INCREDIBLE®

DEVICES

Fractional
Multi-CO2 Laser

The Gold Standard in CO2 Lasers

The INCREDIBLE Fractional Multi-CO2 Training Manual provides comprehensive guidance on operating the device, covering skin rejuvenation and CO2 laser treatment protocols, safety procedures, device settings, and best practices to achieve optimal results.

HEALTH CANADA LICENCED

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Dedication

To the incredible women in the aesthetic world, whose passion for helping others shines through every treatment. May your commitment to excellence and growth empower you to achieve your goals and elevate your career to new heights.

Manufacturer Contact Information

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Disclaimer

Legal, Safety & Compliance Information

Important Safety Information

Before operating this device, all users must carefully read and understand the instructions, warnings, and safety guidelines provided in this manual. Failure to follow the recommended procedures may result in equipment malfunction, injury to the operator or client, or ineffective treatment outcomes.

This device must only be used for its intended purpose and within the parameters specified in this documentation. Operators must always follow recommended safety protocols and ensure that appropriate protective measures are in place during device operation.

Protective equipment, including eye protection where applicable, must be used according to the treatment requirements described in this manual.

Operator Responsibility

This device is intended for professional use only. It must be operated by trained and qualified personnel who possess adequate knowledge of aesthetic or medical treatment procedures.

The operator is responsible for ensuring proper training before operating the device, following all safety instructions and treatment protocols, assessing client suitability prior to performing any treatment, maintaining proper hygiene and safety standards during procedures, and operating the device in accordance with local regulatory requirements.

The manufacturer assumes no responsibility for outcomes resulting from improper use, lack of training, or failure to follow the guidelines outlined in this manual.

Contraindications & Precautions

Before performing any treatment, operators must conduct a thorough consultation and assessment to determine whether the treatment is suitable for the client.

Certain medical conditions, medications, or skin sensitivities may contraindicate treatment. Operators must exercise professional judgment and follow accepted clinical standards when determining treatment eligibility.

If any uncertainty exists regarding a client's suitability for treatment, consultation with a qualified medical professional is recommended.

Maintenance Responsibility

Routine inspection and proper maintenance of the device are essential to ensure safe and effective operation.

Users are responsible for maintaining the device according to the maintenance guidelines provided, ensuring the device is used in an appropriate environment, preventing unauthorized modifications or repairs, and ensuring that servicing is performed only by authorized personnel.

Improper maintenance or unauthorized modifications may result in device malfunction and may void warranty coverage.

Documentation & Product Updates

The information contained in this manual is based on the most current product knowledge available at the time of publication. The manufacturer reserves the right to update or revise the device design, specifications, operational procedures, and documentation at any time without prior notice.

Users are responsible for ensuring they are working with the most recent version of the user guide and operational documentation.

Limitation of Liability

The manufacturer shall not be held liable for any direct, indirect, incidental, or consequential damages resulting from improper operation, unauthorized modification, failure to follow instructions, or use of the device outside of its intended purpose.

Use of this device constitutes acceptance of the guidelines and limitations described in this documentation.

Intellectual Property Notice

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Warranty Disclaimer

Warranty coverage for this device is provided only as outlined in the official warranty documentation supplied with the product.

Warranty may be voided if the device is modified or altered without authorization, serviced by unauthorized personnel, used outside recommended operational parameters, or damaged due to misuse, negligence, or improper handling.

Consumable components and normal wear and tear are not covered under warranty unless explicitly stated.

General Warnings & Safety Symbols

This device must be used only for its intended purpose and in accordance with the procedures described in this manual. Failure to follow instructions may result in equipment damage, operator injury, or client harm.

Users should read this manual before operating the device, ensure only trained professionals operate the equipment, use appropriate protective equipment when required, avoid modifying the device, disconnect power before cleaning or maintenance, and ensure the device is used in a safe environment.

If the device appears damaged or operates abnormally, discontinue use immediately and contact authorized service personnel.

Safety Symbols

Certain symbols may appear on the device, packaging, or documentation to indicate important safety information.

Common symbols may include warning indicators, electrical hazard signs, instructions to refer to the user manual, protective equipment requirements, temperature limitation symbols, and notices indicating that the device should not be disassembled by unauthorized personnel.

Treatment Contraindications & Precautions

Before performing any procedure using this device, operators must assess whether the treatment is suitable for the client.

Treatments should not be performed or should be performed with caution in individuals with active skin infections, open wounds, severe skin sensitivity, inflammatory skin conditions, recent surgical procedures in the treatment area, known hypersensitivity to light or heat-based treatments, pregnancy without medical approval, or use of medications that increase photosensitivity.

Operators must exercise professional judgment and conduct a proper consultation prior to treatment.

Client Consent & Practitioner Responsibility

Before performing any treatment using this device, the practitioner must ensure that the client has received a full consultation and understands the nature of the procedure.

The practitioner is responsible for explaining the treatment process and expected outcomes, discussing potential risks and aftercare instructions, obtaining informed client consent, maintaining client records and treatment documentation, and selecting appropriate treatment parameters.

The manufacturer is not responsible for treatment outcomes or complications resulting from practitioner error or failure to obtain informed consent.

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Chapter 1 – Introduction

1.1 INCREDIBLE Fractional Multi-CO_2 Laser™

Meet the Future of Fractional Laser Technology – Unlock the Power of Precision Aesthetics

Welcome to the INCREDIBLE Fractional Multi- CO_2 Laser™

The INCREDIBLE Fractional Multi- CO_2 Laser™ combines medical-grade performance with advanced engineering to deliver exceptional results in:

1. Skin Resurfacing
2. Scar Removal
3. Stretch Marks Removal

Renowned for its precise control, deep penetration, and minimal downtime, this laser is the perfect solution for Medspas aiming to provide high-demand, result-driven treatments.

This isn't just another CO_2 laser, it's your All-in-One Aesthetic Powerhouse. Treat mild to severe skin concerns, including:

- Fine Lines & Wrinkles
- Hyperpigmentation
- Acne Scars
- Skin Laxity

The INCREDIBLE Fractional System offers control, depth, and consistency your Medspa needs to deliver clinic-quality outcomes with spa-level comfort, elevating your treatments and client satisfaction to the next level.

1.2 Theory

Fractional Laser Technology has been the latest and most popular skincare technology in North America, garnering the most attention in the global dermatology community over the past two years. It represents a minimally invasive procedure, somewhere between invasive and non-invasive.

The theory of fractional laser treatment, known as Fractional Photothermolysis, was first published in 2004 by Dr. Rox Anderson, a laser medicine expert at Harvard University. It quickly gained worldwide recognition and clinical application. Fractional Photothermolysis is an extension of traditional Selective Photothermolysis. It combines the rapid, significant results of invasive procedures with the minimal side effects and short recovery time of non-invasive procedures.

Fractional laser treatment uses laser light to create evenly distributed microscopic holes in the skin, triggering a series of biochemical reactions that tighten, rejuvenate, and remove dark spots. Because fractional laser treatment only covers a portion of the skin, and the newly created holes do not overlap, some healthy skin is preserved, accelerating recovery. Patients can resume their normal activities after four to five days.

The procedure itself is relatively safe and can be performed on any part of the body. Indications include acne scars, fading and eliminating pigmentation, surgical scars, traumatic scars, burn scars, melasma, poikiloderma of Civatte, wrinkles, sagging skin, and photoaging. These applications are currently being used clinically both domestically and internationally, with proven efficacy.

1.2 Function

1. Acne scars
2. Lightens and eliminates dark spots and melasma
3. Surgical scars, traumatic scars, and burn scars
4. Wrinkles, sagging skin, and photoaging
5. Facial rejuvenation

1.3 Taboo

- Pregnant women.
- People with a history of keloids.
- People with active herpes or skin damage.
- People with severe diabetes, hypertension, or epilepsy.
- People with atypical moles or malignant lesions in the operating area.
- People who are inevitably exposed to strong sunlight during daily work.
- People with photosensitivity or drug-induced photosensitivity, or those currently taking photosensitizing medications.

Chapter 2 - How It Works | The Science Behind the System

The INCREDIBLE Fractional Multi-CO2 Laser™ delivers focused beams of high-intensity light into the skin in a fractionated pattern. These micro energy columns create thermal-damage zones in a controlled environment, triggering a safe, natural healing response.

Combining ultra-pulse technology with fractional scanning, the laser delivers thermal energy directly into the skin, stimulating collagen, renewing surface texture and tightening tissue. The best part? It preserves the surrounding healthy tissue, leading to fewer side effects and faster recovery.

2.1 Technical Excellence

Smart Laser, Smarter Outcomes

- **Wavelength:** The Gold Standard 10,600nm – Clinically proven to stimulate deep collagen production, remodel tissue, and improve skin quality from within.
- **Laser Source:** From its USA Coherent laser source to its Korea-imported tubes for energy stability, every component is hand-picked to deliver stable, precise, and powerful results across multiple skin layers and treatment areas.
- **Scan Shapes:** Includes “7” customizable shapes (triangle, square, hexagon, circle, ring, rhombus, straight line), giving you total control over every treatment pass.
- **Scan Methods:** Choose between Normal Sequence for even coverage or Random Sequence to reduce thermal overlap and speed healing.
- **Flexible 7-Joint Articulated Arm:** Engineered for ultra-smooth movement and pinpoint accuracy, ensuring the beam goes exactly where you want it — no drag, no resistance.

2.2 Multi-Purpose Handpiece for Specific Skin Problems

One System. One Specialized Solution

Whether you are rejuvenating facial skin, restoring intimate wellness, or performing precise surgical cuts, the INCREDIBLE Fractional Multi-CO_2 Laser™ adapts with dedicated handpieces for every application.

- **Vaginal Tightening** – Fractional Multi-CO_2 probe for full-contact 360° vaginal treatment
- **Vulva Treatment** – Surface-focused CO_2 rejuvenation for external care
- **Facial Treatment** – Precision resurfacing and wrinkle reduction
- **Surgical CO_2** – Controlled cutting for soft tissue with clean, coagulated edges

All components are safely stored in a custom professional case, making it easy to organize, transport, and protect your investment.

The **INCREDIBLE Fractional Multi-CO2 Laser™** is a groundbreaking technology that delivers targeted facial rejuvenation with exceptional precision. Equipped with a dedicated handpiece for facial treatments, the fractional laser energy penetrates the skin, stimulating collagen production and promoting cell renewal. This results in smoother, firmer skin with a more even tone.

- **Facial Treatment** – Precision resurfacing and wrinkle reduction, including anti-aging effects for firmer skin.

2.3 Application Areas

Fractional

Skin
Resurfacing

Skin
Rejuvenation

Stretch
Marks

Scar
Remodelling

VRL

Vaginal
Tightening

Urinary
Incontinence
(SUI)

Post -
Menopause
GSM

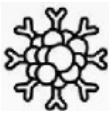
Post -
Delivery
Rehabilitation

CO2 Surgery

Warts
Removal

Moles
Removal

Benign
Tumours

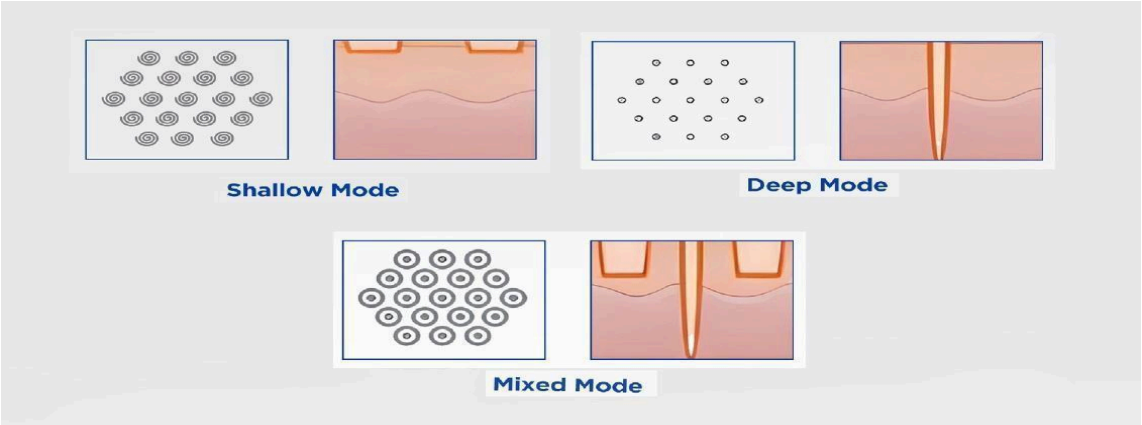


Skin
Derivatives Removal

2.4 Key Features

Three Modes in One Powerful System – Endless Possibilities

Personalized Precision for Every Skin Depth with INCREDIBLE CO_2 Laser's Smart Fractional Technology



Unlock the true potential of INCREDIBLE Fractional Multi-CO_2 Laser™ with this System – a high-performance, multi-mode platform designed to resurface, rejuvenate, and restore skin with unmatched accuracy. Whether targeting fine lines at the surface or deep scar tissue in the dermis, this system adapts to every skin concern using three intelligent treatment modes that maximize results while minimizing downtime.

2.5 Smart Modes That Work Skin Deep

Shallow Mode – Surface-Level Perfection

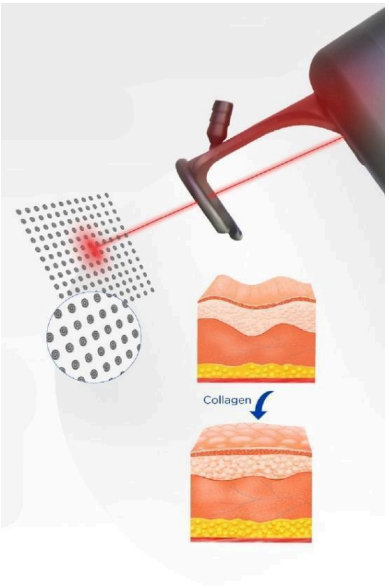
Designed for superficial fractional treatments in the epidermis, this mode boosts epidermal cell turnover and skin regeneration. It's ideal for treating fine lines, tone, texture, and mild pigmentation, offering rejuvenation with minimal thermal damage. Great for clients looking for smoother, brighter skin without extensive downtime.

Deep Mode – Targeting the Root of the Problem

Penetrating the dermal layer, this mode delivers the deepest fractional effect, combining ablation and coagulation to target wrinkles, deep scars, and skin laxity. It stimulates significant collagen remodelling, making it a go-to for clients needing transformational results.

Mixed Mode – Dual-Depth Mastery

Treats Both Superficial and Deep Skin Layers



This Hybrid Scan Pattern combines deep and superficial penetration, optimizing thermal injury across varying skin depths in a single pass. It's a groundbreaking amalgamation of ablative and non-ablative CO_2 Laser Technologies into a smart platform.

This mode allows practitioners to treat the dermis and epidermis layers simultaneously, achieving collagen remodelling and visible rejuvenation with speed, minimal recovery time and precision.

With complete control over energy, pattern, and depth, professionals can independently or jointly activate both modes to maximize clinical flexibility and tailor every treatment to the client's skin condition and comfort level. Mixed Mode is ideal for clients who need comprehensive rejuvenation, from surface texture to deep-tissue remodelling.

2.6 Intelligent Interface for Ultimate Control

Built for Precision, Designed for Simplicity

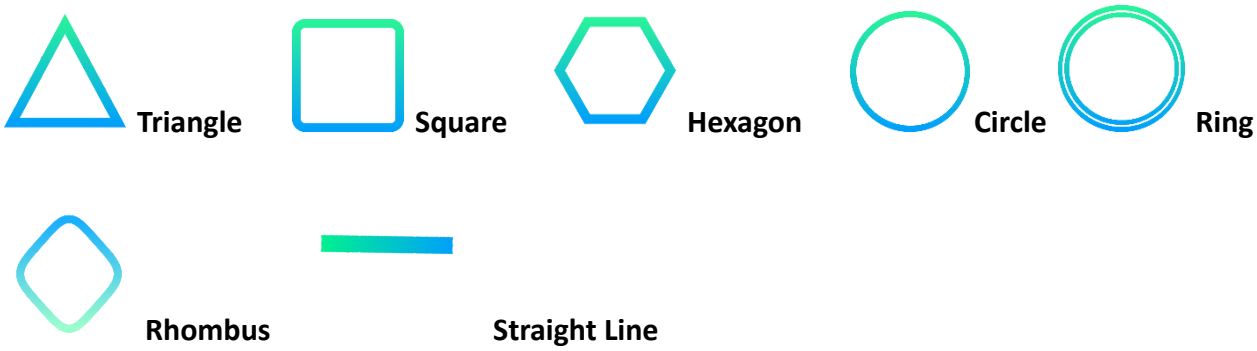
The INCREDIBLE Fractional Multi-CO_2 Laser™ features a sleek, intuitive touchscreen interface that puts complete control in the practitioners' hands. Whether you're delivering surface rejuvenation or deep collagen stimulation, the system's digital interface allows for real-time adjustments in pulse duration, shape, power, and scanning patterns — making treatments both customizable and exceptionally safe.

The design prioritizes ease of use while offering advanced technical versatility, ensuring practitioners of all experience levels can navigate the settings with confidence and precision.

2.7 Customizable Scan Shapes

Adapt to Any Treatment Area with Precision Graphics

The INCREDIBLE Fractional Multi-CO_2 Laser™ interface offers 7 Geometric Scan Shapes to match different facial or body areas perfectly. These include:



Practitioners can scale the size of each shape based on the treatment zone — whether treating under the eyes or across the whole face — providing complete control over coverage and energy distribution.

Advanced Scan Method Options

Optimized Delivery for Uniform or Randomized Treatment

Two scanning methods are available to maximize treatment results and skin response:

1. **Normal Sequence:** A standard scan pattern that delivers shearing with down laser pulses in a consistent, predictable path for uniform energy coverage.
2. **Random Sequence:** A randomized delivery pattern that reduces overlapping heat buildup, making it ideal for sensitive skin and faster healing.
3. **Distant:** For sensitive areas or quick healing with low downtime.

