

Ensemble

MicroneedleRF



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ENSEMBLE

1-1. ENSEMBLE

1-2. MICRONEEDLERF

01

1-1. ENSEMBLE

ensemble
BASIC
Microneedle RF

MICRONEEDLE RF

An ensemble is an Microneedle RF device combining two methods of Micro needling technology and Radio frequency.

A specially made microneedle is inserted into the dermal layer to transmit radio frequency energy of bipolar type. The heat from this energy causes the coagulation mechanism and the collagen is regenerated in the dermis layer, which is effective in improving skin elasticity, wrinkles and acne.

It is possible to make various choices by using three needle which is composed of insulated and non-insulated, opaque tip can relieve patient's anxiety during the procedure. Also, the maximum depth can be up to 4.5mm, so energy can be transferred to the deep part, and name errors can be prevented with electronic charts.



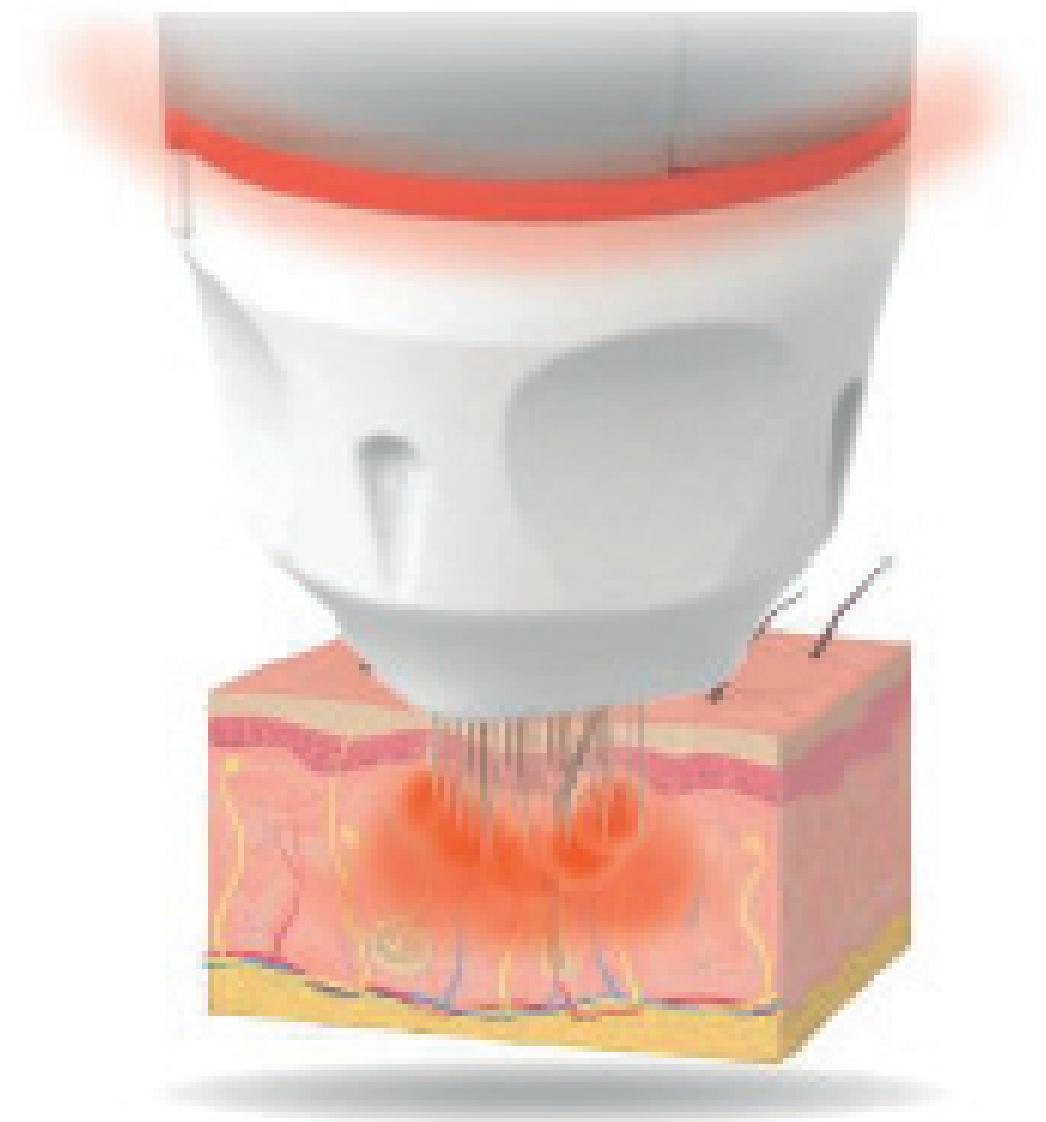
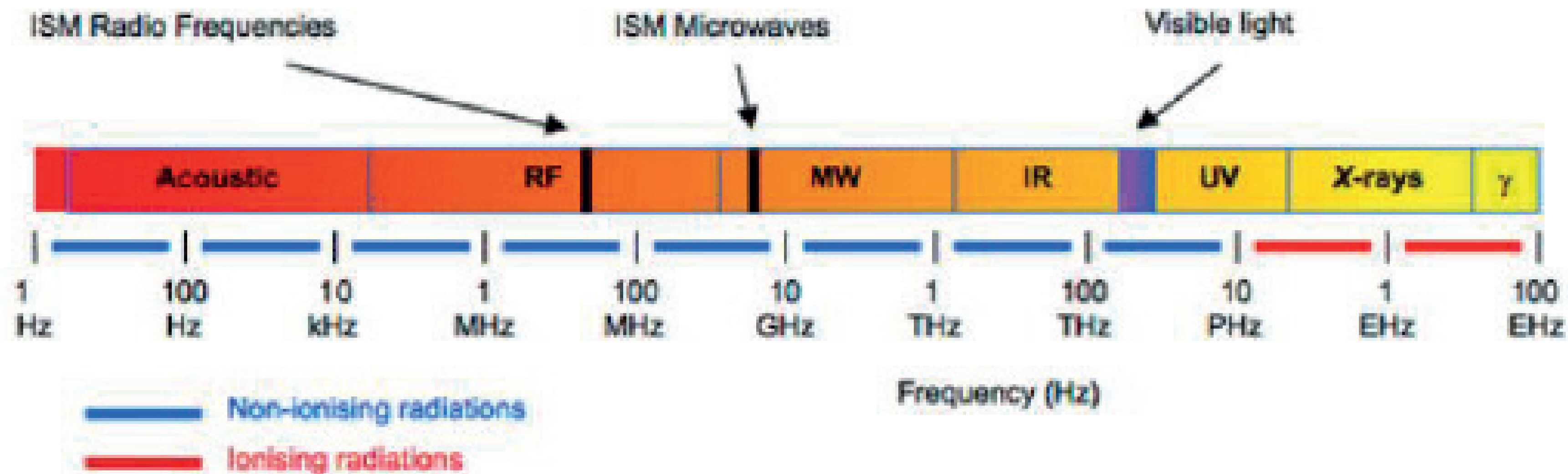
01. ENSEMBLE

1-2. MICRONEEDLE RF

Radio Frequency(RF) is by electromagnetic waves of wavelength 1m m~100km, frequency 3KHz~300GHz, Microneedle RF can selectively transmit energy to the dermis by Radio frequency(RF) high frequency through microneedle.

The electrical energy of the RF is converted into thermal energy and transferred to the dermis through the needle to induce dermal coagulation, which is excellent for skin regeneration.

Also, you control the treatment depth and energy levels to enable a multi-layered approach for customized treatments, regardless of skin type, it is not affected by the amount of chromophore.



01. MICRONEEDLE RF

INDICATION

02

- **SKIN RESURFACING**
 - Scar, Acne scar , Pore, Nose pore
Tightening, Non-surgical Lifting
- **SKIN REJUVENATION**
 - Tightening, Non-surgical Lifting
- **WRINKLE IMPROVEMENT**
 - Forehead/Cheek/Jaw wrinkle, Creases
around the eyes
- **ETC.**
 - Osmidrosis

