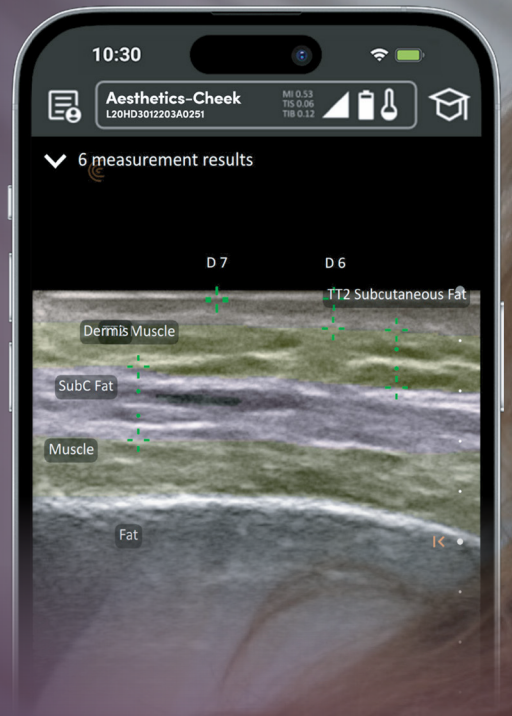
CASE STUDY, AESTHETICS



Measuring Skin Aging Before It Shows

How Dr. Gina Moret Uses Ultrasound to Prove Skin Is Actually Changing

By Dr. Gina Moret and Clarius

clarius



From “It Looks Better” to Measurable Skin Change

Photos lie about lighting filters. Palpation depends on who’s touching. Patients’ moods drive their own self-assessments. Aesthetics physician Dr. Gina Moret went looking for a way to measure the characteristics of skin. She found that she can use the same handheld ultrasound machine that she was already using for injecting to measure her patient outcomes by:

SLEB Ratio

% of Dermis Degraded By Aging

Goal: Decrease

Dermal Thickness

Direct Marker of Skin Health & Aging

Goal: Increase

Echogenicity

Brightness Reflecting Collagen Quality

Goal: Increase



Meet the Innovator Who Turned “It Looks Better” into a Number

Dr. Gina Moret graduated from FESO University in Brazil in 2008 and has built her career around a single goal: achieving results so natural that no one can tell what was done. Board-certified and internationally trained across Brazil, France, Italy, Singapore, and Turkey, she has become an international educator in aesthetic medicine, with a special focus on ultrasound-guided facial anatomy and regenerative treatments. After years mastering the art of injecting, she is now redefining precision by bringing ultrasound into everyday aesthetic practice. She built her career on the art of injecting. Now she’s proving it the impact with ultrasound.

“The future of aesthetic medicine is not about performing treatments. It is about understanding the tissue, measuring the change, and providing natural results.”

- Dr. Gina Moret

The Problem With “It Looks Better”

Surface observation, photography, and manual palpation are the tools aesthetics has always leaned on. All three are useful. None are objective: photos shift with lighting and angle, palpation depends on the hands doing it, and self-assessment tracks mood as much as tissue. As regenerative treatments (biostimulators, exosomes, polynucleotides) shift the goal from replacing volume to improving skin quality, “looks better” isn’t enough anymore, practitioners need data. Ultrasound imaging closes that gap, turning skin quality into something you can measure, track, and defend.



On ultrasound, different skin layers show up as different shades of grey[1]:

The epidermis is a thin, bright line, the dermis glows brighter just beneath it thanks to dense collagen, and the hypodermis reads dark and fatty.

Aging You Can Actually Measure

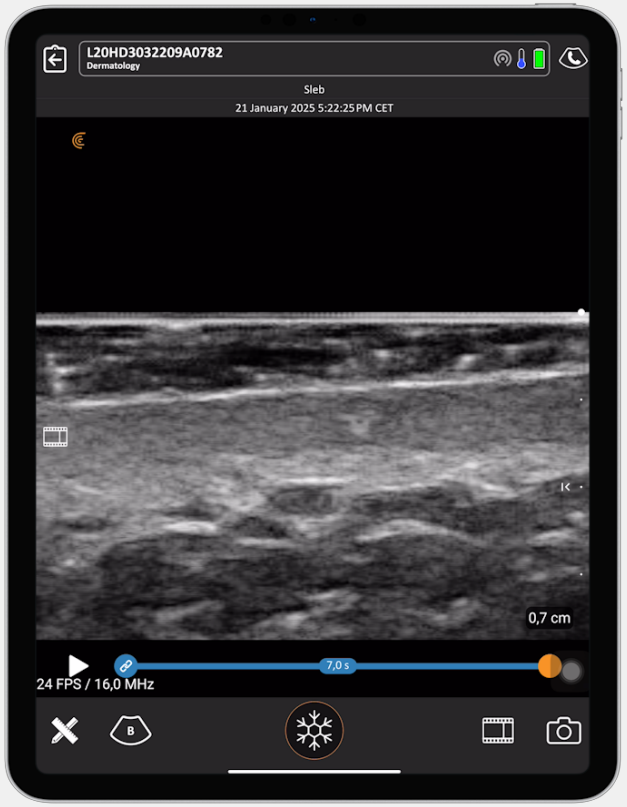
SLEB (Sub-Epidermal Low-Echogenic Band) is a dark band beneath the epidermis on ultrasound, signaling collagen breakdown in aged or sun-damaged skin. Easy to spot with high-resolution ultrasound, it’s Dr. Moret’s go-to biomarker for skin aging, chronic UV exposure, and oxidative damage. It’s driven by extracellular matrix (ECM) breakdown, low-grade inflammation, and solar elastosis, and it’s notoriously irregular in thickness and distribution.[2]

