TargetCool
by CoolHealth

TargetCool

Your Experience Beyond Cooling


TargetCool
CoolHealth.com
TargetCool
TargetCool
by CoolHealth
x10
Boosting
Container
TargetCool
Boosting
Container

Temperature detection sensor

Skin surface temperature detection

Cooling Guard

- Only used for Cooling mode
- Connected to temperature-detecting sensors, it maintains an appropriate distance between the target area and the nozzle

Guard Dock

- The location where the guard is fastened
- Magnetically fastened

Cartridge Cavity

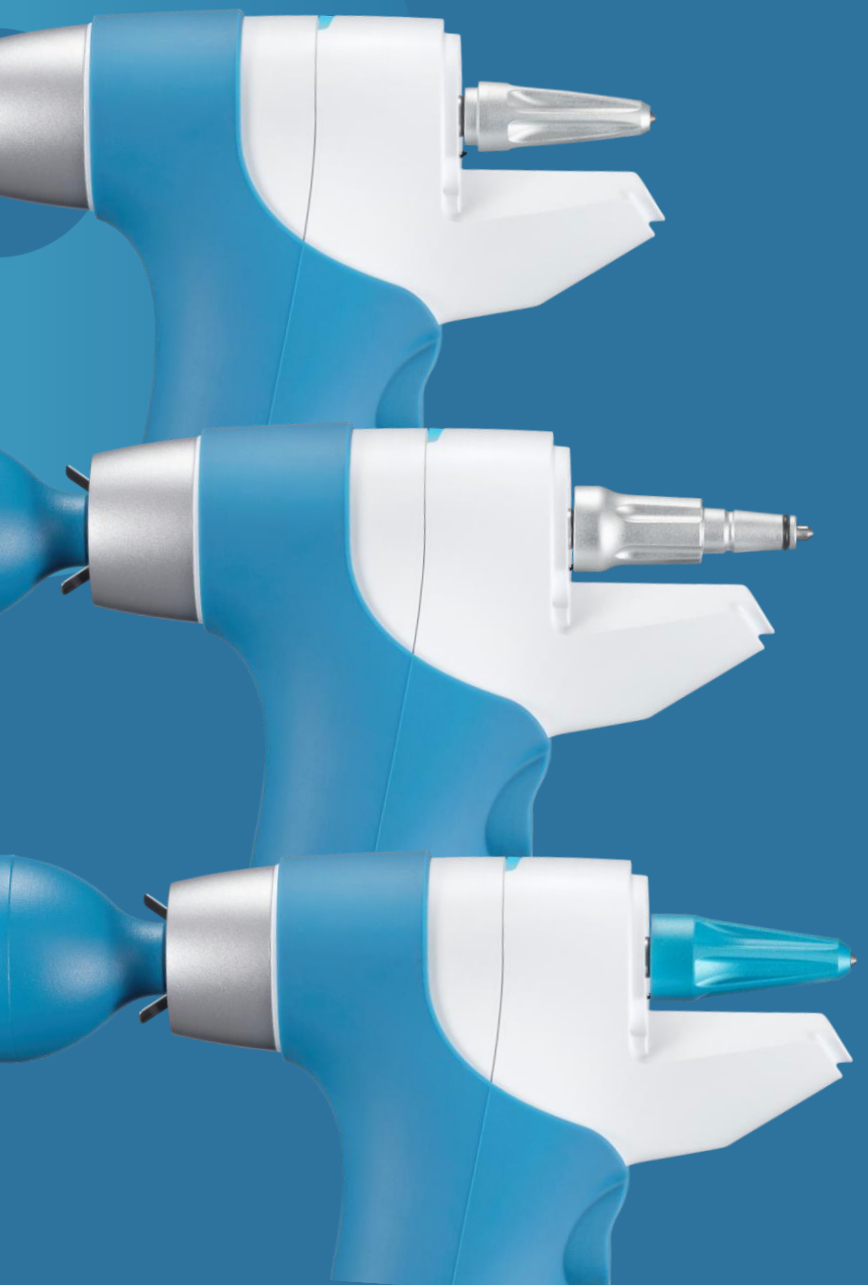
The cartridge cavity is where the cartridge filter can be inserted, and the cartridge can be fastened.

Cartridge

Utilizes 99.9% pure Carbon Dioxide
Cartridge made entirely of 100% aluminum material
fastening it along the threaded axis after inserting the cartridge filter

Cartridge Filter

It serves to seal the cartridge and the TargetCool
filtering out fine particles in the cartridge content



Nozzles

3-in-1 device

3 Different nozzles enables various modes of use.

- **Cooling Nozzle**
- **Boosting Nozzle**
- **Freezing Nozzle**

Pain Control

Alopecia

Acne

Drug Delivery System

Skin Booster

PN

PDRN

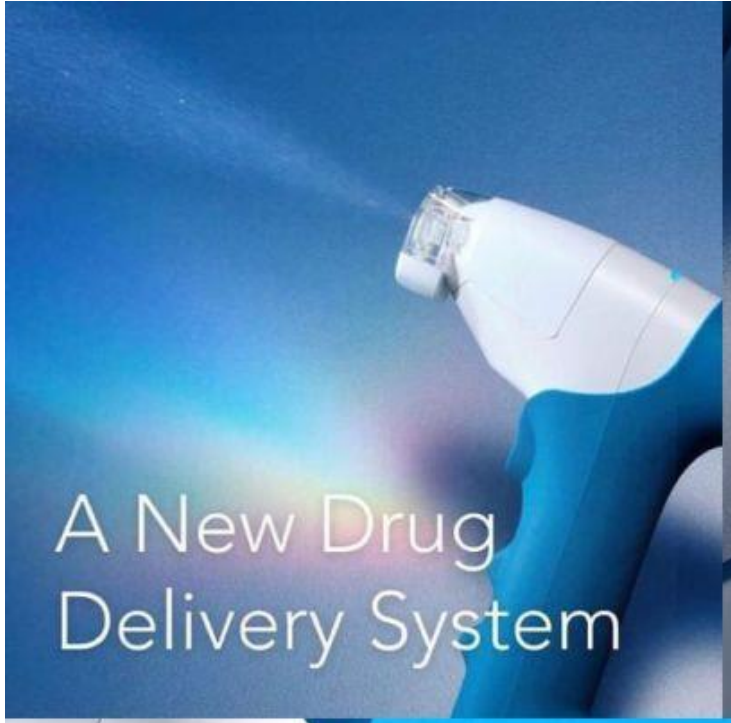
Exosome

Cosmetic

Cryosurgery


沒有使用
Targetcool
使用
Targetcool


Without
TargetCool
With
TargetCool


A New Drug
Delivery System


TargetCool
...
TargetCool can reach up to 100m/s with the powerful jet air stream and spray solution as tiny particles.


...
It propels them into the dermis with high pressure and maximizes their effect on the skin.


...
Experience the new standard of Comfort, the new drug delivery system.

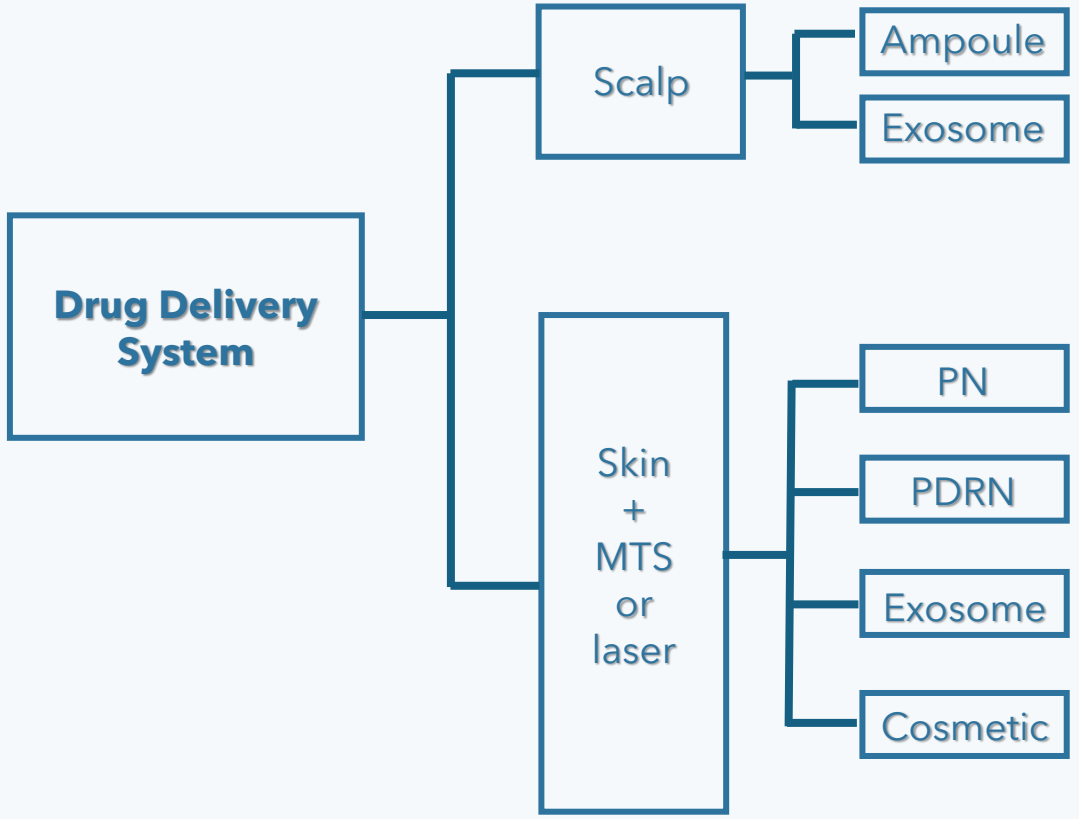
TargetCool Application Categorization by Mode