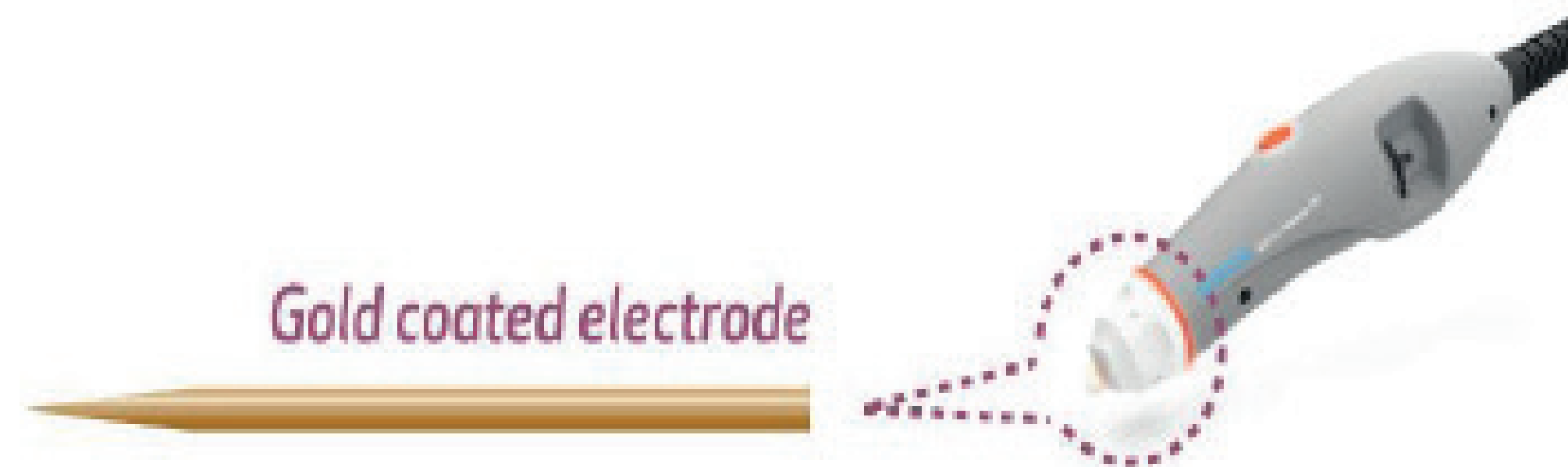
02. INDICATION

FEATURES

03

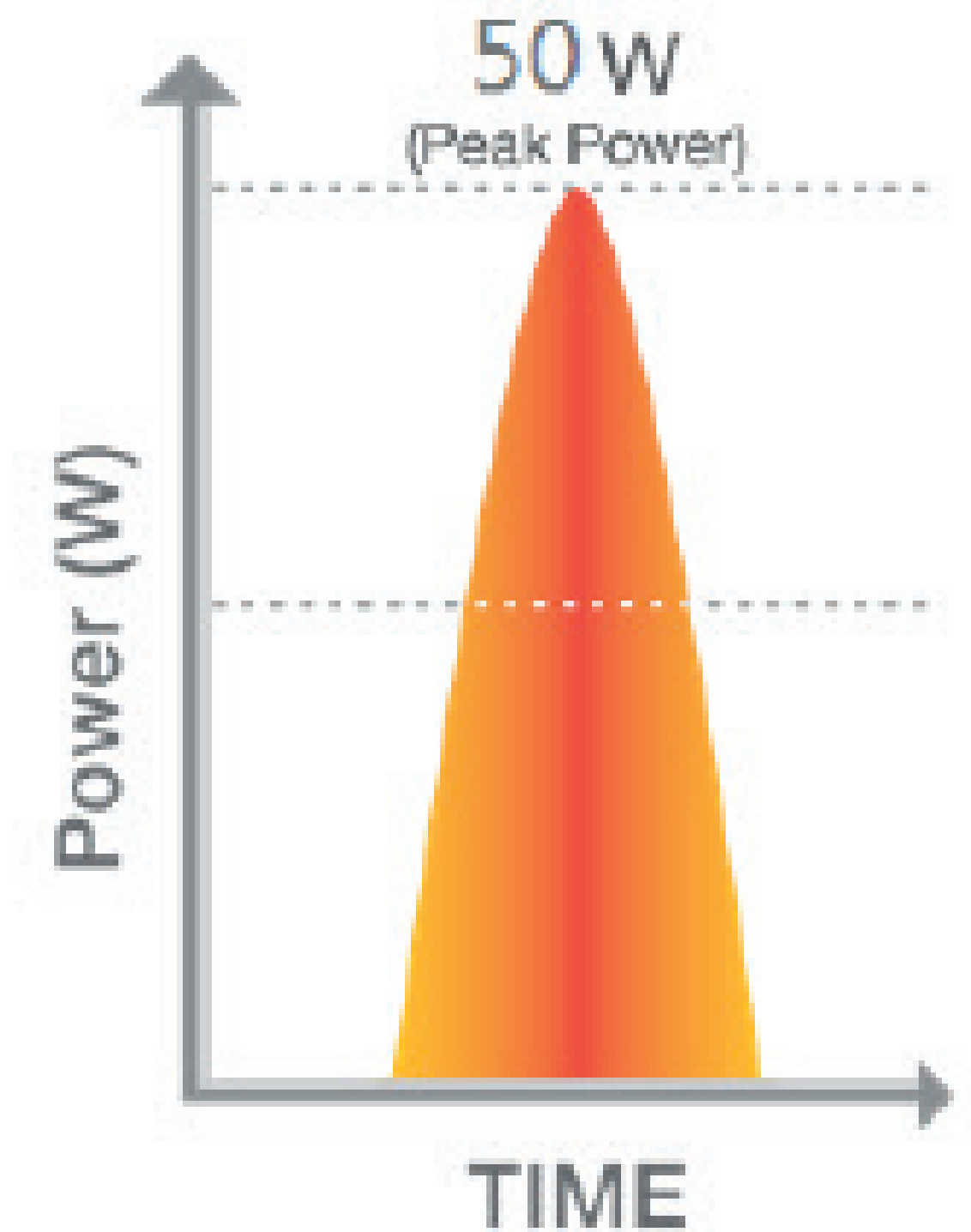
GOLD COATED ELECTRODE

RF irradiation is irradiated only at the end of a specially coated Microneedle, so it does not unnecessarily affect the epidermal tissue, effective protection of the epidermis reduces side effects.



UP TO 50 WATT

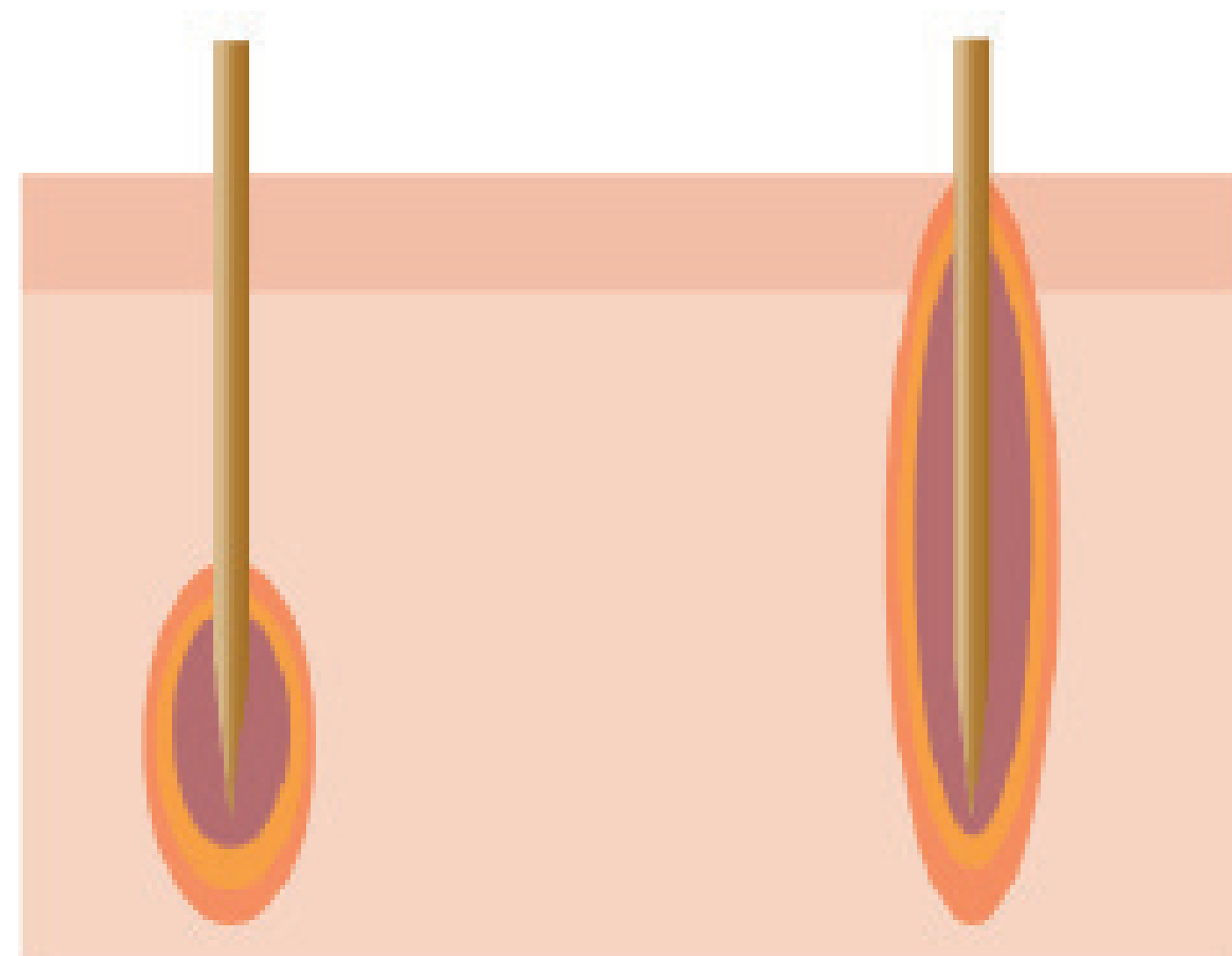
The stable implementation of high power up to 50W results in a coagulation zone in the skin, which shortens the irradiation time during the procedure. Therefore, It can reduce the patient's pain and bleeding in the treatment area.



03. FEATURES

INSULATION / NON-INSULATION

Insulated Needle applies high frequency to dermis with partial insulation,
Non-insulated Needle applies high frequency to epidermis and dermis for total insulation.

