Chapter

Internal and External Radiofrequency Assisted Lipo-Coagulation (RFAL) in the Control of Soft Tissue Contraction during Liposuction: Part 2 "Outside In" RFAL Thermal Tissue Tightening

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Abstract

The new Morpheus8 is a novel external RFAL device that uses the proven soft tissue contraction of BodyTite in an external, non-invasive procedure. This external RF applicator, which is also powered by BodyTite, inserts up to 40 positively charged, coated electrodes 8 mm into the subcutaneous, soft tissue envelope. A monopolar ablative lesion is generated from the tip of the electrode, stimulating contraction of the FSN and adipose coagulation. The RF then flows up to the distant negative, return electrodes on the surface of the skin, providing a non-ablative thermal stimulation to the papillary dermis. The "burst" feature of the Morpheus8, delivers simultaneous multiple levels of internal coagulation in a single one second pulse, amplifying the adipose ablation and contraction effect. Studies, show, that the combination of BodyTite internal thermal coagulation and external Morpheus8 at the time of liposuction can result in 60–70% area skin contraction, greatly improving the soft tissue contours and Body shaping outcomes following lipo-contouring procedures.

Keywords: liposuction, radiofrequency, BodyTite, Morpheus8, fractional RF skin resurfacing, RF micro-needling, soft tissue contraction, RFAL skin tightening, cellulite, stretch marks, mommy make overs, tummy tuck, arm lift, brachioplasty and thigh lift

1. Introduction

The facelift growth rate has been relatively stagnant across the statistics monitored by American Association Esthetic Plastic Surgery, The American Academy of Cosmetic Surgery and the American Society of Dermatologic Surgery and Facial Plastic Surgery. The relatively *flat growth of excisional facelifts* bears witness to the

fact that many consumers and potential patients want a non-excisional option, even the results are less significant than an excisional facelift or an excisional skin tightening procedure. With the advances that have led to the development and FDA approval of products such as the FaceTite NeckTite and BodyTite, the non-excisional face/neck lift and lower lid, brow and cheek lift market, as well as the minimal excision or Non excisional Body shaping market is significant. Most esthetic plastic surgeons now offer a broad offering of non-invasive options such as microdermabrasion, skin care, intense pulsed light and other laser cutaneous enhancement treatments, often including non-evasive skin tightening, neuromodulators and fillers. At the end of this ascending stair-stepladder approach to skin and face rejuvenation, the next stop is usually an excisional facelift, mini-facelift, neck lift, blepharoplasty and/or body excisional procedures, such as inner-thigh lift, brachioplasty and mini-tummy tuck or abdominoplasty. The advent of significant radiofrequency-assisted lipocoagulation (RFAL) skin tightening techniques now offers plastic surgeons, facial plastic surgeons, surgical dermatologists and cosmetic physicians the opportunity to *offer patients a significant Facial or Neck skin tightening experience without excisional consequences of visible scars* (**Figure 1**). InMode's BodyTite, Embrace RF, Votiva and EmpowerRF workstations are true revenue empowering GAP procedures, driving patients that would not be interested in excisional facelift, blepharoplasty or neck lift surgery or patients undergoing excisional surgeries but require more contraction AND excision [1].

The skin tightening market, both face and body, is growing rapidly, but, until now, consumers have been limited to trans-epidermal technology such as radiofrequency devices, laser devices and high-frequency-focused ultrasound (HIFU) devices that offer *modest improvement* after two or three treatments with significant

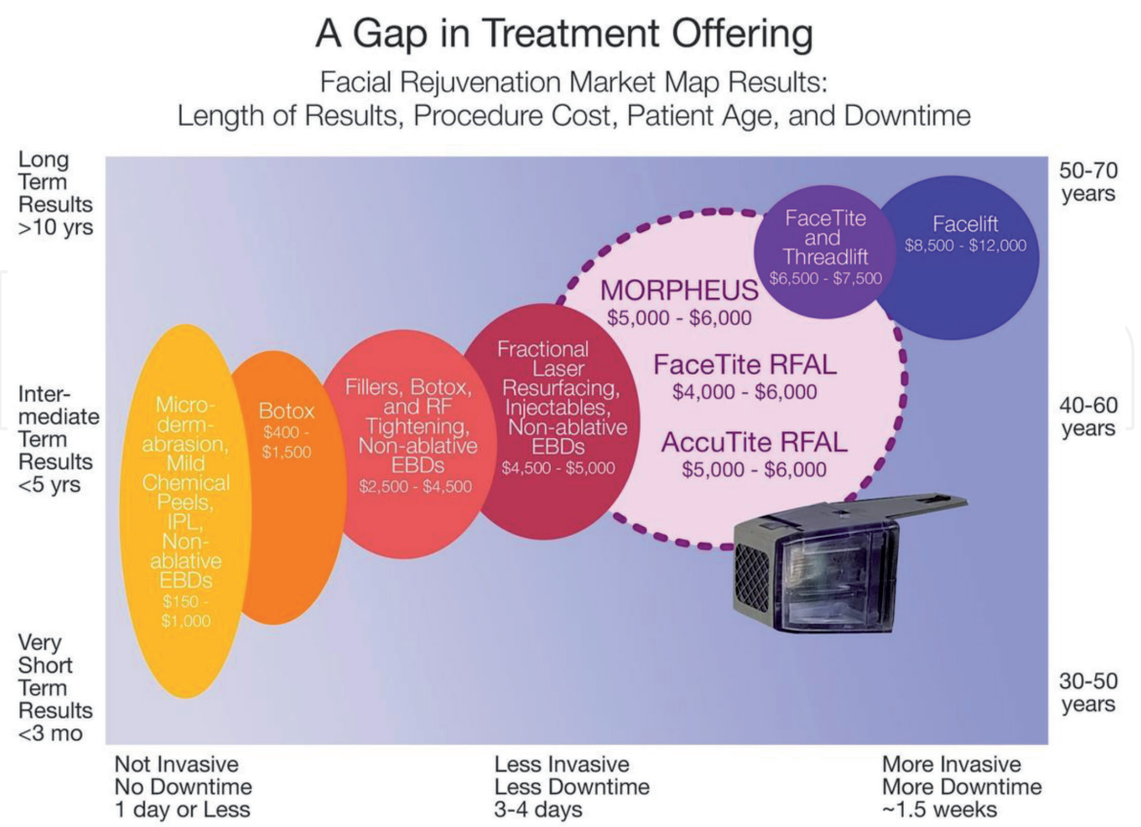

Figure 1.
Facial rejuvenation procedure ascending map of options as function of invasiveness, downtime, recovery, patient age and outcome. FaceTite fills the void between completely non-invasive injectables and energy-based devices and open facelift surgery.

pain and expense. The advantage of FaceTite, AccuTite and the Morpheus 8 is the ability to offer patients a single-treatment, non-excisional Facial rejuvenation and tightening procedure, under local anesthesia with significant soft tissue tightening outcomes. Of course, the BodyTite, FaceTite, AccuTite and the Morpheus 8 can also be combined with mini excisions or lateral-based excisions of the face, or mini skin-only tummy tucks, or axillary arm lifts or mini-inner thigh lifts to enhance and improve the result, but the prime market opportunity is not the improvement of one's open facelift or body excisional techniques, which is important, but to access patients that are looking for a significant but non-excisional surgical experience. However, it would be more appealing and versatile to offer patients the same RFAL adipose contraction concept but from outside.

2. InMode and the morpheus innovation

Now, would it not be even **COOLER**, even more accessible to providers and patients, if this RFAL lipo-coagulation, "enhanced Liposuction" and significant soft tissue contraction and remodeling was available **EXTERNALLY,** a sort of **PERCUTANEOUS RFAL ACCUTITE**? *WELL, now you have it.... the Morpheus Family of soft tissue remodeling applicators and tips,* a trans-epidermal, percutaneous, fractional adipose coagulation, soft tissue contraction and skin remodeling device. In just a few short years, the Morpheus has become the world's #1 fractional skin tightening, wrinkle reduction and soft tissue remodeling tool!

2.1 Trans-epidermal RF systems

The fact that your BodyTite workstation also comes loaded with the world's most successful effective transcutaneous, fractional skin and soft tissue tightening, wrinkle reduction and elastotic treatment device (The Morpheus 8) makes BodyTite system your Total Tissue Contraction, lifting, tightening and smoothening tool. The concept was to take 12–40 pins/electrodes, coat them with silicone, but leave the tip uncoated. Each needle, or micro-electrode is positively charged, like the tip of your AccuTite, or FaceTite electrode. The needles area inserted into the dermis (Fractora) or the adipose tissue and sud-dermal space (Morpheus 8) and then, like with AccuTite, FaceTite, or BodyTite, the RF does not flow between two closely spaced positive–negative needles (micro-needling) BUT the RF thermal energy creates a large monopolar ablation in the fat (Morpheus) or dermis (Fractora) and then, the energy flows up to the negative, return electrodes far away on the skin, creating a non-ablative heating of the superficial papillary dermis.

2.2 Fractora: dermal fractional RFAL resurfacing

This was InMode's first generation of *OUTSIDE-IN*, transcutaneous RFAL for *DERMAL* skin resurfacing and tightening. There are several trans epidermal, needle-based heating technologies that also provide dermal contraction and skin tightening. The most notable is the Profound (Syneron Candela), which is a series of six paired silicone coated needles that have significant bipolar RF ablative energy between them. Each of these coated needles have internal thermistors built into them, they sense the temperature and are able to cut-off the RF energy when the endpoint is met. An endpoint of 67–70 degrees is sustained for 3–5 seconds between these six pairs of internal electrodes providing dermal contraction.

The other effective deep dermal RF system for soft tissue contraction is the Fractora (InMode), which has silicone coated needles that are 3000 microns in

length with the proximal 2200 microns being silicone coated and the distal 800 microns being uncoated (**Figure 2**). Multiple passes or stacking in the Fractora tip sustains the Monopolar ablations with the gentle bipolar RF flow to simulate the types of contraction energy that needle-based technologies such as the Profound can achieve [2–6].

The epidermal thermal sparing effect of the Fractora and the newer Morpheus fractional adipose technology make these devices safer on darker skin types [2, 3].