Cooling Mode

- **Pain Control**
  - Injection
    - Painful, Numerous injections
  - EBD
    - Tatto removal
- Anti-inflammation (**TargetCool Only**)
  - Alopecia
    - Androgenetic
    - Arieta
    - Seborrheic dermatitis
  - Acne
    - Papular
    - Purulent

TargetCool Application Categorization by Mode

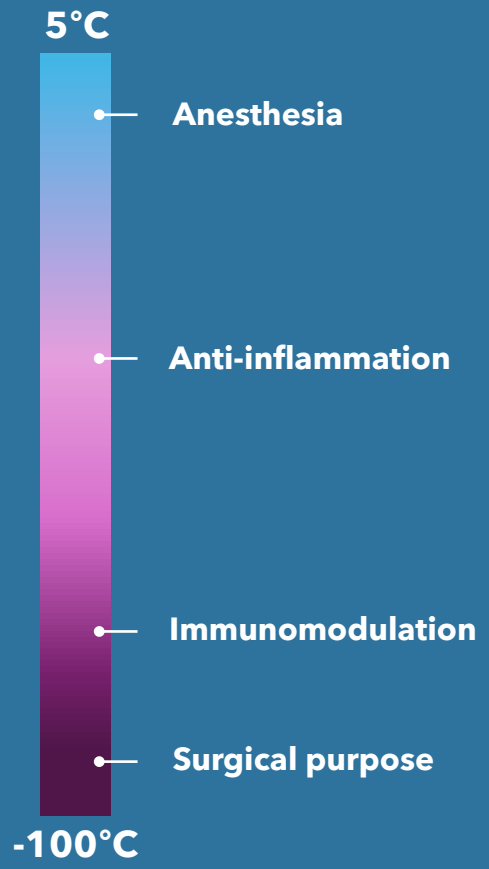
Boosting Mode



Technology

Precision temperature control in cooling

Cooling treatment with protocol by indications



PRECISION CONTROL

- Cooling anesthesia
- Post surgery pain relief

- Eczema
- Scalp seborrheic dermatitis
- Rosacea and Flushing
- Atopic dermatitis
- Post treatment to reduce swelling and pain (Fraxel, chemical peel, RF microneedling)

- Alopecia areata
- Allergic itch

- Destroy tissues

Through precise temperature control technology, cooling can now be used with purpose and protocol.

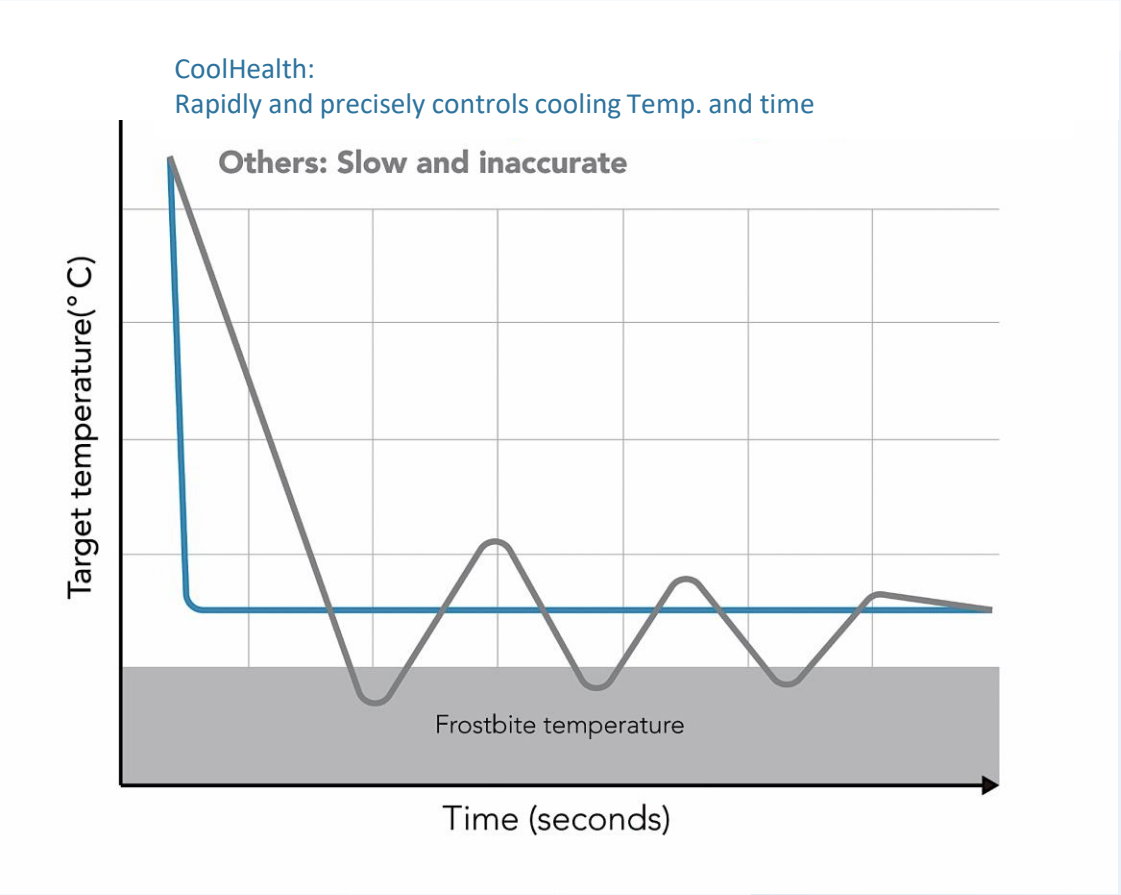
What is TargetCool Cooling ?

Cooling Mode, controls the targeted skin surface to a specific temperature for a designated period of time, providing vasoconstriction and instant numbing effects.

Innovative RPTC* Technology

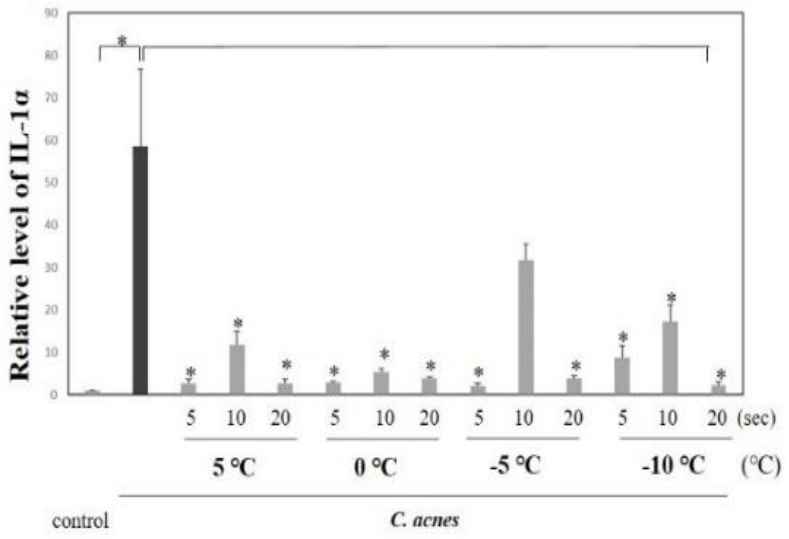
(*Rapid Precision Temperature Control)