This dual-method flexibility ensures clinicians can fine-tune the treatment for both safety and efficacy, especially when treating various skin types or multiple passes.

Rule of Thumb

- Shallow / Regular ⟶ Shorter distance
- Deep / Distant ⟶ Greater distance
- Mixed / Irregular ⟶ Variable distance (system alternates)

Why This Matters

In Deep mode, increasing the distance:

- Widens the spacing between microthermal zones
- Allow deeper energy penetration with less surface overlaps
- Promotes deeper collagen remodelling rather than superficial resurfacing

In Shallow mode, a shorter distance:

- Creates denser, more superficial coverage
- Focuses on epidermal/upper dermal resurfacing
- Results in faster healing and less downtime

Practical Guidance

- If your goal is scars, laxity, or deep wrinkles → increase distance (Deep/Distant)
- If your goal is texture, pigment, fine lines → reduce distance (Shallow/Regular)
- For full rejuvenation → Irregular (mixed distances automatically)

2.8 Recommended Scan Shape by Treatment Area

Triangle

Best for:

- Nasolabial folds
- Lateral canthus (crow's feet)
- Angular facial contours
- Jawline transitions

Clinical Rationale

Triangular geometry adapts well to angled anatomy, allowing precise coverage without excessive overlap.

Square

Best for:

- Cheeks
- Forehead
- Chest (décolletage)
- Abdomen

Clinical Rationale

Provides uniform grid coverage over flat or broad surfaces, ideal for wrinkle reduction and texture improvement.

Hexagon

Best for:

- Full-face resurfacing
- Neck
- Large body areas (arms, thighs, back)

Clinical Rationale

Hexagonal patterns allow maximum coverage with minimal overlap, improving efficiency while keeping consistent thermal distribution.

Circle

Best for:

- Individual acne scars
- Surgical scars
- Small localized lesions
- Perioral fine lines

Clinical Rationale

Circular scans provide even radial energy distribution, making them ideal for isolated or focal treatment zones.

Ring

Best for:

- Periorbital area (under eyes, orbital rim)
- Nipple–areola complex
- Targeted rejuvenation surrounding a structure.

Clinical Rationale

Ring patterns treat the surrounding tissue while sparing the center, reducing risk in delicate anatomical regions.

Rhombus (Diamond)

Best for:

- Neck
- Jawline
- Areas with vertical skin laxity
- Upper arms

Clinical Rationale

The elongated geometry aligns with natural skin tension lines, supporting collagen remodelling and tightening.

Straight Line

Best for:

- Linear scars (surgical or traumatic)
- Stretch marks (striae)
- Fine rhytids in a directional pattern

Clinical Rationale

Allows controlled, directional energy delivery, ideal for treating linear tissue defects without unnecessary lateral spread.

2.9 Advanced Scan Method Options

Optimized Energy Delivery & Healing Control

The system offers three scan delivery methods, allowing further customization based on skin type, sensitivity, and downtime tolerance.

Normal Sequence

- Predictable, uniform scanning path

Best for:

- Full-face resurfacing
- Thick or resilient skin
- Even texture correction

Clinical Benefit

Ensures consistent energy distribution for standard resurfacing protocols.

Random Sequence

- Randomized pulse distribution

Best for:

- Fitzpatrick IV–VI
- Sensitive skin
- Multi-pass treatments

Clinical Benefit

Reduces thermal stacking, lowering the risk of PIH and accelerating healing.

Distant Mode

Increased spacing between microthermal zones

Best for:

- Periorbital and perioral areas
- Neck and chest
- Patients needing minimal downtime.

Clinical Benefit

Promotes faster epithelial recovery while still stimulating collagen remodelling.

Clinical Tip Summary

- Match the scan shape to the anatomy, not just the treatment indication.
- Use Random or Distant modes for higher Fitzpatrick skin types or delicate areas.
- Scale scan size proportionally to avoid over-coverage.
- Combine shape selection with energy, density, and pass control for the best outcomes.

2.10 Skin Type Adjustments (I–VI)

Fitzpatrick	Adjustments
I–II	Standard settings
III	Slightly lower energy, monitor overlap
IV	Lower energy, increase distance, reduce density
V–VI	Lowest energy, longest distance, fewer passes, longer intervals

Rule

Pigment risk ↑ → Energy ↓ | Distance ↑ | Density ↓

First-Treatment Rule

- Always start conservatively
- You can increase depth next session, but you can't undo PIH

Explanation

We control the laser by adjusting how close or spread apart the energy points are.

Closer spacing enhances texture and glow on the surface.

Wider spacing goes deeper to rebuild collagen for scars and wrinkles.

For most patients, we use a combination of both for balanced rejuvenation.

Positioning Language

- Shallow treatments = refresh + glow + minimal downtime
- Deep treatments = structural repair + collagen rebuilding
- Mixed treatments = complete skin renewal

"This isn't just resurfacing — it's controlled skin regeneration."

Key Safety Reminders

- Darker skin ⟶ lower energy, larger distance, fewer passes
- Scars tolerate depth better than pigmentation
- Neck ≠ face (always lighter)

Elastic Tissue: Stretch & recoil

Reticular Fibres: Support tissue structure

Chapter 3 - Operation Theory

3.1 Starter Parameter Guide

Full-Face Rejuvenation (Most Common)

Mode: Irregular (Mixed)

Distance: Medium–High (auto-variable)

Energy: Low–Moderate

Density: Medium

Purpose:

- Texture + tone
- Fine lines
- Mild laxity

Downtime: 5 to 7 days

Acne Scars / Deep Wrinkles

Mode: Distant (Deep)

Distance: Higher distance

Energy: Moderate–High

Density: Low–Medium

Purpose

- Deep dermal remodelling
- Scar depth reduction

Key Point: Greater distance = deeper columns + less surface damage

Downtime: 7 to 10+ days

Texture, Glow, Pigment, Fine Lines

Mode: Regular (Shallow)

Distance: Short distance

Energy: Low

Density: High

Purpose

- Surface resurfacing
- Faster healing

Downtime: 3–5 days

Neck / Décolletage (thin skin)

Mode: Regular or Irregular

Distance: Short–Medium

Energy: Low

Density: Low–Medium

- Avoid aggressive Deep mode on the neck unless very experienced.

Distance controls how deep we work

- Short distance = surface
- Long distance = depth
- Irregular mixes both automatically

Quick safety reminders

- Darker skin types → lower energy, larger distance, fewer passes
- First treatment → conservative settings
- Scars tolerate depth better than pigmentation issues

3.2 Fractional Mode

Main Treatments: All types of acne scars, all trauma, surgical and burn scars, deep wrinkles, exfoliation removal, laser fractional injection, and pore shrinkage.

Acne Scars

To address the unevenness and facial marks left by acne and pimples, the high-energy beam from the fractional laser is absorbed by the skin, where it is converted into heat. Heat energy can reduce inflammation in the skin's surface tissue and decrease bacterial infection.

At the same time, light energy can stimulate the regeneration of skin collagen, promote skin repair, improve the appearance of acne marks and scars, and inhibit the formation of new acne.

Note: Adjust the operating parameters according to the actual situation.

Energy (W)	Light Output Time (ms)	Point Spacing (mm)	Number of Scans	Scan Interval (s)	Number of Treatment Courses (Times)	Treatment Interval (Months)
15 – 25	0.6 – 0.8	0.6 – 0.8	1	0.5	3 – 6	2 – 3

Scars

For scars caused by trauma, surgery, etc., fractional laser treatment uses a laser to create tiny holes in the skin evenly. The laser can penetrate deep into the dermis, improve blood circulation in the skin, rearrange the elastic fibres, and stimulate production, thereby making sunken scars appear fuller and less noticeable.

Note: Adjust the operating parameters according to the actual situation.

Energy (W)	Light Output Time (ms)	Point Spacing (mm)	Number of Scans	Scan Interval (s)	Number of Treatment Courses (Times)	Treatment Interval (Months)
From 25	1.5 – 2.5	0.7 – 0.9	1 – 3	0.5	3 – 6	2 – 3

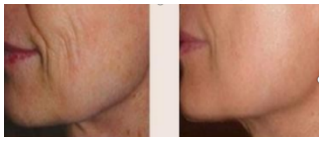
Reduce Wrinkles

For skin wrinkles, fractional laser stimulates collagen proliferation and reorganization via laser heat, thereby increasing skin elasticity and firmness. Wrinkles can also be significantly improved after multiple treatments.

Note: Adjust the operating parameters according to the actual situation.

Energy (W)	Light Output Time (ms)	Point Spacing (mm)	Number of Scans	Scan Interval (s)	Number of Treatment Courses (Times)	Treatment Interval (Months)
15 – 25	1 – 1.5	0.7 – 0.8	1	1	2 – 3	2 – 3

Skin Tightening



For skin-sagging and tightening problems, a fractional laser penetrates deeply into the dermis. It delivers high energy and high heat to promote the regeneration and reorganization of collagen and elastic fibres, effectively improving skin elasticity and vitality and tightening sagging skin.

Note: Adjust the operating parameters according to the actual situation.

Energy (W)	Light Output Time (ms)	Point Spacing (mm)	Number of Scans	Scan Interval (s)	Number of Treatment Courses (Times)	Treatment Interval (Months)

20-25	0.6-0.8	0.8	1	1	3-5	2-3

Reduce Pigmentation

For facial pigmentation problems such as freckles and melasma, fractional lasers emit regularly arranged micro-laser beams in a matrix. The diameter of these micro-laser beams is typically between 100 μm and 1000 μm. When these laser beams interact with the skin surface, they stimulate the metabolism of pigments in cells, thereby reducing pigmentation.

Note: Adjust the operating parameters according to the actual situation.

Energy (W)	Light Output Time (ms)	Point Spacing (mm)	Number of Scans	Scan Interval (s)	Number of Treatment Courses (Times)	Treatment Interval (Months)
6-12	0.3-0.6	0.7-0.8	1	1	2-3	1-2

Improve Enlarged Pores

To address enlarged pores, fractional laser use high-energy lasers to target the skin, inducing microthermal damage that stimulates skin regeneration and collagen reorganization, thereby shrinking pores.

Note: Adjust the operating parameters according to the actual situation.

Energy (W)	Light Output Time (ms)	Point Spacing (mm)	Number of Scans	Scan Interval (s)	Number of Treatment Courses (Times)	Treatment Interval (Months)

10-15	1.5-2	0.7-0.8	1	1	1-3	2-3

3.3 Cutting Mode

Main Treatments: Removal of acne pits, mild to moderate scars, moles, and growths.

The INCREDIBLE Fractional Multi-CO2 Laser works by dividing a single laser beam into nearly a hundred tiny laser pulses. These tiny beams are applied to the skin surface, creating tiny pores and forming a small area of thermal damage. This area of thermal damage effectively stimulates the growth of collagen and elastic fibres in the subdermal tissue beneath the skin, promoting the skin's self-repair process. It helps with faster repair and healing, achieving the goal of removing the unwanted growths.

Note: Adjust the operating parameters according to the actual situation.

Mode	Energy (W)	Light Output Time (mess)	Interval time (ms)	Probe (mm)
3	0.8-2.4	5	50-80	50/100

Chapter 4 – Installation Instructions

4.1 Machine Installation

Placement: Place the machine stably in a clean operating room or treatment room.

Installation

- **Laser Arm:** Connect the laser arm to the machine's corresponding light outlet.
- **Power Cord:** Connect one end to the machine's power socket and the other end to a well-grounded single-phase three-wire power outlet.

After completing the above operations, press the button to switch on the whole machine immediately. At this time, the water will circulate, and the system cooling system will start automatically.

Check for any water leakage at the connection between the treatment head and the instrument. If there is any water leakage, turn off the power and reconnect it.

4.2 Precautions

The INCREDIBLE Fractional Multi-CO_2 Laser™ can be installed in Medical Spas, Clinics or Beauty Salons. Installation precautions include:

- Unpack and place the machine at the selected location
- Check the integrity of the equipment and its components
- Connecting to the power supply
- Install the laser arm
- Test all functions of the device

4.3 Installment

Packing Box

Main Machine

Figure 1

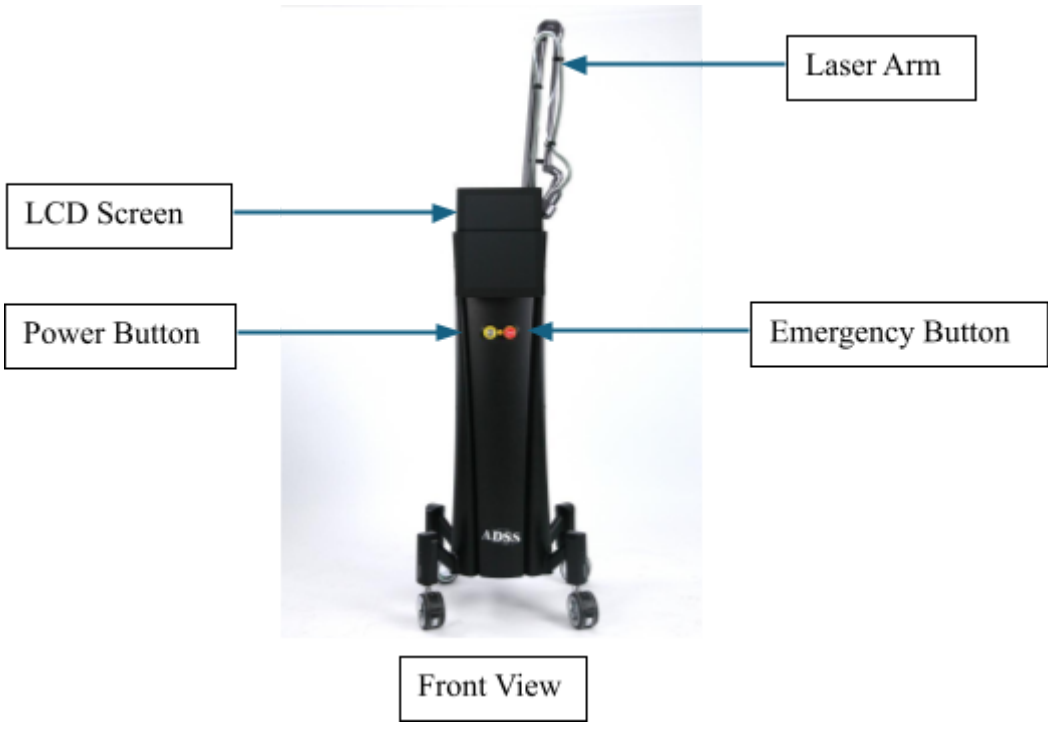
Figure 2

To open the box:

A. Unscrew the wrench in Figure 1 and proceed to Figure 2.

B. Rotate the wrench to open the box.

4.4 Appearance Introduction



Back View

4.4 Equipment List

Power Cable

Foot Pedal

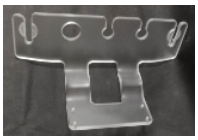
Glasses

Goggles

Air Pipe

Fuse

Laser Arm



Frame

Fractional Probe

CO_2 Probe (100mm)

CO_2 Probe (50mm)

Accessory Description

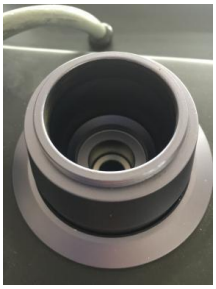
- **Foot Pedal:** It controls the light output of the treatment head.
- **Power Cable:** Connect the machine to a 220V socket to power it on.
- **Glasses:** Protective glasses for operators.
- **Laser Arm:** For laser treatment.
- **Goggles:** Protect the client's eyes.

4.5 Laser Arm Installation

Unscrew the dust cover on the laser arm and main unit.

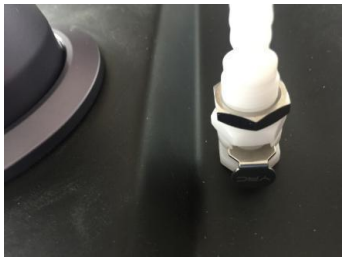
As shown in the figure below:



Align the laser arm with the main unit mounting hole, then insert it vertically and tighten the nut clockwise. As shown in the figure below:


Insert the trachea, as shown in the figure:

Note: The air pipe must not have a 90° dead angle and must rotate 360° without resistance.

Install the Probe

Align the probe with the instrument, then turn the laser arm clockwise, as shown in the figure below. :

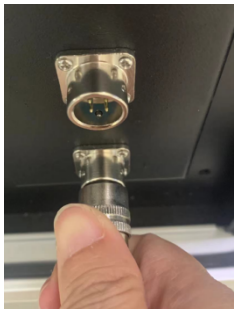






Note: The installation of the dot matrix operation head and the blowing part (The installation of the air tube will only be required when the dot matrix is used).

Installation of Accessories


Foot Pedal Installation


Power Supply Installation

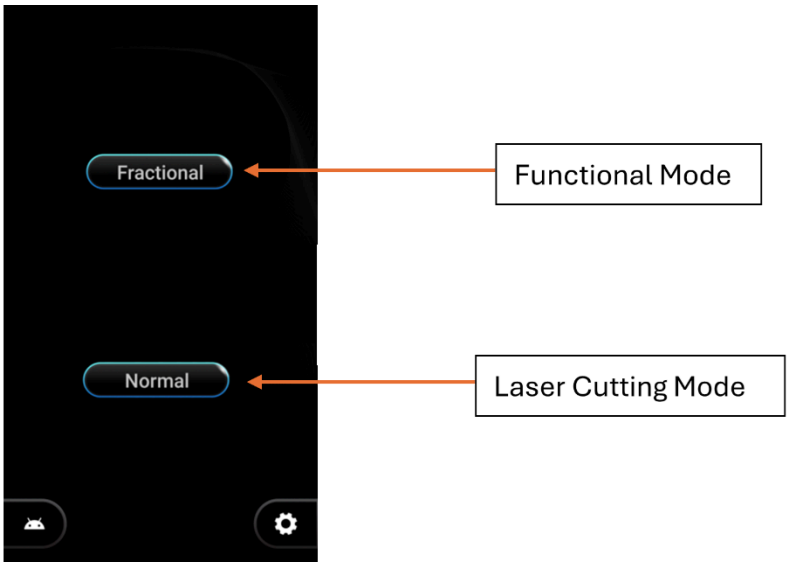
4.6 Startup and Use

After checking the instrument’s safety, press the button switch to start the device.