The other needle-based RF technologies such as the Infini, Intensif and Intercell are very different to Fractora or Profound, as they have small micro-current flowing between narrowly spaced positive and negative electrodes and the amount of ablative index or power density is relatively low, accounting for a minimal thermal contraction and the need for multiple treatments to achieve modest improvements. The eMatrix (Syneron Candela) is a low epidermal impact, trans-epidermal, smooth electrode system that can deliver mild to moderate skin tightening after 3–6 treatments. HIFU, or Ulthera, is a fractional trans-epidermal focused ultrasound dermal ablative system, that, like the eMatrix, can deliver noticeable, modest skin tightening after 2–3 treatments.

The advances in esthetic medicine have led to a wide array of trans-epidermal fractional and non-fractional laser techniques, high frequency focused ultrasound and non-ablative RF technologies that can enhance skin tightening. These technologies are ideal when combined with multiple approach protocols for mild to moderate results, but never compete with deep subcutaneous heating techniques such Smart Lipo laser lipolysis, mono.

probe, Monopolar ThermiRF heating *systems or, the market leader in soft tissue contraction and safe thermal coagulation, bipolar RFAL technologies.* It is the combination of the externally applied Morpheus 8 and the internal RFAL that has resulted in

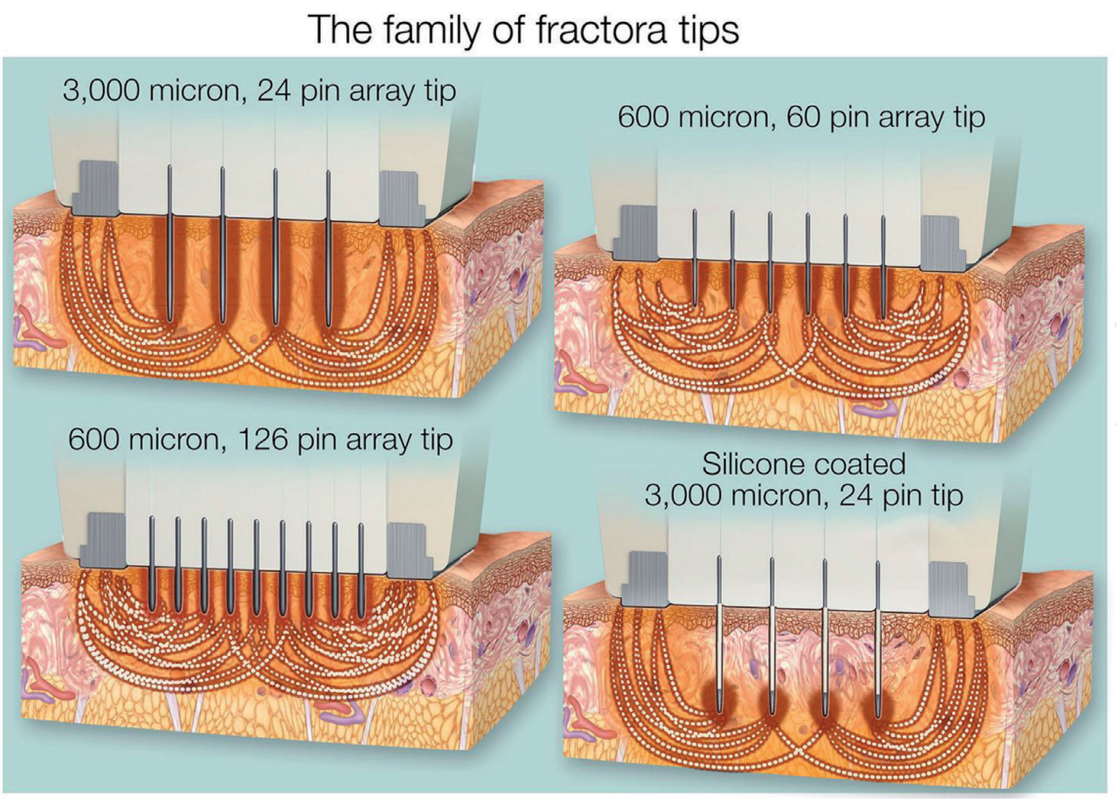

Figure 2.
The Fractora family of treatment tips. The 60 pin (low density) and 126 pin (high density) 600 micron depth, uncoated needles for general skin resurfacing. The 24 pin, uncoated and silicone coated, 3000 micron needle tips applicators for transdermal ablation. The 24-pin silicone coated needle affords the valuable epidermal thermal sparing effect for selective deep dermal, thermal ablation and remodeling.

the extraordinary soft tissue contraction and non-excisional face and body contouring opportunities outlined in this chapter.

3. What is the morpheus concept?

The Morpheus is a *"hand shake"* between the **BodyTite, FaceTite and AccuTite RFAL and the Fractora.** *Whereas Fractora was external, percutaneous DERMAL RFAL, the Morpheus is external RFAL applied to the Adipose and subdermal space* (**Figure 3**).

The Fractora, is a vertical, silicone coated, fractional RF *dermal remodeling system* that delivers fractional, monopolar-like, deep dermal ablative lesions with RF flowing from the positively charged tip of the silicone coated pins to very widely space negative return electrodes on the skin, resulting in a synchronous non-ablative dermal remodeling. The Morpheus is a physiological handshake between these two concepts. It takes the silicone coated pins-electrodes of the Fractora and extends them into the superficial fat. Each pin-electrode, like the internal electrode of the RFAL BodyTite® family of applicators is silicone coated, except for the positively charged tip which releases strongly coagulative RF energy directly into the fat. The BodyTite® and RFAL applicators, and the Morpheus pin-electrodes result in adipose coagulation and ablation, which in turns provides significant FSN contraction and skin tightening. The RF flows up to the negative charged electrode, moving in tandem with the internal electrode along the surface of the skin and results in gentle dermal, non-ablative RF heating and dermal remodeling. The Morpheus return electrodes are also located on the skin, just static and not moving.

3.1 How does the morpheus work?

Morpheus is an innovative, nonsurgical skin and soft tissue enhancement device from InMode. It is an external delivered, bipolar radiofrequency coagulation system

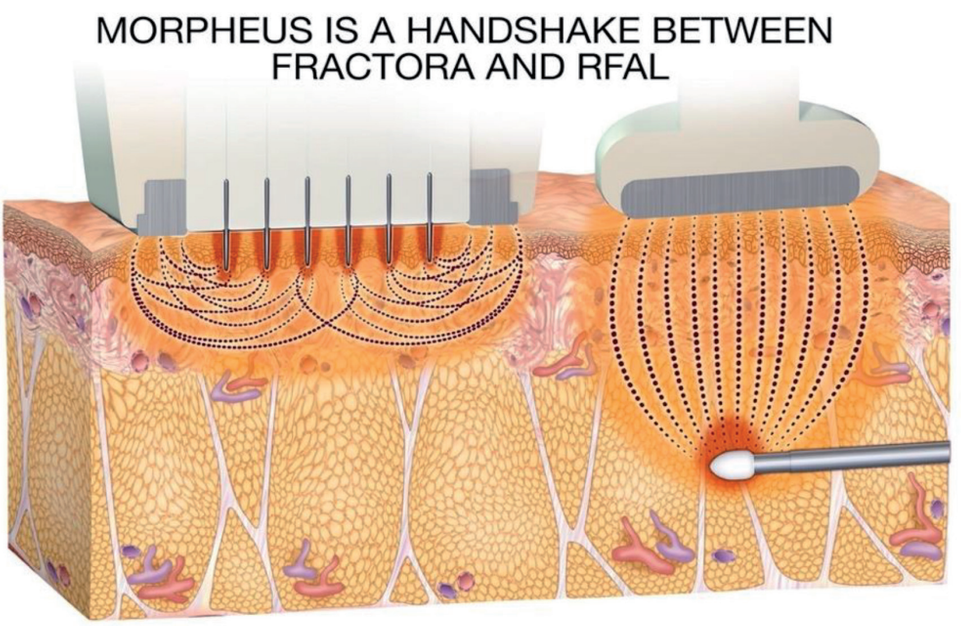

Figure 3.
The Morpheus® is like a physiologic "hand shake" or hybrid of the Fractora® horizontal fractional RF dermal resurfacing on the left together with the RFAL subcutaneous adipose coagulation and FSN contraction, with gentle non ablative RF dermal remodeling from the BodyTite®, FaceTite, AccuTite, or the Aviva gynecological labiaplasty applicator on the right.

of the subcutaneous fat and non-ablative dermal remodeling system. In short, it is externally applied, and it tightens the soft tissue through ablative coagulation of the sub-dermal, superficial fat and FSN (Fibroseptal Network) fibroseptal connection system and simultaneously tightens and smoothens the overlying wrinkled loose skin. At level one, there is also direct reticular dermal remodeling (**Figure 4**).

3.2 How does the morpheus RF flow and induce soft tissue contraction?

The Morpheus handpiece delivers 24, "monopolar-like", silicone coded positively charge, RF emitting electrode pins beneath the skin into the superficial fat. A specific and proprietary pulse of radio frequency electrical energy is then delivered to the fat, which coagulates (tightens) the sub- dermal adipose and, importantly, shortens the horizontal, oblique and vertical connections to the skin called the FSN and, or the fibrous septal network. This action of FSN contraction provides a significant tightening of the soft and reducing overlying wrinkles, scars, irregular texture, pores and even stretch marks and acne scars. The silicone coated needles protect the skin from any thermal injury (**Figures 5** and **6**).