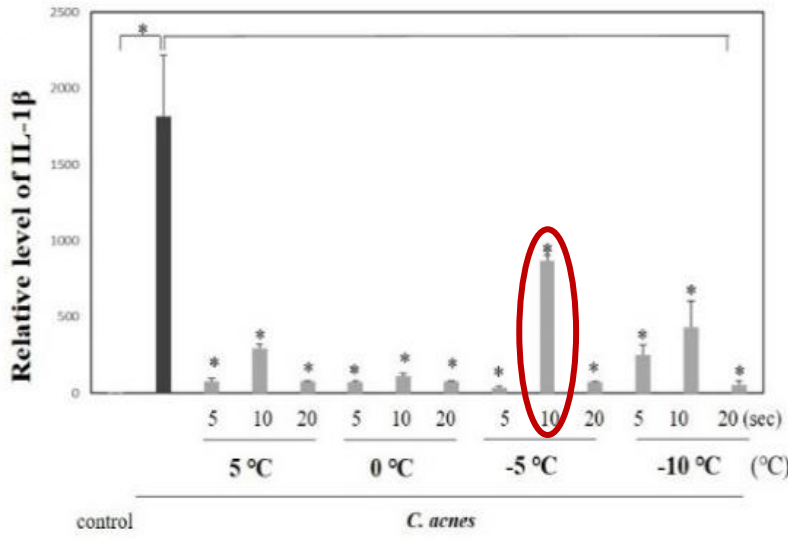
The RPTC Technology is built upon an invention, the cryogen temperature-pressure regulator, which enables control of the intrinsic temperature of the cryogen thermodynamic state in milliseconds and thereby firstly provides precision feedback control of the temperature at a target treatment area.

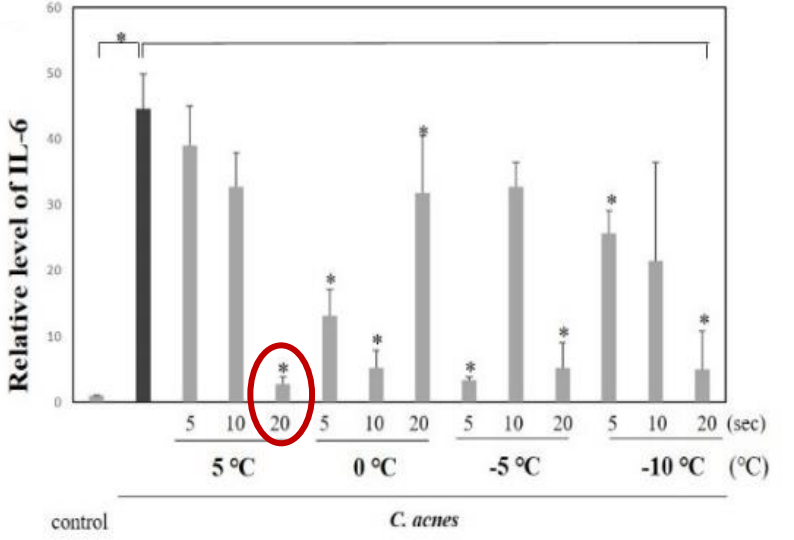


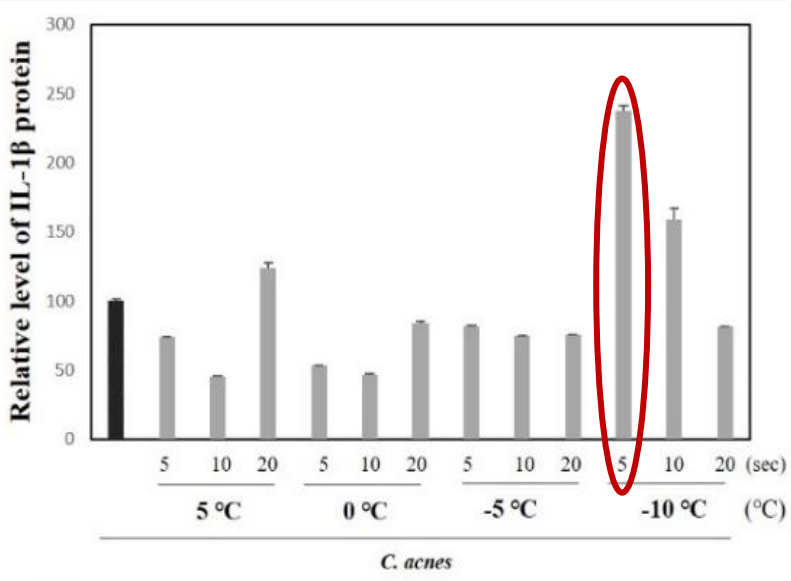
Why Precise Temperature Control Technology Is Important?

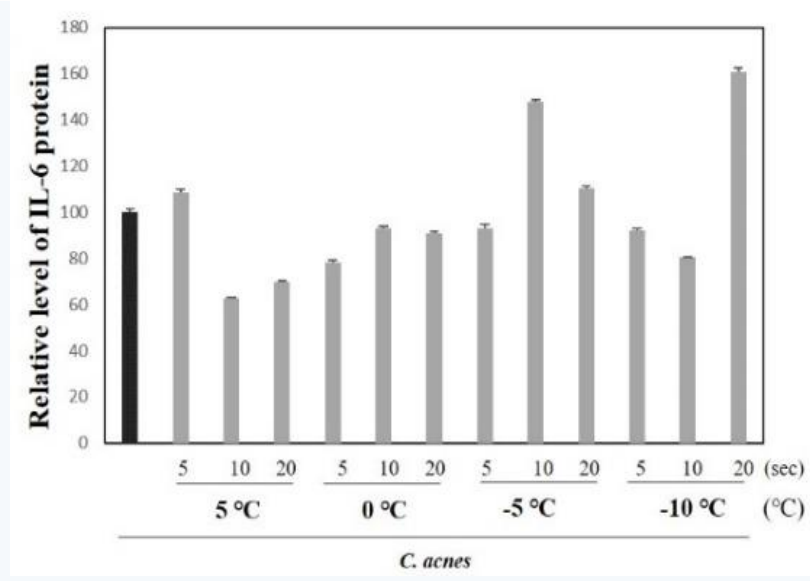
Beauty with Comfort TargetCool

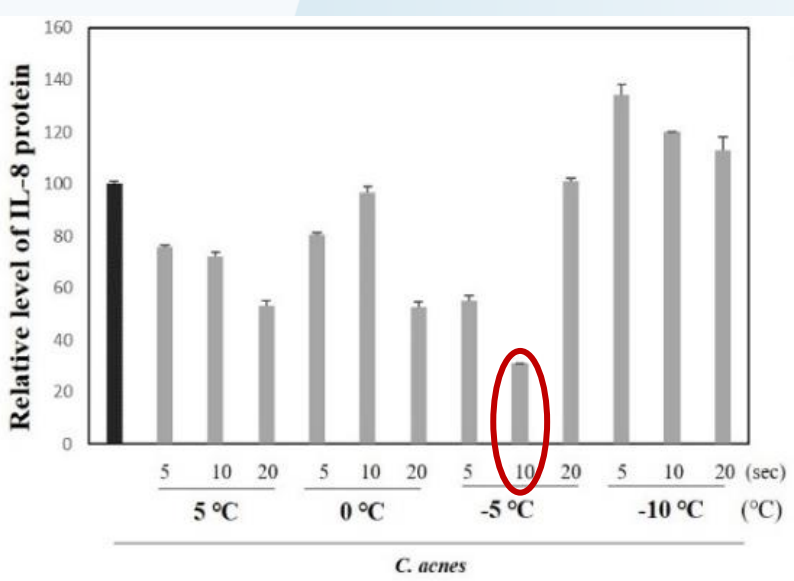












TargetCool

The first product to precisely control between -10°C and +5°C

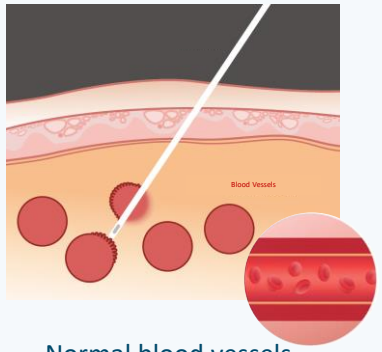
- Controls the intrinsic temperature of cryogen
- Direct control of target tissue temperature → most reliable data
- Reliable and safe efficacy of anesthesia, anti-inflammatory treatments, and drug delivery

Why TargetCool?