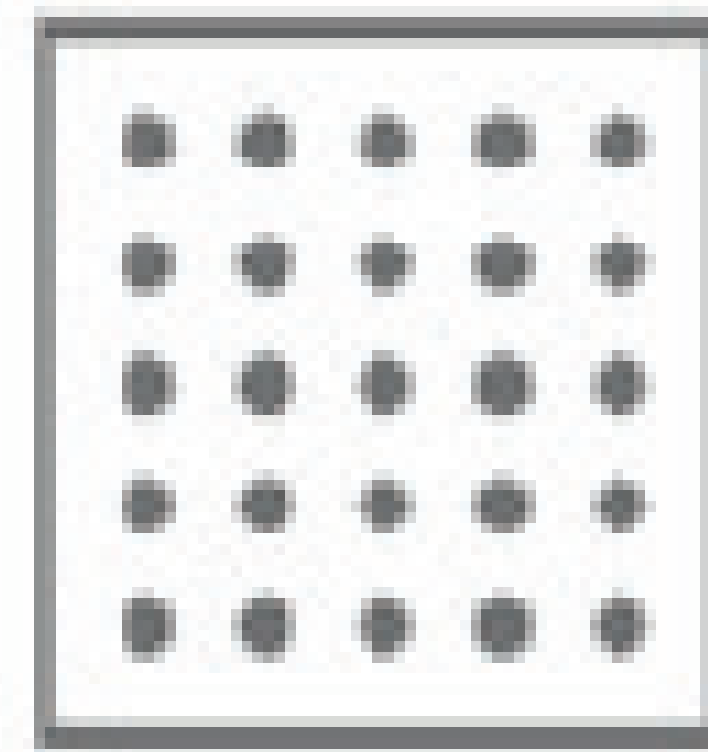


Insulated RF Needle

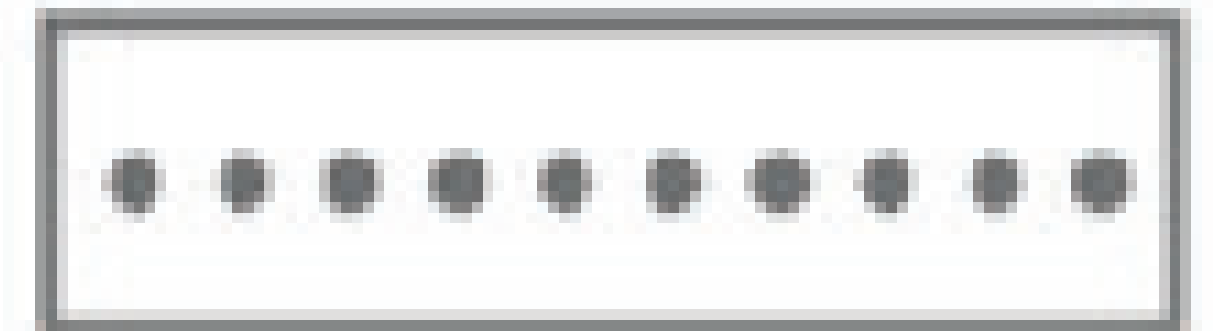
Non Insulated RF Needle

VARIOUS TIP SIZE

Various tip sizes of 25pin(5x5), 10pin(1x10) are available to adjust the lesion treatment range, energy, depth, etc.
Effective high-frequency transmission is possible by acting evenly between whiles each needle.



5x5

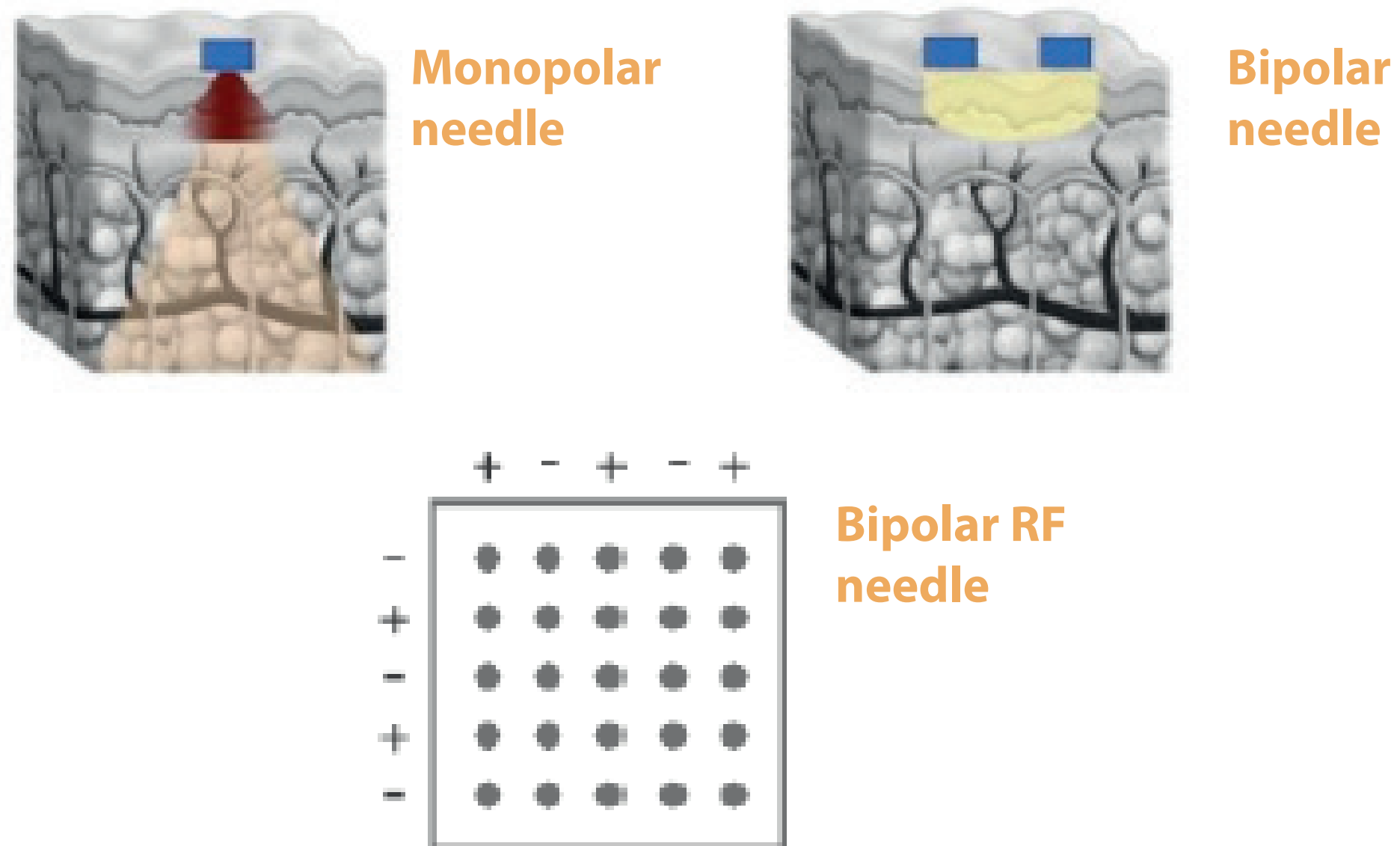


1x10

03. FEATURES

BIPOLAR NEEDLE RF

Bipolar needle RF allows for safe operation between two closely spaced electrodes, where the current from one electrode flows through the tissue to the other and is shallower than the monopolar needle and less thermal damage.



REASONABLE PRICE

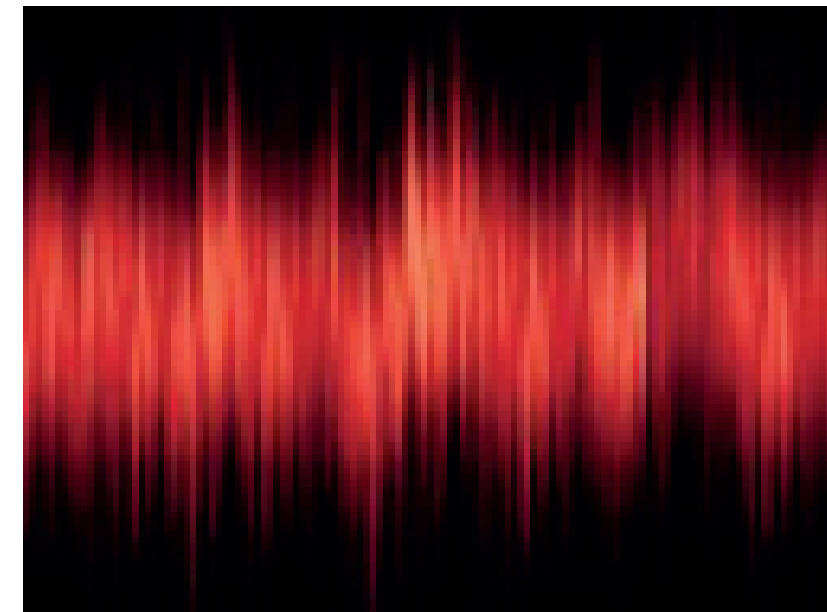
Based on the laser development technology, simple design with indispensable function can be purchased over reasonable price. In addition to that, it is possible to purchase disposable item, cartridge, 20% ~ 50% lower price than other competitors'.