The RF energy then flows up toward the skin surface, along the silicone coated needle and along the FSN to the negatively charged triangular-shaped electrodes on

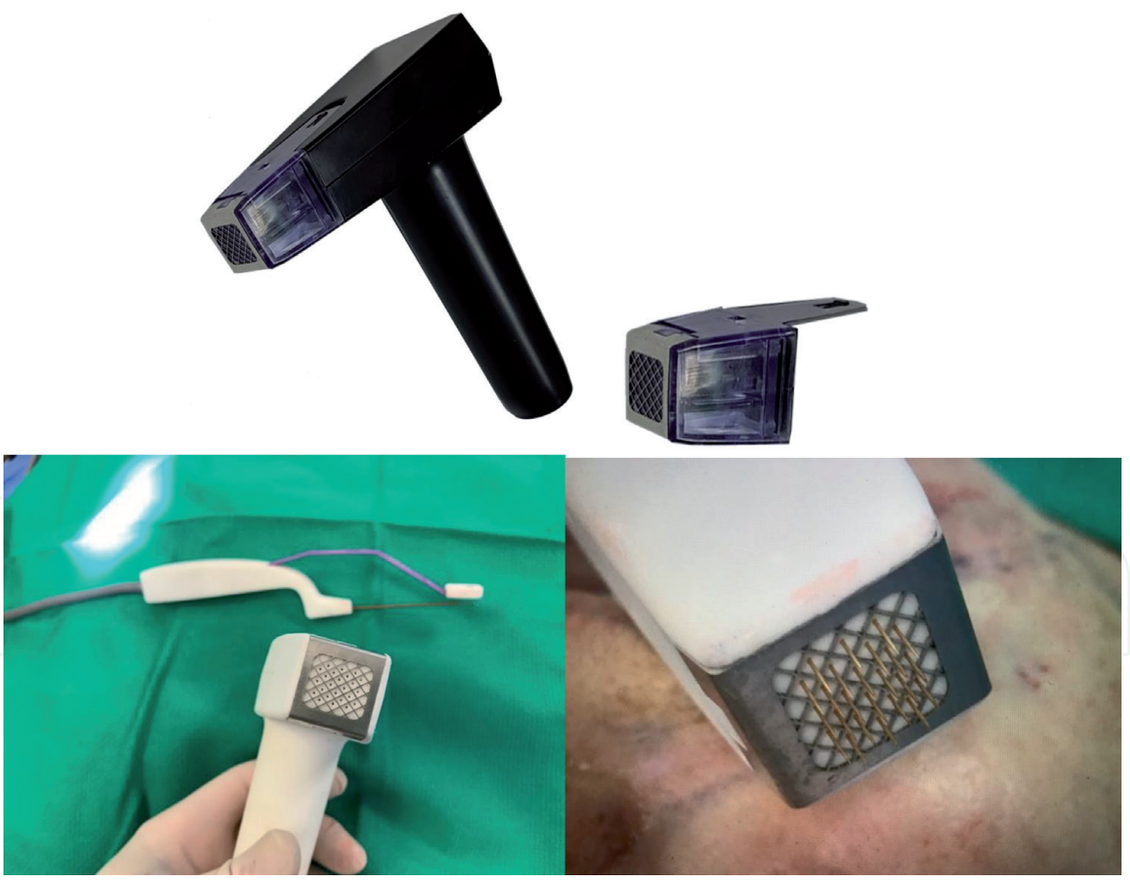

Figure 4.
The Morpheus hand piece and tip is a reciprocating motorized device that propels silicon coated pin-electrodes through the skin and into the superficial fat just under the skin. The uncoated, positively charged tips of the pins-electrodes release strong radiofrequency (RF) energy that causes a localized adipose coagulation and RFAL tightening of the fat and contraction of the FSN connections to the skin. The fat and FSN contraction tightens the overlying soft tissue. The RF energy then flows from the tip of the positively charged electrode-pin up to the surface of the negatively charged, triangular shaped electrodes, which sit statically on the skinthrough which the pin-electrodes are protrude. (lower left and right) the RF also flows to other negatively charged external return electrodes on the sides and this is gentle, non-nectrotic in nature, and tightens the dermis non-ablatively.

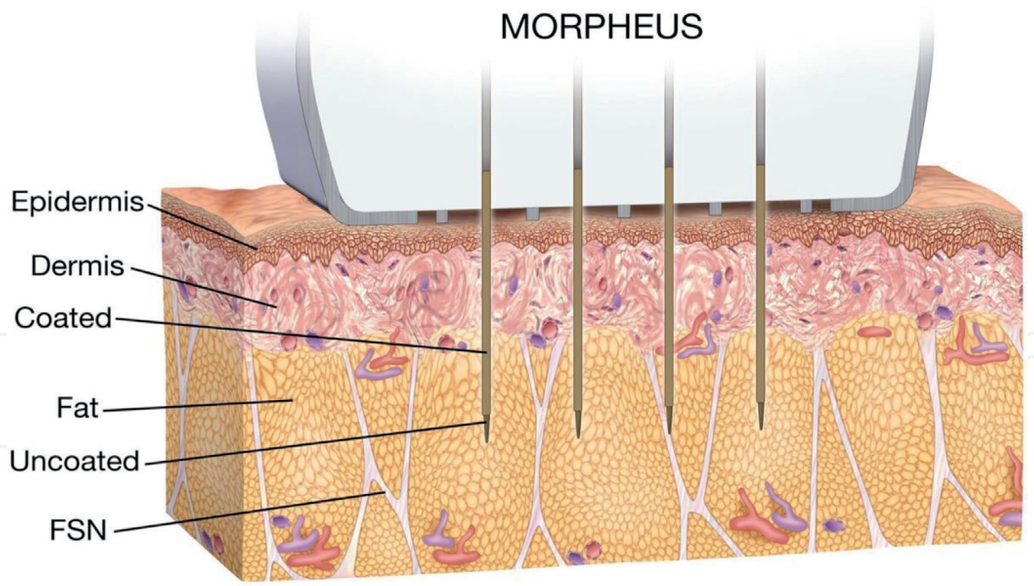

Figure 5.
The Morpheus delivers positively charged, silicone coated needle electrode through the skin into the superficial fat. The skin and epidermal-dermal junction is protected by the silicone coating. The tip of the electrodes are not coated and are embedded in the fat. The tip of each probe-needle is positively charged, and strong RF energy is emitted that heats, coagulates and tightens the fat, FSN and overlying skin. The RF flow distantly to negatively charged, larger surfacing area negative return electrodes that sit statically on the surface of the skin (and NOT ADJACENT the needle tip, hence NOT micro-RF micro needling).

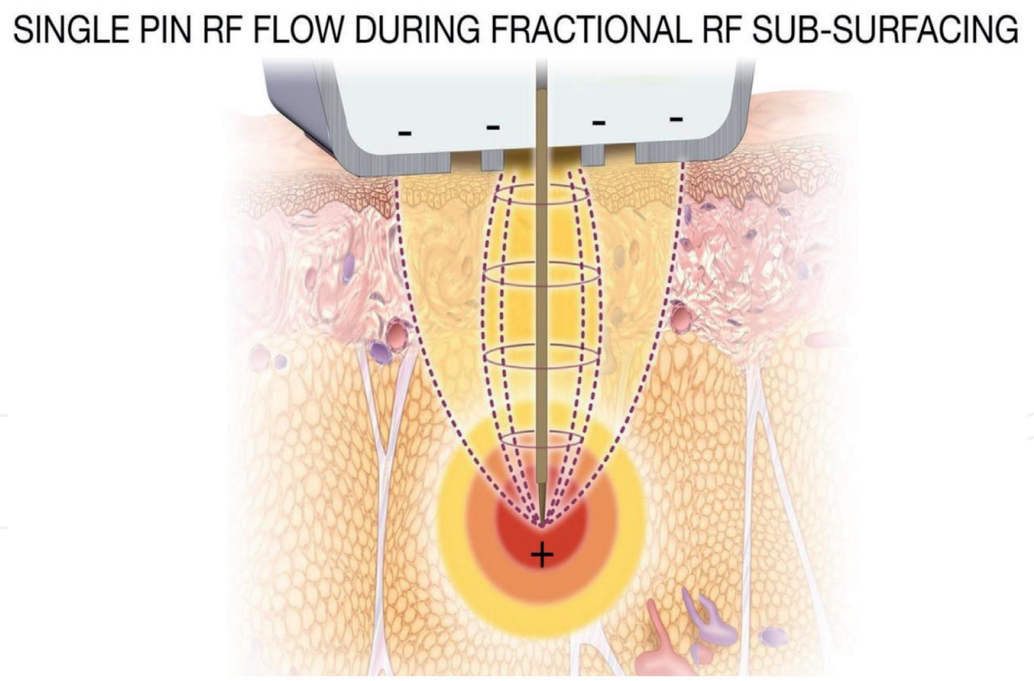

Figure 6.
The uncoated tip of the Morpheus pin-electrode is positively charged and results in a strong coagulative and ablative lesion in the fat and surrounding FSN. The RF then flows up the pin-electrode, along the FSN to the negatively charged triangular return electrodes that the pin-electrode protrude through and return electrode on the sides of the tip. This superficial RF is non-ablative in nature and results in a non-necrotic heating and tightening of the papillary and reticular dermis.

the surface of the skin, that surround the pins-electrodes and this delivers a non-ablative, non-necrotic and significant direct heating of the papillary and reticular dermis and skin which stimulates new collagen, elastin and ground substances,

further tightening the soft tissue envelope and smoothening overlying wrinkles, folds irregular texture, scars and even in large pores, stretch marks and acne scars (**Figure 6**).

The protrusion of the needle-electrode through the dermis into the fat is a mechanical, fractional dermal injury, which will lead to some remodeling and dermal enhancement from the mechanical nature of the injury, however, this fractional dermal injury is non-thermal, due to the silicone coating. The epidermal-dermal thermal sparing nature of the Morpheus, focusing more on the FSN and adipose contraction, makes this device more effective at tightening lax skin and can avoid many of the epidermal-dermal junctional complications of thermal fractional dermal technologies (**Figure 7**).

During the nonsurgical face and neck lift, the Morpheus can be applied to the neck, face, upper and lower lids and brow, as well as lax body areas, to achieve a state-of-the-art, industry-leading nonsurgical facelift and skin contraction. At my clinic, SpaMedica, the Morpheus has replaced other, formally new and innovative technologies such as the 5-year-old Profound and 8-year-old Ulthera and other external radiofrequency devices, all of which offer a good non-surgical lift, Morpheus provides a **GREAT** improvement [2–8].

