becomes the primary interface for tissue interaction.

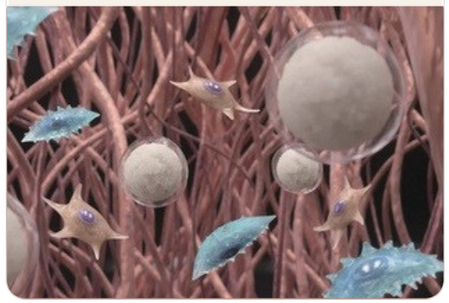
Over time, cells attach to, infiltrate and interact with the porous PDLLA microspheres. Subsequent collagen deposition then contributes to softness, continuity and structural support. This progressive process distinguishes scaffold–led regeneration from conventional volumization.

Phase 1

Early physical presence and uniform distribution

IMMEDIATE PRESENCE

Hours to Days

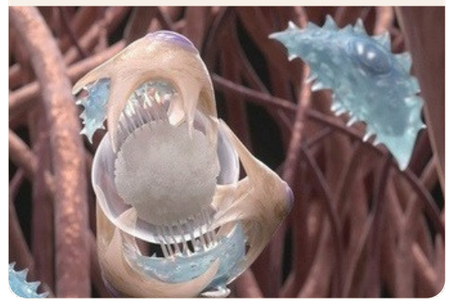


Phase 2

Cellular attachment, tissue integration and collagen deposition

TISSUE REMODELING & REGENERATION

Weeks to Months



Support first, refinement over time

The material itself is not the final result.
It guides the tissue response that contributeds to the aesthetic outcome.

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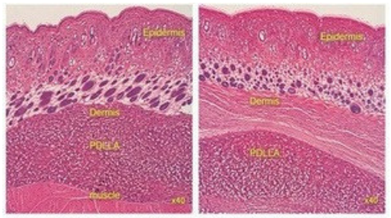
HISTOLOGICAL TISSUE RESPONSE

FROM SCAFFOLD INTERACTION TO ORGANIZED TISSUE RENEWAL.

Regeneration is defined by how tissue develops around the scaffold — where cells localize, how collagen matures and how the surrounding microenvironment evolves.

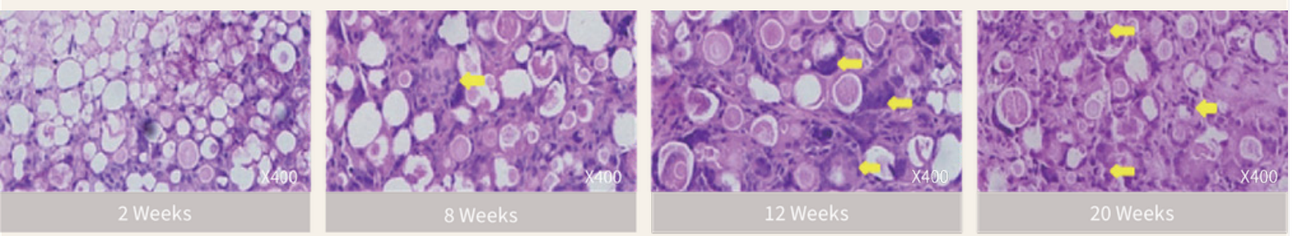
For controlled regenerative response, tissue interaction should be localized within the treatment area. In the clinical observations, PDLLA particles remained within the intended injection layer at early time points, with no migration into surrounding tissues observed.

PDLLA particles' Location in the injected sites



2 weeks after injection | 4 weeks after injection

Histological findings show that cells are first observed along the particle surfaces, followed by increasing culluar presence in the spaces between particles and infiltration into the porous microsphere structure. This evolving interaction between cells and scaffold extends beyond the initial physical correction, supporting progressive tissue integration and a naturally refined outcome over time.