Battery	AA 2 batteries
Waiting Time	40,000hours
Using Time	8,000 hours

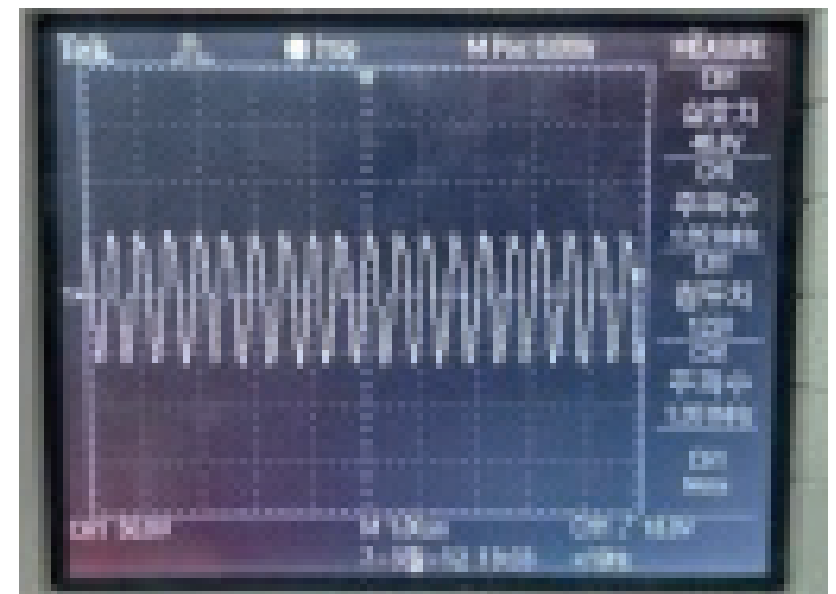
03. FEATURES

2MHZ RF FREQUENCY

It realizes stable waveform and transmits effective voltage & accurate energy per cycle, enabling efficient & stable operation. Also, more intensive distribution than 1MHz is possible.



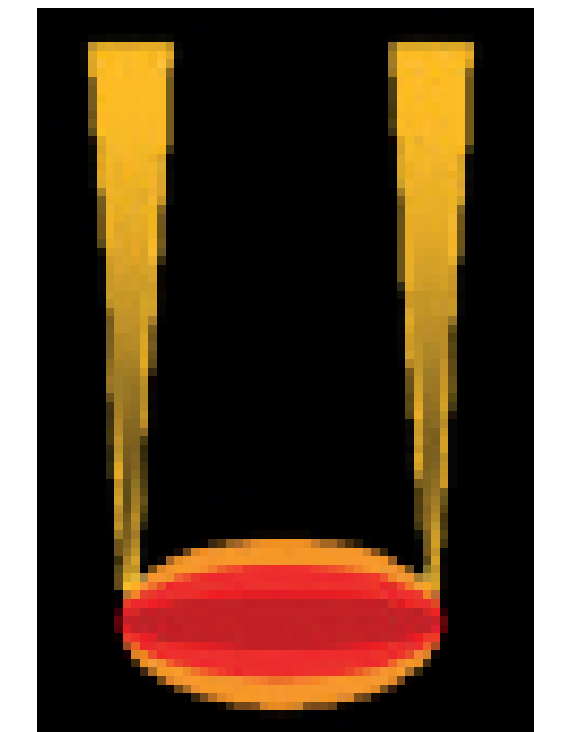
General high frequency machine



2MHz (Ensemble)



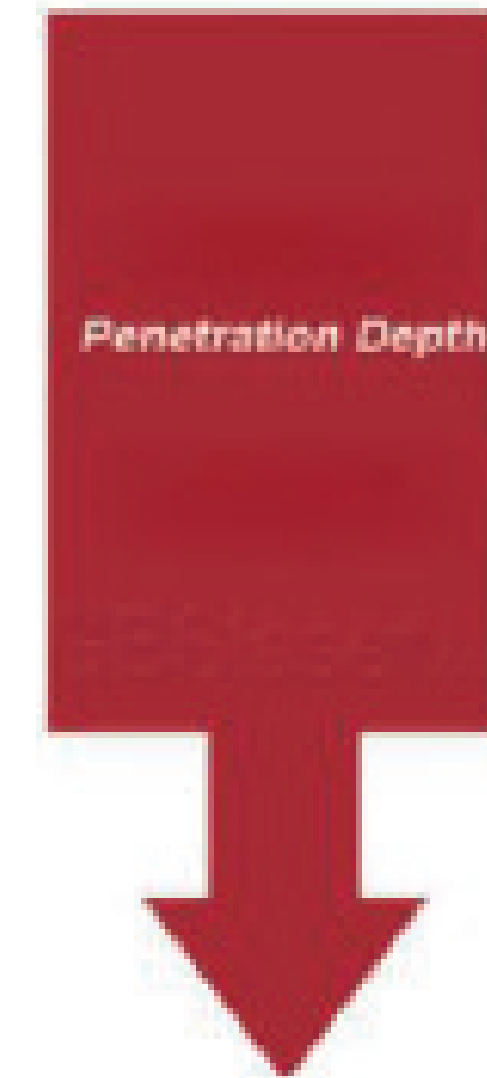
1MHz



2MHz

NEEDLE DEPTH

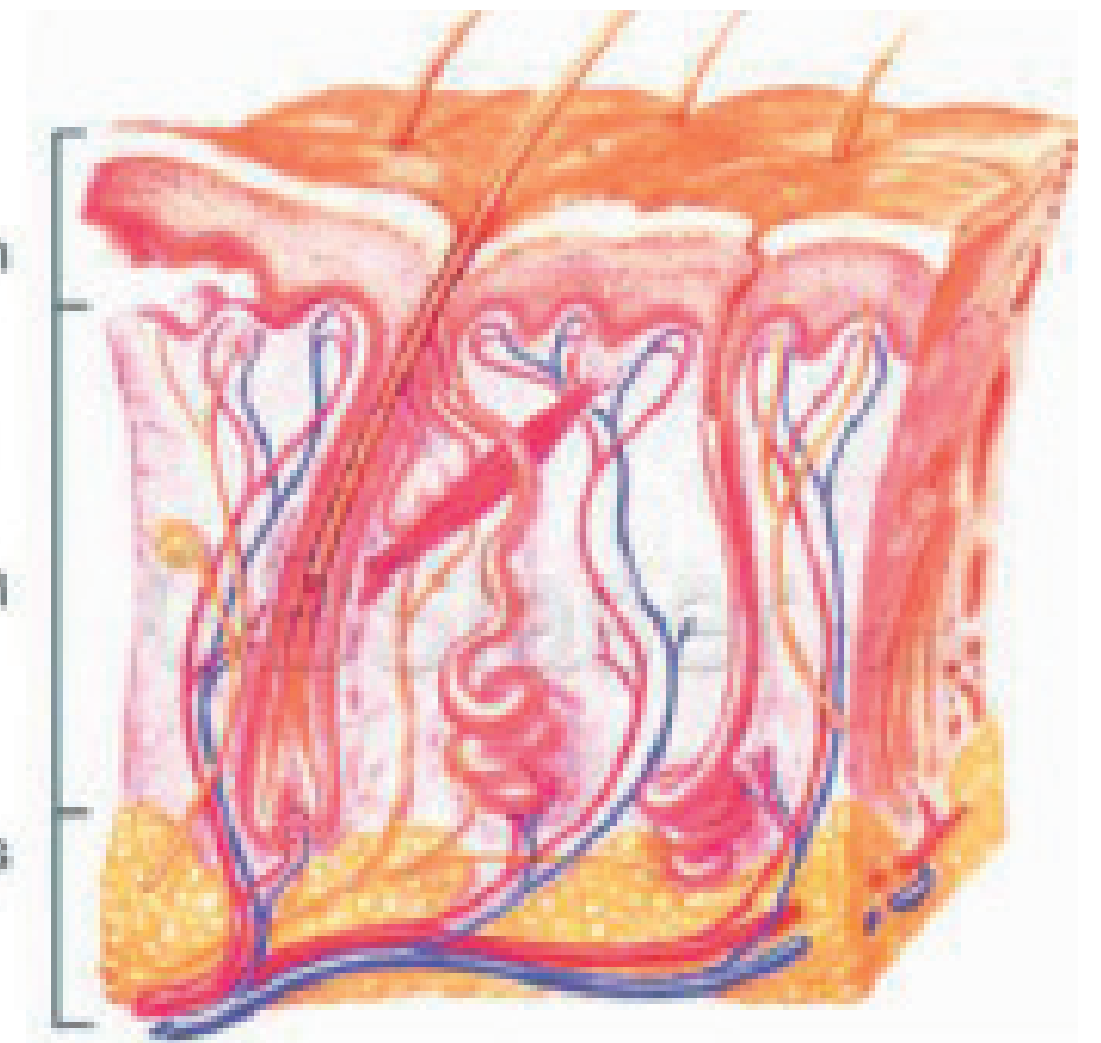
Needle Depth can transfer energy to the deeper Hypodermis up to 4.5mm, which stimulates the whole Dermis and Hypodermis layers, maximize RF effects.