3.3 Horizontal and vertical sequential fractional coagulation and tightening

The Morpheus user has the capability to set the depth the Pins to different levels within the fat, that creating a **vertical and horizontal** fractional coagulative matrix. By sending the pin-electrodes into *different levels* of the superficial, subdermal

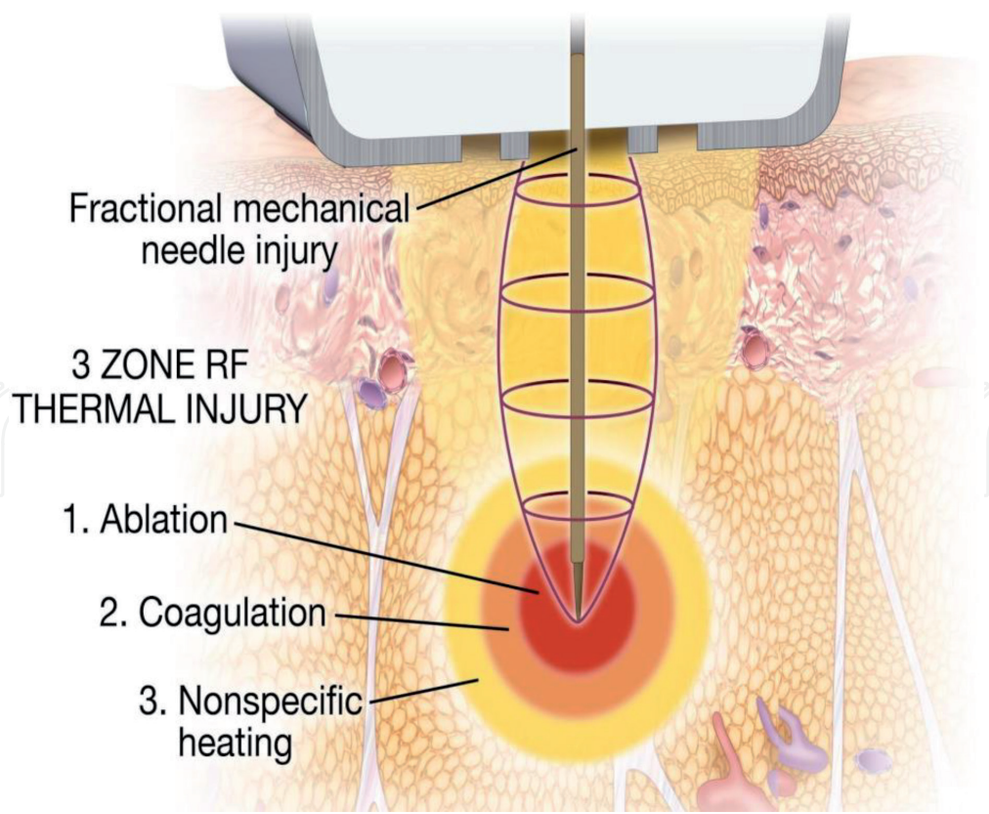

Figure 7.
The Morpheus releases RF energy from the positively charged tip, embedded in the fat, leading to RFAL like coagulation of the superficial fat and tightening of the bands (Fibroseptal bands or Fibroseptal network FSN) that determine skin tautness and, with the FSN contraction there is a very strong contraction and tightening of the skin. The RF also flows back up the pin-electrode, to the negatively charged, triangular shaped external electrode (through which the pins-electrode protrude), heating the dermis and skin directly leading to new collagen and elastin.

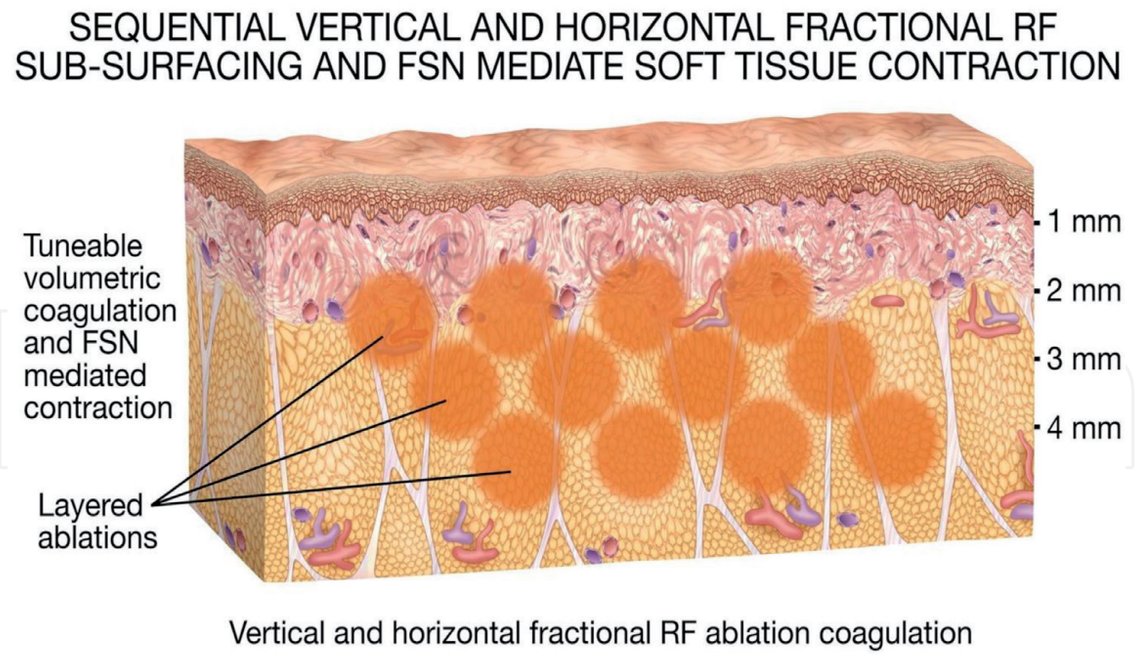

Figure 8.
By performing multiple passes [2–3] at different pin-electrode depths, one can summate the FSN and adipose coagulation and contraction volume, resulting in more skin tightening and dermal remodeling.

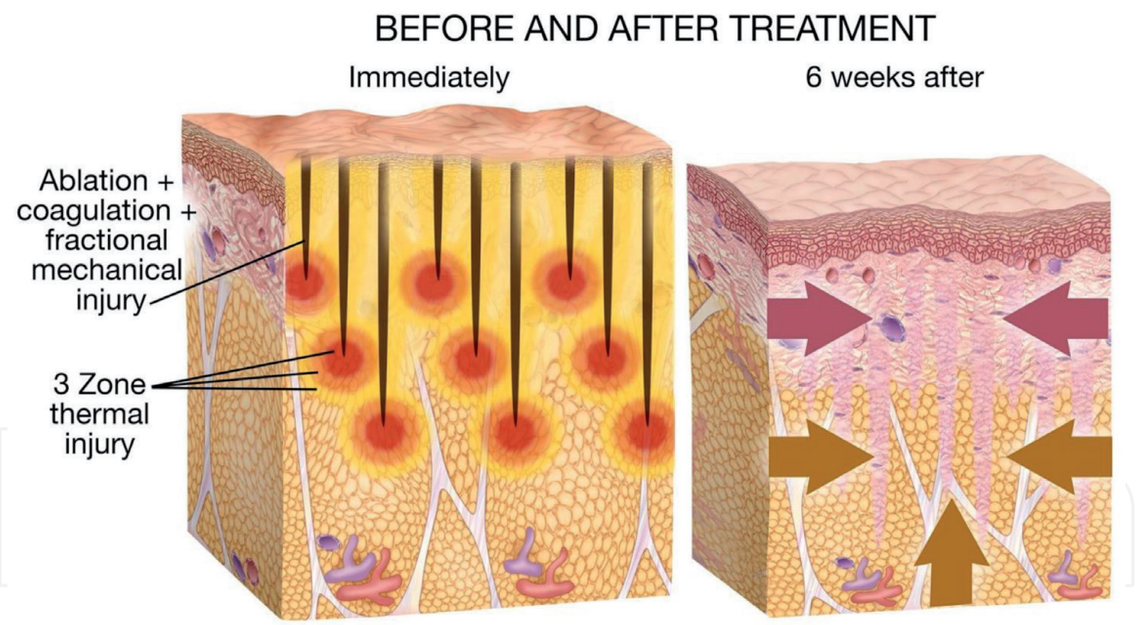

Figure 9.
Multiple passes at different levels, results in a horizontal and vertical fractional remodeling of the adipose and FSN with dermal remodeling for optimal skin tightening and soft tissue contraction.

fat, more volumetric fat coagulation and FSN contraction and recruitment occurs resulting in more effective soft tissue tightening. By performing several passes with the Morpheus, with the pins-electrodes propelled into the fat at different depths with each pass, optimal volumetric adipose RFAL like coagulation and FSN shortening can occur (**Figures 8–10**). Just like the sequential vertical FSN contraction that occurs by performed RFAL and BodyTite, FaceTite and AccuTite at multiple levels (see Part 1: Internal RFAL chapter and basic science) by performing Morpheus at multiple depths, you achieve a summative adipose and FSN coagulative effect with an enhanced degree of soft tissue contraction (**Figures 8–10**). After stimulation of the