2 Weeks | 8 Weeks | 12 Weeks | 20 Weeks

Pink: Cytoplasm Dark Pink or Blue: Nucleus Arrows: Foreign body giant cells

- At Week 2, cells have grown and attached on the surfaces of PDLLA particles and to spaces between particles.
- At Week 8, there are no empty spaces between PDLLA particles, by being filled with cells which start to migrate into porous PDLLA particles (yellow arrow).
- At Week 12 and 20, cells have migrated into the inner parts of PDLLA particles, and fill inside and spaces between the particles.

MATRIX × MICROVASCULAR × ADIPOSE

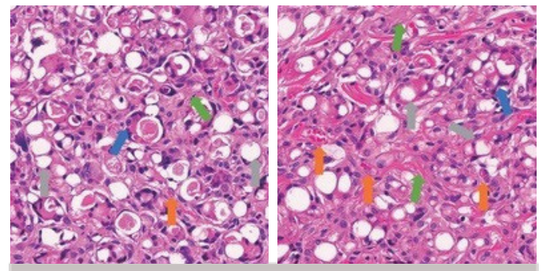
Porous PDLLA is associated with a broader tissue response spanning collagen maturation, microvascular formation and new adipose tissue formation.

MATRIX — Newly formed collagen progresses toward a more organized, bundled and mature collagen architecture.

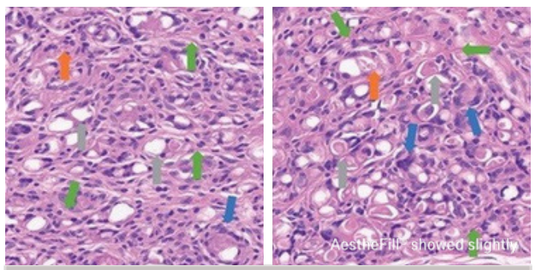
MICROVASCULAR — Newly formed capillaries appear within the evolving tissue environment.

ADIPOSE — New adipose tissue formation has been observed, extending the regenerative response beyond the collagen matrix.

At week 2 and 4, AestheFill® has showed an inflammatory profile comparable to the comparator, with more pronounced cellular infiltration around the material and a greater presence of newly formed collagen fibers and capillaries.



2 Weeks



4 Weeks

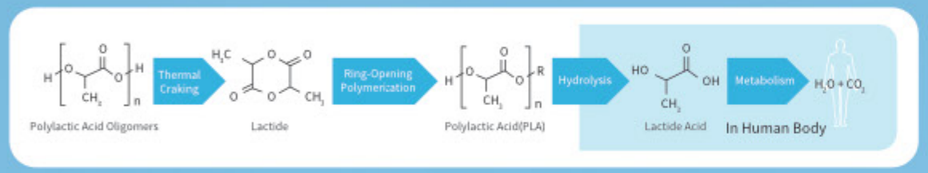
Giant cells Newly formed capillaries
Newly formed collagen fibers Microspheres

The regenerative signal extends beyond collagen quantity to the quality and architecture of newly formed tissue.

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Biodegradation and Material Safety

AestheFill® and PowerFill® support aesthetic results lasting 12 months or longer. Over time, PDLLA undergoes hydrolytic degradation and is metabolized through physiological pathways, allowing the scaffold to fulfill its role within an appropriate biological timeframe.



Balanced material behavior is an important consideration in product safety. Temporary scaffold support and predictable biodegradation help balance long-lasting performance, tissue compatibility and long-term confidence.



4S Regeneration Pathway

The 4S framework expresses the shared product philosophy of AestheFill® and PowerFill® through four complementary principles.



Scaffold

Porous PDLLA microspheres form a temporary, high-surface-area scaffold for tissue interaction.

Structure

Collagen deposition contributes to soft-tissue support, contour continuity and improved skin quality.

Stimulate

Cellular activity develops at and within the scaffold, supporting progressive collagen formation over time. Newly formed tissue becomes increasingly organized. The response extends across matrix, microvascular and adipose dimensions.

Safety

PDLLA undergoes gradual hydrolytic degradation, with its breakdown products metabolized through physiological pathways. Appropriate preparation and clinical technique remain integral to controlled use.

