

CO₂ LASER RESURFACING of the FACE AND NECK

Your Weekly Newsletter

by Dr. Nick Sieveking

12.18.25



In our newsletter "**Thermal Energy Therapy for Skin**" (published August 15, 2025), we discussed all laser and non-laser thermal devices at *MoreGlow*, the science behind the devices, and the clinical effects. CO₂ laser resurfacing stands alone as the paramount device to reverse aging and damage to the skin; thus, the CO₂ laser deserves individual attention in this newsletter edition.

Let me make something clear upfront: CO₂ laser resurfacing is not a facelift, and a facelift cannot replicate what a CO₂ laser does. They are fundamentally different tools. DO NOT let any laser doctors convince you that a CO₂ laser can "give you a facelift result". These doctors are not qualified to perform a facelift surgery, but are trying to keep your business.

It's best to see a facelift specialist who is also an expert in aesthetic lasers and offers all the latest laser and non-laser technology.

A facelift can make a patient look 15–20 years younger by restoring the architecture of the face and neck — lifting descended fat pads, correcting jowls, tightening the SMAS, and restoring a clean jawline and youthful neck profile (see newsletter, "**Everything Facelift**", published August 6, 2025).

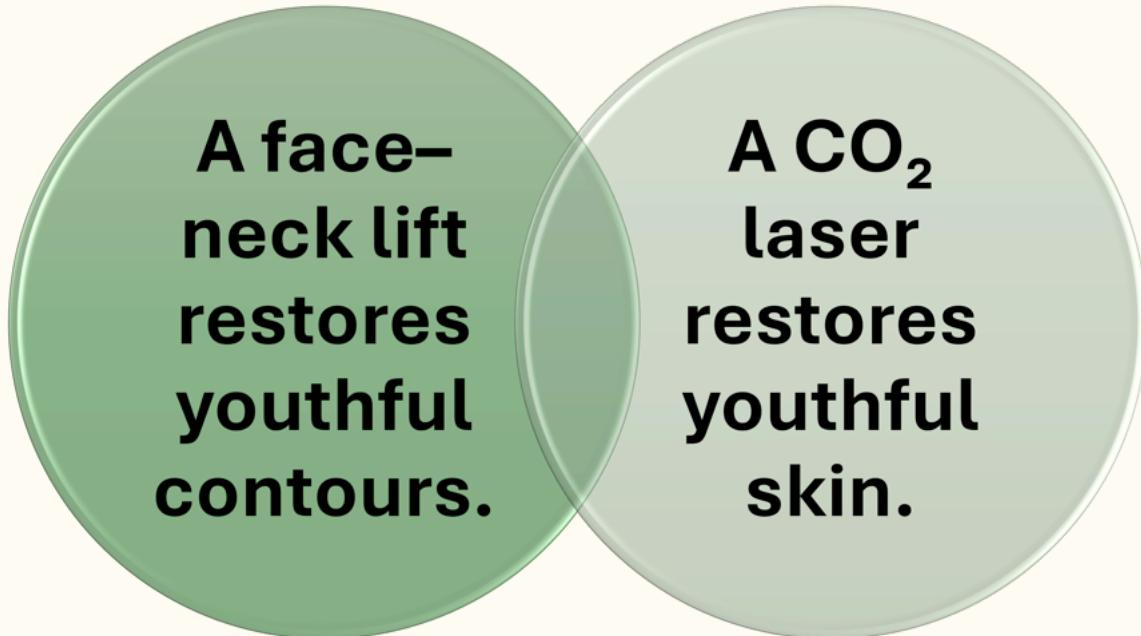
But a facelift does not change the age or quality of the skin itself. It won't fix fine lines, crepey skin, etched wrinkles, visible scarring, sun damage, or enlarged pores.

On the other hand, a CO₂ laser dramatically improves skin quality, but it cannot correct true structural issues. A laser will not repair:

- Deep muscular laxity
- Neck banding
- Significant jowling
- Fat fullness of the neck or cheeks
- Heavy, sagging lower face or submental laxity

Because these two procedures target completely different layers and problems, they're not interchangeable—they're complementary.

Why They Work Best Together



In my practice, the ideal sequence is:

1. Perform the facelift/neck lift first, correcting the foundation.
 - Create natural firmness and tension
 - Get rid of the extra stretched skin
2. Wait approximately three months for tissues to heal and stabilize.
3. Finish the project with ablative CO₂ resurfacing — it's the “icing on the cake”.