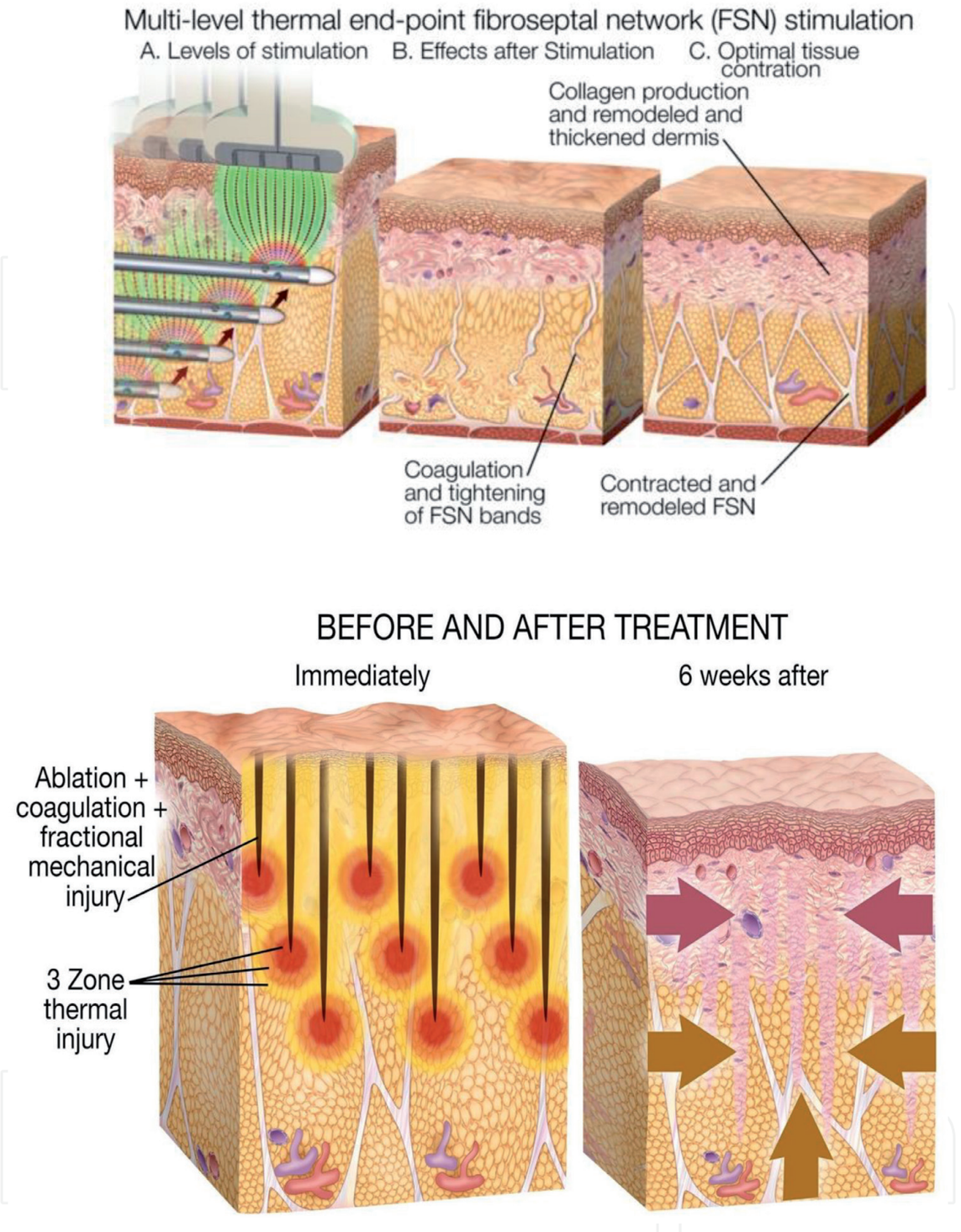

Figure 10.
Multiple variable depth vertical pass RFAL (left) and multiple, variable depth vertical pass Morpheus facilitate and amplified recruitment of the FSN contraction effect.

FSN at multiple levels, on the most superficial settings, Level ONE, there is a direct sub-reticular dermal remodeling and direct skin tightening effect.

The Sandwich thermal contraction of the "INSIDE-OUT" RFAL BodyTite, FaceTite and AccuTite FSN adipose contraction handpieces, combined with the "OUTSIDE-IN" adipo-dermal contraction of the Morpheus affords the BodyTite physician unprecedented control of the **ENTIRE SOFT TISSUE ENVELOP** and is the reason why clinicians can achieve the kind of "scar less" skin tightening results that are best in class and without compare, as they optimize the outcomes for all those **FACE AND BODY GAP patients**, who need control of the adipose FSA (30–40% contraction) subdermal space and transdermal remodeling (20–30%)

and contraction, for a potential overall 60% Total Tissue Thermal contraction during enhanced liposuction [7–14].

4. What is the morpheus burst?

The Morpheus Burst offers the next level of InMode innovation. The Morpheus BURST comes with the Morpheus BODY applicator (**Figure 11**). The Morpheus BURST is automated multiple, sequential Vertical Fractional adipose RFAL ablation and coagulation in a single cycle. The first FDA approval gained for deepest penetration depth up to 7 mm of ablation and 8 mm of heat and allows to use Morpheus8 applicator for multi-level energy release during one insertion cycle.

There are two options for the 3 level RFAL automated Morpheus BURST fractional Coagulation:

i. 7 mm, 5 mm and 3 mm OR, (**Figure 12**)

ii. 6 mm, 4 mm and 2 mm (**Figure 12**)

iii. And two options for the 2 levels of automated coagulation treatment

iv. 5 mm and 3 mm OR

v. 4 mm and 2 mm (**Figure 13**)

With each of the pulse sequence options above, the Morpheus BURST software will automatically embed the 40-pin needle array at deepest level and deliver the coagulation and ablative pulses automatically stopping every 2 mm during retraction (**Figures 12** and **13**).

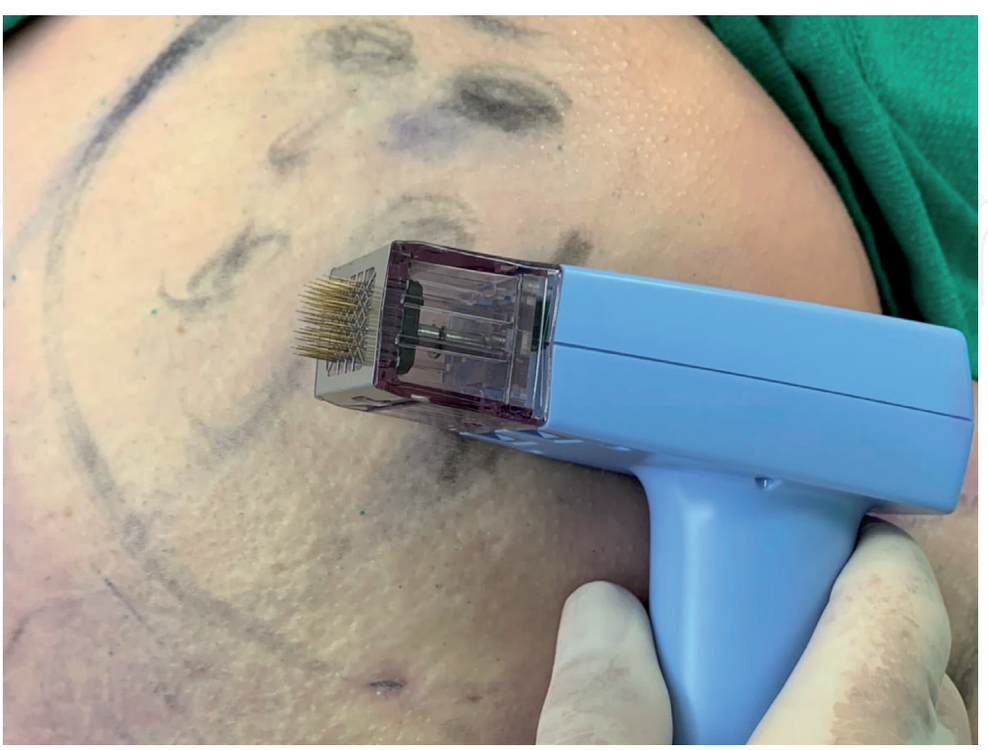

Figure 11.
The Morpheus BURST comes with the Morpheus BODY applicator. 40-pin electrodes that penetrate 2-7 mm with single pulse, automated double or triple pulse ablation and coagulation.

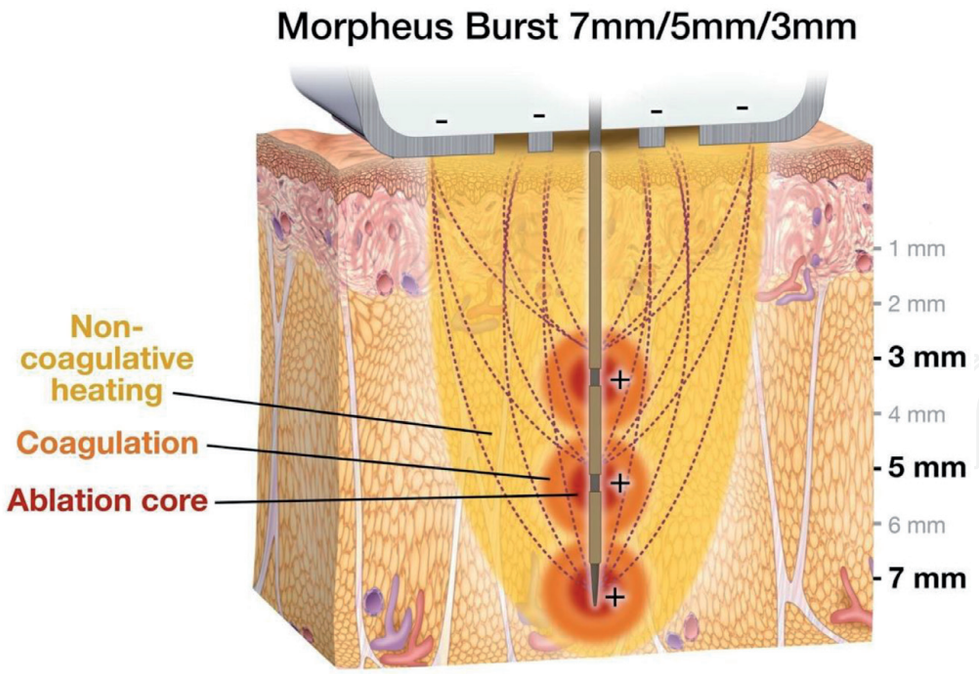

Figure 12.
The new Morpheus BURST offers automated, single pulse vertical, fractional adipose coagulation and contract in a single 1 second pulse. The triple depth can be either 7 mm/5 mm/3 mm, or in thinner tissue zones, 6 mm/4 mm/2 mm. There are also 2 double automated ablative and coagulative soft tissue contraction of 5 mm/3 mm and 4 mm/2 mm.