Epidermis
0 - 0.45mm

Dermis
0.45 - 3mm

Hypodermis
(Fat layer)
3mm -



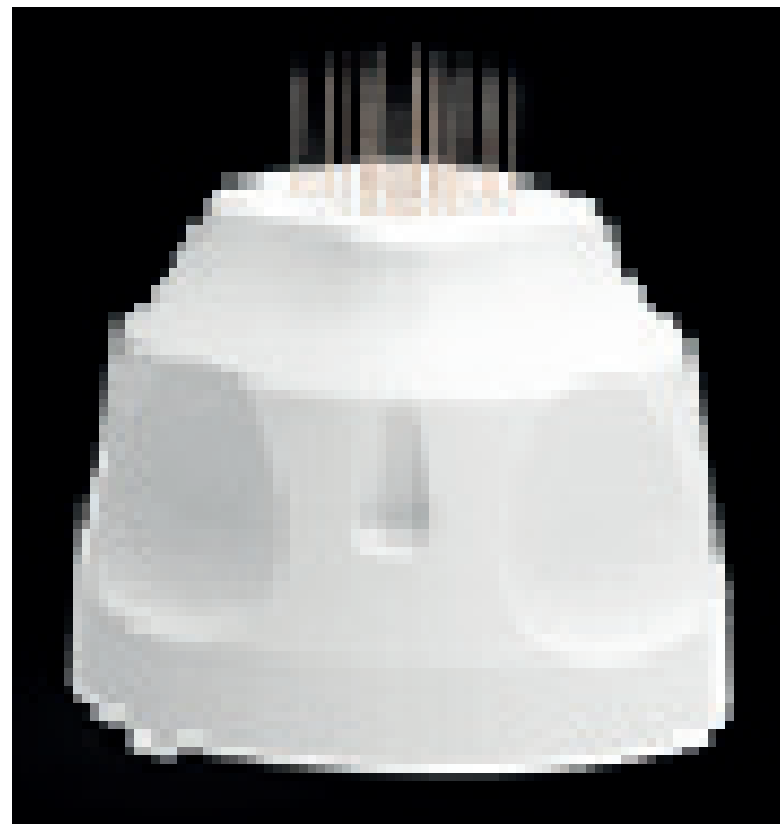
03. FEATURES

SHAPE OF NEEDLE

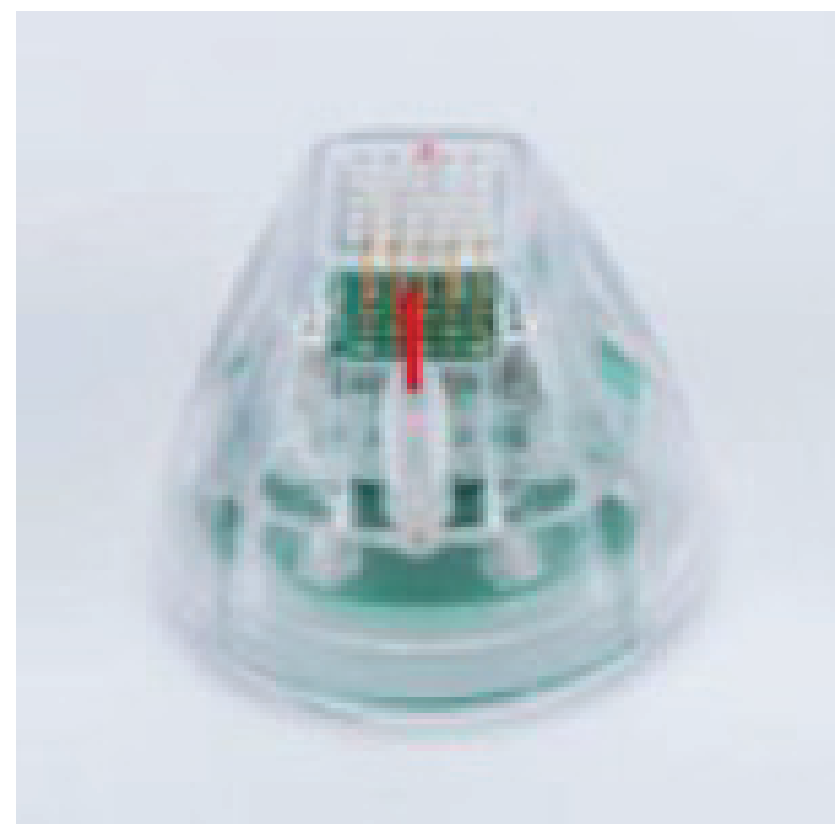
Needle is composed of two of blunt type and sharp type.

The blunt type is painful but has a great treatment effect, the Sharp type is less effective than blunts, but also less painful.

Also, the tip itself is opaque, reducing the patient's fear and anxiety.



Ensemble basic



Other companies

SIMPLE SHAPE AND LIGHT

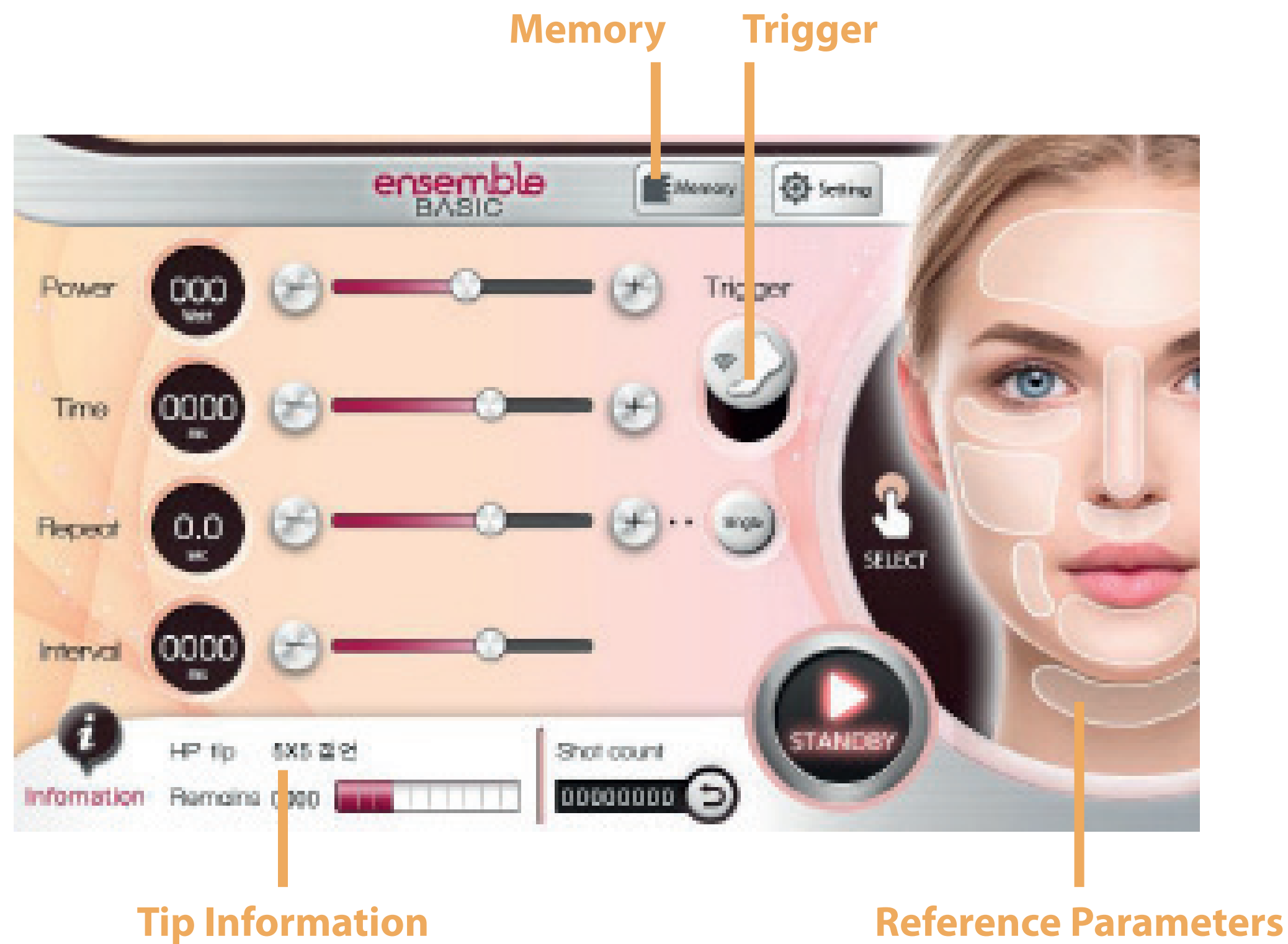
Tray and device body possible to separated, so space utilization in the treatment room is high. Also, 6kg lightweight and small device body is easy to move to a convenient treatment position.



03. FEATURES

USER FRIENDLY UI

Power, Time, Repeat, Interval, switch type, etc can be operated with one touch.



- MEMORY**
Restore saved treatment parameters including Power, Time, Repeat, Interval
- REPEAT TIME**
Provides user convenience by allowing arbitrary speed control.
- TIP INFORMATION**
check the Tip information, such as remaining shoots, the no. of pins etc.
- REFERENCE PARAMETERS**
8 basic reference parameters are shown, when treatment area is chosen on the screen.