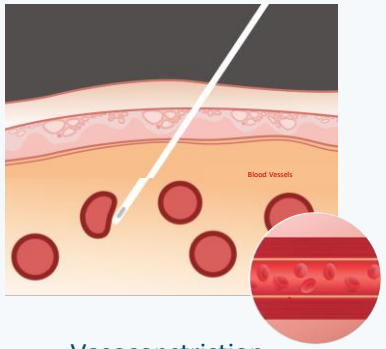
1. Reduce inflammation, bleeding, swelling, and bruising

TargetCool alleviates bruising, swelling, and hematoma caused by potential vascular damage during injection procedures through its immediate skin cooling, which **induces vasoconstriction.**

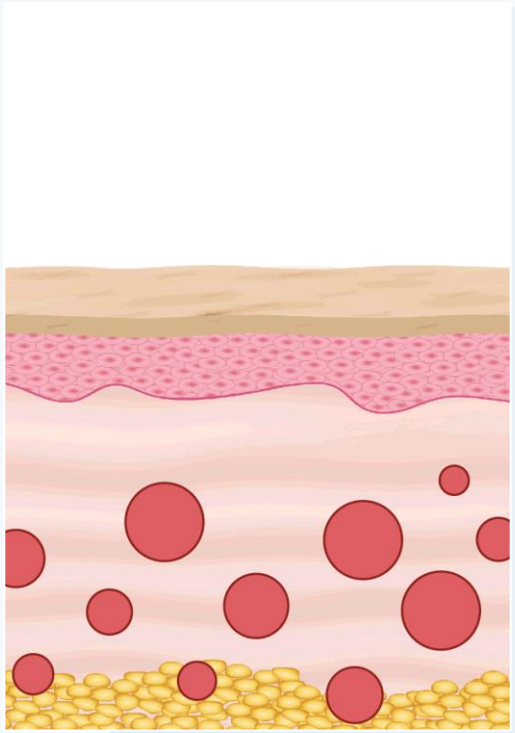
- The outer walls of blood vessels temporarily thicken, leading to a reduction in the diameter of blood vessels and an increase in vascular density, resulting in a decreased potential for vascular damage.
- With increased spacing between blood vessels, the likelihood of vascular damage during procedures is reduced.



Normal blood vessels



Vasoconstriction in blood vessels with COOLING

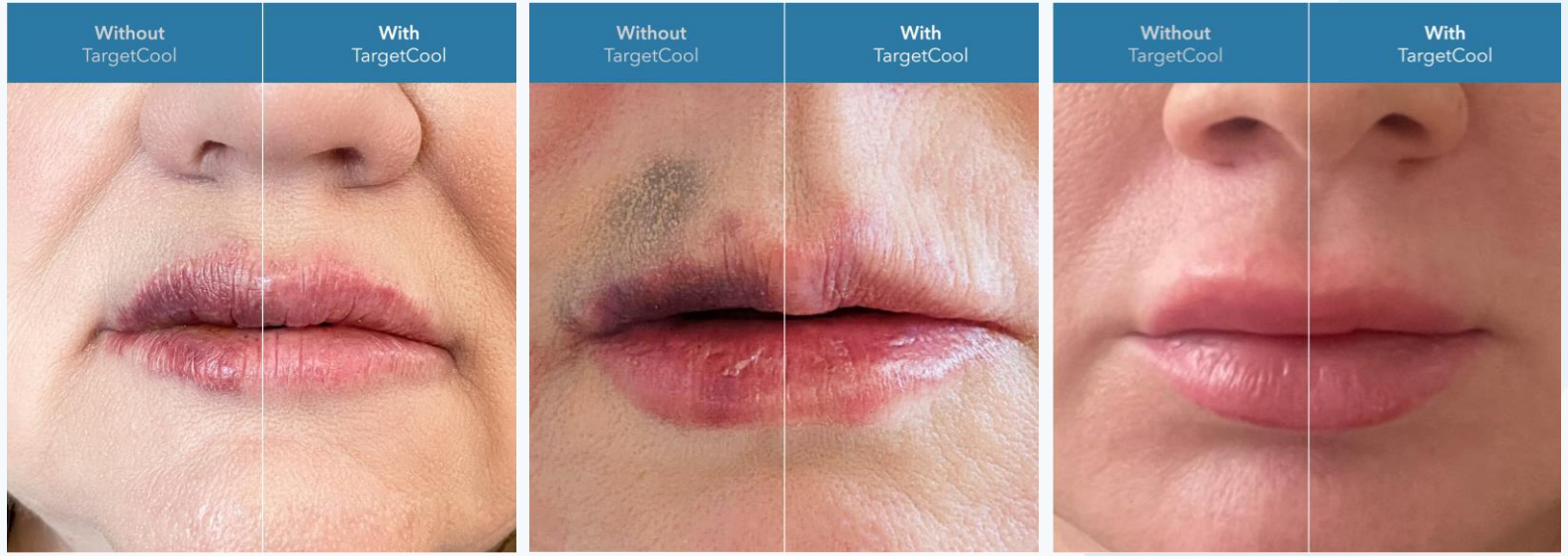


Cannula Injection after COOLING

Why TargetCool?

1. **Reduce inflammation, bleeding, swelling, and bruising**

93% Percent of patients **prefer TargetCool** over lidocaine specifically for lip fillers.



After lip filler treatment 24 hours later

Summary: Comparing TargetCool vs Topical anesthesia

	TargetCool	Topical Anesthesia
Pain	Reduced by 3-4	Reduced by 3-4
Onset	Immediate	~ 20-30 mins
Inflammation/swelling reduction	√	X
Bleeding/bruising control	√	X
Anatomical site	All	Limitations on scalp
Sensitivity/irritation	Absent	Probable
Rejuvenation	√ (Bohr's effect)	X

Cooling Injection Count

45	55	MAX 70
PL	**PL**	**Continuous**
0° C for 3 seconds	3° C for 3 seconds	3° C

Performance may vary depending on the user's skill proficiency

TargetCool Application

Pain control &
Reduce downtime

Tatto Removal With laser

TargetCool Application

Pain control &
Reduce downtime

Hair Loss

Only TargetCool Use

Journals and clinical cases of Hair Loss Improvement with Cryotherapy

Cryotherapy treatment alone can induce hair regrowth.

Liquid Nitrogen Cryotherapy in Recalcitrant Alopecia Areata: A Study of 11 Patients

Vijay P Zawar [1], Gayatri Mukund Karad [1]

Affiliations + expand

PMID: 27127370 PMCID: PMC4830166 DOI: 10.4103/0974-7753.179403

Free PMC article

Abstract

Context: Recalcitrant alopecia areata (AA) is not uncommon in clinical practice. In certain patients, treatment failures are known with almost every conventional therapy either singly or in combination.

Aims: To study the efficacy of liquid nitrogen (LN) cryotherapy in patients with recalcitrant AA.

Abstract Main Point:

Amirnia *et al.* studied 120 patients of AA where they compared intralesional triamcinolone injections with LN cryotherapy and noticed that AA patches treated with intralesional triamcinolone injections gave superior results but concluded that cryotherapy treatment alone can induce hair regrowth in AA.[11] Gita and Mohammadreza evaluated the efficacy of LN cryotherapy versus

Cell Types Promoting Goosebumps Form a Niche to Regulate Hair Follicle Stem Cells

Yulia Shwartz,[1,2,12] Meryem Gonzalez-Celeiro,[1,2,3,12] Chih-Lung Chen,[4,12] H. Amalia Pasolli,[5] Shu-Hsien Sheu,[6] Sabrina Mai-Yi Fan,[4] Farnaz Shamsi,[7] Steven Assaad,[1,2] Edrick Tai-Yu Lin,[4] Bing Zhang,[1,2] Pai-Chi Tsai,[1,2] Megan He,[1,2,11] Yu-Hua Tseng,[2,7] Sung-Jan Lin,[4,8,9,10,*] and Ya-Chieh Hsu[1,2,13,*]

SUMMARY

Piloerection (goosebumps) requires concerted actions of the hair follicle, the *arrector pili* muscle (APM), and the sympathetic nerve, providing a model to study interactions across epithelium, mesenchyme, and nerves. Here, we show that APMs and sympathetic nerves form a dual-component niche to modulate hair follicle stem cell (HFSC) activity. Sympathetic nerves form synapse-like structures with HFSCs and regulate HFSCs through norepinephrine, whereas APMs maintain sympathetic innervation to HFSCs. Without norepinephrine signaling, HFSCs enter deep quiescence by down-regulating the cell cycle and metabolism while up-regulating quiescence regulators *Foxp1* and *Fgf18*. During development, HFSC progeny secretes Sonic Hedge-