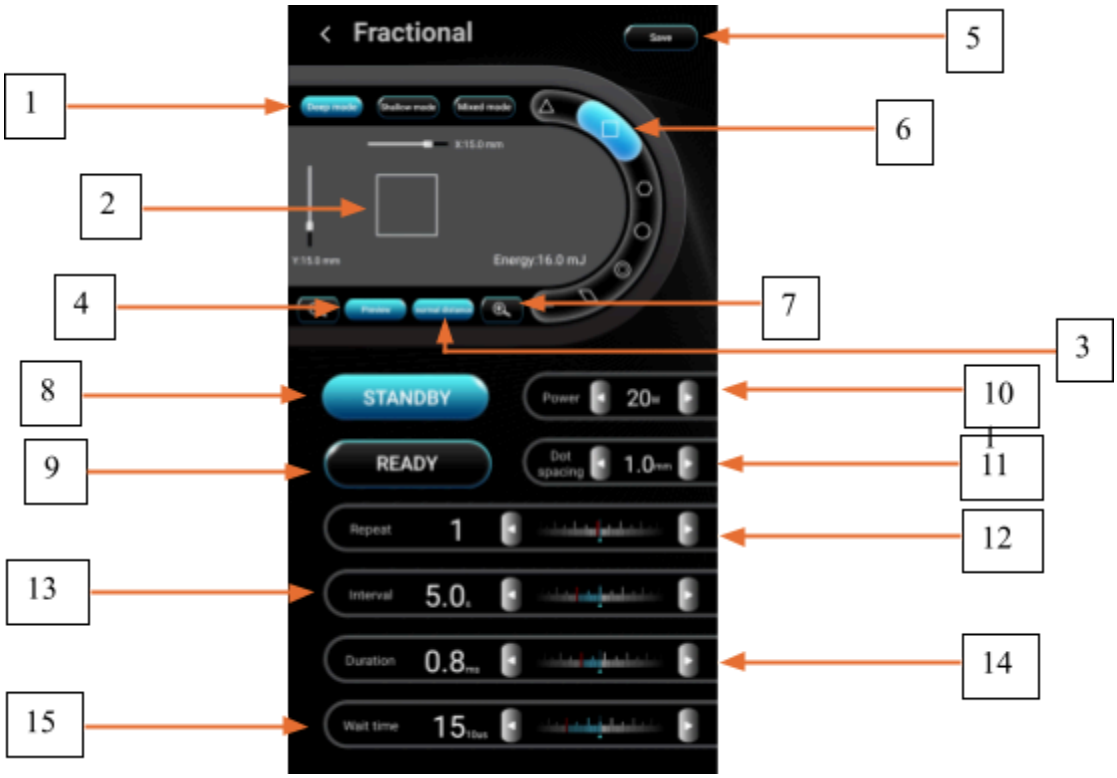
Chapter 5 – Interface Operation Instructions

5.1 Function Selection Interface

Function selection interface: According to the customer's treatment needs, select the corresponding function and enter the corresponding operation treatment interface, as shown in the figure:



5.2 Fractional Mode Operation Instructions



The function keys are described as follows:

1. **Treatment Mode Selection**

According to the treatment plan, you can choose from three modes: deep, shallow, or mixed.

2. **Treatment Graphic Display**

According to the treatment plan, different treatment graphics are selected. The selectable graphics are: triangle, square, hexagon, circle, ring, diamond, and straight line. The length of the square and the circle can be adjusted to become a rectangle and an ellipse.

3. **Dotting Mode Selection**

Depending on the treatment plan, you can choose the normal mode or the random mode.

4. **Preview Button**

Select whether to preview with red aiming, based on your needs. When it is on, a red-light graphic outline will be displayed at the handpiece treatment site. When it is off, no red-light graphic outline will appear at the handpiece treatment site; only a dot will appear.

5. **Save Button**

Interface parameter adjustments can be saved by clicking the Save button.

6. **Graphic Shape Selection**

According to the treatment plan, you can choose from 7 treatment shapes: triangle, square, hexagon, circle, ring, diamond, and straight line.

7. **Graphic Resize Buttons**

Adjust the graph size according to the treatment plan. Click "+" to make the graph larger and "-" to make the graph smaller.

8. **Standby Button**

Click the standby button to exit the working state.

9. **Prepare Button**

Click the Ready button to enter the ready working state.

10. **Power Display and Adjustment**

The treatment power is displayed here. Use the left and right buttons or slide to adjust the power. The adjustment range is 1-Pmax, with a step of 1W. Adjust the power according to the treatment plan.

11. **Dot Pitch Display and Adjustment**

The treatment point spacing is displayed here. It can be adjusted with the left and right buttons or by sliding. The adjustment range is 0.2-2.6mm, with a step of 0.1. Adjust the point spacing according to the treatment plan.

12. **Scan Pattern Times Adjustment**

The number of scan graphs is displayed here. It can be adjusted with the left and right buttons or by sliding. The adjustment range is 0-10 times, with a step of 1. The number of scans can be adjusted according to the treatment plan.

13. **Graphic Scanning Interval Display and Adjustment**

The length of the graphic scanning interval is displayed here. It can be adjusted with the left and right buttons or by sliding. The adjustment range is 0.5-5s, with a step of 0.5s. Adjust the scanning interval according to the treatment plan.

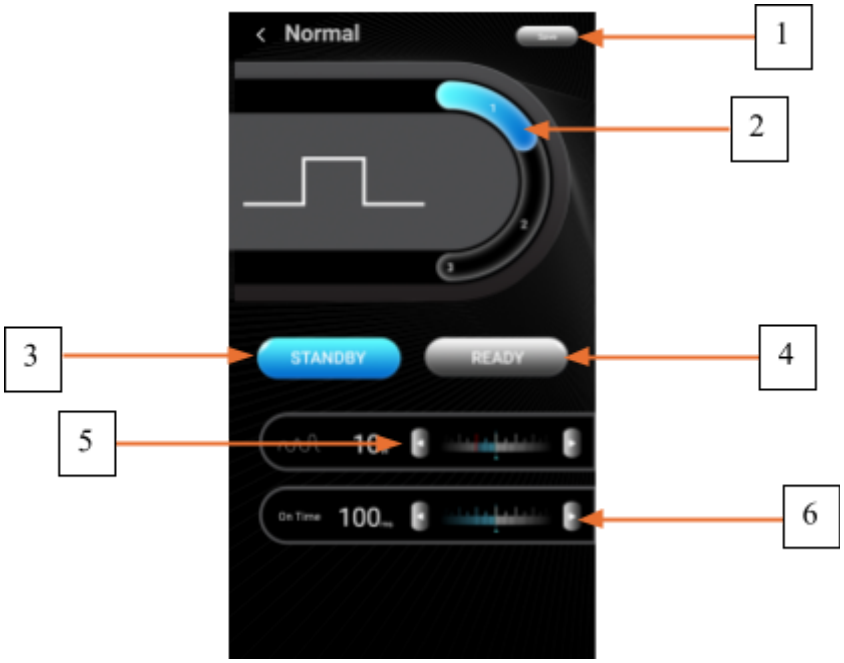
14. Point Light Emission Time Display and Adjustment

The time of light emission for each dot is displayed here. It can be adjusted with the left and right buttons or by sliding. The adjustment range is 0.1-10ms, with a step of 0.1ms. The larger the value, the greater the dot's energy.

15. Adjust The Waiting Time Between Interval Points

The waiting time between interval points is displayed here. It can be adjusted by pressing the left or right button or sliding. The adjustment range is 1-100 (10 μs) with a step size of 10 μs.

5.3 Cutting Mode Operation Instructions



There are three modes in the cutting interface. Different modes correspond to different treatment parameters. Mode 1 is shown in the figure:

The function keys are described as follows:

1. **Save Button**

Interface parameter adjustments can be saved by clicking the Save button.

2. **Mode Switch Key**

Current display mode 1: Single pulse mode. In this mode, pressing the pedal will generate a single output.

3. **Standby Button**

Click the standby button to exit the working state.

4. **Prepare Button**

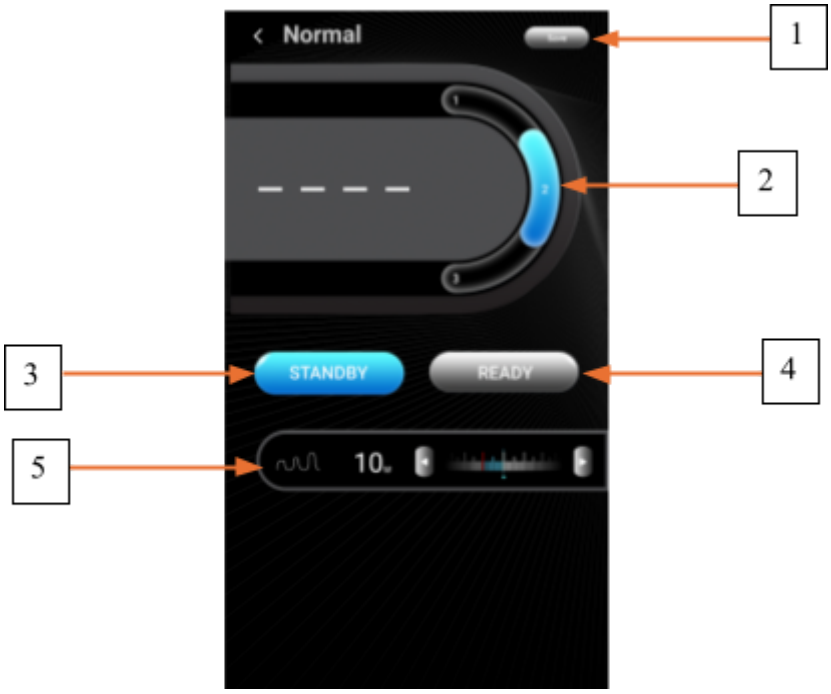
Click the Ready button to enter the ready working state.

5. **Power Display and Adjustment**

The treatment power is displayed here. Use the left and right buttons or slide to adjust the power. The adjustment range is 1-Pmax, with a step of 1w. Adjust the power according to the treatment plan.

6. **Point Light Emission Time Display and Adjustment**

The light time is displayed here. It can be adjusted by pressing the left and right buttons or sliding. The adjustment range is 0.5-1000ms, with a step of 1ms. The larger the value, the greater the energy.



Mode 2, as shown in the figure：

The function keys are described as follows:

1. **Save Button**

Interface parameter adjustments can be saved by clicking the Save button.

2. **Mode Switch Key**

Current display mode 2: Continuous mode. In this mode, the laser emits light continuously when the pedal is pressed.

3. **Standby Button**

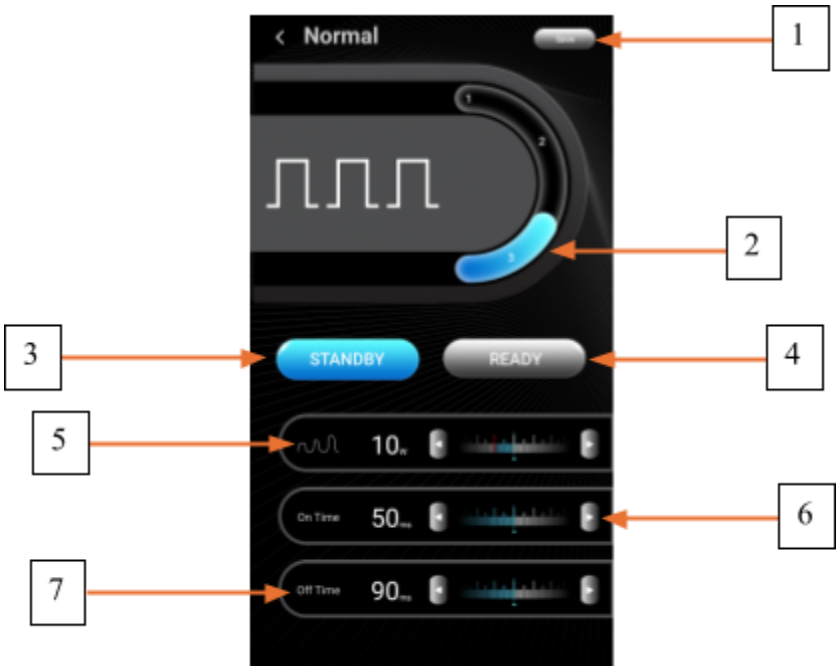
Click the standby button to exit the working state.

4. **Ready**

Click the Ready button to enter the ready working state.

5. **Power Display and Adjustment**

The treatment power is displayed here. Use the left and right buttons or slide to adjust the power. The adjustment range is 1-Pmax, with a step of 1w. Adjust the power according to the treatment plan.



Mode three, as shown in the figure:

The function keys are described as follows:

1. **Save**

Interface parameter adjustments can be saved by clicking the Save button.

2. **Mode Switch**

Current display mode three: multi-pulse mode. In this mode, pressing the pedal continuously generates a series of taps.

3. **Standby**

Click the standby button to exit the working state.

4. **Ready**

Click the Ready button to enter the ready working state.

5. **Power Display And Adjustment**

The treatment power is displayed here. Use the left and right buttons or slide to adjust the power. The adjustment range is 1-Pmax, with a step of 1w. Adjust the power according to the treatment plan.

6. **Point Light Emission Time Display and Adjustment**

This shows the time each dot emits light. It can be adjusted with the left and right buttons or by sliding. The adjustment range is 0.5-1000ms, with a step of 1ms. The larger the value, the greater the energy.

7. **Light Interval Time Display and Adjustment**

The interval between two light outputs is displayed here. It can be adjusted with the left and right buttons or by sliding. The adjustment range is 0.5-1000ms, with a step of 1ms. The larger the value, the longer the interval.

Chapter 6 - Regulatory, Safety & Compliance

6.1 Mandatory Safety Equipment & Environmental Controls

The use of adjunctive safety equipment is mandatory when operating CO_2 laser systems.

These controls are required to protect patients, practitioners, and the clinical environment from risks associated with laser-generated airborne contaminants, thermal exposure, and occupational hazards.

All safety equipment outlined below must be available, functional, and used in accordance with manufacturer instructions and clinic policy.

6.2 Smoke Evacuation Systems (Smoke Shark / Smoky Back / Equivalent)

CO_2 laser treatments generate laser-generated airborne contaminants (LGAC), commonly referred to as surgical plume. This plume may contain:

A. Toxic gases and vapors
B. Ultrafine particulate matter
C. Cellular debris
D. Potentially infectious bioaerosols

Policy Requirements

- A certified smoke evacuation system must be used for all ablative and fractional CO_2 laser procedures
- The evacuation nozzle must be positioned within the manufacturer-recommended distance from the treatment site
- The system must remain active for the entire duration of laser energy delivery

Clinical & Regulatory Rationale

- Reduces inhalation exposure to hazardous airborne particles
- Protects staff from cumulative respiratory risk
- Supports compliance with Occupational Health & Safety (OH&S) standards
- Aligns with Infection Prevention & Control (IPAC) principles
- Meets insurer and medical director risk mitigation requirements

Failure to utilize smoke evacuation during CO_2 laser procedures constitutes a breach of safety protocol and regulatory compliance.

6.3 Cold Air Analgesia Systems (Zimmer Cryo / Equivalent)

Cold air analgesia systems are used as an adjunctive comfort and safety measure during CO_2 laser treatments.

These systems deliver controlled cold air to the treatment area before, during, and after laser exposure.

Clinical Applications

- Enhances patient comfort and tolerance
- Reduces thermal sensation during energy delivery
- Assists in minimizing post-treatment erythema and edema
- Supports safer treatment delivery in sensitive or high-risk areas

Operational Guidelines

- Cold air systems must be used according to manufacturer specifications
- Use does not replace appropriate parameter selection or clinical judgment
- The device is adjunctive and does not alter laser-tissue interaction

Cold air analgesia systems are considered part of the clinic's environmental safety controls and must be maintained in proper working order

Regulatory Note

Smoke evacuation and cold air systems are classified as environmental and occupational safety controls, not treatment modalities. Their use is governed by regulatory, IPAC, and OH&S requirements rather than treatment preference.

Chapter 7 – Simple Maintenance and Care of the Machine

7.1 Common Problems and Failures

The Whole Machine Has No Power

Workaround

A. Check whether the emergency switch is popped up. If it is up, it is open; if it is pressed, it is closed.
B. Check whether the air switch is turned on. The top is on, and the bottom is off.
C. Check whether the fuse at the power input on the back of the machine is damaged.
D. Check whether the power cord is damaged or short-circuited.
E. Check whether there is power output at the power socket.

A System Freeze Occurs

Workaround

A. High-voltage interference: Check whether there are high-power electrical appliances in the surrounding power grid.
B. Software is out of control; replace the controller.

The Energy of the Graphics Is Uneven or Deviates from the Position

Workaround

A. Re-adjust the optical path.
B. The light-exit lens is too dirty. Clean it with an alcohol cotton. Ensure it is dry before use; otherwise, the alcohol may cause the lens to burn or be damaged.

No Infrared Light Indicator

Workaround

A. Check whether the infrared power supply has a 3V DC output voltage.
B. Replace the infrared sight.

No Gas Output from the Blowing Device

Workaround

A. Check whether the air pump is working properly.
B. Check the air pipe for leaks.

7.2 Daily Maintenance and Care

Maintenance

- The machine must not be exposed to direct sunlight.
- After use, cover the bald part of the machine with a cloth bag and cover the entire machine to prevent dust from entering (very important).
- The machine operating head must be handled with care (very important).

Care

- Place the device in a dry, ventilated, dust-free room (very important).
- No non-professionals except the operator are allowed to use this machine.