A 0.2 mm SLEB means something different depending on the dermis it’s sitting in:

- Minor in a naturally thick dermis, or
- Red flag in a thin, atrophic one.

So Dr. Moret doesn’t look at absolute thickness. She calculates the SLEB Ratio:

SLEB Ratio (%) = (SLEB Thickness ÷ Total Dermal Thickness) × 100



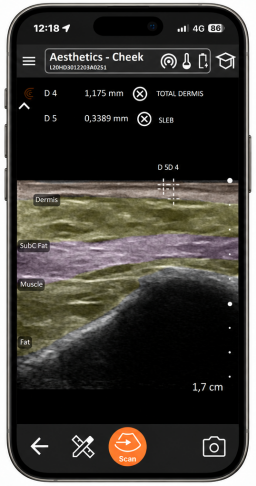
1. Park KE, Mehta P, Tran C, Parikh AO, Zhou Q, Zhang-Nunes S. A comparison of five point-of-care ultrasound devices for use in ophthalmology and facial aesthetics. Ultrasound. 2023. doi:10.1177/1742271X231166895.

2. Excludes the epidermis, measured down to the upper border of the hypodermis.

That number shows exactly how much of a healthy dermal compartment has been structurally replaced by degenerative tissue, and it's what lets her match a protocol to what the tissue actually needs. Dr. Moret uses the SLEB Ratios in Table 1 to create personalized treatment plans for her patients, making it easier to track outcomes and improve patient experiences.

SLEB Ratio	What's Happening	Dr. Moret's Clinical Strategy
0 - 10%	Optimal structure. Minimal or absent SLEB, bright homogeneous dermis	Preserve. 1 to 2 cycles a year of mesotherapy or skin boosters.
10 - 20%	Early changes. Thin SLEB, dermal brightness still intact.	Intervene early with PRP, PDRN (salmon DNA polynucleotides), or light biostimulation.
20 - 30%	Moderate aging. Early heterogeneity, reduced brightness.	Actively regenerate with polynucleotides, exosomes, or combo tightening therapies.
30 - 40%	Advanced compromise. Thicker SLEB, disorganized dermis.	Go stronger with particulate biostimulators: CaHA or PLLA/PDLLA.
40%+	Severe photo-damage. Dense thick SLEB, lost structural definition.	Multi-modal: HIFU plus deep biostimulators and advanced regenerative therapy.

Table one: SLEB Ratios



In this example, the SLEB ratio is 28%, which suggests early heterogeneity and reduced brightness of the SLEB, both signs of moderate aging.

Fun Fact: The 45% Rule

If a patient's SLEB ratio comes back above 45 to 50%, Dr. Moret's advice is simple: re-scan before you treat. A number that high is more likely a technical error, or a sign of an underlying dermatological condition, than routine aging.

Keep the ultrasound probe perpendicular to your contact point to get the most accurate results.

Beyond the SLEB Ratio

The SLEB ratio is where the assessment starts, not where it ends. Before Dr. Moret commits to a protocol, she reads three more markers on the same scan.