03. FEATURES

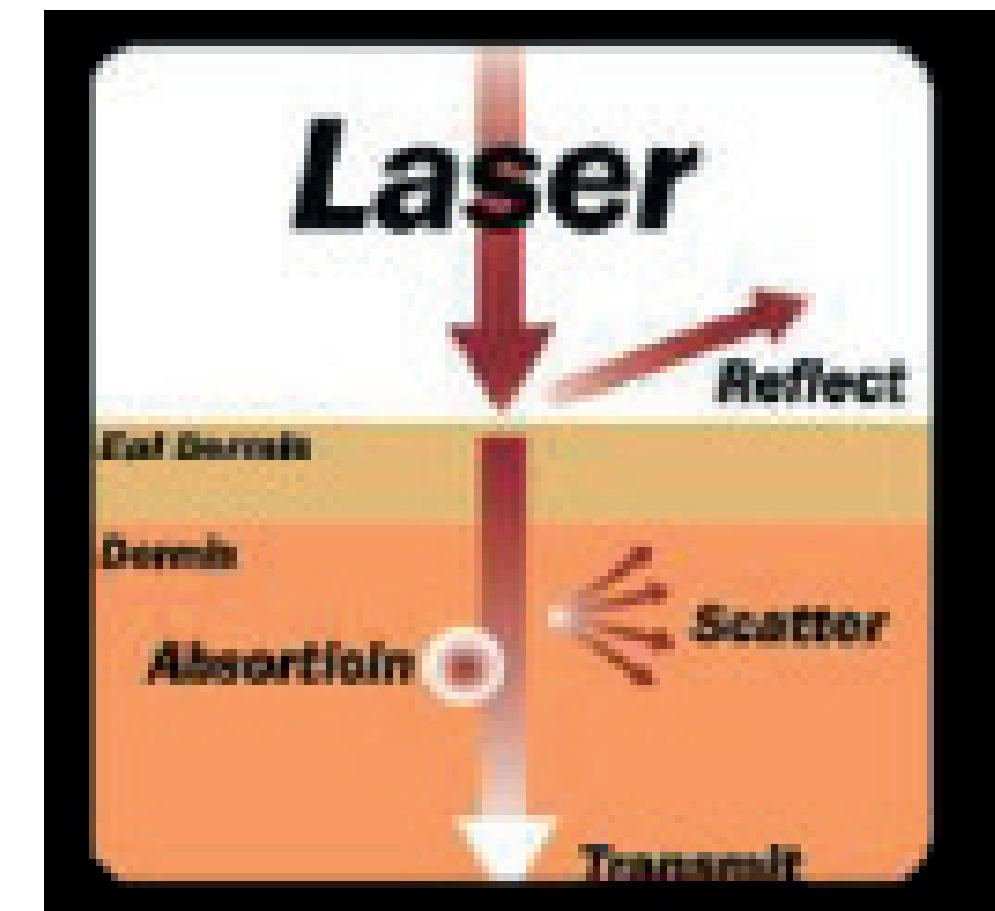
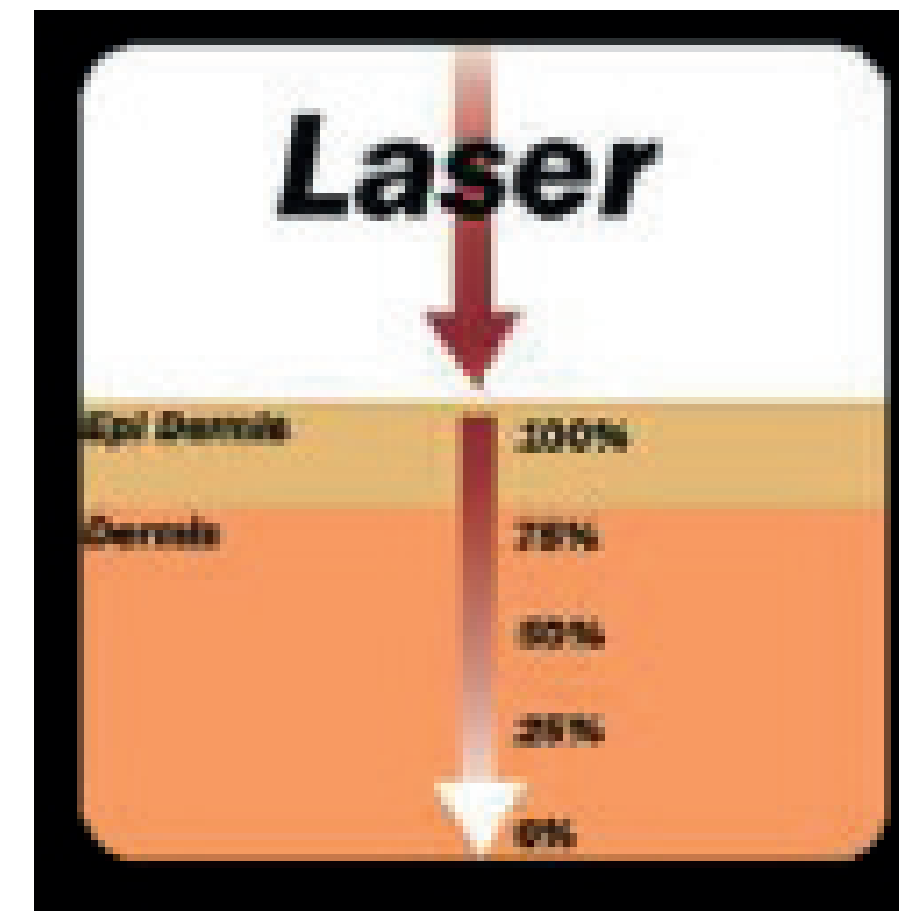
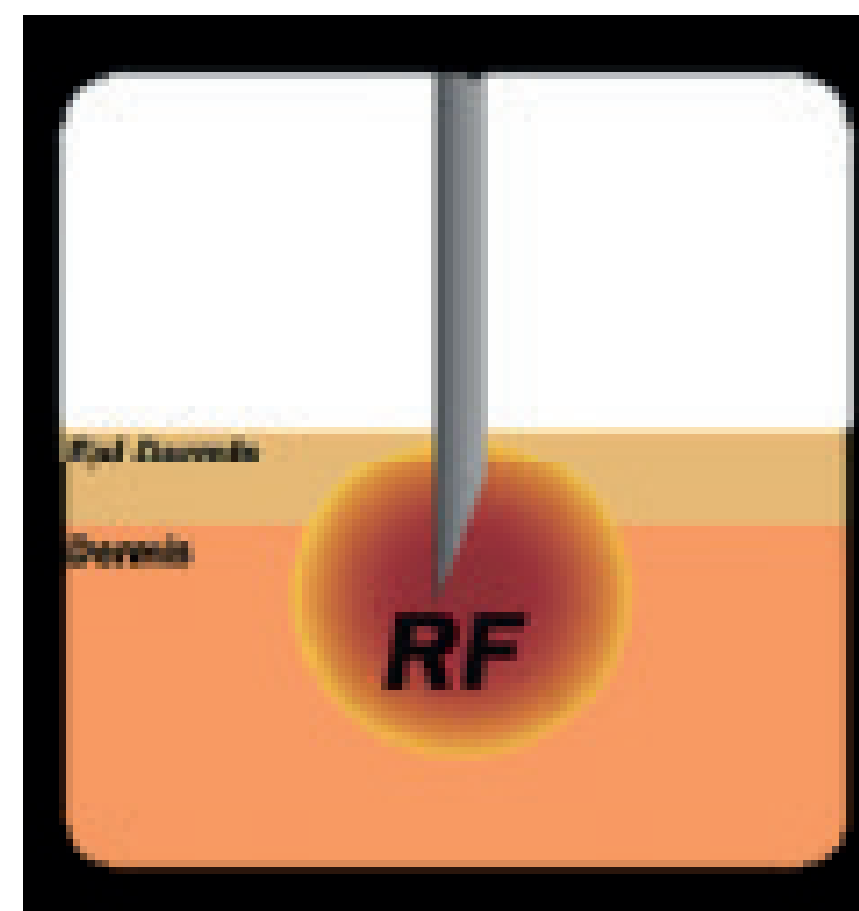
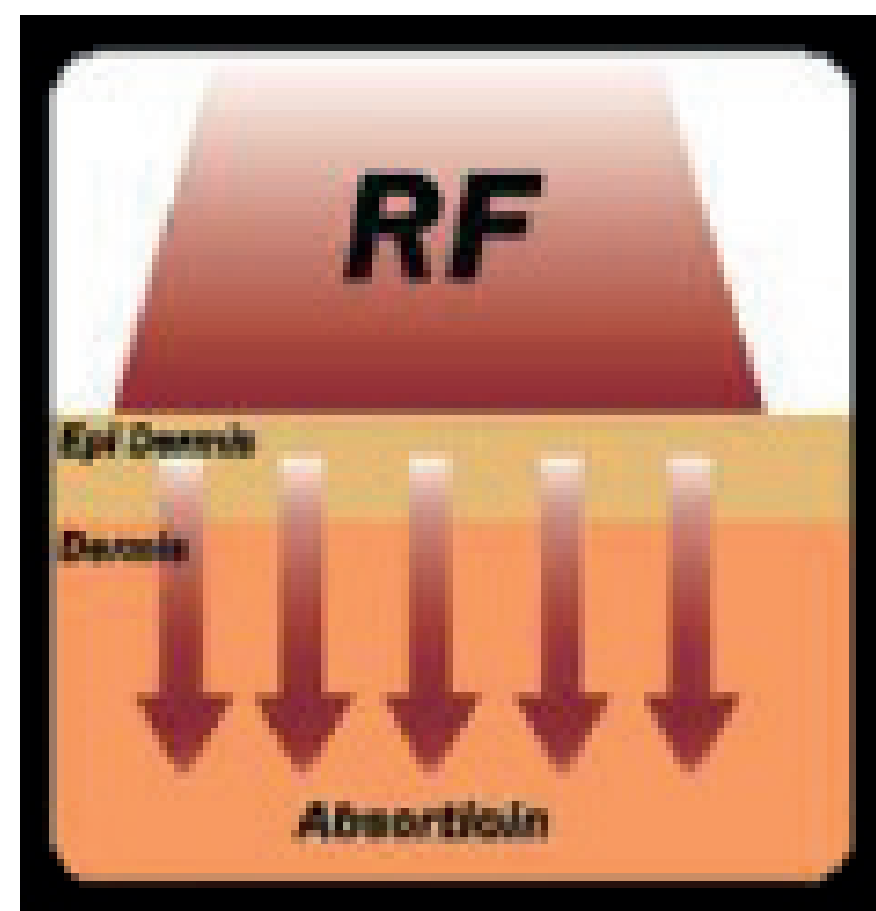
COMPARISON