Chapter 8 – Safety Precautions for INCREDIBLE Fractional Multi-CO_2 Laser™ Operation

8.1 Fractional Laser Safety

The fractional laser system is a high-tech medical device used to safely and reliably remove facial blemishes and excess hair from various parts of the body. It can be used safely by trained and qualified personnel, provided it is properly operated and maintained. Operators and other personnel assisting with operation and maintenance should fully understand the safety information provided in this chapter. The safety of the patient, the operator, and other personnel is of paramount importance. The laser's design incorporates the highest level of consideration for patient and operator safety. The following are some of its safety measures:

1. The instrument's self-test system starts immediately after power-on and will continuously monitor the circuits while the device is running.
2. The laser is transmitted to the patient's skin using a scanner, and it can only be emitted from the scanner's front end.
3. This machine is designed with an independent safety circuit that can cut off power when there is leakage.
4. In case of an emergency, the power supply can be quickly cut off through the red emergency stop switch.
5. The key switch prevents anyone from turning on the device at will.

8.2 Warning

Improper use of any laser device can cause personal injury. Laser operation generates high voltage. Personnel operating high-intensity laser devices must remain vigilant at all times and take necessary protective measures as described in this manual.

Patients: Patient safety primarily depends on well-trained physicians and appropriately equipped operating rooms. Patient literacy is also crucial; they should understand the principles of operation. Patients should receive effective eye protection when undergoing high-intensity laser procedures.

Medical Staff: Operators may be exposed to the laser beam during procedures and should receive appropriate protection from the laser's wavelength. Medical staff should wear professional laser goggles with a 10,600 nm protection rating during procedures to ensure their safety.

Treatment Rooms: High-intensity lasers should be clearly indicated in the operating room.

Major Warnings

To ensure the safe use of this system, please observe safety precautions and carefully read the following warnings:

1. No one except authorized technicians may perform any repairs on the IPL, including any internal repairs to the unit, or adjustments to the power supply, cooling system, optical components, or operating head. Be aware that high voltages are present within this unit, which can be hazardous.
2. Confirm that the rated voltage of this system corresponds to the voltage in your country (220V AC).
3. Only perform maintenance on this unit after turning it off and unplugging the power cord. Performing maintenance while it is powered on can cause personal injury and damage to the equipment.

Warning About Lasers

1. Lasers can damage eyes and cause fires or burns. All necessary protective measures must be taken when using this device.
2. Excessive light exposure in the operating area may cause thermal damage to the skin, leading to hyperplasia, atrophy, or abnormal pigmentation.
3. Even when wearing protective glasses, do not look directly into the laser light emitted from the laser head.
4. Do not point the laser head into the air. When not in use, store the laser head on a hook.

8.3 Electrical and Mechanical Safety

1. Keep all panels and covers closed. Opening covers can be dangerous.
2. Dangerous high voltages are generated within this system. Even after the power cord is disconnected, some components may still retain a stored charge. Therefore, only authorized personnel should be allowed to open the instrument.
3. When maintaining the equipment, do not turn on the power, open covers, or leave the equipment unattended.
4. This system weighs 35 kg. Improper movement can cause personal injury. The unit is well-balanced and movable, but move it carefully and slowly.
5. The unit is grounded via the ground wire in the three-core power cord. Proper grounding is essential for safe operation.

Fire Prevention

1. Objects absorb light energy and their temperature rises. Precautions should be taken to reduce the risk of ignition of flammable materials in or near the operating area.
2. Do not use flammable substances such as alcohol or acetone when performing preoperative skin treatments. If necessary, use soap and water.
3. If alcohol is used to clean the operating head or disinfect any of its components, allow it to dry thoroughly before turning on the machine.

System Safety Device

1. This system is equipped with several safety devices. All personnel in the operating room must be familiar with their location and operation.
2. **Key Switch:** The key switch turns the system power on and off. This unit can only be powered on with the key provided by our company.
3. **Power Indicator:** Red. Illuminates upon power-up, indicating that the system is receiving power.
4. **Emergency Switch:** This red, mushroom-shaped button provides an emergency shutdown of the entire system. When pressed, power is immediately cut off regardless of the system's current state. Turning the emergency switch clockwise releases it; otherwise, the unit remains in the off state.

Equipment Self-Test

After powering on, the system circuit immediately enters self-test mode. In this state, the operator should allow the instrument to run for 1-3 minutes before proceeding to the next step.

Device Level

- **Electric Shock Protection:** Class 1, BF level.
- **Corrosive Liquid Resistance:** General.
- Do not use this device in the presence of a mixture of flammable anesthetics and airborne nitric oxide.
- **Operation Mode:** Continuous.

Chapter 9 - Clinical Training Module & SOP Framework

9.1 Purpose of Training

This training module establishes standardized clinical protocols for the safe, effective, and consistent use of the INCREDIBLE Fractional Multi-CO_2 Laser™. It is designed to support: - Patient safety and comfort - Predictable, reproducible outcomes - Regulatory and insurer compliance - Practitioner competency and accountability

This document is intended for use in Medspas, medical aesthetics clinics, and physician-led practices.

9.2 Regulatory & Compliance Foundation

All treatments performed with the INCREDIBLE Fractional Multi-CO_2 Laser™ must comply with: - Applicable scope of practice regulations - PIPEDA (Canada) and PHIPA (Ontario, where applicable) - Informed consent and documentation standards - Laser safety regulations and manufacturer guidelines

Clinical photographs constitute Personal Health Information (PHI) and must be handled accordingly.

Module 1

Chapter 10 - Skin Anatomy & Physiology

- Overview of skin as the body's largest organ
- Layers: Epidermis, Dermis, Hypodermis
- Specialized structures (hair follicles, glands, nerves, blood vessels)
- Skin functions: barrier, thermoregulation, sensation, immune defence

Clinical relevance for laser/IPL treatments:

- **Epidermis:** Protection, melanin considerations
- **Dermis:** Target zone, chromophores, treatment outcomes

10.1 The Skin

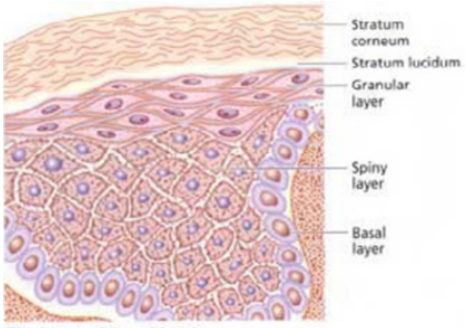
Skin Anatomy Overview

The Skin: The body's largest organ, forming a protective barrier against bacteria, environmental exposure, and physical injury. It helps maintain body temperature and contains sensory nerve endings for heat, cold, touch, pressure, and pain. Average thickness: ~2 mm (0.07 inches).

10.2 Layers of the Skin

Epidermis

- Outermost layer: Tough protective barrier
- Contains melanin for skin colour and UV protection
- Constantly regenerates, key to treatment safety.



The layers of the epidermis

Dermis

Beneath the epidermis, it contains blood vessels, nerve endings, sweat & sebaceous glands, and hair follicles.

Provides structural support, elasticity, nourishment, sensory input, and thermoregulation.

Thickness: 0.3 mm (eyelids) to 3.0 mm (back).

Connective Tissue Elements

- **Collagen:** Strength & structural integrity
- **Elastic Tissue:** Stretch & recoil
- **Reticular Fibres:** Support tissue structure

Dermal Layers

Papillary Layer: Superficial, fine collagen network; supports epidermis, contains capillaries & nerve endings.

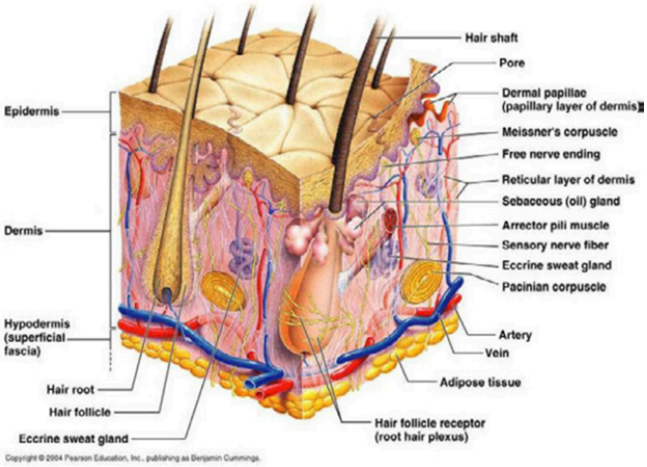
Reticular Layer: Deeper, dense collagen fibres; provide tensile strength & resilience.

Specialized Dermal Cells & Structures

Hair follicles (with erector pili muscles)

Sebaceous & apocrine glands (oil & scent)

Eccrine sweat glands (temperature regulation) Blood vessels & nerves



Specialized Nerve Endings: Meissner's corpuscles (light touch), Vater-Pacini corpuscles (pressure).

Hypodermis (Subcutaneous Tissue)

Fat & connective tissue with larger blood vessels & nerves.

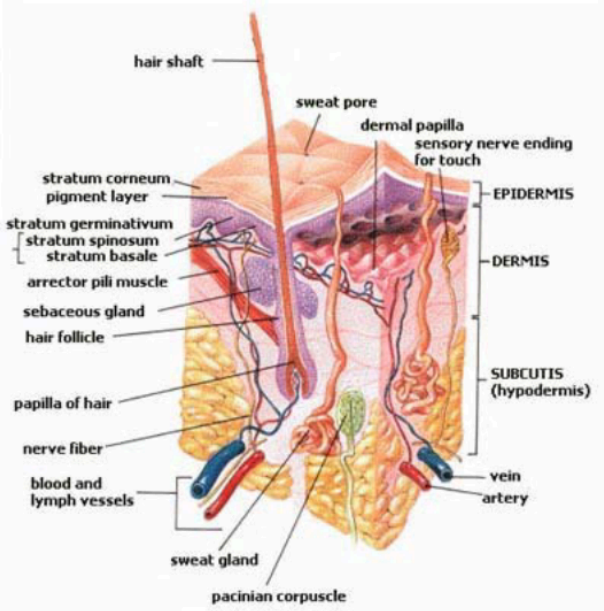
Provides insulation, cushioning, and temperature regulation.

Thickness varies by body area and individual.

Clinical Relevance for Laser Treatments

Epidermis: Safety concerns; melanin affects absorption & risk; requires cooling & appropriate wavelength.

Dermis: Primary treatment target; contains hair follicles, blood supply, chromophores.



Hypodermis: Insulation & cushioning; influences treatment depth & parameters.

Student Quick Reference

Largest Organ: ~2 mm thick

Three Layers: Epidermis, Dermis, Hypodermis

- Laser targets the dermis while protecting the epidermis.
- Proper skin assessment is critical for safety and efficacy.

Training Reminder: Understanding skin anatomy is essential for safe laser operation, accurate parameter selection, and managing client expectations. Incorrect assessment increases the risk of burns, pigmentation changes, and suboptimal outcomes.

Chapter 11 - The Fitzpatrick Skin-Type Chart

While each new client must have a complete Fitzpatrick assessment, this is one of the tools in the assessment process. You must take into consideration the client's ethnic background.

You can use this skin-type chart for self-assessment by adding up the score for each of the questions you've answered. At the end, there is a scale providing a range for each of the six skin-type categories. Following the scale is an explanation of each skin type. You can quickly and easily determine your skin type.

Score	0	1	2	3	4
What is the colour of your eyes?	Light blue, Grey, Green	Blue, Grey, Green	Blue, Hazel, Lt – Med Brown	Dark Brown	Brownish Black
What is the natural colour of your hair before puberty?	Sandy Red	Blond	Chestnut/Dark Blond	Dark Brown	Black
What is the colour of your skin (non-exposed areas)?	Reddish	Very Pale	Pale with Beige tint	Light Brown	Dark Brown
Do you have freckles in unexposed areas?	Many	Several	Few	Incidental	None

Genetic Disposition

Total Score for Genetic Disposition: _____

11.1 Reaction to Sun Exposure

Score	0	1	2	3	4
What happens when you stay in the sun too long?	Painful redness, blistering, peeling	Blistering followed by peeling	Burns sometimes, followed by peeling	Rare burns	Never had burns
To What degree do you turn brown?	Hardly or not at all	Light color tan	Reasonable tan	Tan very easily	Turn dark brown quickly
Do you turn brown within several hours after sun exposure?	Never	Seldom	Sometimes	Often	Always
How does your face react to the sun?	Very sensitive	Sensitive	Normal	Very resistant	Never had a problem

Total Score for Reaction to Sun Exposure: _____

11.2 Tanning Habits

Score	0	1	2	3	4
When did you last expose your body to the sun between 10 AM – 5 PM (or artificial sunlamp/tanning cream)?	More than 3 months ago	2-3 months ago,	1-2 months ago,	Less than a month ago	Less than 2 weeks ago
Throughout the year, how often to you expose yourself to the sun between 10 AM – 5 PM – i.e. summer, holidays etc..	Never	Hardly ever	Sometimes	Often	Always

Total Score for Tanning Habits: _____

Add up the total scores for each of the three sections for your Skin Type Score.

Chapter 12 - Skin Type Score - Fitzpatrick Skin Type

0-7	I
8-16	II
17-25	III
25-30	IV
Over 30	V -VI

TYPE 1: Highly sensitive, always burns, never tans.

- Example: Red hair with freckles

TYPE 2: Very sun sensitive, burns easily, tans minimally.

- Example: Fair-skinned, fair-haired Caucasians

TYPE 3: Sun-sensitive skin, sometimes burns, slowly tans to light brown.

- Example: Darker Caucasians.

TYPE 4: Minimally sun sensitive, burns minimally, always tans to moderate brown.

- Example: Mediterranean-type Caucasians, some Hispanics.

TYPE 5: Sun-insensitive skin, rarely burns, tans well.

- Example: Some Hispanics, some Blacks

TYPE 6: Sun insensitive, never burns, deeply pigmented.

- Example: Darker Blacks.

12.1 Fitzpatrick Skin Type Characteristics

Fitzpatrick I

- **Skin:** Very Fair, Usually Warm Undertones
- **Eye Colour:** Light blue, Light green, Light gray
- **Hair Colour:** Red, Strawberry blonde, very light blonde

- **Skin Characteristics:** Extremely fair/porcelain, always burns, often blisters, peels, seldom/never tans, freckles common, very high UV sensitivity, very low melanin production
- **Common Ethnic Backgrounds:** Northern European, Celtic (Irish, Scottish), Scandinavian

Fitzpatrick II

- **Skin:** Very Fair/Pink, Usually Warm Undertones
- **Eye Colour:** Blue, Green, Gray, Light Hazel, Light brown
- **Hair Colour:** Red, Strawberry blonde, very light blonde, Light blonde (Lt–Med), Light brown, (Rare) Dark brown
- **Skin Characteristics:** Always burns, may blister, peels, tans minimally; tan fades 1–2 weeks; freckles; moderate UV sensitivity; low melanin production
- **Common Ethnic Backgrounds:** Northern & Western European, Eastern European

Fitzpatrick III

- **Skin:** Fair to Medium, Warm or Cool Undertones
- **Eye Colour:** Blue, Green, Medium-Dark Hazel, almost any eye colour except black
- **Hair Colour:** Medium-Dark blonde, Chestnut, Light-Dark brown, Black brown
- **Skin Characteristics:** Light beige to olive undertones; sometimes burns, sometimes peels; first sun exposure then gradual tan; few freckles; holds tan 3–4 weeks; more even pigmentation
- **Common Ethnic Backgrounds:** European

Fitzpatrick IV

- **Skin:** Light-Medium/Olive, Usually Cool Undertones (rarely warm)
- **Eye Colour:** Any, usually Medium-Dark Brown, Black-brown, Dark blue
- **Hair Colour:** Medium-Dark Blonde (may be white, blonde until puberty), Auburn, Black
- **Skin Characteristics:** Light-Medium olive/light brown; rarely burns, rarely peels; tans easily and deeply; higher melanin; can hold residual tan for months; seldom freckles; increased risk of PIH; risk for Melasma
- **Common Ethnic Backgrounds:** Caucasian mix with dark ethnicity, Turkish, Mediterranean, Middle Eastern, Light Hispanic/Latin, Light East Asian, Some African American

Fitzpatrick V

- **Skin:** Medium-Dark Brown, Usually Cool Undertone (rarely warm)
- **Eye Color:** Any, usually Medium-Dark brown, Black brown
- **Hair Color:** Rarely light brown; usually Dark brown, Black

- **Skin Characteristics:** Naturally brown; very rarely burns; tans very easily; high melanin; high risk for PIH and keloid scarring; high risk for Melasma
- **Common Ethnic Backgrounds:** Some Middle Eastern, Central Asian, South & Southeast Asian, Filipino, Thai, Indonesian, East Indian (North-Central), Pakistani, African American / Afro-Caribbean

Fitzpatrick VI

- **Skin:** Deeply Pigmented, Usually Cool Undertones (rarely warm)
- **Eye Color:** Rare, can be any
- **Hair Color:** Rarely light, can include dark ginger; Black
- **Skin Characteristics:** Deep brown to blue-black; never burns; very high melanin; strong natural UV protection; highest risk for PIH and keloids; high risk for Melasma
- **Common Ethnic Backgrounds:** Sub-Saharan African, Afro-Caribbean, South Indian, Sri Lankan

Module 2

Chapter 13 - Laser Physics

13.1 Foundational Theory for Co_2 Laser Applications

Purpose

This module provides practitioners with a foundational understanding of laser physics as it applies to clinical CO_2 laser treatments, including ablative and fractional resurfacing.

A solid grasp of laser physics is essential for:

- Safe parameter selection
- Predictable treatment outcomes
- Effective complication prevention
- Confident patient education

Laser physics is not abstract theory—it directly governs tissue response, safety margins, and clinical success.

13.2 Definition Of Laser

LASER is an acronym for:

Light
Amplification by
Stimulated
Emission of
Radiation

A laser produces a focused, high-energy beam of light with unique physical properties that differentiate it from ordinary light sources.