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https://doi.org/10.1016/j.cell.2020.06.031

Abstract Main Point:

Cold triggers both piloerection and hair growth

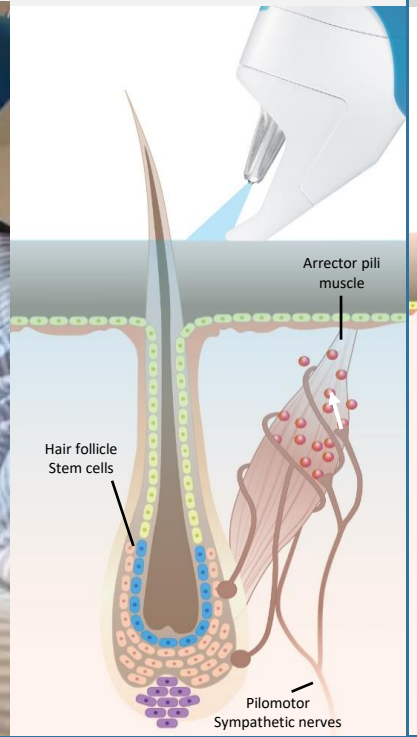
Our data established that APMs and sympathetic innervation form a dual-component niche to regulate HFSC activity. The sympathetic nerve secretes norepinephrine to modulate HFSC activity directly, whereas

Journal information: DOI: 10.4103/0974-7753.179403 & DOI: 10.1016/j.cell.2020.06.031

Hair Loss Improvement with TargetCool

Sympathetic nerves promote piloerection and hair regeneration in response to cold.

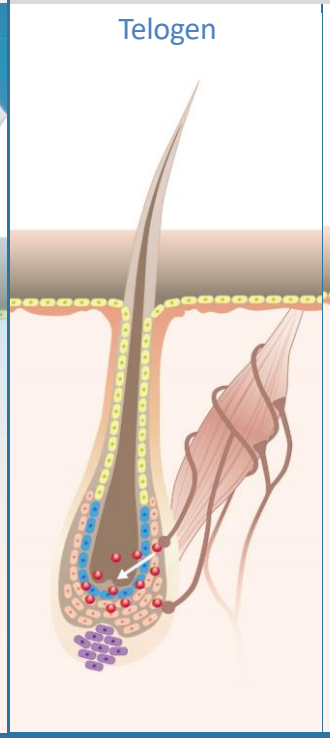
Rapid Cooling
Piloerection



Rapid Cooling by TargetCool
: Sympathetic nerves release norepinephrine (NE) to contract arrector pili muscles, **Hair erection**

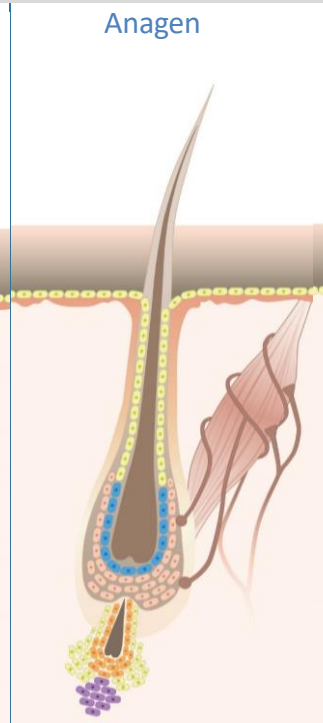
Prolonged cooling
hair regeneration

Telogen



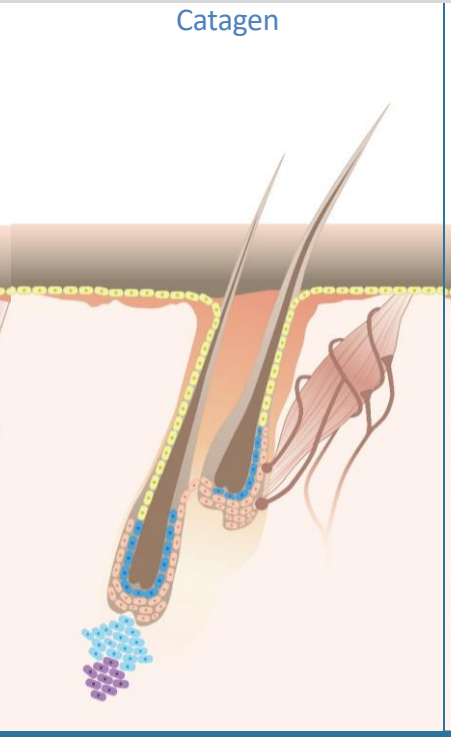
: Sympathetic nerve-derived NE signaling activates quiescent HFSCs in telogen to **accelerate their entry into anagen.**

Anagen



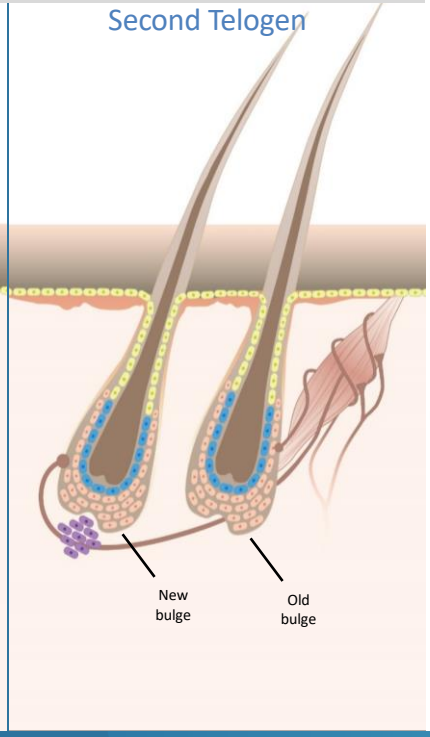
: HFSCs proliferate to produce transit-amplifying cells, which then undergo **massive proliferation and differentiation** to drive the growth of new hair.

Catagen

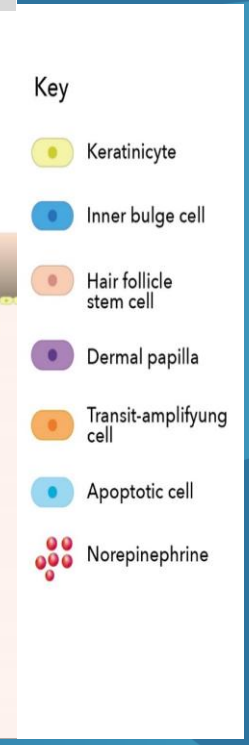


: The proliferative capacity of transit-amplifying cells subsequently wears out, and hair follicles degenerate during catagen.

Second Telogen



: Hair follicles are restored to their resting size as they enter the next telogen.



Reference: A Hairy End to a Chilling

Androgenetic alopecia: Patient 1

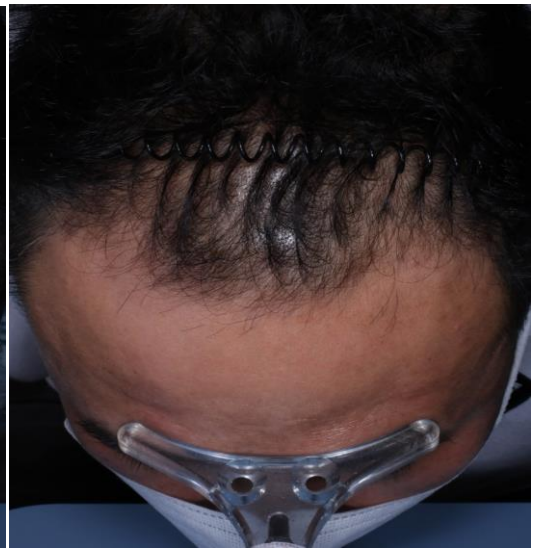
Cryotherapy at 0°C, 10 seconds, 2cycle x 16weeks.