This **"BURST"** of soft tissue ablation and coagulation at multiple levels with each cycle, optimizes and greatly increases the amount of soft tissue contraction and fat reduction that can be delivered in each second. In essence, one pass of the Morpheus BURST, is equivalent to the summative contractile effect of 3 passes with the non-burst Morpheus (**Figure 14**). This tripling of the coagulation index provides 300% increase in the single pass soft tissue contraction and fat reduction. Automatic delivering energy in 3 levels also increase uniformity of treatment allowing delivery of precise number of ablative and coagulative zones for each level and exactly the same treatment area.

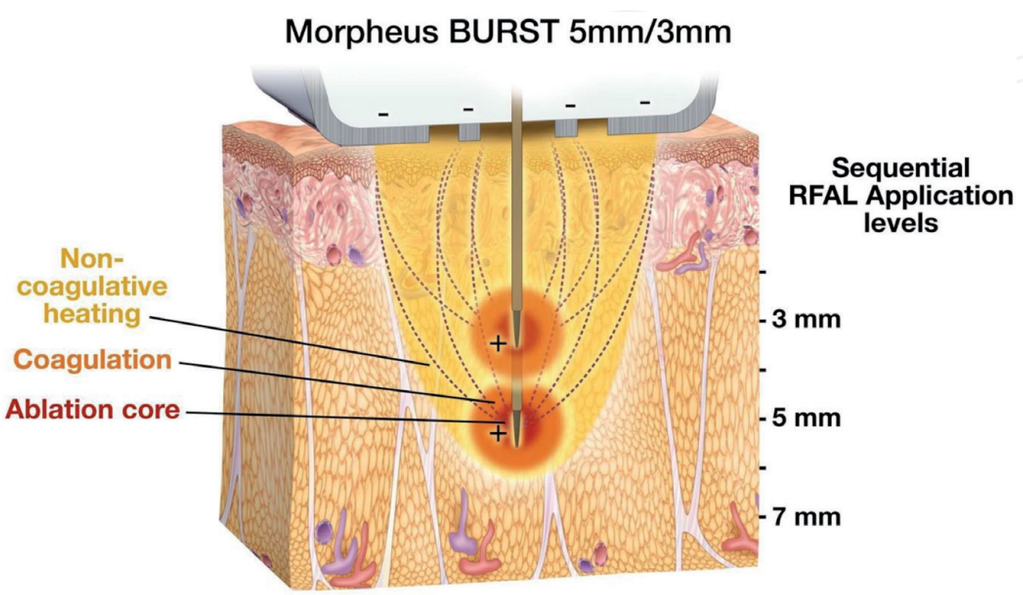

Figure 13.
The Morpheus burst allows a double synchronous double burst, single pulse ablation and coagulation injury for thinner, soft tissue areas.

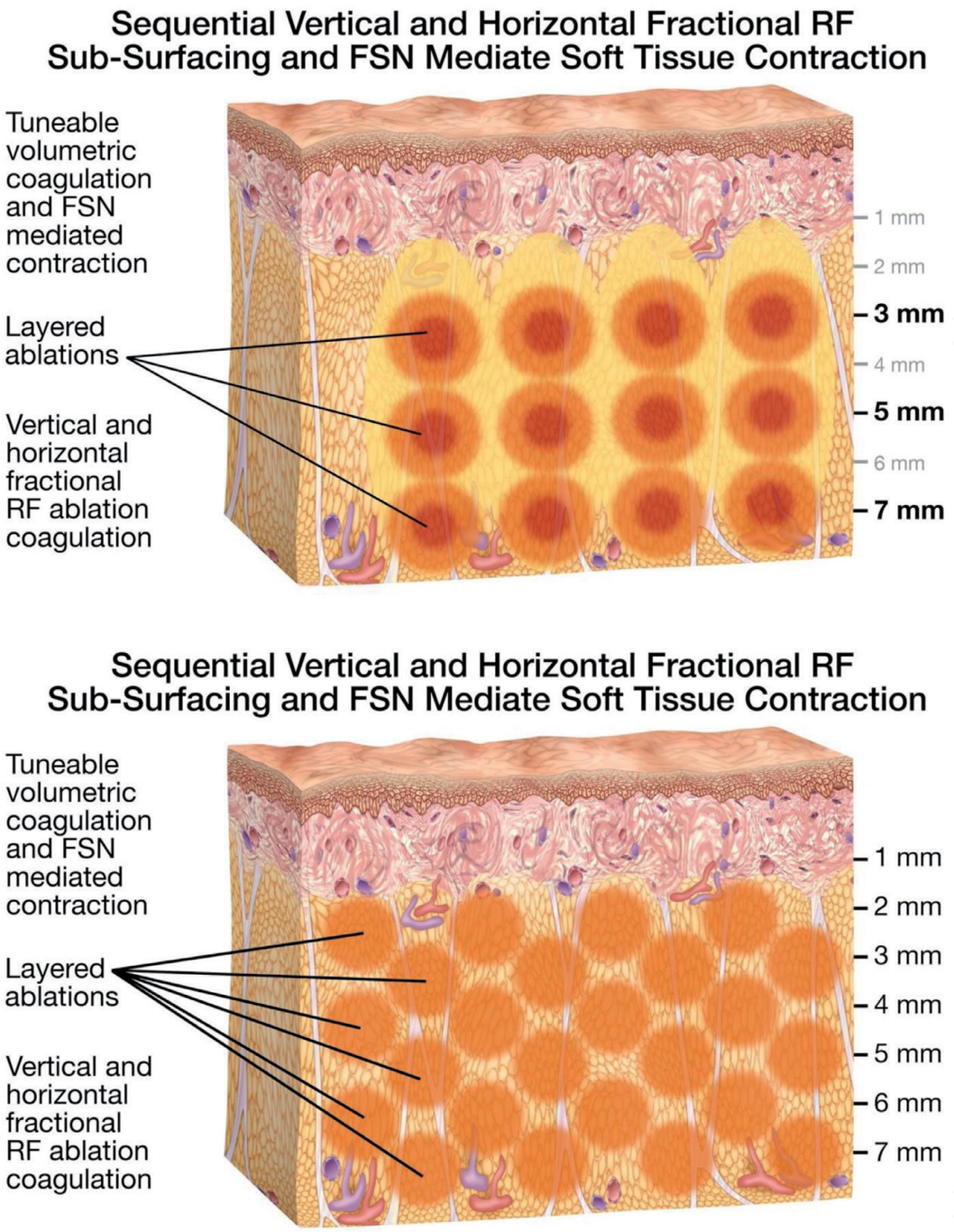

Figure 14.
Top: *Shows the synchronous, automated, single pulse 3 zone thermal effects of the Morpheus BURST.* ***Bottom:*** *The synchronous, automated multiple vertical depths of coagulation simulate 3 passes in a single pulse, amplifying and efficiently delivering optimized soft tissue volume ablation, coagulation and ultimately, single pass contraction. With 2 passes, one at burst 7 and the other burst 6, coagulation zones can be deposited every 1 mm.*

The Burst Pulse Configuration at each level is as follows:

1. 100 milliseconds stationary for each energy release for each of 3 levels, 7 mm/5 mm/3 mm or 6 mm/4 mm/2 mm.

2. 100 milliseconds for position change movement

3. **TOTAL cycle time is 700 milliseconds.**

4. **Total tissue ablation and contraction up to 300% greater per second**

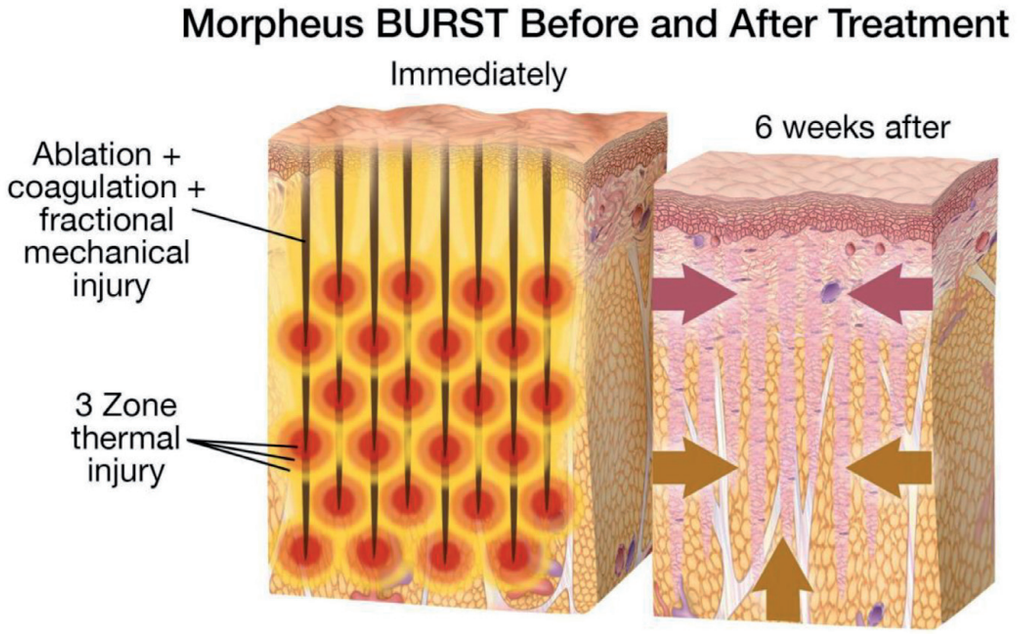

Figure 15.
The aggregate soft tissue coagulation and enhanced volumetric soft tissue contraction of the Morpheus BURST.

Each Morpheus BURST pulse is like making 3 sequential passes, with the single depth coagulation Morpheus. Thus, with a single pass in a given zone, is then equivalent to 3x's the number of passes with 3x's the ablative and coagulative index and GREATLY enhanced soft tissue contraction (**Figure 15**).