13.3 Fundamental Properties Of Laser Light

Laser light differs from conventional light in three critical ways:

1. Monochromaticity

- Laser light consists of a single, specific wavelength.
- Enables precise targeting of tissue chromophores.
- CO_2 lasers emit at 10,600 nanometers.

Clinical Relevance

A single wavelength allows predictable absorption and controlled tissue interaction.

2. Coherence

- Photons travel in phase and alignment.
- Energy delivery is controlled and concentrated.
- Produces consistent tissue effects.

Clinical Felevance

Coherence enables uniform ablation, coagulation, and fractional column formation.

3. Collimation

- Laser beams travel in a parallel direction with minimal divergence
- Allows precise focusing with minimal energy loss.

Clinical Relevance

Critical for accuracy in ablative, surgical, and fractional CO_2 treatments.

13.4 Laser–Tissue Interaction

When laser energy contacts tissue, one or more of the following interactions occur:

1. Absorption (Primary Mechanism)

- Tissue chromophores absorb laser energy.
- Absorbed energy converts to heat.
- Desired mechanism for clinical treatment

Primary Chromophore for CO_2 Lasers

Water

Because water is abundant in skin and mucosal tissue, CO_2 energy is highly absorbed, allowing:

- Precise ablation
- Controlled thermal injury.
- Predictable penetration depth

Clinical Relevance

High water absorption results in shallow penetration with strong surface effect, enabling exact tissue removal with minimal collateral damage when parameters are properly selected.

2. Reflection

- Energy bounces off the tissue surface.
- Does not contribute to treatment.
- Poses a safety risk.

Clinical Implications

- Mandatory eye protection for all persons in the treatment room
- Use of non-reflective instruments
- Proper beam alignment

3. Scattering

- Energy is deflected within tissue.
- Reduces precision.
- Can increase unintended thermal spread.

Clinical Implications:

- Excessive energy or improper pulse duration increases scatter.
- Controlled pulse duration and proper spacing reduce thermal diffusion.

4. Transmission

- Energy passes through tissue without interaction.
- Minimal relevance for CO_2 lasers due to high water absorption

Clinical Relevance

CO_2 lasers are not designed for deep tissue transmission, reinforcing their role as ablative and fractional resurfacing devices.

13.5 Thermal Effects Of Laser–Tissue Interaction

Tissue response is determined by the temperature achieved:

Temperature Range	Tissue Effect
40–45°C	Hyperthermia (cell stress)
60–70°C	Protein denaturation, collagen contraction
70–100°C	Coagulation and hemostasis
>100°C	Tissue vaporization (ablation)

Clinical Significance

- Fractional CO_2 treatments balance ablation and coagulation
- Excessive heat increases the risk of burns, scarring, delayed healing, and pigment alteration.

13.6 Selective Photothermolysis (Clinical Context)

Although CO_2 lasers primarily target water, treatment success still follows the principle of Selective Photothermolysis:

- Wavelength is preferentially absorbed by the target chromophore.
- Pulse duration aligns with tissue thermal relaxation time.
- Surrounding tissue is preserved to promote healing.

This principle is especially critical in:

- Fractional resurfacing
- Vaginal mucosal treatments
- Precision lesion removal

13.7 Co_2 Laser–Specific Physics (10,600 nm)

- Human tissue is 70–80% water.
- CO_2 wavelength is highly absorbed by intracellular and extracellular water.

Results in:

- Rapid heating
- Tissue vaporization
- Controlled ablation

13.8 Ablation vs. Coagulation

Effect	Description	Clinical Use
Ablation	Tissue Vaporization	Resurfacing, Lesion Removal
Coagulatiom	Protein Denaturation	Hemostasis, Collagen Tightening

Fractional CO_2 creates both effects simultaneously within controlled microthermal zones.

13.9 Fractional Laser Physics

Microthermal Treatment Zones (MTZs)

- Energy is delivered in microscopic columns.
- Untreated tissue remains between columns.
- Promotes rapid healing and reduced downtime.

Thermal Relaxation Time (TRT)

- Time required for tissue to dissipate 50% of absorbed heat.
- Proper pulse duration prevents collateral damage.
- Critical for safe parameter selection

13.10 Pulse Structure & Energy Control

Key Laser Parameters

- Power (Watts): Rate of energy delivery
- Pulse Duration (ms): Length of laser emission.
- Pulse Interval: Time between pulses.
- Density: Percentage of tissue treated
- Depth: Penetration level

Each parameter directly affects:

- Tissue response
- Healing time
- Risk profile

13.11 Spacing Between Fractional Co_2 Treatments

Adequate spacing allows complete healing and collagen remodelling while reducing cumulative thermal injury.

- Minimum interval: 6–8 weeks
- Deeper or aggressive treatments: 8–12 weeks

Intervals vary based on:

- Energy and depth
- Treatment area
- Skin type and healing response
- Prior resurfacing history

13.12 When Is “Too Many” Treatments?

- Most patients require only 1–3 treatments per year.

Additional treatments only if:

- Full healing has occurred.
- Skin integrity is restored.
- No chronic inflammation or scarring

Excessive frequency increases the risk of fibrosis, pigmentary changes, and delayed healing.

13.13 Thermal Effects & Safety Considerations

Improper parameter selection may result in:

- Excessive thermal diffusion
- Burns or delayed healing.
- Scarring or pigment alteration

Risk increases with:

- Higher Fitzpatrick skin types
- Excessive density or overlap
- Inadequate cooling
- Poor post-care compliance

13.14 Clinical Relevance to Practice

Understanding laser physics enables practitioners to:

- Select safe starting parameters.
- Adjust treatments by skin type and indication.
- Anticipate tissue response.
- Prevent complications.
- Educate patients confidently.

Key Training Reminder

Laser physics directly governs clinical safety and outcomes.

Failure to understand energy–tissue interactions significantly increases the risk of adverse events.

13.15 Fractional Resurfacing — Clinical Overview

Fractional resurfacing delivers laser energy in a fractionated pattern, creating MTZs while preserving surrounding tissue.

Indications

- Fine lines and wrinkles
- Mild to moderate photoaging
- Uneven texture and tone
- Enlarged pores.
- Early acne scarring

Mechanism of Action

- Fractional thermal columns penetrate the epidermis and superficial dermis.
- Controlled injury stimulates fibroblasts and collagen remodelling.
- Intact tissue accelerates epithelial repair.

Contraindications

- Active infection or inflammation
- Open wounds or compromised barrier
- Pregnancy (relative)
- Recent isotretinoin use (6–12 months)
- History of keloid scarring (relative)

Expected Patient Response

- Transient erythema and edema
- Mild exfoliation or dryness
- Minimal downtime (typically 1–3 days)

Final Training Pearl

Technology does not create safety—understanding does.

Laser physics knowledge is the foundation of every safe, effective CO_2 treatment.

Module 3

Chapter 14 - Incredible Fractional Multi-CO_2 Laser™ – Resurfacing

Clinical Overview

Fractional CO_2 resurfacing uses a 10,600 nm wavelength to deliver ablative microcolumns with precise thermal coagulation. This modality allows deeper dermal penetration, promoting neocollagenesis, tissue remodelling, and skin tightening. Compared to non-ablative lasers, fractional CO_2 provides more significant improvement in wrinkles, scars, and texture, while minimizing downtime compared to fully ablative systems.

Indications

Fractional CO_2 resurfacing is indicated for:

- Moderate to severe wrinkles
- Atrophic acne scars
- Surgical or traumatic scars
- Skin laxity
- Advanced photoaging and pigment irregularities
- Textural improvement for uneven skin tone

14.1 Mechanism of Action

The Incredible Fractional Multi-CO_2 Laser™ works via:

- Ablation of damaged epidermal tissue, allowing new skin regeneration
- Thermal coagulation within the dermis to stimulate collagen and elastin production.
- Neocollagenesis and tissue tightening over 3–6 months following treatment.

14.2 Laser Technology & Device Overview

- **Fractional vs. Fully Ablative:** Delivers microcolumns, leaving surrounding tissue intact for faster healing.
- **Spot Size & Density:** Adjustable to match skin concern and patient tolerance.
- **Pulse Width & Energy Settings:** Tailored for epidermal vs. dermal targeting.
- **Safety Features:** Epidermal cooling, automated energy modulation, integrated skin sensors
- **Handpiece Options:** Scan patterns for scars, wrinkles, or large areas

14.3 Patient Selection & Consultation

- Fitzpatrick skin typing (I–VI) to assess risk of hyperpigmentation.
- **Medical History:** Skin disorders, medications (e.g., isotretinoin), autoimmune conditions
- **Psychological Readiness:** Realistic expectations and adherence to post-care

Contraindications

- Active infection in the treatment area
- Pregnancy or lactation
- History of keloids or poor wound healing
- Recent isotretinoin use (<6–12 months)
- Uncontrolled systemic illness

14.4 Pre-Treatment Requirements

- Detailed medical history and informed consent
- Pre-treatment photography for documentation
- Topical anesthetic as indicated (30–60 minutes dwell time)
- Avoid retinoids, chemical peels, or sun exposure 1–2 weeks prior.
- Discuss session expectations, downtime, and outcomes.

14.5 Treatment Planning & Protocols

- **Number of Sessions:** Typically, 1–3 for wrinkles, 3–6 for acne scars, spaced 4–6 weeks apart.
- **Energy and Density:** Tailored per indication:
    - **Fine Lines:** Lower energy, higher density
    - **Deep Wrinkles/Scars:** Higher energy, lower density or multi-pass
- **Single vs. Multi-Pass:** Multi-pass may be used for thicker scars or deeper wrinkles.
- **Combination Therapy:** May be combined with PRP, microneedling, or topical growth factors for enhanced results.

14.6 Technique & Application

1. Cleansing and skin preparation
2. Topical or local anesthetic application
3. Laser calibration and test spot on an inconspicuous area
4. Sequential passes to ensure uniform coverage.
5. Avoid overlapping to minimize the risk of scarring.
6. Post-laser cooling and protective ointment application
7. Patient monitoring during and immediately after the procedure

14.7 Post-Treatment Expectations

- **Days 1–3:** Erythema, edema, mild discomfort
- **Days 3–10:** Micro-crusting, flaking, and exfoliation
- **Weeks 2–4:** Skin may appear pink or sensitive.
- **Months 1–6:** Gradual improvement in texture, tone, elasticity, and scar reduction
- Multiple Sessions may be needed for the best results.

14.8 Post-Treatment Care

- Gentle cleansing and non-irritating moisturizers
- Broad-spectrum sunscreen SPF 30+, strict sun avoidance
- Avoid picking or scratching crusted areas.
- Use healing ointments or recommended serums.
- Follow-up visits to check recovery and outcomes.
- Avoid retinoids, chemical peels, or harsh scrubs until fully healed.

14.9 Complications & Risk Management

- Post-inflammatory hyperpigmentation (PIH), especially in darker skin types
- Prolonged erythema or edema
- Infection if post-care is ignored.
- Scarring with aggressive parameters or overlapping passes
- Eyelid or mucosal protection is mandatory for periorbital or perioral areas.

14.10 Troubleshooting

- **Hyperpigmentation:** Topical lightening agents, strict sun avoidance
- **Persistent Erythema:** Cold compresses, barrier creams, and avoidance of heat
- **Crusting/Infection:** Maintain hygiene, use prescribed topical antibiotics if needed.
- **Poor Healing:** Evaluate for underlying medical issues or aggressive treatment.

Outcome Assessment & Follow-Up

- Photography for pre- and post-treatment comparison
- Objective grading: Wrinkle score, scar depth, texture scale
- Patient satisfaction questionnaires
- Evaluate the need for more sessions based on the response.
- Document any complications or interventions.

Case Studies / Clinical Examples

- **Example 1:** Moderate acne scars – 4 sessions, 4-week interval, visible improvement at 3 months
- **Example 2:** Periorbital wrinkles – 2 sessions, single-pass, minimal downtime, noticeable skin tightening at 6 weeks
- **Example 3:** Surgical scar remodelling – 3 sessions, multi-pass, combined with PRP for accelerated healing

Key Clinical Tips

- Test spot high-risk patients (Fitzpatrick IV–VI) to reduce PIH.
- Layered, gradual treatment sessions reduce downtime while maximizing results.
- Combine therapies when indicated for scar remodelling or skin laxity.
- Maintain meticulous pre- and post-treatment documentation.

Summary & Key Takeaways

- Fractional CO_2 laser resurfacing is highly effective for skin rejuvenation, scar treatment, and texture improvement.
- Success depends on proper patient selection, device parameters, and adherence to post-care.
- Downtime is variable but predictable, and complications can be minimized with technique and precautions.
- Multiple sessions and long-term follow-up are often necessary for the best outcomes.

Module 4

Chapter 15 - Incredible Fractional Multi-CO_2 Laser™ – Ablative Co_2 Lesion Removal

Clinical Overview

Ablative CO_2 lesion removal allows precise vaporization of unwanted tissue with minimal bleeding and excellent cosmetic outcomes. The laser delivers a focused, high-energy beam that removes epidermal or superficial dermal lesions safely while preserving surrounding tissue.

Indications

- Skin tags (acrochordons)
- Benign epidermal lesions (e.g., seborrheic keratoses, nevi with medical clearance)
- Viral warts (within scope of practice and clinic protocols)
- Small superficial benign growths

Clinical Protocol

1. Lesion assessment and documentation.
2. Medical clearance for suspicious or atypical lesions
3. Local anesthesia as indicated (topical or injectable)
4. Conservative, layer-by-layer ablation
5. Hemostasis and protective dressing

Safety Measures

- Mandatory eye protection for patient and staff
- Smoke plume evacuation to prevent viral particle exposure.
- Avoid over-ablation to minimize scarring.
- Use sterile instruments and proper hygiene.

Healing Timeline

- Crusting and scabbing expected for 5–10 days.
- Complete epithelialization within 7–14 days
- Minimal scarring with proper conservative technique

15.1 Standard Operating Principles (All Modules)

Pre-Treatment SOP

- Verify patient identity.
- Review medical history and contraindications.
- Obtain informed consent.

- Capture clinical photographs.
- Prepare treatment area and implement laser safety measures.

Intra-Treatment SOP

- Adhere to prescribed laser parameters.
- Monitor patient comfort continuously.
- Maintain sterile technique where needed.

Post-Treatment SOP

- Provide written aftercare instructions.
- Document treatment settings and patient response.
- Schedule follow-up visits as indicated.

15.2 Training Outcomes & Competency

Upon completion, practitioners must show:

- Appropriate patient selection
- Safe and effective parameter selection
- Competent procedural execution
- Patient comfort management
- Complete and correct treatment documentation

Module 5

Chapter 16 - Detailed Standard Operating Procedures

16.1 Skin Preparation & Topical Anesthesia

Purpose

Standardized protocols for safe application and removal of topical anesthetics prior to CO_2 laser treatments are aligned with Canadian regulatory standards.

Approved Anesthetics

- Compounded BLT (Benzocaine, Lidocaine, Tetracaine) in a non-petroleum, water-miscible cream base

Application

- Cleanse skin thoroughly.
- Apply a thin-to-moderate layer.
- Occlude: 30–45 minutes for face, up to 60 minutes for body

Removal

- Use dry gauze.
- Rinse with sterile saline or water.
- Optional gentle cleanser
- Allow skin to dry completely.

Final Degreasing

- Optional 70% isopropyl alcohol wipe after anesthetic removal
- Light application only

Prohibited

- Acetone or petroleum-based anesthetics
- Intravaginal anesthetics or alcohol-based solutions
- Use water-based lubricants only.

Documentation

- Record consent, medical directive, and anesthetic details.

16.2 INCREDIBLE Factional Multi-CO_2 Laser™ Lesion Chart

Key Principles Before Removing Lesions

Only benign (non-cancerous) lesions should be treated with a CO_2 fractional laser.

CO_2 laser removal is commonly used for benign skin growths, but only after a clinical assessment confirms they're harmless.

Avoid lasers on anything potentially malignant.

If a lesion shows warning signs (changes in colour, size, bleeding, irregular border, or firm growth), it must be seen by a dermatologist first — ideally with dermatoscopy or biopsy before treatment.