Goals of CO₂ Laser Resurfacing

Ablative CO₂ resurfacing reliably improves:

- Fine lines and etched wrinkles
- Sun-damaged skin and precancerous lesions
- Acne scars and traumatic scars
- Enlarged pores
- Skin thickness, firmness, and elasticity
- Uneven texture and discoloration
- Mild skin laxity (a small but noticeable tightening)

How a CO₂ Laser Works

A chromophore is the target of certain laser energies. Various chromophores include:

- Water
- Hemoglobin/blood

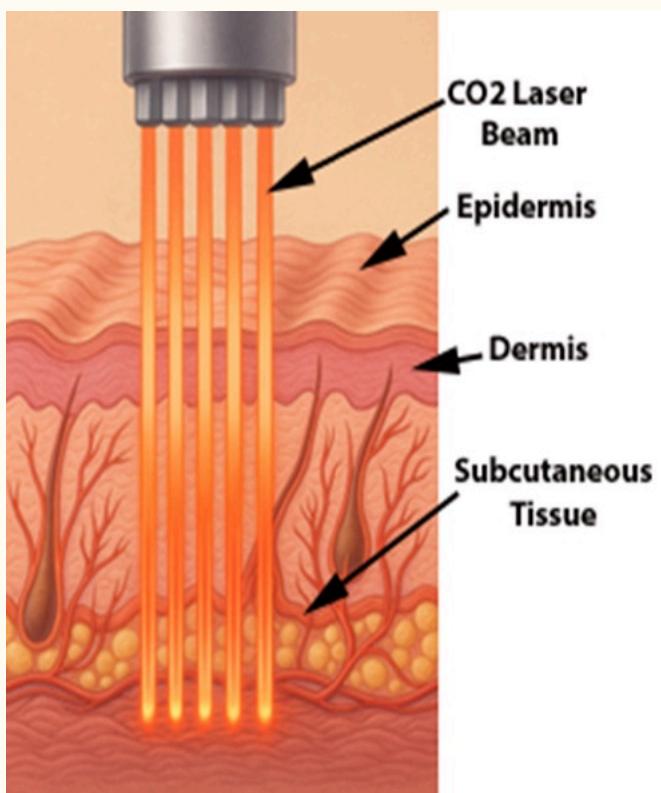
- Melanin (hair follicle, dark skin lesions, melasma..)
- Tattoo ink
- Lipids/fat cells

Human skin is primarily water:

- Epidermis: ~20–30%
- Dermis: ~70% (**the collagen-rich layer we care about surgically**)
- Subcutaneous Fat: ~10–30%

Water is the chromophore that attracts the thermal energy of the CO₂ laser.

CO₂ laser energy is absorbed selectively by intracellular water, without damaging other tissues such as blood vessels, nerves, hair follicles, fat cells, etc.