Baseline

Week 16

Baseline

Week 16



Patient Information

Gender : Male

Symptoms : Androgenetic alopecia

Treatment Duration : 16weeks

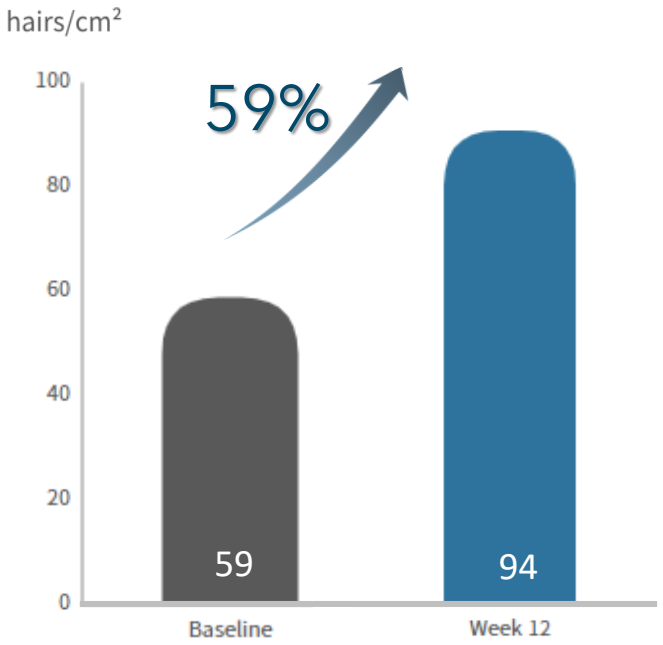
Improvements: Increase in hair 19% density and 48% thickness

Source : Prof. Ohsang Kwon, SNU hospital

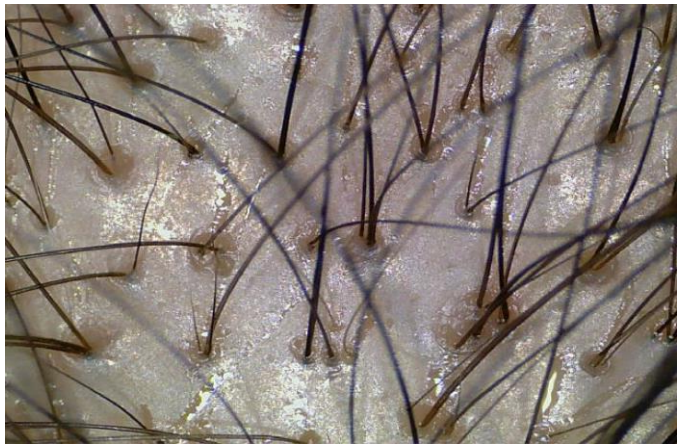
Androgenetic alopecia: Patient 2

Density Improvement

Cryotherapy at -1°C, 20 seconds (10s/10s split), 2 cycles, twice a week, for 12 weeks



Baseline



59 hairs/cm²

Week 12

94 hairs/cm²

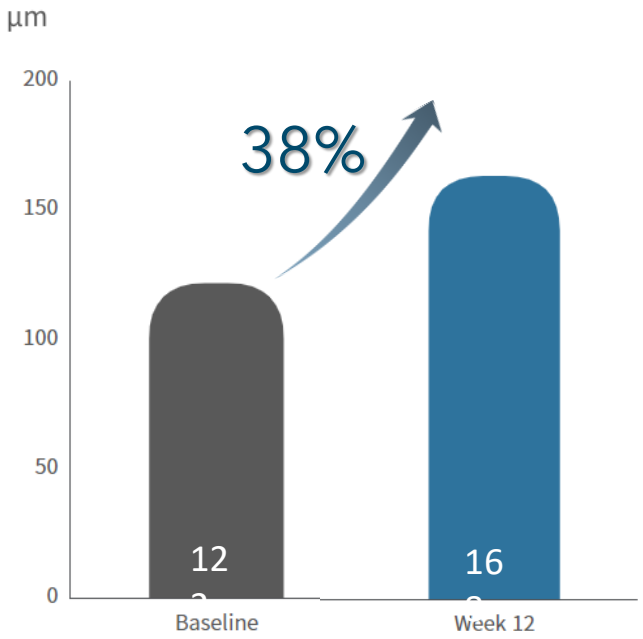
Increase in hair density of 35 hairs/cm²

Source: Dr.Hyeongyeong Kim, Moudaclinic

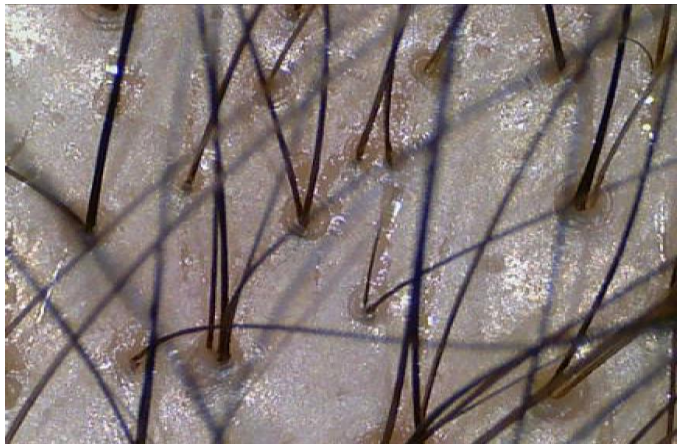
Androgenetic alopecia: Patient 2

Thickness Improvement

Cryotherapy at -1°C, 20 seconds (10s/10s split), 2 cycles, twice a week, for 12 weeks

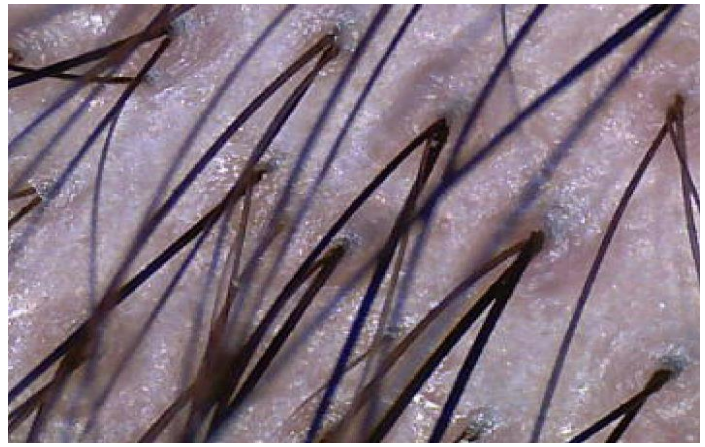


Baseline



122 µm

Week 12



168 µm

Increase in hair thickness of 46.0µm

Source: Dr.Hyeongyeong Kim, Moudaclinic

Androgenetic alopecia: Patient 3

Cryotherapy at -1°C, 20 seconds (10s/10s split), 2 cycles, twice a week, for 12 weeks