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DISTINCTIVE FEATURES

NATRUAL

- Natural-looking results visible immediately after treatment
- Progressive stimulation of the body's own collagen production
- Firmer, smoother-looking skin with a refreshed, rejuvenated appearance.
- Long-lasting results for 12 months or longer

RAPID

- Designed for rapid on site reconstitution
- Faster homogenization than competitors
- Ready for use immediately after preparation
- A complete procedure in approximately 15-30 minutes.

VERSATILE

- Treatment can be tailored to individual needs and aesthetic objectives
- Different concentrations can be selected for different treatment areas
- Distinct particle specifications translate the technology into skin-quality, facial and body-form applications.

SAFE

- Biodegradable PDLLA metabolized fully through physiological pathways
- More than 12 years of clinical evaluation and use
- Low reported incidence of nodules and treatment-related adverse effects



Defining features shared across our PDLLA + CMC portfolio

- Less Nodule Formation
- Widely Used in the Medical Field for Decades
- Customizable Concentration for Different Uses and Areas
- < 30 Minutes of Reconstitution Time
- Patented Porous Microspheres Provide Spaces for Collagen Formation
- Less Risk of Migration
- Natural and Smooth Skin Texture with Restored Elasticity
- Low Risk of Needle Clogging
- No Post-Treatment Massage Required

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Product Portfolio

Our products form a cohesive regenerative aesthetic portfolio — enhancing skin luminosity, supporting facial structure and refining contours with balance and proportion.



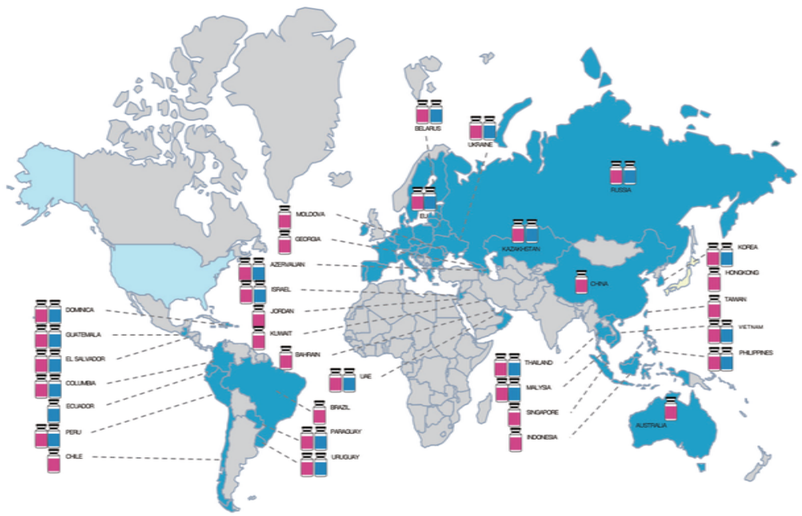
Facial Regenerative Aesthetic Treatment

AestheFill®-V200

Designed for structural and lifting support, skin-quality improvement and contour refinement.

Particle Size: 25–50 μm

Composition: PDLLA 154 mg + CMC 46 mg



AestheFill®
More than 40 conturies and regions

PowerFill®
More than 25 conturies and regions

Use in accordance with the approved IFU, locally authorized indications and professional training. Product availability, indications and specifications may vary by market.



Reconstitution & Suspension Quality

For collagen biostimulators, proper preparation is integral to treatment performance. A clear and reproducible process helps achieve a uniform suspension, supporting smooth delivery, even distribution and consistent handling throughout the procedure.

AestheFill® and PowerFill® are supplied in lyophilized powders for reconstitution by trained professionals.

The final D-value should be selected according to the treatment objective. Reconstitute with sterile water for injection, then homogenize thoroughly until a smooth, uniform suspension is achieved.