5. What is the difference between the Morpheus 8 and microneedline and RF micronieeling systems

The Fractora was the first external Fractional RFAL skin tightening device and was *intradermal Fractional RFAL*. The Fractora is completely different to the safe, but far less effective RF micro needling systems. In all the micro needling systems, the RF energy flows between closely approximated rows of needles having opposite polarity and embedded side by side into the tissue (**Figure 16**). RF micro needling systems have minimal ablative capacity and a very low ablative tissue index. The closely approximately rows of positive and negative pins in the RF micro needling systems lead *to minimal thermal tissue ablation, minimal soft tissue contraction and are basically acting similar to non-thermal micro needling devices.* The RF micro needlers, as I call them offer extreme safety, but negligible thermal coagulation and contraction. They require multiple treatments [6–8], to deliver minimal tissue remodeling, but are quite safe and inexpensive (Micropens often deliver as much).

6. The morpheus adipose fractional RFAL

The Morpheus8 took the *"outside-in"* Fractora RFAL concept from the dermis and expanded the application and thermal targeting to the most important layer for body contouring, the adipose tissue and FSN. The Morpheus electrodes (pins) have 500 microns of uncoated electrode at the tip for the ablative RFAL energy. The fractional array range from 12 Pins on the Morpheus PRIME, 24 pin electrodes on the Morpheus BASIC to 40 pins on the Morpheus Body. The Morpheus body offers Fractional Adipose, thermal ablation and needle penetration depths of

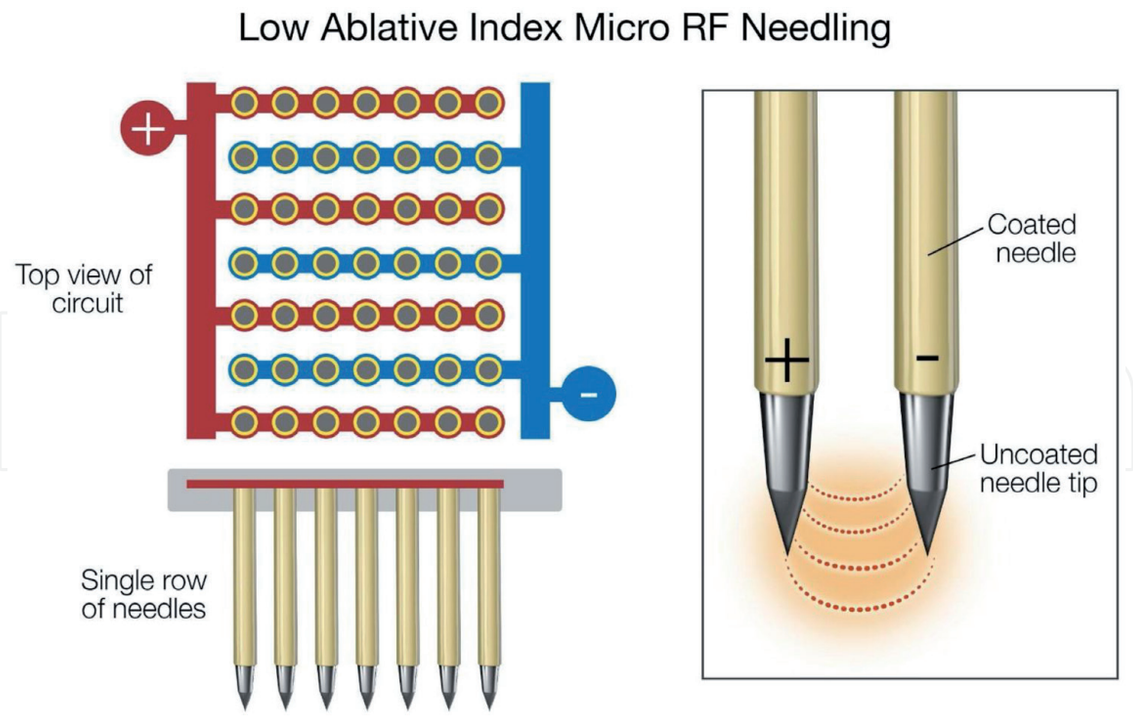

Figure 16.
Bipolar RF micro needling*. The polymer coated needles protect the surface of the skin, but the RF current flows between very closely spaced electrodes, resulting in a very small area of tissue ablation compared to the massive aggregate soft tissue ablation, coagulation and contraction of the Morpheus family of fractional adipose applicators.*

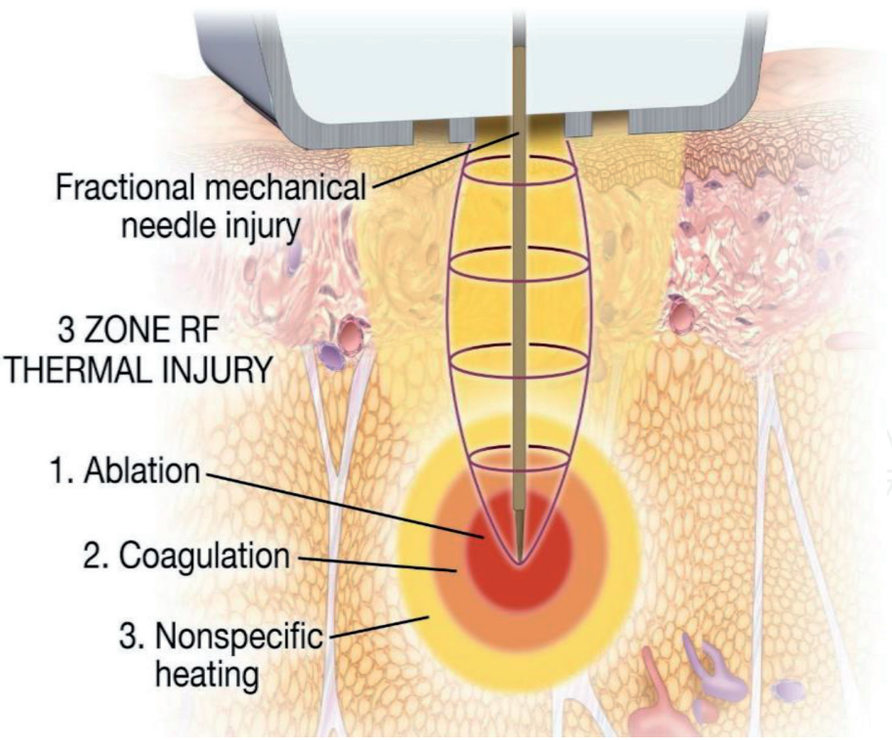

Figure 17.
The Morpheus releases RF energy from the positively charged tip, embedded in the fat, leading to RFAL like coagulation of the superficial fat and tightening of the bands (Fibroseptal bands or Fibroseptal network FSN) that determine skin tautness and, with the FSN contraction there is a very strong contraction and tightening of the skin. The RF also flows back up the pin-electrode, to the negatively charged, charged side rail electrodes.

2 mm, 3 mm, 4 mm, 5 mm, 6 mm, and 7 mm with thermal effect up to 8 mm for a BiFractional (horizontal and vertical adipose fractional effect) ability to ablate and coagulate adipose tissue from the *"outside in"* (**Figure 17**). Like the RFAL minimally

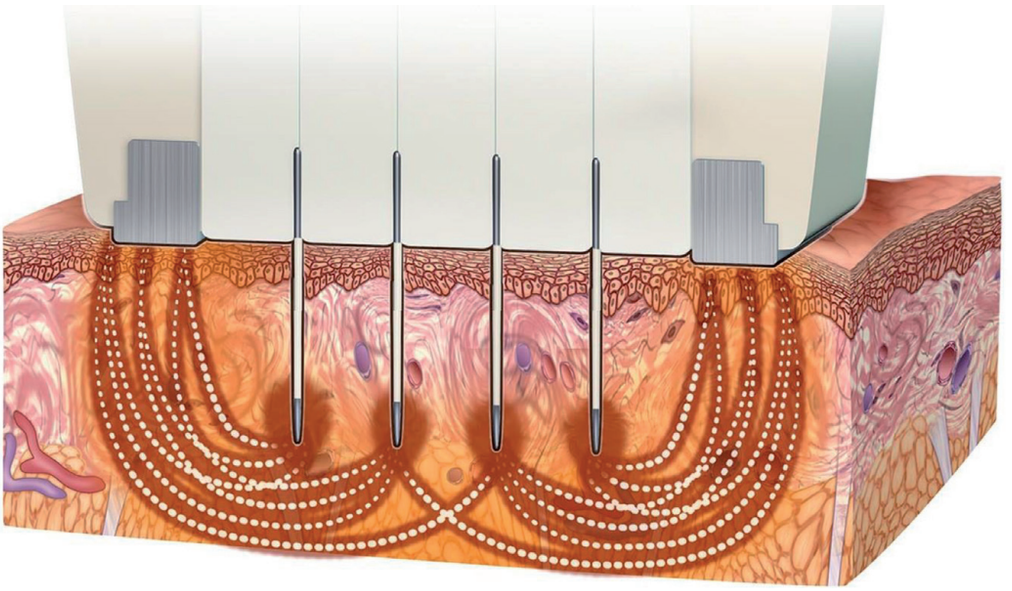

Figure 18.
The 24 pin Fractora tip, has needles that are 2500 microns in length and can be uncoated or coated. The 24-pin, 2500 micron coated needles have polymer coating along the proximal 2000 microns leaving the distal or last 500 microns uncoated. The coated portion spares the epidermal- dermal junction the thermal injury and allows very aggressive deep dermal fractional injuries and remodeling without the risk or fear of excessive superficial crater injuries and hypopigmentation or scaring. The 24-pin coated Fractora tip is called a "low epidermal impact" tip and is an important tool in deep tissue tightening and deep wrinkle and scar improvements.

invasive applicators, and the dermal Fractora before it, with the Morpheus8, the RF energy flows from the deeply embedded array of needle electrodes to the return electrodes on the surface of the skin.

The Morpheus facilitates fractional adipose tissue ablation and coagulation as well as FSN contraction resulting volume reduction and tissue tightening. Safety is optimized by the contact and impedance monitoring that automatically control RF flow between the electrodes.

The Morpheus8 family of Adipose and Dermal fractional RFAL ablation have become the most successful and commonly use fractional ablative devices in the world.