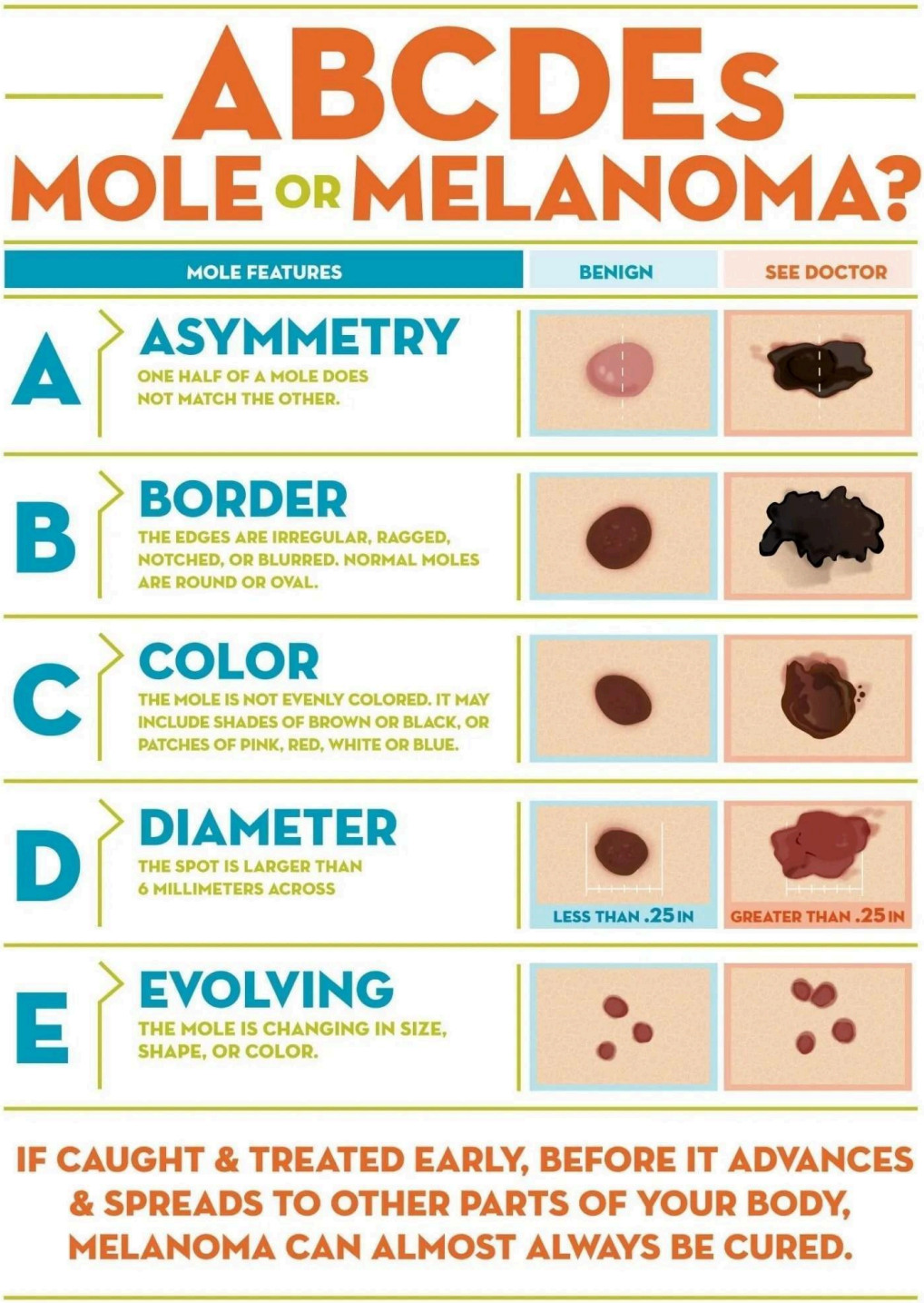
16.3 Common Lesions Often Treatable With CO_2 Fractional Laser

Typical Benign Lesions Suitable For Co_2 Laser Removal

- Small benign moles / pigmented lesions
- Skin tags (acrochordons)
- Seborrheic keratosis (“age warts”)
- Warts
- Dermatosis Papulosa Nigra (DPN)
- Milia (tiny keratin cysts)
- Cherry angiomas (red vascular spots)
- Xanthelasma (cholesterol deposits around eyelids)

All of these are surface-or superficial-level benign lesions and are commonly removed with a fractional CO_2 laser after medical clearance.

16.4 Lesions That Require *Derm Evaluation* Before Any Removal

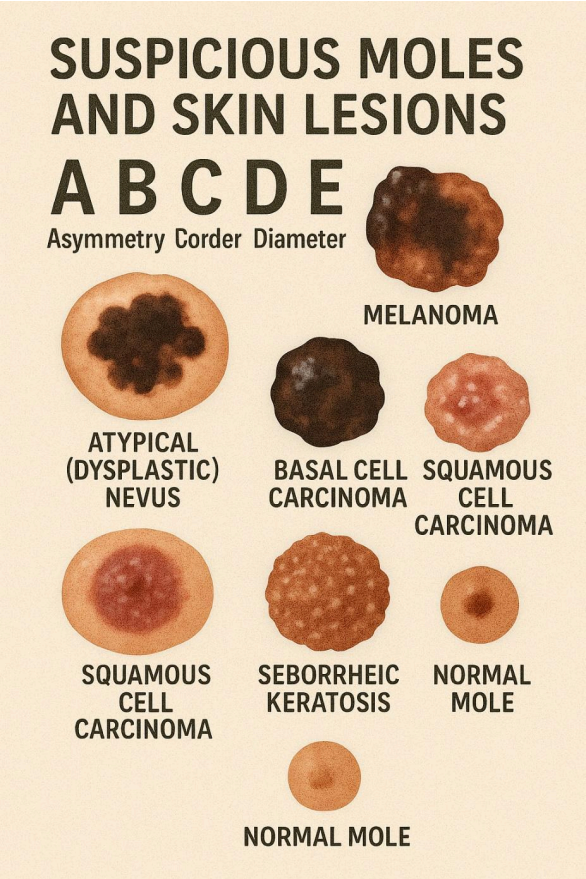


Red Flags – DO NOT Treat with Laser.

These features suggest possible malignancy or deeper pathology and require a dermatologist's assessment first:

Abcde Warning Signs of Melanoma

- Asymmetry
- Border irregularity
- Color variation
- Diameter >6 mm
- Evolving over time



Additionally:

- Rapidly growing lesions
- Painful or bleeding growths
- Firm nodules under the skin
- Lesions with irregular or fuzzy borders

These could be melanoma or other skin cancers — laser removal without prior evaluation can miss malignancy and delay diagnosis.

16.5 Quick Decision Guide

Can Be Considered For CO_2 Laser Removal (After Physician Clearance):

- Small, flat or slightly raised benign moles.
- Skin tags
- Seborrheic keratoses
- Warts
- Milia or small keratin cysts

Must Be Referred First to A Dermatologist:

- Lesions with suspicious characteristics (ABCDE)
- Larger, deep, rapidly changing lesions
- Any lesion with pain, itch, bleed
- Known family history of skin cancer.

Clinical Notes

CO_2 lasers are often used by dermatologists for **benign growth removal and resurfacing** when indicated.

Before treating any lesion with a laser, it's standard practice to **confirm with a qualified clinician** that it's benign (often via dermatoscopy or biopsy).

16.6 Practical Labels

(For a Chart, Poster, or Training Sheet)

Lesion Type	Example	Laser Suitable?	Requires Derm Evaluation?
Skin Tags	Soft, pedunculated	✔ Yes	Optional
Small Benign Moles	Uniform colour, <3–4 mm	✔ Yes (with clearance)	Optional
Seborrheic Keratosis	"Waxy", stuck-on look	✔ Yes	Optional
Warts	Rough, viral	✔Yes	Optional
Milia	Tiny white cyst	✔ Yes	Optional
Cherry Angioma	Red vascular spot	✔ Yes	Optional
Suspicious Mole	Asymmetrical, irregular	❌ No	❗ Yes
Rapidly Growing Lesion	Enlarging	❌ No	❗ Yes
Bleeding/Itching Lesion	Symptomatic	❌ No	❗ Yes

(Source: Clinical CO_2 laser indications and safety guidelines)

Final Takeaway

Fractional CO_2 lasers are a powerful tool for removing benign, superficial lesions — but safety comes first.

Any sign of malignancy or deep lesion → dermatologist evaluation before any laser is essential.

Chapter 17 - General Fractional CO2 Laser Safety (All Treatments)

17.1 Pre-Procedure Checklist

- Verify laser certification and device calibration.
- Confirm laser signage in the treatment room.
- Ensure protective eyewear for the patient and staff.
- Activate smoke plume evacuation.
- Confirm emergency stop function.

Universal Contraindications

- Pregnancy (unless physician-directed)
- Active infection at the treatment site
- Photosensitivity disorders
- Recent isotretinoin use (6–12 months)
- History of poor wound healing or keloids (relative)

17.2 Fractional Resurfacing Procedure

Step-by-Step Protocol

1. Cleanse the area with an approved antiseptic (non-alcohol for sensitive regions)
2. Apply and remove a topical anesthetic, if indicated.
3. Select conservative initial parameters based on skin type and indication.
4. Deliver laser in uniform, non-overlapping passes.
5. Monitor skin response continuously.

Post-Treatment Care

- Cool skin as needed.
- Apply barrier repair products.
- Provide written aftercare instructions.

17.3 Fractional CO_2 Resurfacing Procedure

Step-by-Step Protocol

1. Confirm medical clearance and consent.
2. Capture pre-treatment photography.
3. Apply a topical anesthetic and occlude as needed.
4. Select depth, density, and energy per indication.
5. Perform fractional passes with controlled overlap.
6. Assess endpoint (erythema, micro-crusting)

Immediate Aftercare

- Occlusive healing ointment
- Sun avoidance instructions
- Emphasize strict post-care compliance.

Step-by-Step Protocol

1. Lesion assessment and documentation.
2. Obtain medical authorization if needed.
3. Administer local anesthesia as indicated.
4. Use a focused beam for layer-by-layer ablation.
5. Achieve hemostasis and apply a protective dressing.

17.4 Treatment Settings

Parameters vary based on:

- Indication (wrinkles, scars, lesions)
- Skin type (Fitzpatrick I–VI)
- Area of treatment (face, neck, body, periorbital, perioral)

Conservative first settings are recommended for the first treatment.

Multi-pass or higher energy is used gradually, with caution.

Module 6

Chapter 18 - Post-Treatment Recovery & Aftercare

18.1 CO_2 Laser Treatments

Fractional CO_2 • Ablative CO_2 • Lesion Removal

18.2 Post-Treatment Care & Healing Timeline

This chapter outlines what patients should expect and the exact post-care responsibilities from **Day 0 through long-term recovery**.

Healing timelines vary based on treatment depth, density, indication, and Fitzpatrick skin type.

Patients with **Fitzpatrick IV–VI** require stricter adherence, longer caution phases, and increased monitoring due to higher pigmentary risk.

18.3 Day 0–3

Acute Inflammatory Phase

What to Expect

- Intense redness (sunburn-like)
- Swelling, warmth, or tenderness
- Tightness or dryness
- Pinpoint bleeding or oozing (ablative CO_2 only)
- Mild discomfort or stinging

These reactions are normal and expected.

Required Post-Care

- Keep the area clean, protected, and continuously hydrated.
- Use only clinician-approved post-laser products.
- Apply all products with clean hands.
- Sleep with head elevated (facial treatments)
- Cold compresses only if approved.

Strictly Avoid

- Sun exposure
- Heat, steam, saunas.
- Exercise or sweating.
- Makeup (until cleared)
- Active skincare (retinoids, acids, exfoliants)

- Picking, scratching, or touching treated skin

Immediate Post-Treatment (Day 0)

Cleansing

Do Not Wash The Skin On Day 0
(Unless specifically instructed otherwise)

Topical Application — Day 0–3

Ablative Co_2 Resurfacing

- **Aquaphor / Petrolatum-based ointment**
  - Apply a thick layer every 2–3 hours while awake.
  - Skin must remain continuously moist.
  - Do NOT allow crusting or drying.
- **Hale Derma® (Hypochlorous Acid Spray)**
  - May be layered under Aquaphor.
  - Provides gentle antimicrobial support and inflammation reduction.

Fractional CO_2 (Non-Ablative / Light Ablative)

Hale Derma

- Apply 3–4× daily.

Aquaphor

- Spot-use or overnight only if dryness occurs.
- Avoid over-occlusion.

Positioning & Environment

- Sleep with your head elevated.
- Use clean pillowcases.
- Avoid unnecessary contact with treated skin.

Strictly Avoid — Day 0

- Washing the skin
- Sun exposure
- Heat or sweating.
- Makeup
- Pets touching the area.
- Dirty phones, hats, or masks contacting skin.

18.4 Day 1–3

Acute Healing Phase (Continued)

Cleansing Instructions (Begin Day 1)

Face/Body Washing Begins on Day 1 Only

How to Cleanse

1. Wash hands thoroughly.
2. Use cool to lukewarm water.
3. Use a gentle, non-foaming cleanser.
4. Cleanse with fingertips only.
5. Do NOT scrub, rub, or use washcloths.
6. Pat dry with clean disposable towel or 4×4 gauze

Frequency

- Once daily on Day 1
- Up to twice daily by Day 2–3 if needed.

Post-Cleansing Care

1. Spray Hale Derma
    a. Apply Aquaphor
    b. Thick layer for ablative
2. Thin/spot use for fractional
3. Reapply throughout the day as needed.

18.5 Vinegar (Acetic Acid) Compress — Post CO_2

Purpose

- Mild antimicrobial effect
- Soothes inflammation.
- Supports optimal healing ph.

Formula (Very Diluted)

- Distilled white vinegar: 1 tsp (≈5 mL)
- Distilled/sterile water: 1 cup (≈240 mL) (Approx. 1:50 dilution)

Application

1. Soak a soft gauze or cotton pad.
2. Squeeze excess (damp, not dripping)
3. Apply gently for 1–2 minutes.

4. Pat dry with sterile gauze
5. Follow at once with Aquaphor or Hale Derma

Frequency

- 2–3× daily for first 2–3 days (ablative CO_2)
- Optional once daily for fractional if redness persists.

Safety Notes

- Never use full-strength vinegar
- Discontinue if burning or irritation occurs.
- Avoid if infection or open wounds are present.

18.6 Environmental Hygiene (Critical)

- Change pillowcases daily.
- Use clean towels each time.
- Keep pets away from treated skin.
- Avoid dust, gardening, dirty environments.
- Disinfect phone screens daily.

18.7 Day 3–5

Early Regeneration Phase

What to Expect

- Swelling decreases
- Skin darkens or bronzes.
- Micro-crusting becomes visible.
- Flaking or peeling begins

This is expected healing, not a complication.

Post-Care

- Gentle cleansing 1–2× daily
- Hale Derma as needed.
- Aquaphor only on dry or crusted areas
- Vinegar compress once daily if needed.

Strictly Avoid

- Picking or peeling
- Exfoliants or actives
- Heat, sweating
- Sun exposure

18.8 Day 5–7

Re-Epithelialization Phase

What to Expect

- Crusting falls away naturally
- Skin appears pink and fragile.
- Texture begins to smooth.

Post-Care Adjustments

- Cleanse gently twice daily.
- Transition from heavy Aquaphor to lighter barrier moisturizer (if approved)
- Hale Derma may continue.
- SPF may begin ONLY when the skin is fully closed, and the clinician approves.

18.9 Day 7–14

Recovery & Stabilization Phase

What to Expect

- Residual redness may persist.
- Skin tone continues to normalize.
- Sensitivity decreases

Post-Care

- Daily physical SPF (mandatory)
- Gentle skincare only
- No activities unless approved.
- Avoid other procedures.

18.10 Healing Timelines — Distinction

Fractional CO_2

- Day 0–1: Redness, warmth
- Day 2–3: Bronze/sandpaper texture
- Day 4–7: Micro-flaking
- Day 7–14: Pinkness, strengthening phase.

Ablative CO_2

- Day 0–3: Oozing, crust prevention
- Day 4–7: Skin closure begins.
- Day 7–14: Pink/red fragile skin
- Weeks 3–6: Collagen remodelling & pigment normalization

18.11 Fitzpatrick IV–VI: Additional Caution

- Sun avoidance is mandatory.
- SPF must be daily and consistent once approved.
- Heat exposure must be avoided longer.
- Any change in pigment must be reported at once.
- Early retreatment is contraindicated.

Visual skin tone does not reduce biological risk.

Melanocyte behaviour—not appearance—decides safety.

Sun Protection (Critical)

- Physical sunscreen (zinc/titanium) once skin is intact.
- Wide-brim hat
- No direct sun 4–6 weeks (CO_2)
- No direct sun 7–10 days (fractional)

18.12 Nutrition Support

Favor

- High-quality protein
- Vitamin A-rich foods
- Zinc-rich foods
- Omega-3 sources
- Hydration ≥2 L/day

Avoid

- Alcohol (7–10 days CO_2, 3–5 days fractional)
- Spicy foods (first 72h)
- Excess sugar
- Very hot foods/drinks (48h)
- Excessive blue-light exposure
    - 7 days fractional
    - 10 days resurfacing

What Not to Apply

- Retinoids (14 days fractional, 4–6 weeks CO_2)
- Acids or exfoliants
- Vitamin C serums
- Essential oils
- Fragrance

- Makeup until cleared

18.13 Special Indications

Mole/Lesion Removal (Ablative)

- Days 0–3: barrier ointment 2–4× daily
- Days 4–7: do not pick scabs.
- Days 7–14: scabs fall naturally.
- Sunscreen once healed

When to Contact the Clinic

- Increasing pain after Day 3
- Yellow crusting or pus
- Fever or chills
- New blistering
- Pigment changes
- Delayed healing

Key Training Reminder

Post-care compliance is as critical as the choice of parameters, especially in Fitzpatrick IV–VI skin.

Moist wound healing + sun avoidance = optimal collagen remodelling and pigment safety.

Module 7

Chapter 19 - Comprehensive Technical Specifications & Treatment Parameters Guidelines (General)

Built to Deliver Power, Precision, and Customization

The INCREDIBLE Fractional Multi-CO_2 Laser™ provides four main system modes, each with programmable parameters optimized for specific clinical applications.

19.1 Mode #1 – Fractional Mode

Targeted Rejuvenation

Indications: Fine lines, acne scars, texture, tone improvement, and general aesthetic skin treatments.

Programmable Parameters

Graphics / Scan Shapes: Triangle, Circle, Ring, Diamond (Rhombus), Square, Hexagon

Power Output

- Face 8 - 15 W
- Body 10 - 20 W

Pulse Duration: 0.1 - 0.3 ms

Dot Distance

- 0.6 - 2.9 mm ⟶ Safe / Standard fractional
- 0.4 – 0.5 mm ⟶ Transitional / aggressive fractional (For experienced users ONY)

Pulse Repeat: 1 - 3

Pulse Interval: 0.5 - 2.0 ms

Number of Treatments: 2 - 4 sessions

Treatment Intervals: 4 - 6 weeks

Clinical Notes

Provides high-precision epidermal and superficial-dermal targeting with customizable coverage. Ideal for first-time patients, maintenance protocols, and higher Fitzpatrick skin types when paired with Random or Distant scan.

19.2 Mode #2 – Fractional Mode

Targeted Resurfacing

Indications: *Deep lines, acne scars, texture, tone improvement, Scars*

Programmable Parameters

Graphics / Scan Shapes: Circle, Straight Line (Scars), Square, Hexagon

Power Output: 25 – 40 W (Start lower on face)

Pulse Duration: 0.1 - 0.3 ms

Dot Distance: ≤ 0.3 mm ⟶ True resurfacing density

Pulse Repeat: 1

Pulse Interval: 0.3 - 1.0 ms

Number of Treatments: 1 - 3 sessions

Treatment Intervals: 6 - 8 weeks

Clinical Notes

Designed for deeper dermal remodelling and aggressive collagen stimulation. Increased downtime expected. Conservative first passes are mandatory, especially on the face and neck.