- 4-1. A COMPARISON : RF & LASER
- 4-2. SPECIFICATION COMPARISON

04

4-1. A COMPARISON: RF & CO₂ LASER

RADIO FREQUENCY	CO ₂ LASER
<ul style="list-style-type: none">• Non affected by skin type.• Easily reached target depth.• Less risk of side effects.• Easy to adjust depth.• It can be Applied directly to target without loss of energy.	<ul style="list-style-type: none">• Selective absorption influenced by chromophore.• Difficulty to adjust depth.• Energy transfer to target is affected by various parameters.



04. COMPARISON

4-2. SPECIFICATION COMPARISON

Item	Ensemble	A COMPANY	B COMPANY
Dimension	307(W) x 318(L) x 203(H) `	362(W) x 409(L) x 1713(H) mm	380(W) x 340(L) x 1140(H) mm
Weights	6kg	28 kg	27 kg
RF Output	Max, Power 50W	Max, Power 50W	Max, Power 40W
System type	Bipolar RF(Radio Frequency)	Bipolar RF(Radio Frequency)	Bipolar RF(Radio Frequency)
Frequency	2MHz	1MHz	1MHz/2MHz(High Frequency)
Operation Mode	Microneedle Fractional RF	Microneedle Fractional RF(MFR) Superficial Fractional RF (SFR)	Microneedle Fractional RF
Spot Size	25(5x5), 10(1x10) pins	MFR : Microneedle electrodes SFR : Up to 144pins	36 pins
Penetration depth	0.5 – 4.5mm	0.5 – 3.5mm	0.5 – 3.5 mm
Switch type	Finger & Foot (wireless)	Finger & Foot Switch	Finger & Foot Switch
Display system	7" Touch LCD GUI	Color Touch LCD(Total shot Count Displayed)	10.4 inch LCD Touch screen

04. COMPARISON

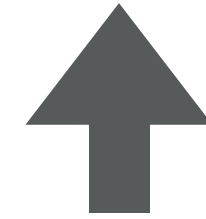
REFERENCE

05

Microneedle RF for the treatment of Acne

Skin needling or needle dermabrasion using microneedles has been reported to stimulate migration and proliferation of keratinocytes and fibroblasts by inducing the release of several growth factors.

The efficacy and safety of a fractionated microneedle RF device in the treatment of inflammatory acne lesions. The advantages of therapy using this device over other therapies are the combined effects of volumetric tissue heating by the RF and collagen induction by the stamping microneedles.



Fractionated RF seems to provide higher volumetric heating and deeper heat diffusion than ablative and nonablative laser-based fractional devices. Skin needling or needle dermabrasion using microneedles has been reported to stimulate migration and proliferation of keratinocytes and fibroblasts by inducing the release of several growth factors. In addition, making closer holes induces regeneration and realignment of irregular and thick collagen bundles through physical breakage, resulting in better clinical scar and skin texture ~ The present study demonstrated the efficacy and safety of a fractionated microneedle RF device in be conducted in the future to confirm our findings. the treatment of inflammatory acne lesions. We think that the advantages of therapy using this device over other therapies are the combined effects of volumetric tissue heating by the RF and collagen induction by the stamping microneedles. The inhibition of sebaceous gland activity and the stimulation of follicular epithelial and dermal architecture remodeling are mechanisms that might result in the clinical improve-ment of inflammatory acne lesions when using fractional RF-induced dermal heating and skin needling.

05. REFERENCE

☒ Skin rejuvenation by microneedle fractional radiofrequency

Fractional radiofrequency (RF) has revolutionized the field of skin rejuvenation. Hantash et al. introduced a minimally invasive device, microneedle fractional RF, which adopted microneedle therapy system (MTS) for delivering bipolar RF energy directly into the skin through microneedle. RF thermal lesions are fractionally generated within the reticular dermis. Fractional thermal injury of deep dermal collagen induces a vigorous wound healing process leading to dermal remodeling and the generation of new collagen, elastin and hyaluronic acid.

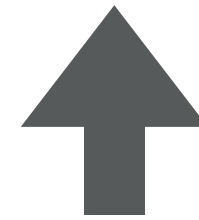


Recently, fractional radiofrequency (RF) has revolutionized the field of skin rejuvenation. Hantash et al. introduced a minimally invasive device, microneedle fractional RF, which adopted microneedle therapy system (MTS) for delivering bipolar RF energy directly into the skin through microneedle. RF thermal lesions are fractionally generated within the reticular dermis. Fractional thermal injury of deep dermal collagen induces a vigorous wound healing process leading to dermal remodeling and the generation of new collagen, elastin and hyaluronic acid.

05. REFERENCE

Radiofrequency in the Treatment of Mild to Moderate Laxity of the Lower Face & Neck

Fractional HIFR proved safe and effective in the treatment of neck laxity in a large aged range of patients including the elderly. It was demonstrated to stimulate new collagen and elastin and achieve some benefits in the reduction of skin laxity.



As a result, this approach was modified to achieve acceptable pain tolerance using longer exposure times and lower temperatures that achieved partial denaturation of collagen that, while not causing removal and replacement of aged collagen, was demonstrated to stimulate new collagen and elastin and achieve some benefits in the reduction of skin laxity. ~ Based on the proven efficacy on facial wrinkles, the present study was therefore designed to assess the efficacy of HIFR with insulated microneedles in the treatment of mild to moderate laxity of the lower face and neck.

05. REFERENCE

Fractinal needle radiofrequency treatment on rosacea

FMR can result in modest improvement of rosacea. And it is effective in treating inflammatory acne.



The treatment of rosacea with radiofrequency devices and its mechanism have rarely been reported. Our results confirmed that FMR can result in modest improvement of rosacea. The effectiveness was maintained until 2 months after the last treatment. FMR was slightly more effective in reducing erythema in patients with PPR than in those with ETR, suggesting inflammatory lesions, such as papules and pustules, could be more effectively treated with this device. This result agreed with reports showing that FMR is effective in treating inflammatory acne.

FMR results in clinical and histological improvement of rosacea. FMR can be an option for patients who fail other medical therapy, who are resistant to long-term oral therapy, or who do not want take any oral or topical medication, such as pregnant women. We also expect that FMR may have synergistic effects in combination with other treatment methods. Further study is to be focused on optimizing parameters as well as evaluating the efficacy of multiple FMR treatments and combination therapy with other medications. FMR results in clinical and histological improvement of rosacea. FMR can be an option for patients who fail other medical therapy, who are resistant to long-term oral therapy, or who do not want take any oral or topical medication, such as pregnant women. We also expect that FMR may have synergistic effects in combination with other treatment methods. Further study is to be focused on optimizing parameters as well as evaluating the efficacy of multiple FMR treatments and combination therapy with other medications.

05. REFERENCE

SPECIFICATIONS

06

General

Dimension	307(W) x 318(L) x 203(H) mm
Weights	6kg
RF Output	Max, Power 50W
System type	Bipolar RF(Radio Frequency)
Frequency	2MHz
Operation Mode	Microneedle Fractional RF
Spot Size	25 pins
Penetration depth	0.5 – 4.5mm
Switch type	Finger & Foot (wireless)
Display system	7" Touch LCD GUI
Energy max output	50W

ensemble

BASIC

Microneedle RF



06. SPECIFICATIONS

CONCLUSIONS

07

- 1 ●● GOLD COATED ELECTRODE
- 2 ●● INSULATED/NON-INSULATED NEEDLE
- 3 ●● BIPOLAR NEEDLE RF
- 4 ●● VARIOUS SWITCHES
- 5 ●● ELECTRIC CHAT/NEEDLE MEMORY CHIP
- 6 ●● USER FRIENDLY UI
- 7 ●● UP TO 4.5MM NEEDLE DEPTH
- 8 ●● 2MHZ RF FREQUENCY
- 9 ●● UP TO 50 WATT