In contrast to micro needling devices, the Fractora has needle electrode embedded to the depth up to 2.5 mm and external electrode applied to the skin surface above the needles. All pin electrodes have the same polarity and release deep dermal ablative energy that then flows up to the return electrodes located on the skin. These large arrays of intradermal positive electrodes create multiple, zones of dermal ablation around each of the individual needle electrode. In addition to these zones of ablation, there is a large zone of non- ablative dermal coagulation and then finally, a large region of non-coagulative dermal tissue heating stretched toward skin surface (**Figure 18**). The Fractora was very effective, but only harnessed the power of dermal contraction and not the FSN or adipose tissue, like the AccuTite, FaceTite or Bodytite.

7. Clinical applications of the morpheus burst

The Morpheus BURST has greatly enhanced our ability to shape, contour, coagulate and contract tissue using the RFAL from the outside in.

7.1 Morpheus burst body

I will use Morpheus BODY and BURST to treat large zone body contouring from the outside in with a single pass, often in combination with RFAL BodyTite

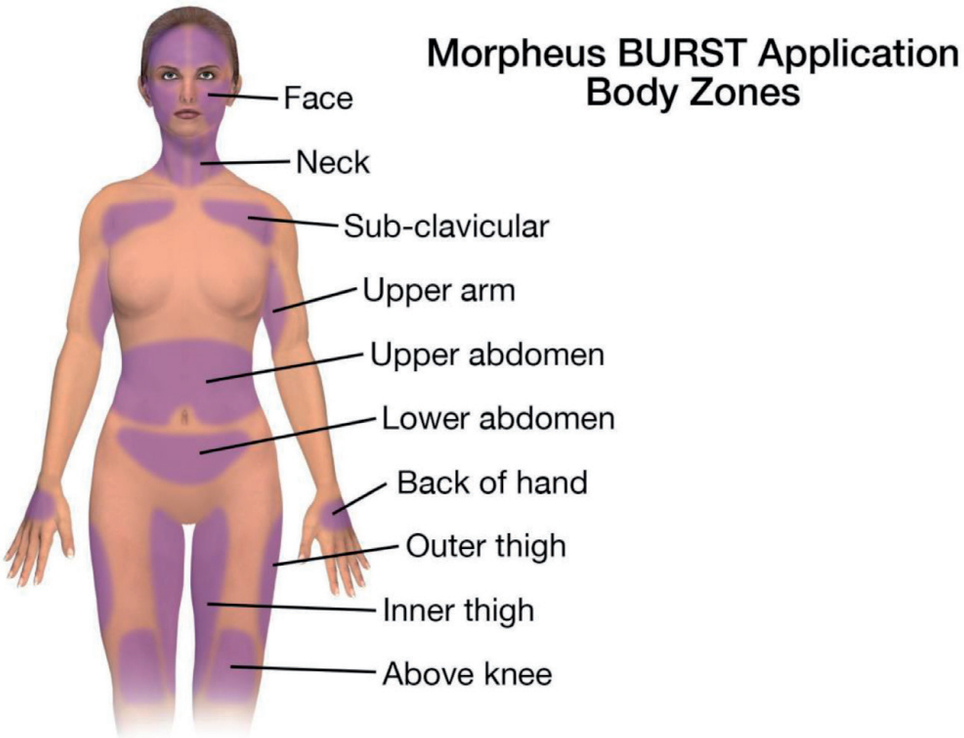

Figure 19.
The Morpheus BURST is very effective at fat reduction, soft tissue tightening and cellulite reduction in zones all over the body.

treatment. The Morphus Burst can be used on thicker necks and jawlines, but the Morpheus 24 pin Face (black handpiece), 12 pin Prime and 60 pin resurfacing tip are more common on the Face itself (**Figure 19**).

8. Clinical cases of RFAL

The following 2 cases are clinical examples of the BodyTite workstation and its applicators: the integrated use of the RFAL internal BodyTite, FaceTite, AccuTite applicators used in concert with the externally applied Morpheus8 RFAL and how they can be combined to deliver soft tissue contours, face and body shaping through "enhanced liposuction" technology and techniques.

8.1 CASE 1: BodyTite RFAL, M8 and the body

A young male presented with significant post Coolsculpting Abdominal Paradoxical Adipose Hyperplasia (**Figure 20**). Other consultations with Plastic Surgery colleges had recommended an excisional abdominoplasty. The patient was reluctant to undergo an excisional procedure and the extensive scar that would be required. After meeting with the patient, I felt a non-excisional BodyTite and Morpheus RFAL enhanced liposuction would achieve good results.

8.2 The RFAL procedure and settings

The RFAL procedure was performed in the office under local tumescent anesthesia and oral sedation. The 2.4 mm BodyTite RFAL applicator was used and the settings were: 40 degrees Celsius skin cut-off and 70 degrees Celsius deep adipose cut-off. Stamping and slow-moving passes were made at the level 6 deep supra-fascial depth, Level 4 mid adipose depth and level 2 superficial adipose level. Following the RFAL treatment, PAL and SAL aspiration was performed

Figure 20.
A patient presented for BodyTite RFAL and Morpheus8 after significant post CoolSculpting abdominal paradoxical adipose hyperplasia.

until there was a 3–4 cm thickness soft tissue flap remaining. Following aspiration, a second RFAL pass was performed at level 2. Following the BodyTite treatment, the Morpheus8 was used in the BURST mode at level 7 mm/5 mm/3 mm and 25 mj/pin.

8.3 Postoperative care

Standard postoperative drain, garmenting and foam was deployed. At 6 months, patient was very happy with his results. The patient is from out of the province and, not living in Toronto and so emailed some cell phone photos. The patient was very happy with his abdominal reduction and contraction and is contemplating a second RFAL and Morpheus8 at one year (**Figure 21**).

8.4 CASE 2: BodyTite RFAL, M8 and the face

A woman in her 60's presented with advanced facial aging concerns: upper lid hooding, periocular laxity, elastosis and extensive wrinkling. She also complained of perioral laxity, deep nasolabial folds, labio-mental folds and periocular wrinkles and laxity. Her primary concern, however, was her jowls, double chin and neck laxity (**Figure 22**).

8.5 The procedure

The procedure was performed in the office Under local anesthesia, tumescent infiltration and oral sedation.

Figure 21.
BodyTite RFAL and Morpheus8 results performed on a post CoolSculpting abdominal paradoxical adipose hyperplasia.

Figure 22.
Patient presented with periocular aging, laxity and rhytids along with pan-facial and cervical descent, rhytids and laxity. Her desire was a non-excisional face and neck tightening, wrinkles reduction, along with a skin pinch upper lid blepharoplasty.

Periocular: The Accutite was used in the supraorbital brow, upper and lower lid. The supra-orbicularis plane and sub-frontalis plane was used in the brow, above the orbicularis in the upper lid and above and below the orbicularis in the lower lid. The Morpheus Prime was used on the upper and lower lid skin The Morpheus 24 pin was used on the brow skin. **Settings:** The AccuTite was set at 40/70 degrees Celsius skin and deep thermal cut-off's and the Morpheus8 Prime and 24 pin at 4 mm/3 mm/2 mm using 45 mj/pin. A limited extension, 6 mm skin pinch upper lid blepharoplasty was performed after the AccuTite and the Morpheus resurfacing tip used for 3 passes on the lower lid skin at 30 mj/pin

Perioral and Cheek: The AccuTite 40/70 degrees Celsius cut-off was used overtop and lateral to the Nasolabial fold, the labio-mental fold and jowl. Stamping and moving techniques were uses. The Morpheus8, 24 pin tip was used across the cheek and perioral skin using 3 passes at 4 mm/3 mm/2 mm with the resurfacing tip at the end at 30 mj/pin

The Jawline and Neck: The FaceTite 40/70 degrees Celsius cut-off was used on the jawline and jowl, sub-mentum and neck followed by modest aspiration using a 1.8 mm microcannula. Following the FaceTite the Morpheus8 Body applicator in BURST mode one pass at 7 mm/5 mm/3 mm and a second pass at 6 mm/4 mm/2 mm, each with 30 mj/pin was performed.

One pass of IPL was performed on the face and neck at the end of the procedure to help with the dyschromia using the Lumecca 515 nm handpiece and 14 j/cm2 and a 10 ms pulse duration

The postoperative care consisted of skin cleaning with tepid water and Aquaphor.

The patient was ready in make up at 2 weeks and very pleased with her results (**Figure 23**).

Figure 23.
A patient underwent a combined procedure with FaceTite and Morphesu 8 burst o the neck and jawline, following by aspiration of the submentum and jowl. Good soft tissue lipocoagulation and contraction was achieved. AccuTite RFAL and Morpheus 8 was performed in the perioral, lower lid, upper lid and brow region with no aspiration but good lipocontraction and elastotic wrinkle reduction. A skin pinch upper lid blepharoplasty was performed in conjunction with the AccuTite and M8.

9. Conclusions

It has become imperative for the modern liposuction surgeon to include an energy based surgical device that facilitates "enhanced liposuction".

Lipocoagulation leading to optimal and enhanced Lipo-contraction and soft tissue tightening has become a very large element of the modern contouring practice. Further, the modern surgeon no longer performs only body contouring, but also deploys more delicate and thermally controlled applicators and handpieces to deliver soft tissue contraction and contouring of the brow, eyes, perioral, cheeks, jawline and neck.

The emergence of a market segment of consumer, the "GAP patients", who are looking for significant non-excisional soft tissue tightening, contraction and wrinkle reduction has created a whole next Body AND Face market opportunity for esthetic physicians. These GAP patients want more than the traditional non-invasive market of toxins, fillers and external non-invasive energy-based devices, but also want to avoid the scars, recovery and stigma of excision procedures. Using the InMode internal and external RFAL applicators, the BodyTite, FaceTite, AccuTite and Morpheus8, non-excisional, minimally invasive procedures can now provide compelling in office procedures for the face and body, performed under local anesthesia that are deliver impressive results. "Enhanced Lipocoagulation and contraction" is here to stay as are the GAP patients who demand a non-excisional but effective solution to their esthetic concerns.

Conflict of interest

The Author is a paid workshop consultant for the company, co-patent developer and a founding shareholder.

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