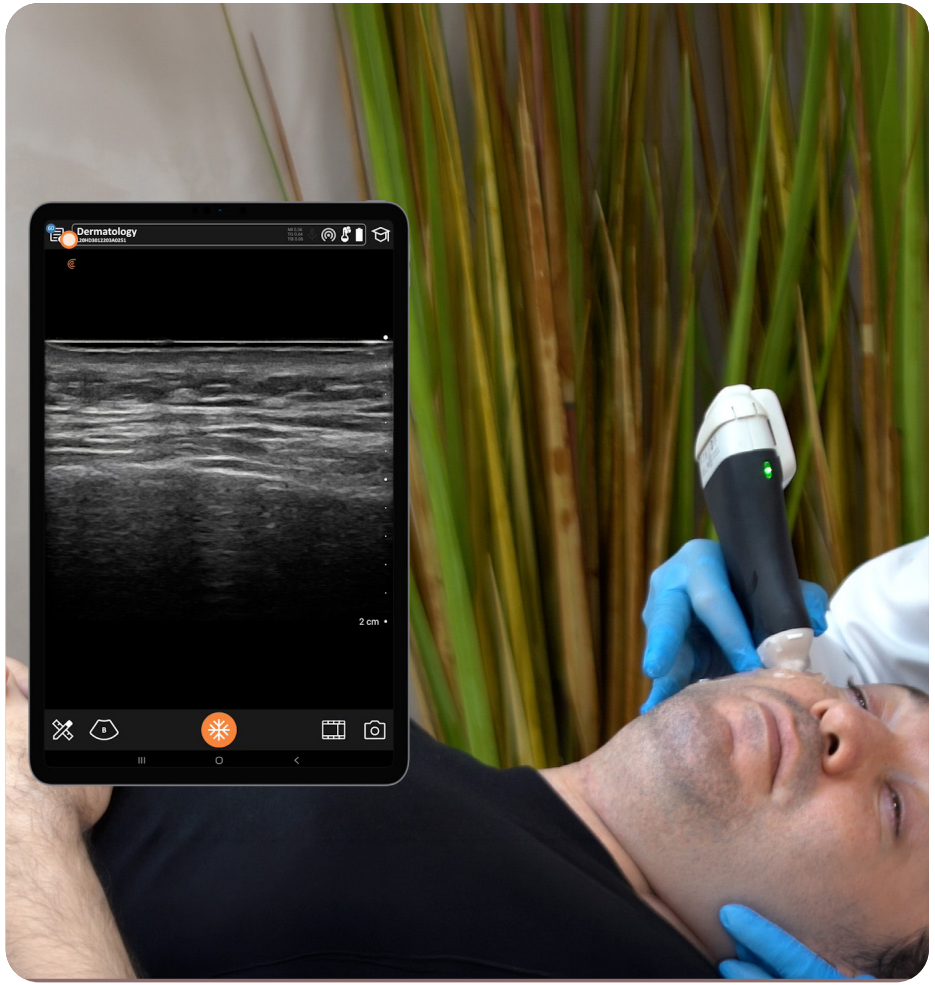
Dermal echogenicity[3] reflects collagen density: brighter means healthier, better-organized structure, duller signals collagen loss even with an unremarkable SLEB.

Dermal thickness indicates volume and ECM integrity: thicker means more structural support, thinner means less room for error and a longer rebuild.

Tissue homogeneity reflects the uniformity of dermal architecture: smooth and even reads as healthy, broken and irregular reads as damage, even when the dermis isn't obviously thin.

Together, these metrics create a structured, multi-point evaluation of the dermis itself. Before any injection, Dr. Moret runs through the same checklist on every patient:

- Dermal thickness
- SLEB thickness and SLEB ratio
- Dermal echogenicity
- Homogeneity vs. disorganization
- Subcutaneous tissue quality
- Old filler, fibrosis, nodules, or edema
- Vascular or anatomical risk zones



Fun fact: not all dermis is created equal.

Facial dermal thickness varies by more than 3x depending on where you scan, which is why a SLEB ratio only makes sense in the context of the zone it came from:

Facial Zone	Dermal Thickness	What It Means
Periorbital area, upper lip	0.5–0.9 mm	Thin; shows fine lines first
Cheek, nasolabial fold, chin	Up to 1.9 mm	Deeper collagen reserve, more structural support

This is exactly why standardizing your scan sites matters as much as the number itself.

3. Dini, V., Iannone, M., Michelucci, A., Manzo Margiotta, F., Granieri, G., Salvia, G., Oranges, T., Janowska, A., Morganti, R., & Romanelli, M. (2023). Ultra-High Frequency UltraSound (UHFUS) Assessment of Barrier Function in Moderate-to-Severe Atopic Dermatitis during Dupilumab Treatment. Diagnostics, 13(17), 2721. https://doi.org/10.3390/diagnostics13172721

Proving the Treatment Worked

Injecting a biostimulator is easy to see. Confirming it triggered real remodeling is harder, and that's where ultrasound earns its keep. Dr. Moret tracks each product's tissue signature over time in Table 2.