Baseline

Week 12

Baseline

Week 12

Source : Prof. Kwon, SNU hospital

Patient Information

Gender : Male

Symptoms : Androgenetic alopecia

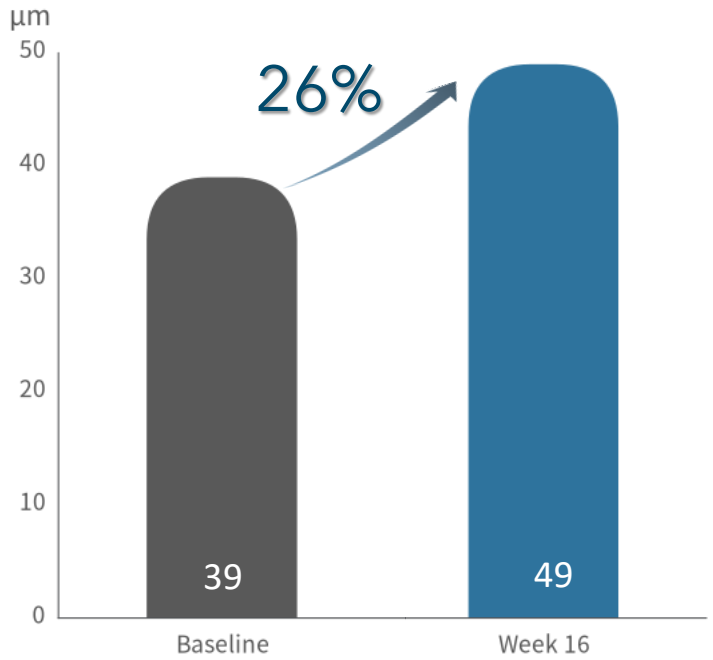
Treatment Duration : 12weeks

Improvements: Increase in hair 50.0% density and 37.5% thickness

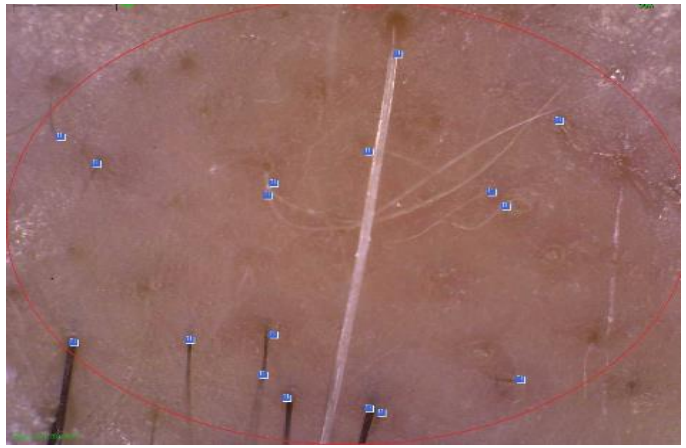
Source: Dr.Hyeongyeong Kim, Moudaclinic

Alopecia areata : Patient 1
Thickness Improvement

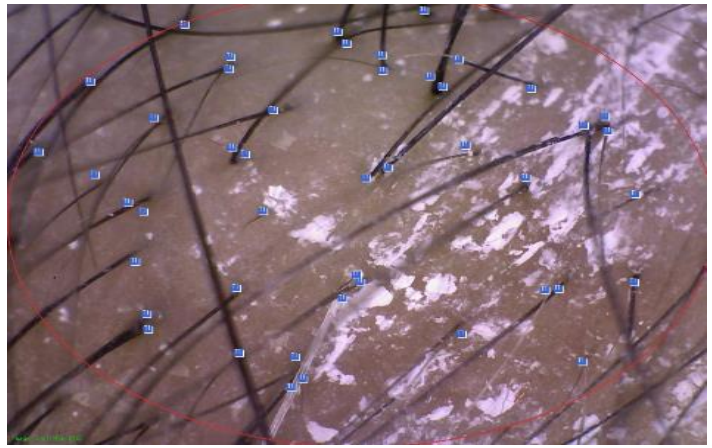
Cryotherapy at 0°C, 20 seconds, 2 cycles, once every two weeks, 6 visits, evaluation at week 16.



Baseline



Week 16



39µm

49µm

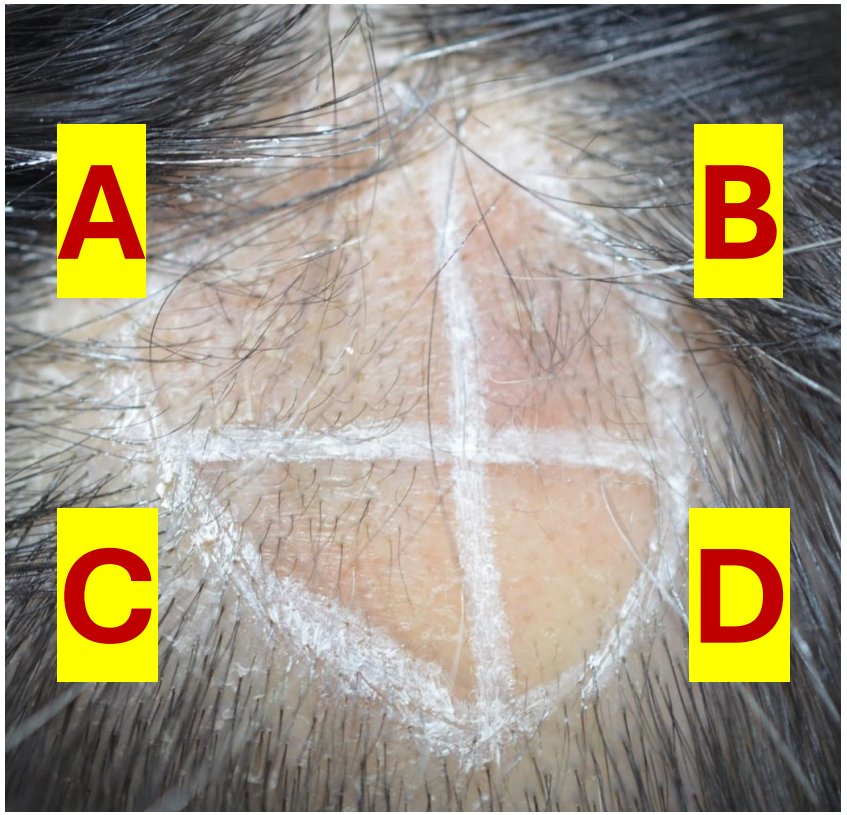
Increase in hair thickness of 10.0µm

Source : Prof. Ohsang Kwon, SNU hospital

Alopecia areata : On-going Clinical Case study

Once a week for 4 weeks

Baseline



Week 4

Area	Treatment
A	TAILI 2.5 mg/ml (positive control)
B	TargetCool 0℃, 20s x 2cycle
C	TargetCool 0℃, 10s x 2cycle
D	Control (No Treatment)

Source : Prof. Ohsang Kwon, SNU hospital

Pain relief during injection procedure

- Cooling mode: Rapid Precision Cooling
- Is a safe and effective way to rapidly cool the skin between temperatures of -10°C~5°C for various medical procedures.
- Precise and rapid temperature control to minimize pain during injections.

Provided by Dr Mohataz in Dubai

Transdermal delivery

- Boosting mode: Ice Needling
- Is a procedure to instantly spray cryo-frozen particles injecting them into the dermal layer
- Used for non-invasive drug delivery with ampoules unsuitable for injection procedures
- Synergistic effect when used with MTS

The solid cryogenic drug particles

Source : Moudaclinic, Dr Hyeon Gyeong Kim.

Journals and clinical cases of Acne Cryotherapy Efficacy and Safety

Selective Cryotherapy is safe and efficient on reduction of Acne

Selective Cryolysis of Sebaceous Glands

H. Ray Jalian[1,2,6], Joshua Tam[2,3,6], Linh N. Vuong[2], Jeremy Fisher[2], Lilit Garibyan[2,3], Martin C. Mihm[4], David Zurakowski[5], Conor L. Evans[2,3] and R. Rox Anderson[2,3]

Acne vulgaris is a nearly universal cutaneous inflammatory disease. Excess sebum production is an integral part of disease pathogenesis. Medical therapies that reduce sebum excretion result in clinical improvement of acne. Given the preferential susceptibility of lipid-containing cells to cold, we investigated the hypothesis that controlled local skin cooling causes preferential injury to sebaceous glands, in murine and swine models using a range of temperatures as low as – 10 °C, and then on the backs of human subjects. In mouse ears, peak histologic damage occurred 72 hours after treatment; eosinophilic necrotic plugs formed within sebaceous glands, and the number of glands was significantly reduced up to 1 week post treatment. Cooling disrupted sebocyte cell membranes, alkaline phosphatase activity, and significantly reduced sebocyte lipid content. In human volunteers, cooling damaged sebaceous glands and reduced sebum output for 2 weeks, with minimal injury to surrounding tissues. Selective cryolysis of sebaceous glands is achievable through brief, non-invasive skin cooling, suggesting that controlled cooling could be developed as an effective treatment for acne vulgaris.

Journal of Investigative Dermatology (2015) **135,** 2173–2180; doi:10.1038/jid.2015.148; published online 28 May 2015

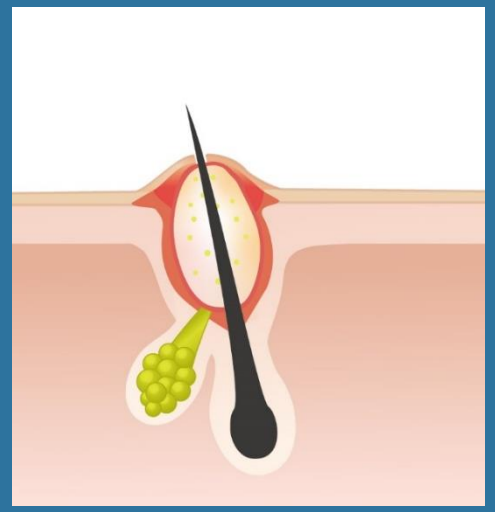
Abstract Main Point:

and Dessinioti, 2010), and photodynamic therapy (Sakamoto *et al.*, 2010)—reduce acne, at least in part, by damaging sebaceous glands and/or decreasing sebum excretion, and a 30–50% sebum reduction is correlated with improvements in clinical acne measures (Janiczek-Dolphin *et al.*, 2010).