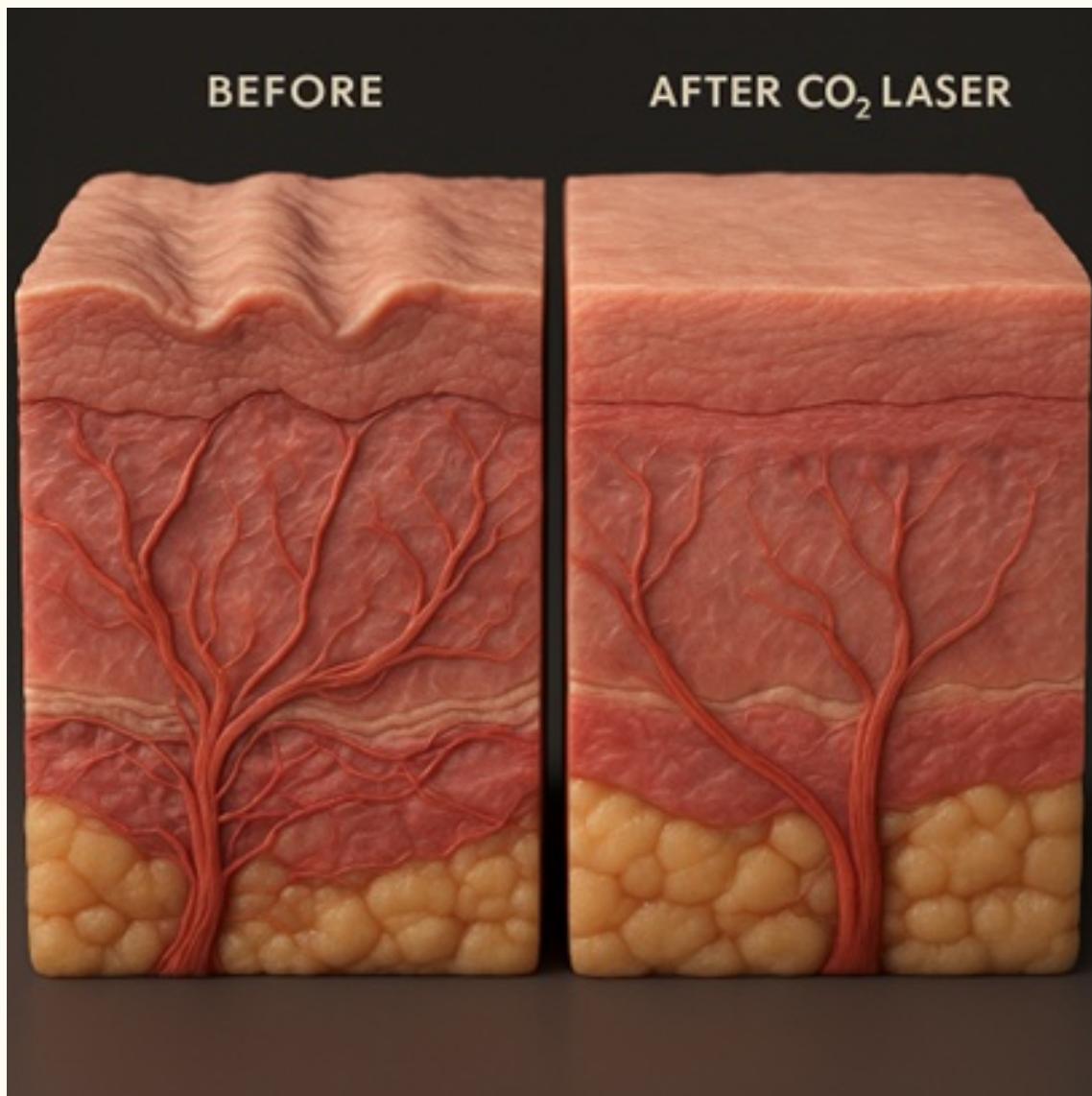


Mechanism of Action

1. Selective Absorption – **CO₂ laser energy** is absorbed by water in skin cells, producing rapid heating.
2. Ablation (Vaporization) – This heat vaporizes **epidermal** cells, removing aged/damaged tissue and creating micro-channels.
3. Coagulation & Contraction – Heat penetrates the **dermis**, causing immediate collagen shrinkage and tightening.
4. Inflammation & Repair – Fibroblasts are activated to produce new **collagen** and elastin.
5. Remodeling – Over weeks to months, collagen reorganizes, improving skin texture, firmness, scars, lines, and tone.

Key Effects on the Skin

- Removes sun-damaged surface layers
- Tightens existing collagen and stimulates new collagen production
- Smooths wrinkles and fine lines
- Softens scars
- Reduces pore visibility
- Improves discoloration and overall skin radiance



Tetra CO₂ @ Sieveking MoreGlow MedSpa

The Tetra CO₂ Laser Resurfacing System represents the current state of the art in carbon dioxide laser technology. It is one of the most complete and versatile CO₂ resurfacing platforms available today, capable of delivering everything from light, superficial treatments with minimal downtime to deep, aggressive resurfacing with more prolonged recovery, depending on clinical goals.

This is a technically complex device that demands a thorough understanding of laser–tissue interaction, proper patient selection, and meticulous technique. As such, it should be used only by well-trained and experienced professionals.

In the hands of an experienced clinician, the Tetra CO₂ laser is an exceptional complement to facelift surgery, allowing precise resurfacing to address skin

texture, fine lines, and photodamage—areas that surgery alone cannot fully correct. When combined appropriately, it elevates overall outcomes and delivers more complete facial rejuvenation.

Some terminology to know:

1. Fractional laser resurfacing is a laser technique in which only a fraction of the skin surface is treated in a controlled, patterned manner, leaving surrounding tissue intact. The untreated skin acts as a reservoir for rapid healing, dramatically reducing downtime and risk compared with fully ablative resurfacing.
2. Laser Ablation is the process by which laser energy precisely removes (vaporizes) tissue by rapidly heating its primary chromophore—most commonly water—to the point of instantaneous phase change, resulting in controlled tissue removal.
3. Laser Erythema is the post-treatment redness of the skin that occurs after laser energy induces vasodilation and inflammation within the superficial dermal microvasculature.
4. PIH- Post-inflammatory hyperpigmentation (PIH) after CO₂ laser resurfacing is an acquired increase in epidermal (and sometimes dermal) melanin deposition that occurs as a reactive response to inflammation and thermal injury induced by the laser. It is a known, predictable risk—not a failure of the procedure—particularly in susceptible patients.