Common preparation methods

1	Hand Shaking	20–30 minutes when using a reconstitution volume of ≥3 mL
2	Vortex	15–30 minutes
3	Back-and-Forth Method	3–5 minutes



AestheFill®

AestheFill® is an injectable PDLLA collagen biostimulator designed for natural-looking facial rejuvenation.

The AestheFill® range offers flexibility across facial aesthetic needs. Different product specifications can be selected for superficial skin-quality refinement, facial harmonization or deeper structural support, depending on the treatment objective and locally approved use.

Product Type: Injectable PDLLA collagen biostimulator

Main Component: Poly-D,L-lactic acid microspheres

Carrier System: Carboxymethylcellulose

Composition: PDLLA microspheres 77% + CMC 23%

Specifications: 200 mg

Particle Size Range: 25–50 µm

Product Form: Lyophilized powder for reconstitution

Storage Conditions: Store below 30°C. Do not freeze.

Use in accordance with the approved IFU, locally authorized indications and professional training. Product availability, indications and specifications may vary by market.

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AestheFill® V200
FOR FACIAL ARCHITECTURE

AestheFill® -V200 is developed for facial aesthetic treatments that address aging through both structural support and regenerative renewal. Through scaffold-led collagen biostimulation, it supports natural-looking volume restoration, softens appearance of wrinkles and folds, refines facial contours, improves firmness and promotes overall rejuvenation.

Its aesthetic value lies in balance — reinforcing facial architecture while preserving natural expression and individual character. The face appears more supported, refreshed and naturally revitalized.



Composition	PDLLA 154 mg + CMC 46 mg per vial
Duration	Results lasts for 12+ months
Preparation	Reconstitution in under 15 minutes
Aftercare	No routine post-treatment massage required



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D-Value
as an Aesthetic Choice

AestheFill® can be prepared at different concentrations to support different aesthetic objectives. In accordance with the approved protocol and professional training, the D-value may be selected according to the intended effect — from projection and structural support to broader blending and diffuse refinement.

D- VALUE	PREPRATION	INTENTION
D10	8ml SWFI + 2ml lidocaine	**Foundation & Blending** localized structural reinforcement support. Softer correction accross folds & transitional areas
D20	18ml SWFI + 2ml lidocaine	**REFINEMENT** For texture, firmness & ooverall rejuvenation

D-value selection should be individualized according to anatomy, tissue condition and aesthetic objective, in accordance with the approved Instruction for Use (IFU) protocol and professional



AestheCode Mindset

AestheCode organizes AestheFill® treatment around anatomy, depth and aesthetic objectives.

AestheLift

Deep structural planning for the temples, zygomatic region, mandible and selected projection points.

AestheZone

Broad superficial fanning for wrinkles,texture, facial transitions and skin-quality improvement.

AestheBody

Measurement-based planning for selected non-facial zones such as neck,décolleté, abdomen or hands where approved.

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Before and After

AestheFill®-V200 cases illustrate progressive, natural-looking change over time. Outcomes include improved facial contours, softening of lines and folds, improvement in depressed acne scars and sustained correction at long-term follow-up. Individual results vary according to anatomy, tissue condition, technique and treatment plan.

Patient: 51-year-old woman
AestheFill Used: 2 vials
Primary Objective: Skin Quality
Treatment Focus: Improvement in skin texture, firmness, and overall skin quality.

medyglobal
Dr.Daniel Quirós



Before | After

Patient: 32-year-old woman
AestheFill Used: 2 vials
Primary Objective: Contour
Treatment Focus: Nasolabial fold softening and refinement of the oral commissure-marionette transition.



Before | After

Patient: 41-year-old woman
AestheFill Used: 1 vial
Primary Objective: Skin Quality
Treatment Focus: Horizontal neck-line softening and improvement in neck firmness and texture.

medyglobal
Dra.Concha De Rojas



Before | 2 months | 4 months

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AestheFill®

www.bioalpha.me

+971 52 538 5370

Valtrans Bldg. W-09, DIP 2, Dubai, UAE