07. CONCLUSIONS

CLINICAL PICTURES

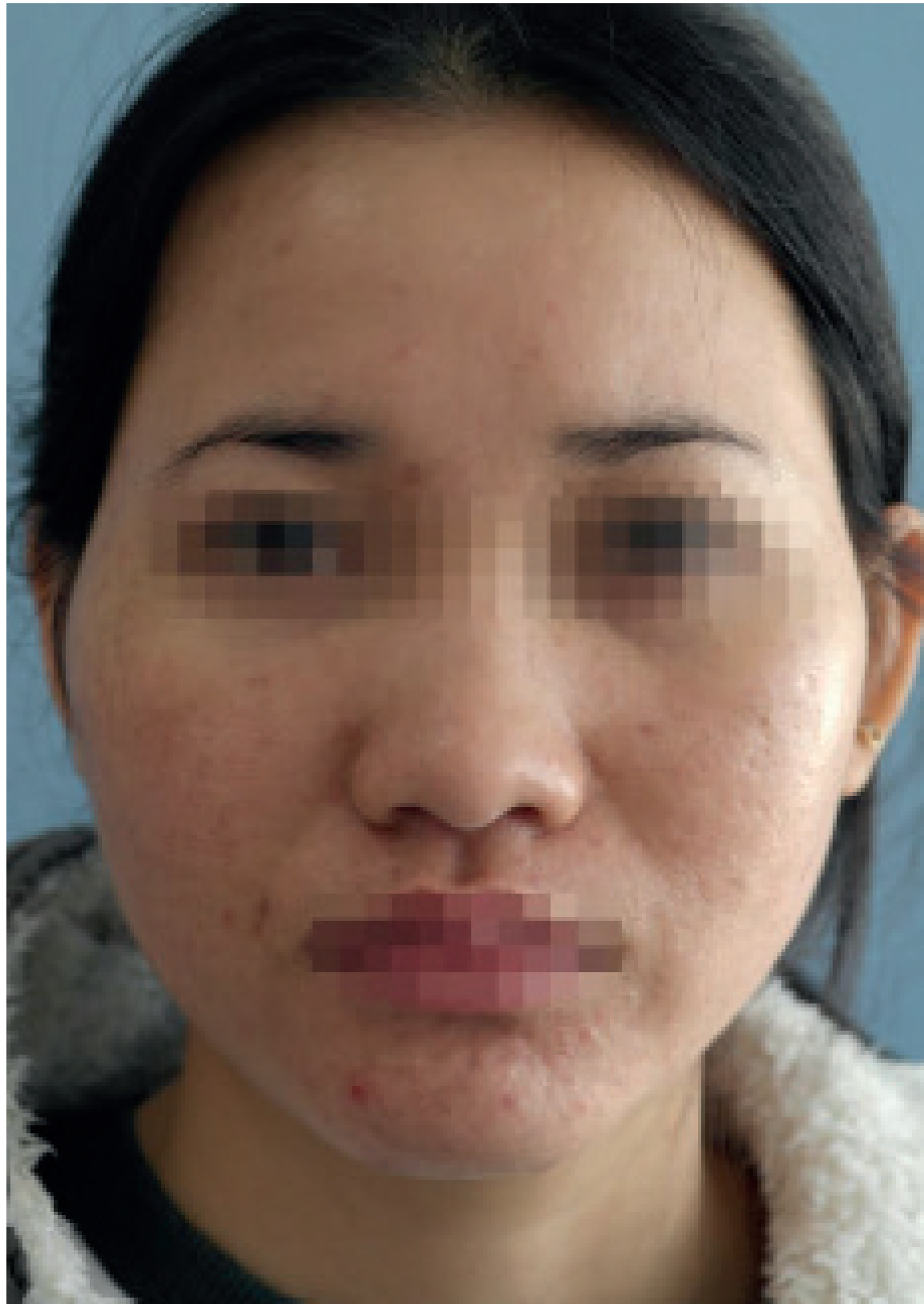
1-1. ACNE SCAR

1-2. ACNE SCAR

08

8-1. ACNE SCAR

BEFORE



AFTER



Age: 31

sex: female

Country: vietnam

Cheek: 50W, 25ms, depth 1.0mm/

Forehead: 50W, 25ms, depth
0.5mm Total 250 shot/ 1 session/
interval 3 weeks

PASCAL plastic hospital Dr. Son

08. CLINICAL PICTURES

8-1. ACNE SCAR

BEFORE



AFTER



Age: 31

sex: female

Country: vietnam

Cheek: 50W, 25ms, depth 1.0mm/

Forehead: 50W, 25ms, depth
0.5mm Total 250 shot/ 1 session/
interval 3 weeks

PASCAL plastic hospital Dr. Son

08. BEFORE / AFTER

8-2. ACNE SCAR

BEFORE



AFTER



Age: 22

sex: female

Country: korea

Cheek: 50W, 25ms, depth 1.0mm/

Forehead: 50W, 25ms, depth 1.0mm Total 300 shot/ 1 session/ interval 3 weeks

PASCAL plastic hospital Dr. Son

08. BEFORE / AFTER

8-2. ACNE SCAR

BEFORE



AFTER



Age: 22

sex: female

Country: korea

Cheek: 50W, 25ms, depth 1.0mm/

Forehead: 50W, 25ms, depth 1.0mm Total 300 shot/ 1 session/ interval 3 weeks

PASCAL plastic hospital Dr. Son

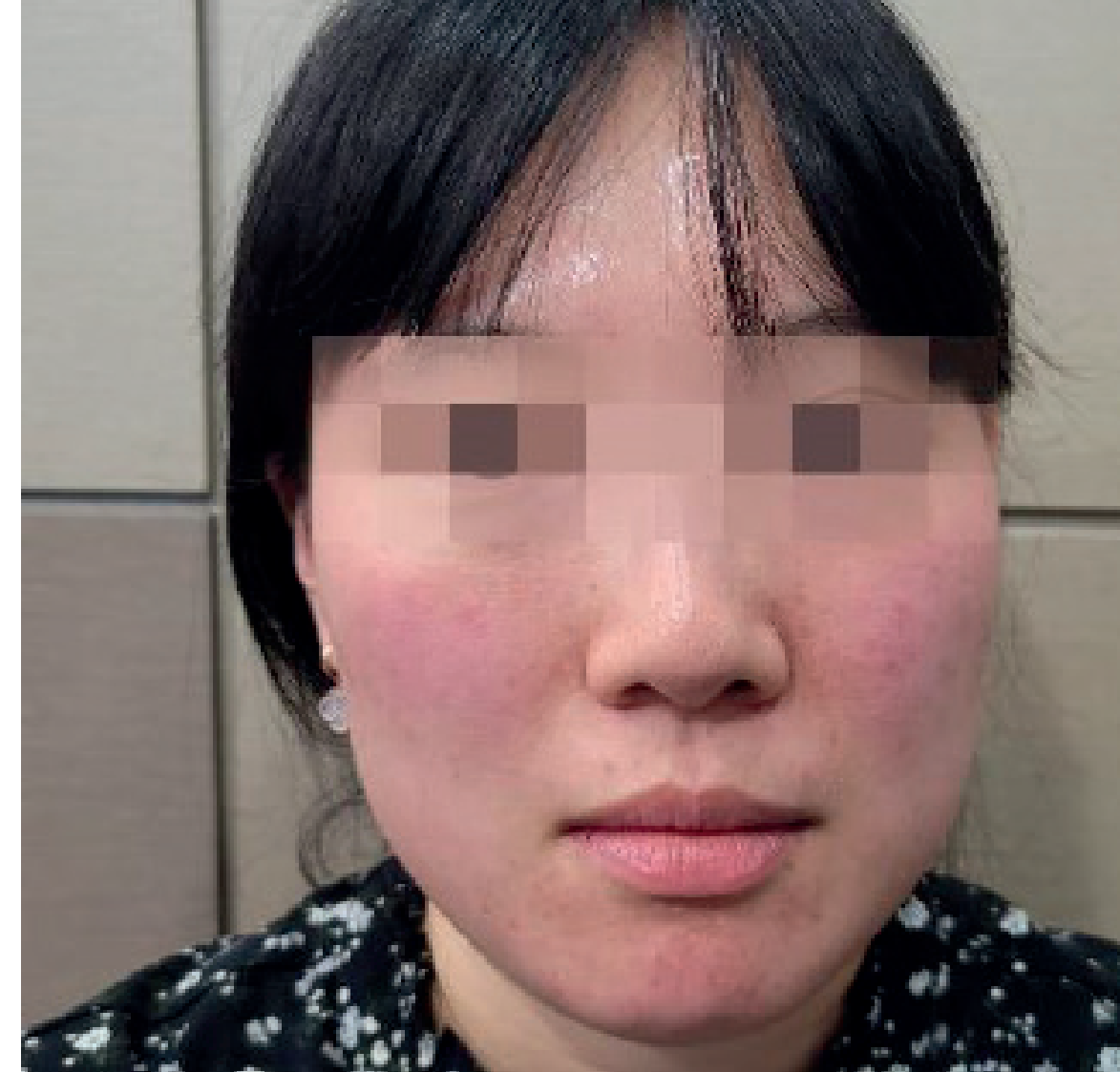
08. BEFORE / AFTER

8-3. ACNE SCAR

BEFORE



AFTER



Age: 33

sex: female

Country: korea

PASCAL plastic hospital Dr. Son

08. BEFORE / AFTER

8-4. ACNE SCAR

BEFORE



AFTER



Sex: female

Country: korea

PASCAL plastic hospital Dr. Son

08. BEFORE / AFTER

8-5. ACNE SCAR

BEFORE



AFTER



Age: 30

sex: male

Country: korea

KAIROS plastic hospital LIM

JONGHAK M.D.,Ph.D.

08. BEFORE / AFTER

THANK YOU

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