Tetra CO₂ Treatment Options:

- **CoolPeel**
- **DEKA**



CoolPeel CO₂

- Type: superficial / light fractional CO₂
- Depth & Energy: very shallow ablation with minimal thermal coagulation
- Primary Indications:
 - texture refinement
 - fine lines
 - pore size
 - mild photodamage
- Downtime:
 - erythema + mild edema
 - typically 3–5 days
- Anesthesia:
 - often topical only
- Risk Profile:
 - low risk of PIH, scarring, prolonged erythema
- Patient Profile:
 - busy patients

- first-time laser patients
- maintenance treatments

Bottom line:

CoolPeel is CO₂ “lite.” Great for skin quality, not for structural change.

DEKA CO₂

- Type: traditional / aggressive fractional CO₂
- Depth & Energy:
 - deeper and superficial ablation
 - more thermal coagulation
- Primary Indications:
 - deep rhytids
 - acne scarring
 - advanced photodamage
 - skin laxity
- Downtime:
 - oozing, crusting, prolonged erythema
 - 10–14 days, sometimes longer
- Anesthesia:
 - topical, Pro-Nox™, blocks, IV sedation, or general (each depending on the clinical or surgical setting)
- Risk Profile:
 - Higher PIH risk
 - Higher risk of prolonged erythema, infection, scarring
- Patient Profile:
 - patients who want one-and-done results
 - often combined with surgical procedures (e.g., facelift)

Bottom line:

DEKA delivers real resurfacing with real downtime—and real results.

Straight Talk Summary of Realistic Patient Expectations

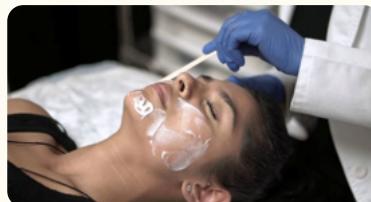
FEATURE	Tetra CoolPeel	DEKA CO ₂
Ablation depth	Superficial	Deep
Downtime	≤5 days	~2 weeks
Anesthesia	Topical	Blocks / Topical/Gas
Risk	Low	Low--Moderate
Results	Subtle refinement	Structural change

How Do We Keep You Comfortable at *MoreGlow* During CO₂ Laser Treatments?



Nitrous Oxide

Self-administered “laughing” gas (a.k.a. nitrous oxide or Pro-Nox™) makes even deeper treatments very tolerable. Patients can even drive themselves home about 30 minutes after the CO₂ treatment.



Topical Numbing Medicine

Topical numbing medicine is applied to the areas that will be treated. When allowed time to penetrate deeper into the dermis, topical anesthesia provides excellent numbing of the skin.



Injectable Numbing Medicine

For more aggressive treatments such as **Deep Lip Lines** and **Wrinkles** around the **mouth**, numbing medicine can be injected into specific sensory nerves of the face to provide complete numbness (lasts about two hours).

Deep Tetra CO2 (DEKA) around the eyes



Deep Tetra CO2 (DEKA) on the cheek



Expected Downtime & Common Temporary Side Effects

- Redness and swelling (days to weeks)
- Pink skin that can persist for several months
- Itching or burning as healing occurs
- Bronzing, peeling, or crusting
- Milia or acne from occlusive ointments
- Transient skin texture changes during re-epithelialization

Less Common but Serious Risks

- Infection (bacterial, viral—HSV is the classic—or fungal)
- Pigmentation changes: hyperpigmentation or hypopigmentation
- Scarring: hypertrophic or irregular if healing is interrupted
- Thermal injury from excessive passes or poor technique
- Ectropion (rare; lower eyelid laxity + aggressive passes)

PIH after CO2 Laser



Viral (Oral Herpes) Infection after CO2 Laser



Hypertrophic Scarring around mouth after “too aggressive” CO2 laser treatment



How to Minimize Risks

- Choose an experienced provider skilled with ablative lasers, especially in darker skin types.
- Avoid sun exposure before and after treatment to prevent burns and pigmentation issues.
- Follow aftercare instructions meticulously—this is critical for barrier repair and infection prevention.
- Avoid scheduling during high-sun months (summer treatments increase complications).

SPECIAL OFFER

--Through January 31, 2026--

Reference this newsletter and receive 20% OFF a DEKA CO₂ Laser Treatment at MoreGlow Med Spa.

[Call Now](#)

Stay Tuned!

Be on the lookout for next week's newsletter, "Glyphosate: The Chemical We Never Consented to Eat".

[Schedule Appointment](#)



Sieveking Plastic Surgery

1200 Old Hillsboro Rd., B2, Franklin,

TN 37069

info@sievekingplasticsurgery.com

615-321-1010

[Unsubscribe](#)

Ageless Solutions

615-678-7784