19.3 Mode #3 – VRL Mode

Vaginal Rejuvenation (Standard Handle)

Indications: Vaginal tissue rejuvenation, hydration stimulation, non-invasive tightening, structural improvement.

19.4 Mode #4 – Normal Mode

Surgical and Ablative Applications

Indications: Soft tissue cutting, ablative procedures, and surgical resurfacing.

- **Power Output:** 5 – 30 W (lesion-dependent)
- **Pulse On Time:** 0.1 – 0.5 ms
- **Pulse Off Time:** 0.1 – 0.5 ms

Clinical Notes

Provides controlled, continuous or pulsed energy for precise ablation. Used for skin tags, benign lesions, and surgical applications. The layer-by-layer technique minimizes scarring risk.

19.5 Mode #5 – VRL-90° Mode

Optional Vaginal Rejuvenation Handle

Indications: Full-contact vaginal treatments, 360° energy delivery.

Clinical Notes

Provides deeper access and broader coverage for gynecological aesthetic services.

Always start with conservative settings and adjust based on skin type, treatment area, and indication. Document all parameters for patient safety and consistency.

Module 8

Chapter 20 - Treatment Parameters - Reference

20.1 Fractional Treatments

When "Double-Passing" Can Be Safe

1. Device Type & Settings

- Some fractional lasers (CO_2, Erbium, etc.) allow multiple passes if energy, density, and pulse duration are adjusted to prevent excessive thermal buildup.
- Low-density first pass → second pass at the same or slightly lower density can be safe.

2. Patient Skin Type (Fitzpatrick)

- Fitzpatrick I–III: generally, tolerate two passes better
- Fitzpatrick IV–VI: higher risk of hyperpigmentation or burns, must be cautious

3. Treatment Depth

- Shallow passes: safer to repeat
- Deep ablation: avoid over-treating, as the risk of scarring, prolonged erythema, or infection rises

4. Treatment Area

- Sensitive areas (around eyes, lips, nose) → usually single pass
- Cheeks, forehead → often can tolerate a controlled second pass

5. Patient Skin Condition

Avoid double passes on:

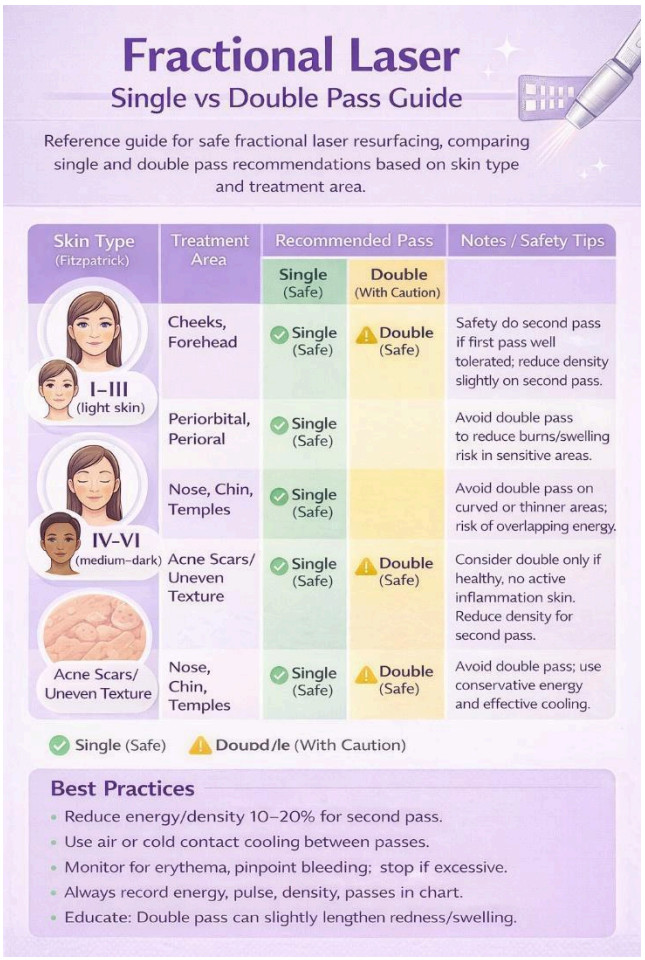
- Actively inflamed skin
- Acne with pustules
- Open wounds or eczema

20.2 Best Practices

Key Takeaway

- Double-passing is sometimes used for more uniform resurfacing, but should only be done with experience, proper settings, and a patient assessment.
- Over-aggressive double-passing can increase downtime, risk of PIH, or scarring.

20.3 Fractional Laser Single vs. Double Pass Guide



Best Practices for Double Pass

1. **Reduce Energy or Density**

If you must do a second pass, lower fluence by 10–20% or reduce dot density.

2. **Cooling Between Passes**

Use air cooling, cold gel, or contact cooling to reduce thermal buildup.

3. **Observe Skin Response**

Stop if you see excessive erythema, edema, or pinpoint bleeding.

4. **Patient Education**

Explain longer downtime and slightly increased redness/swelling if a double pass is done.

5. **Documentation**

Always record energy, pulse, density, and number of passes for legal and treatment follow-up.

Clinical Tip

Double-pass is most often used on larger, more resilient areas like the cheeks and forehead, rarely on delicate areas like the eyes, lips, or around the nose.

Always err on caution with darker skin due to a higher risk of post-inflammatory hyperpigmentation (PIH).

20.4 Fractional CO_2 & Resurfacing Cheat Sheet

20.5 Point Spacing & Tissue Behaviour

Spacing	Tissue Effect	Indication
0.6–0.8 mm	Microcolumns stay discrete; tissue bridges preserved	Facial fractional
0.7–2.9 mm	Still fractional; used for scars (variable)	Scar remodeling
0.4–0.5 mm	Columns close enough for heat halos to interact (transitional/aggressive fractional)	Higher density fractional; careful with energy/pulse
≤ 0.3 mm	Microcolumns overlap and coalesce; epithelium behaves like continuous ablation	CO_2 resurfacing

Key Notes

- Transitional/aggressive fractional (0.4–0.5 mm) is still fractional if:
  - Energy is moderate.
  - Pulse duration is short.
  - Single scan only
- Setpoint for resurfacing: ≈0.3 mm and below

Bottom Line

- 0.6–2.9 mm → fractional
- 0.4–0.5 mm → aggressive/transitional
- ≤ 0.3 mm → resurfacing

20.6 Point Spacing vs. Scan Interval

Big-picture difference:

- **Point Spacing (mm):** Distance between individual microdots.
- **Scan Interval (mm):** Distance between rows/passes during scan.

Feature	Small	Large
Point Spacing	Dots closer → higher density, more coverage, more heat	Dots farther → lower density, safer, faster healing
Scan Interval	Rows closer → higher effective coverage	Rows farther → lower effective coverage

Clinical Interaction

- Tight spacing + short interval → very high density (risk overtreatment)
- Wide spacing + short interval → moderate density, smoother coverage
- Tight spacing + long interval → focused columns, safer thermal profile

Practical Guidance

- Face resurfacing: moderate spacing + moderate interval
- Neck/chest: wider spacing + longer interval
- Scars/body tightening: tighter spacing + shorter interval

Mental Model

- Point spacing = "How close are the dots?"
- Scan interval = "How close are the rows?"

20.7 Fractionalization & Safety

- Higher spacing (1.0–2.0 mm) → more fractional (lighter, safer)
- Lower spacing (0.5–0.8 mm) → denser, more aggressive
- Manufacturer presets: usually 0.5–1.0 mm for visible results quickly, but not always safest

Guidance by Goal

- Texture / glow / minimal downtime → 1.0–1.5 mm.
- Maintenance fractional → 1.2–2.0 mm
- Scars / deep resurfacing → 0.5–0.8 mm

20.8 Fractional vs. Resurfacing: Settings & Passes

Area	Treatment	Energy (mJ)	Spacing	Passes	Off Time	Endpoint
Face	Fractional	8–15	1.0–1.5	1–2	Moderate - Long	Even erythema, mild edema
Face	Resurfacing	15–25+	0.5–0.8	1 (Rarely 2)	Short	Uniform frosting, controlled pinpoint bleeding
Body	Fractional	10–20	1.2–2.0	2–3	Moderate	Light erythema, edema
Body	Resurfacing	20–30+	0.6–1.0	1–2	Longer	Targeted tissue ablation

Key Safety Rule

Increase effect by increasing passes OR density, not both.

Never stack high energy + tight spacing + multiple passes, especially on the face.

20.9 Fitzpatrick Considerations

Type	Strategy
I - II	Can handle tighter spacing; shorter off time; more aggressive resurfacing possible.
III	Moderate spacing; conservative second passes; longer off time.
IV - VI	Fractional-first mindset; wider spacing; lower energy; longer off time; fewer passes.

Higher Fitzpatrick types → higher risk of post-inflammatory hyperpigmentation → lower energy, fewer scans, longer intervals.

20.10 Area-Specific Strategy

Area	Fractional	Resurfacing	Notes / Endpoints
Perioral	10–18 mJ, 0.8–1.0 mm, 1–2 passes	15–25 mJ, 0.5–0.7 mm, 1 pass	Endpoint: uniform frosting + mild edema; avoid stacking passes
Periocular	6–10 mJ, 1.2–2.0 mm, 1 pass	N/A	Faint erythema, mild swelling; never chase frosting.
Cheeks	10–15 mJ, 1.0–1.5 mm, 1–2 passes	15–22 mJ, 0.6–0.8 mm 1 pass	Even erythema ± pinpoint whitening
Neck	8–12 mJ, 1.5–2.0 mm, 1 pass	Rare	Light erythema; avoid tight spacing/multiple passes
Scars	15–25 mJ, 0.6–1.0 mm, 1–2 passes	20–30+ mJ, 0.5–0.8 mm, 1 pass	Localized edema, textural change; targeted remodeling

20.11 Fractional Treatment Intervals

Tissue/Indication	Fraction/Session	Interval Between Sessions
Facial Rejuvenation	1–3 passes / 1 scan	4–6 weeks
Scars	1–3 passes / 1–2 scans	6–8 weeks
Vaginal Fractional	1 scan	4–6 weeks

General upper limits/year:

- Facial fractional CO_2: 2–3 treatments (Fitz I–III), 1 treatment (Fitz IV–V)
- Scars: 3–6 treatments/year
- Vaginal fractional: 2–3 treatments/year

Exceeding these can increase cumulative thermal injury and PIH risk.

20.12 Endpoints to Watch

Fractional

- Even erythema
- Mild edema
- No char / confluent whitening

Resurfacing

- Uniform frosting / whitening
- Controlled pinpoint bleeding.
- Immediate tightening

Signs of overtreatment: grey haze, heavy frosting, tissue desiccation, oozing, char, delayed blanching

Quick Reference

Spacing	Use
0.6–2.9 mm	Fractional (safe, discrete columns)
0.4–0.5 mm	Aggressive / transitional fractional
≤ 0.3 mm	CO_2 resurfacing (overlapping columns, continuous effect)

Resurfacing isn't about the label — it's about spacing + cumulative heat.

20.13 Fractional CO_2 Training Cheat Sheet (Visual Layout)

CO_2 Fractional & Resurfacing Quick Reference

Visual Layout Concept

1. Spacing Scale (Horizontal Bar)

- Left → tight spacing (≤0.3 mm)
- Right → wide spacing (2.9 mm)

Mark three zones with color codes:

Zone	Spacing (mm)	Colour	Label
Resurfacing	≤0.3	**Red**	Columns overlap → continuous ablation
Aggressive/Transitional Fractional	0.4–0.5	**Orange**	Heat halos interact; still fractional if energy/pulse low
Fractional	0.6–2.9	**Green**	Microcolumns discrete; tissue bridges preserved

2. Underneath Each Zone → Quick Bullet Icons

Resurfacing (Red):

- Microcolumns coalesce.
- Continuous epithelial ablation
- Standard endpoints: uniform frosting, pinpoint bleeding

Energy: High

- Passes: 1–2 max

Area Caution: Face, periocular thin skin → risky

Transitional (Orange):

- Heat halos start interacting.
- Still fractional if: moderate energy, short pulse, single scan
- Endpoint: mild frosting, even erythema

Fractional (Green):

- Columns discrete, tissue bridges preserved.
- Safe coverage
- Energy: low–moderate
- Passes: 1–2 (face), 2–3 (body)

Endpoint: Mild erythema, slight edema

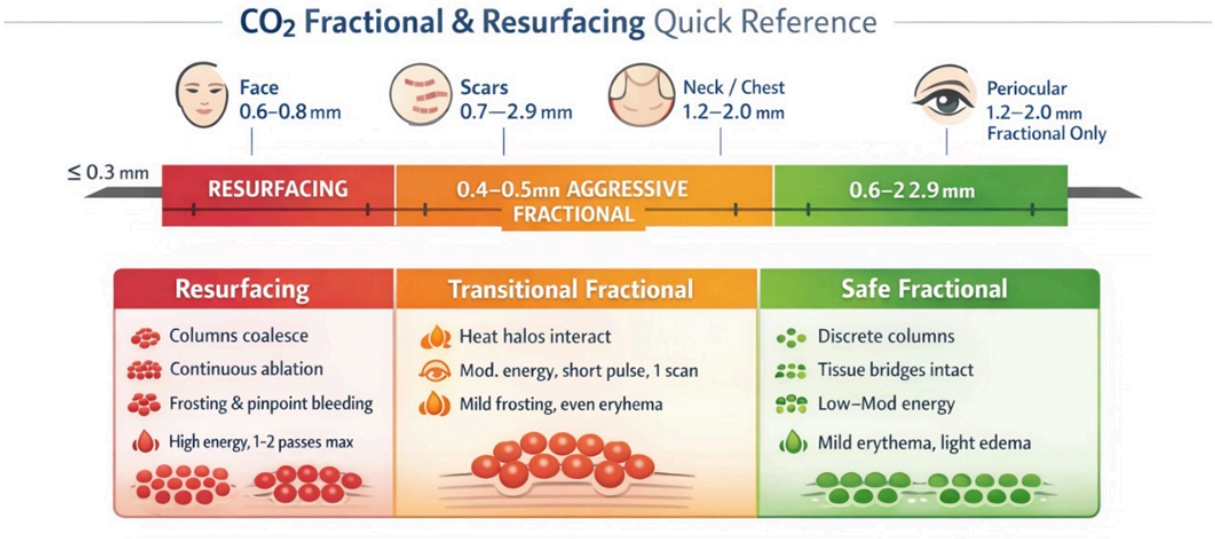
3. Vertical Callouts for Clinical Context

- Face: 0.6–0.8 mm
- Scars: 0.7–2.9 mm
- Neck / Chest: 1.2–2.0 mm
- Periocular: 1.2–2.0 mm, fractional only

4. Quick Reference Table (Bottom Section)

Metric	Fractional	Resurfacing
Energy Passes	Low - Moderate (8 - 20 mJ)	High (15 - 30+ mJ)
Passes	1–2 (face), 2–3 (body)	1 (max) 2
Spacing	0.6 - 2.9	≤0.3 mm
Scan Interval	Moderate	Short
Endpoint	Mild erythema / edema	Uniform frosting / pinpoint bleeding

6. Color Coding / Visual Cues



- **Red** → resurface alert.
- **Orange** → caution, transitional
- **Green** → safe fractional

Module 9

Chapter 21 - Complication Management & Adverse Events

21.1 urn Severity Classification & Management

Burn Severity	Clinical Signs	Immediate Actions	Follow-Up & Documentation
First-Degree (Superficial)	• Redness • Mild swelling • Tenderness • No blisters	**1.** Stop treatment immediately **2.** Cool area with cool compress or running water for 10–15 minutes **3.** Advise strict sun avoidance	• Monitor for signs of infection • Document incident in patient record • Adjust future laser settings to prevent recurrence
Second-Degree (Partial-Thickness)	• Redness with blisters or oozing • Moderate to severe pain • Swelling	**1.** Stop treatment immediately **2.** Cool the affected area **3.** Do not pop blisters **4.** Cover with sterile, non-adherent dressing.	• Document at once • Monitor closely for infection • Refer to a medical professional for assessment and treatment
Third-Degree (Full-Thickness)	• White, leathery, or charred skin • Severe tissue damage • Numbness	**1.** Stop treatment immediately **2.** Do not apply creams or ice **3.** Seek emergency medical assistance **4.** Keep area clean and protected	• Considerable risk of complications • Mandatory medical management • Complete incident and adverse event reporting

Module 10

Chapter 22 - Practitioner Competency

Purpose

This section establishes the minimum competency, certification, and ongoing proficiency requirements for practitioners running the INCREDIBLE Fractional Multi-CO_2 Laser™. Its purpose is to ensure patient safety, consistent clinical outcomes, regulatory compliance, and professional accountability across all treatment modalities.

Scope

These requirements apply to all practitioners performing or aiding with:

1. Fractional CO_2 resurfacing
2. Ablative CO_2 lesion removal
3. Any procedure using CO_2 laser energy.

Initial Practitioner Qualification Requirements

Before independently performing treatments, practitioners must meet all the following:

1. Professional Eligibility

- **A.** Must practice within their regulated scope of practice.
- **B.** Must be legally allowed to perform laser procedures under provincial regulations.
- **C.** Must work under a Medical Director where required by law or insurer.

2. Theoretical Training (Mandatory)

Practitioners must successfully complete didactic education covering:

- **A.** Laser physics & tissue interaction
- **B.** CO_2 laser wavelength (10,600 nm) mechanisms
- **C.** Skin anatomy and chromophores
- **D.** Fitzpatrick skin typing and risk stratification.
- **E.** Indications, contraindications, and relative contraindications
- **F.** Laser safety standards (CSA / ANSI / Health Canada)
- **G.** Smoke plume risks and mitigation.
- **H.** Complication prevention and management
- **I.** Documentation, consent, and PHI compliance (PIPEDA / PHIPA)

Assessment Required

- ☐ Written or verbal knowledge verification
- ☐ Case-based risk assessment review.