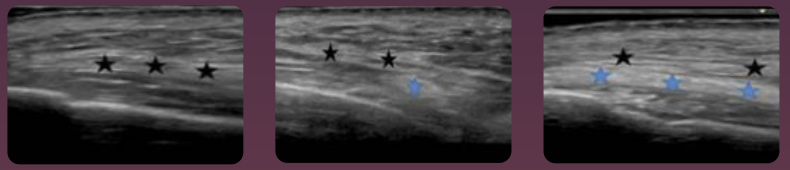
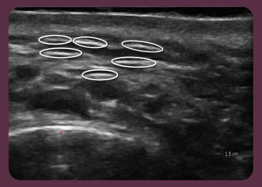
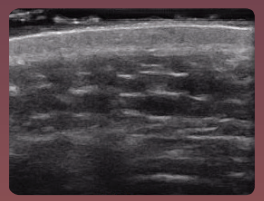
Biostimulator	What Ultrasound Shows You	With Clarius Ultrasound Machine
CaHA	Bright particulate deposits right after injection. By 2 months, a thick hyper-echogenic band confirms real neo-collagenesis.	
PLLA / PDLLA	Subtle deposits with a posterior acoustic shadow. By 1 month, uniform dermal and subdermal echogenic maturation.	
HIFU	Hyper-dense thermal dots and a brighter, more consolidated SMAS layer confirm energy affected the right plane.	

Table two: What ultrasound shows you about biostimulators

Baseline
Pre-Treatment Scan

1 Month
Early Integration

3 Months
Peak Collagen Response

6 Months
Long Term Remodeling

Same imaging settings, positioning, and landmarks at every scan

The timeline above only works if the method behind it never changes, so Dr. Moret keeps imaging settings, positioning, and landmarks the same at every scan. A single site never tells the whole story either, so she standardizes the areas she checks too, tracking six zones every visit: the zygomatic arch, temples, jawline, infraorbital region, perioral area, and neck, watching for a lower SLEB ratio, greater dermal thickness, and higher echogenicity. It allows her to show her patients' that the treatment is working.

Reading the Patient, Not Just the Scan

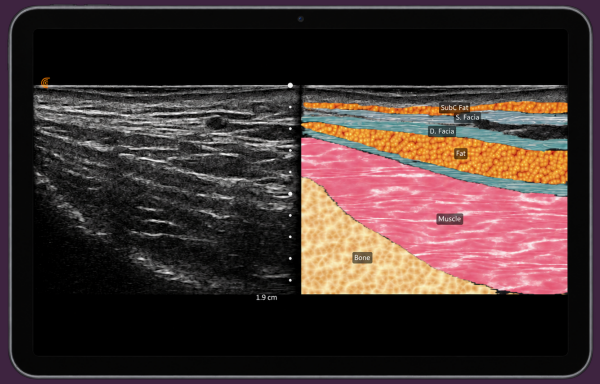
A SLEB ratio only means something if you know what else might be influencing it. Here are a few examples from Dr. Moret's experience:

- Chronic corticosteroid use thins the epidermis and artificially inflates the SLEB's share of the dermis.
- Connective tissue disorders (scleroderma, cutaneous lupus, psoriasis) degrade the extracellular matrix directly and drive their own chronic inflammation.
- Active isotretinoin therapy has the potential to create structural changes.
- GLP-1 receptor agonists thin more than fat: the SMAS and fibrotic septae go too, so these patients often need structural remodeling, not just volume.



FUN FACT: GLP-1, BEYOND THE FAT PADS

Most practitioners keep their eyes on the fat compartments when a patient starts a GLP-1 drug, since that's where the visible change shows up first. But ultrasound reveals that the SMAS and fibrotic septae, the structural scaffolding that holds facial volume in place, are thinning right along with the fat, often before it's obvious on the surface.



Making Ultrasound Easier to Interpret

The Clarius L20 HD3's T-Mode™ automatically colors and labels tissue layers, SMAS, muscle, deep fascia, right alongside the grayscale image while you scan. "The artificial intelligence is going to show you all of the tissues that are there in color," she says. "That makes learning very fast."

There's a patient-facing payoff too. Sharing the scanning screen live turns a promise into proof: when someone watches their own SLEB ratio shrink over a treatment series, it builds trust and keeps them showing up for multi-sessions.

The Takeaways

Objective Proof

SLEB ratio quantifies exactly how much dermis has been lost to degeneration.

Evidence Based Treatments

Five SLEB ratios map directly to specific biostimulator protocols

Verified Impact

Follow-up scans at 1, 3, and 6 months track real tissue change over time

Want to Personalize Treatments in Your Practice?

TALK TO AN EXPERT

Source: Clarius webinar, "Ultrasound for Facial Aesthetics: Skin Evaluation and Biostimulation Assessment," featuring Dr. Gina Moret and Clarius sonographer Janaye Smith. Full webinar available on-demand.

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