3. Hands-On Clinical Training (Mandatory)

Practitioners must complete supervised hands-on training, including:

A. Device operation and parameter choice
B. Proper handpiece handling and treatment technique
C. Safe use of smoke evacuation and cooling systems
D. Recognition of clinical endpoints
E. Post-treatment care instruction delivery

Minimum Supervised Cases (Recommended)

A. Fractional CO_2 resurfacing: _____ cases
B. Vaginal rejuvenation (VRL): _____ cases
C. Ablative lesion removal: _____ cases

(Final case numbers decided by Medical Director or Training Lead)

Limitations of Practice

Practitioners must:

- Treat only approved indications
- Use conservative parameters, especially for higher Fitzpatrick types.
- Defer or refer cases outside their scope or competency.
- Obtain medical clearance where indicated.

Failure to comply may result in:

- Suspension of certification
- Mandatory retraining
- Removal from laser practice privileges

Documentation & Record Keeping

Practitioner certification records must include:

- Training completion dates
- Competency assessments
- Case logs
- Annual reviews

Records must be kept following clinic policy and regulatory requirements.

Module 11

Chapter 23 - Consent Forms and Reports for Record-Keeping

All records constitute Personal Health Information (PHI).

23.1 Clinical Photography Consent

Purpose

Clinical photography is mandatory for CO_2 laser treatments to:

- Plan treatment parameters.
- Monitor healing and outcomes.
- Document medical care and continuity.
- Support quality assurance and professional review.

Data Protection

- Photographs stored securely as PHI
- Access limited to authorized personnel
- No sharing without consent, except when required by law.

Optional Marketing Consent

- **Option A:** Consent for educational or promotional use (de-identified)
- **Option B:** Decline marketing use.

Acknowledgement & Signature

Client signature needed for informed consent.

Relative Contraindications & Risk Acknowledgement

Disclosure

Client must disclose any conditions that may increase risk, including:

- Type 2 diabetes (controlled)
- Delayed wound healing history.
- PIH history
- Hypertrophic or abnormal scarring
- Autoimmune conditions in remission
- High Fitzpatrick skin type (IV–VI)
- Recent sun exposure or tanning

Explanations of Risks

- Delayed healing, prolonged erythema
- Infection, pigment changes (hyper- or hypopigmentation)
- Scarring or textural changes

Voluntary Assumption of Risk & Release

- Elective procedure with informed consent
- Alternative options explained
- Liability release for disclosed relative contraindications (excluding gross negligence)

Medical Care & Follow-Up

- Adverse reactions require follow-up with a qualified healthcare provider.
- Laser practitioners do not provide medical diagnoses.

Acknowledgement & Signature

Client and practitioner signatures needed.

23.2 Clinical Photography Consent Form

(CO_2 Laser – PIPEDA / PHIPA Compliant)

Clinic Name: _____ Client Name: _____

Date of Birth: _____ Date: _____

Purpose of Clinical Photography (Mandatory)

I understand that clinical photography is a required component of treatment involving the CO_2 fractional laser device. Photographs may be taken before, during, and after treatment and form part of my Personal Health Information (PHI).

Clinical photographs are needed for:

- Treatment planning and parameter selection
- Monitoring healing, outcomes, and complications
- Medical documentation and continuity of care
- Quality assurance, training, and professional review

I understand that refusal to consent to clinical photography may prevent treatment from being safely performed.

Collection, Use & Protection of Personal Health Information

I acknowledge that my photographs are considered Personal Health Information (PHI) under:

- PIPEDA (Personal Information Protection and Electronic Documents Act)
- PHIPA (Personal Health Information Protection Act), where applicable

I understand and agree that:

- Photographs will be used only for clinical and professional purposes.
- Images will be stored securely within my confidential medical record.
- Access is limited to authorized clinic personnel.
- Safeguards are in place to prevent unauthorized access, loss, or disclosure.
- My photographs will not be shared with third parties without my consent, unless required by law

Marketing & Promotional Use

(Optional – Separate Consent)

Clinical consent does not include marketing use.

☐ **Option A – Consent To Marketing Use**

I voluntarily authorize the clinic to use de-identified photographs for:

- Clinic website
- Social media
- Educational or professional presentations
- Printed or digital marketing materials

I understand that:

- My name or identifying information will not be disclosed.
- I will not receive compensation.
- This consent may be withdrawn in writing, subject to materials already in circulation.

Client Initials: _____

☐ **Option B – No Marketing Consent**

I do not authorize the use of my photographs for marketing or promotional purposes.

Client Initials: _____

Acknowledgement & Signature

I confirm that the purpose of clinical photography has been explained to me and that my consent is informed and voluntary.

Client Signature: _____ **Practitioner / Witness: _____**

Printed Name: _____ **Signature: _____**

Date: _____ **Date: _____**

23.3 Risk Acknowledgement & Informed Consent

Relative Contraindication

(CO_2 Fractional Laser)

Clinic Name: _____ **Client Name: _____**

Date of Birth: _____ **Date: _____**

Purpose of This Document

This document confirms that I have been fully informed of the increased risks associated with CO_2 fractional laser treatments when certain relative contraindications are present, and that I voluntarily choose to go ahead with treatment.

This document is used in accordance with Canadian professional standards for non-surgical aesthetic laser procedures.

Disclosure of Relative Contraindication(s)

I acknowledge that I have disclosed, or have been advised that I may have, one or more of the following conditions, which may increase the risk of complications from CO_2 laser treatment:

- ☐ Controlled Type 2 diabetes
- ☐ History of delayed wound healing
- ☐ History of post-inflammatory hyperpigmentation (PIH)
- ☐ History of abnormal or hypertrophic scarring
- ☐ Autoimmune condition in remission
- ☐ Higher Fitzpatrick skin type (IV–VI)
- ☐ Recent sun exposure or tanning

Other (specify): _____

I confirm that I do not have any absolute contraindications, including but not limited to:

1. Active infection at the treatment site
2. Uncontrolled diabetes or Type 1 diabetes
3. Pregnancy (unless physician-directed)
4. Active malignancy
5. Undiagnosed or suspicious lesions

Explanation of Risks (CO_2 Laser Specific)

I understand that:

- CO_2 laser treatments create a controlled thermal injury to the skin or tissue.

- Healing relies on adequate circulation, immune response, and collagen repair.

Certain medical or skin conditions may increase the risk of:

- Delayed healing
- Prolonged redness or swelling
- Infection
- Pigment changes (hyperpigmentation or hypopigmentation)
- Scarring or textural changes

I understand that individual response cannot be predicted or guaranteed.

Voluntary Assumption of Risk

I acknowledge that:

- This is an elective cosmetic procedure.
- I have had sufficient opportunity to ask questions.
- I am choosing to proceed of my own free will.
- Alternative options, including deferral or referral, have been discussed.

Release & Limitation of Liability

To the fullest extent permitted by Canadian law, I release the clinic, its practitioners, employees, and medical director from liability arising from known and disclosed relative contraindications, provided that treatment is performed in accordance with accepted professional standards.

This release does not apply to gross negligence or willful misconduct.

Medical Care & Follow-Up

I understand that:

- Laser practitioners do not provide medical diagnosis or treatment.
- If an adverse reaction occurs, I may be advised to seek care from a qualified healthcare provider.

Acknowledgement & Signature

I confirm that all information I have provided is accurate and complete, and that I understand the risks associated with proceeding with CO_2 laser treatment.

Client Name: _____ **Practitioner Name: _____**

Client Signature: _____ **Practitioner Signature: _____**

Date: _____ **Date: _____**

23.4 Laser Treatment Contraindication Risk Acknowledgement, Informed Consent Waiver

Clinic Name: _____ **Clinic Address:** _____

Client Name: _____ **Date of Birth:** _____

Date: _____

1. Purpose of This Document

This document confirms that the undersigned client has been fully informed of the known and potential risks associated with laser treatments when relative contraindications are present, and that the client voluntarily elects to proceed despite those risks.

This waiver aligns with Canadian professional practice standards for non-surgical cosmetic laser and light-based procedures.

2. Disclosure of Relative Contraindication(s)

The client acknowledges that they have disclosed or have been advised of one or more of the following conditions that may increase the risk of complications (check all that apply):

- ☐ Type 2 Diabetes (diet or medication controlled)
- ☐ History of delayed wound healing
- ☐ Circulatory or vascular compromise
- ☐ Autoimmune condition in remission
- ☐ History of abnormal scarring

Other (specify): _____

The client confirms they do NOT have Type 1 diabetes, uncontrolled diabetes, active ulcers, active infections, or any absolute contraindication that would prohibit treatment.

3. Explanation of Risks

The client understands and acknowledges that:

- Laser treatments create a controlled thermal injury to the skin.
- Certain medical conditions, including Type 2 diabetes, may impair circulation, immune response, and wound healing.
- These factors may increase the risk of delayed healing, infection, blistering, pigmentation changes, scarring, or other adverse reactions.
- Individual response to treatment cannot be predicted or guaranteed.

The client confirms these risks have been clearly explained, all questions answered, and no guarantees or assurances of outcome have been made.

4. Voluntary Assumption of Risk

The client knowingly, voluntarily, and expressly assumes all risks associated with proceeding despite the presence of a relative contraindication.

The client confirms that they:

- Are they proceeding of their own free will
- Understand that elective cosmetic treatment is not medically necessary
- Have had sufficient opportunity to decline or postpone treatment

5. Release and Limitation of Liability

To the fullest extent permitted by Canadian law, the client releases, waives, and discharges the clinic, its owners, directors, officers, employees, contractors, students, and service providers from any and all claims, demands, damages, or causes of action arising from or related to:

- Known or disclosed relative contraindications
- Delayed healing or adverse skin reactions
- Complications despite appropriate screening, technique, and adherence to professional standards

This waiver does not apply to acts of gross negligence or willful misconduct.

6. Medical Care and Follow-Up

The client understands that if an adverse reaction occurs, they may be advised to seek medical attention from a qualified healthcare provider, and that cosmetic laser practitioners do not provide medical diagnosis or treatment.

7. Confirmation of Truthful Disclosure

The client confirms that all medical history and health information provided is true, complete, and accurate. Failure to disclose relevant medical information may increase risk.

8. Governing Law

This agreement is governed by and interpreted in accordance with the laws of the Province/Territory of _____ and the laws of Canada applicable therein.

9. Acknowledgement and Signatures

I have read and fully understand this document. I have had the opportunity to ask questions and receive satisfactory answers. I voluntarily consent to proceed under the conditions outlined above.

Client Name: _____ **Practitioner Name:** _____

Client Signature: _____ **Practitioner Signature:** _____

Date: _____ **Date:** _____

This document is intended for use in professional cosmetic laser settings and does not replace medical advice or physician clearance when required.

23.5 CO_2 Laser Patient Treatment Record

(Fractional • Ablative)

Patient Information

Patient Name: _____ **Date of Birth:** _____

Chart / File: _____ **Treatment Date:** _____

Practitioner: _____ **Medical Director:** _____

Pre-Treatment Assessment

Fitzpatrick Skin Type:

- ☐ I
- ☐ II
- ☐ III
- ☐ VI
- ☐ V
- ☐ VI

Treatment Area(s): _____

Indication / Diagnosis: _____

Contraindications Reviewed: ☐ Yes ☐ No

Informed Consent Signed: ☐ Yes ☐ No

Pre-Treatment Photos Taken: ☐ Yes ☐ No

Topical Anesthetic Used: ☐ No ☐ Yes → Type & Time: _____

Device & Mode Selection

Laser Device: INCREDIBLE Fractional Multi-CO_2 Laser™

Treatment Mode Used

- ☐ Mode #1 – Fractional
- ☐ Mode #3 – Normal / Ablative

Treatment Parameters (Required)

Core Settings

Power Output: _____ W (Max 40 W)

Pulse Duration: _____ ms

Pulse Interval: _____ sec

Repeat Cycles: _____

Fractional Mode (If Applicable)

Scan Shape: _____

Dot Distance: _____ mm

Depth Mode: ☐ Shallow ☐ Deep ☐ Mixed

Scan Method: ☐ Normal ☐ Random

Passes Per Area: _____

Normal / Ablative Mode (If Applicable)

Pulse ON Time: _____ ms

Pulse OFF Time: _____ ms

Lesion Type: ☐ Skin Tag ☐ Wart ☐ Benign Lesion

Lesion Location(s): _____

Local Anesthetic Used: ☐ No ☐ Yes → Type: _____

Intra-Treatment Observations

Tissue Response / Endpoints Observed:

- ☐ Erythema
- ☐ Micro-crusting
- ☐ Tissue contraction
- ☐ Vaporization achieved

Other: _____

Patient Tolerance: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Pain Score (0–10): _____

23.6 Treatment Incident Report

Purpose

This form is used to document any unexpected events, adverse reactions, or treatment complications during or after a CO_2 fractional laser procedure. It ensures patient safety, regulatory compliance, and quality improvement.

Patient Information

Patient Name: _____ **Date of Birth: _____**

Patient ID / Chart #: _____ **Date of Incident: _____**

Time of Incident: _____ **Practitioner: _____**

Witness (if applicable): _____

Treatment Details

Procedure / Module: _____

Laser Mode Used: _____

Parameters

Power: _____ W

Pulse Duration: _____ ms

Pulse Interval: _____ s

Density / Dot Distance: _____ mm

Number of Passes: _____

Target Area: _____

Pre-treatment Assessment Completed: ☐ Yes ☐ No

Fitzpatrick Skin Type: _____

Incident Description

Type of Incident: (Check All That Apply)

- ☐ First-degree burn/redness
- ☐ Second-degree burn/blistering
- ☐ Third-degree burn/severe tissue damage
- ☐ Unexpected pain or discomfort

- ☐ Hyperpigmentation/hypopigmentation
- ☐ Infection / delayed healing
- ☐ Equipment malfunction

Other: _____

Detailed Description of Incident

Immediate Actions Taken

- ☐ Treatment paused/stopped
- ☐ Area cooled (compress / Zimmer)
- ☐ Wound dressing applied
- ☐ Pain management provided
- ☐ Patient monitored on-site
- ☐ Patient referred to physician / ER
- ☐ Laser parameters documented and adjusted

Additional Notes

Follow-Up & Outcome

Follow-up Date Scheduled: _____

Patient Outcome/Resolution

Further Action Required: ☐ Yes ☐ No

If Yes, Describe: _____

Signatures

Reporting Practitioner: _____ **Signature: _____**

Date: _____

Clinic Director: _____ **Signature: _____**

Date: _____

Notes for Use

Must be completed immediately following any adverse event or treatment complication.

Maintain as part of the patient's medical record (PHI).

Review incidents regularly for training and quality improvement.

23.7 Safety & Equipment Confirmation

Eye Protection Worn: ☐ Yes

Smoke Evacuation Used: ☐ Yes

Zimmer / Cooling Device Used: ☐ Yes ☐ N/A

Adverse Event During Treatment: ☐ No ☐ Yes → Details below

Post-Treatment Care

Immediate Post-Care Applied

- ☐ Barrier Ointment
- ☐ HOCl Spray (Hale Derma)
- ☐ Occlusive Dressing (Ablative)

Written Recovery Sheet Provided: ☐ Yes

Sun Avoidance/Restrictions Reviewed: ☐ Yes

Follow-Up Scheduled: ☐ Yes → Date: _____

Adverse Events/Complications (If Any)

Practitioner Declaration

I confirm that this treatment was performed in accordance with clinic SOPs, manufacturer guidelines, and applicable regulatory standards.

Practitioner Signature: _____ **Date: _____**

Module 12

Chapter 24 - Patient Communication & Expectation Management

This final module serves as the capstone of the INCREDIBLE CO_2 Laser Clinical Training Manual. It does not introduce new techniques or parameters. Instead, it defines the standard of practice, professional conduct, and clinical responsibility expected of every practitioner using this technology.

CO_2 laser treatments are powerful tools. Their success depends not only on equipment and settings, but on the judgment, ethics, and communication of the practitioner.

The Practitioner as the Safety System

No laser protocol replaces:

- Clinical judgment
- Patient assessment
- Ethical decision-making

The practitioner is the primary safety system.

Every outcome — good or poor — ultimately reflects decisions made before, during, and after treatment.

Mastery Is Consistency, Not Aggression

True clinical mastery is demonstrated through:

- Conservative parameter choice
- Predictable healing outcomes
- Thoughtful treatment progression
- Willingness to defer or decline treatment when proper.

The goal is sustainable results, not dramatic single-session outcomes.

Patient Trust Is Earned Through Transparency

Patients place trust in practitioners who:

- Communicate honestly and without exaggeration.
- Set expectations clearly and consistently.
- Respect patient autonomy.
- Document thoroughly

Trust is not built through reassurance—it is built through clarity, boundaries, and professionalism.

Ethical Practice Protects Everyone

Ethical practice means:

- Treating within scope and training
- Referring when appropriate
- Avoiding pressure, upselling, or urgency tactics
- Maintaining professional boundaries

Ethics protect:

- Patients
- Practitioners
- Clinics
- The profession as a whole

Documentation Is Part of Treatment

Every treatment includes:

- Clinical reasoning
- Parameter selection
- Patient education
- Informed consent
- Aftercare reinforcement

If it is not documented, it is considered not performed.

Documentation is not administrative—it is clinical.

The Standard You Set Is the Standard You Become

Every practitioner contributes to the reputation of:

- CO_2 laser treatments
- Aesthetic medicine
- Clinical laser practice

Consistency, humility, and continuous learning define excellence — not speed or volume.

Final Statement

This manual provides the foundation. Clinical excellence comes from how it is applied.

Use this technology with:

- Respect for tissue
- Respect for patients
- Respect for your role as a practitioner

When used thoughtfully and ethically, CO_2 laser treatments offer transformative outcomes — both for patients and for the professionals who deliver them.

INCREDIBLE DEVICES

INCREDIBLE THERAPEUTIC SYSTEMS

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