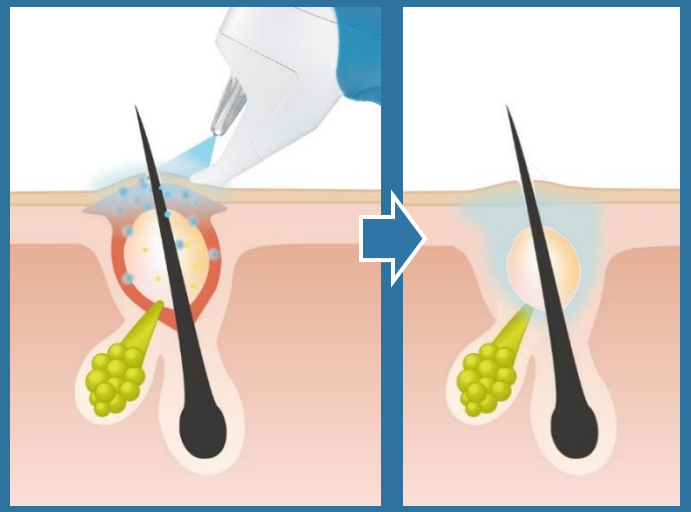
By varying cooling parameters such as temperature, exposure time, cooling rate, and the number of cooling cycles (Table 1), we identified conditions at which sebaceous glands were selectively damaged, with little to no injury of surrounding tissues. One such combination—cooling at a device tem-

TargetCool's precisely target area of inflammation (acne, erythema)

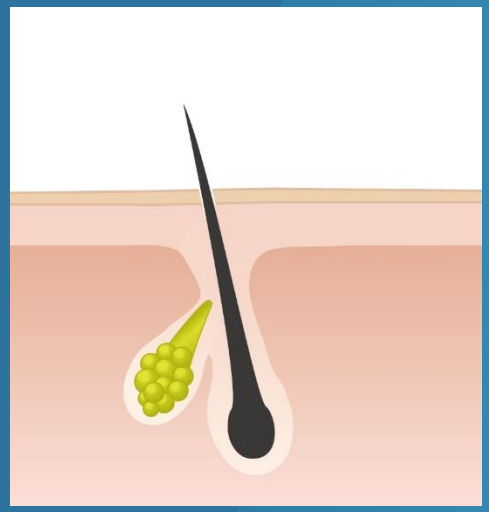
1. Precisely target the area of inflammation instantaneously reducing the temperature.



2. Reduction of inflammation by decreasing the sebum excretion by sebaceous gland.



3. **Ultimately,** skin is relieved from acne, returning to normal state.



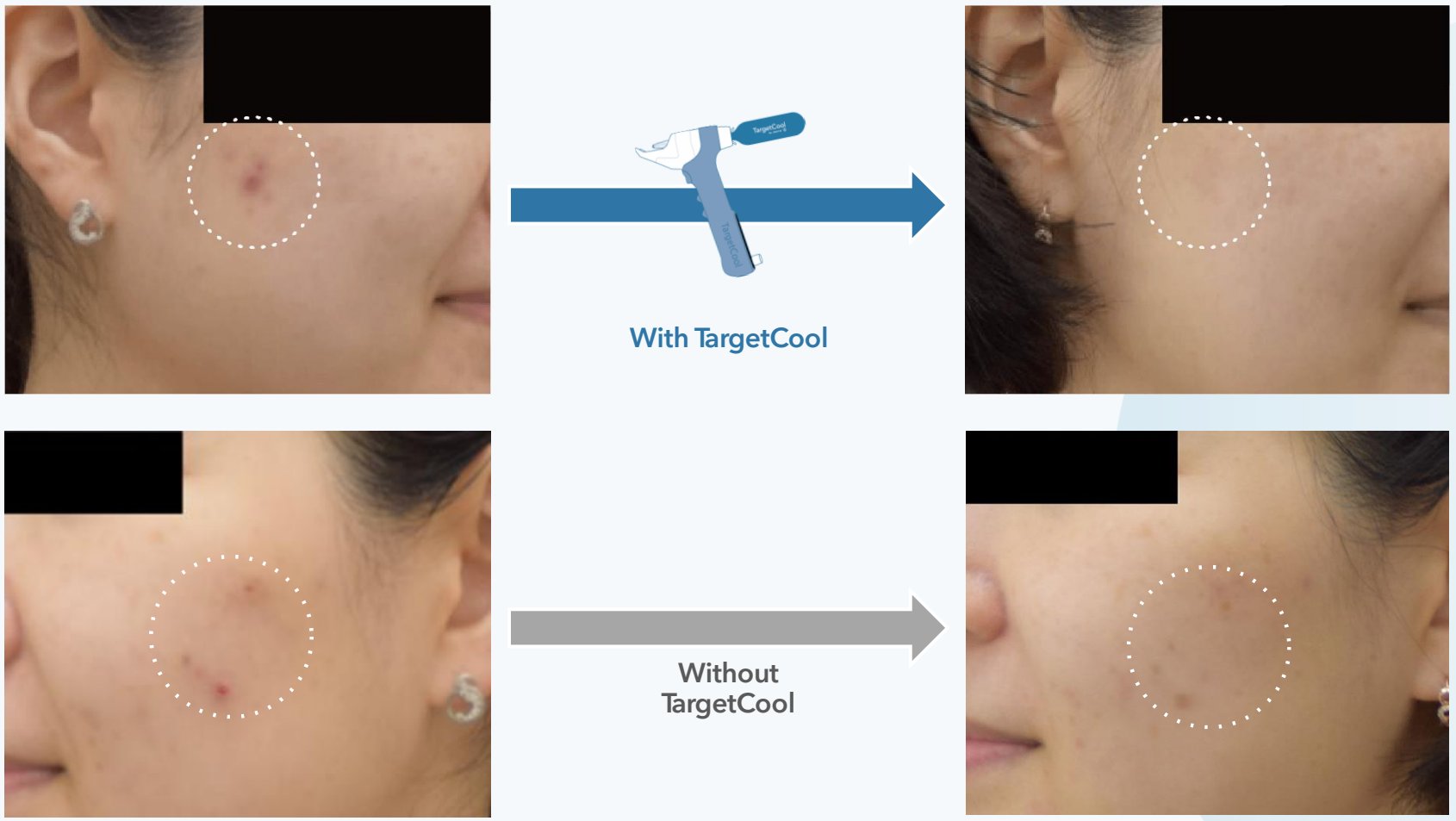
* Journal information: refer to Appendix A

Cryotherapy treatment efficacy

- Cryotherapy at 0°C, 3 seconds, 1 cycle, once a week. For 3 weeks

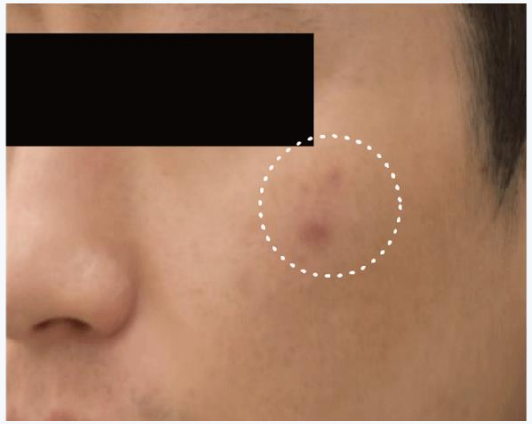
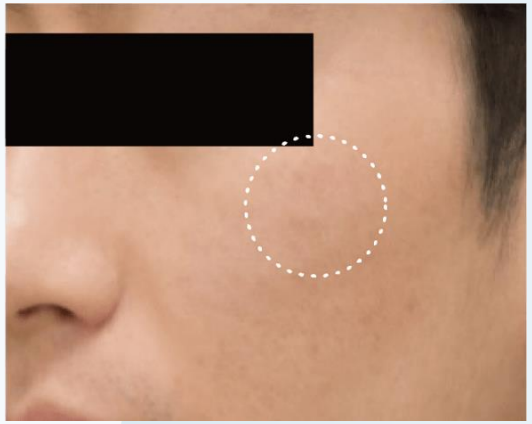
Baseline
(Right Cheek)

Baseline
(Left Cheek)



Case Study 3:

- Cryotherapy at 0°C, 3 seconds, 1 cycle, once a week. For 3 weeks

Baseline	Week 1	Week 2	Week 3
			

Patient Information:

- Gender: Male
- Main area of treatment: Left Cheek Center

Results

Sample Information:

Sample Total (n) = 20	
Male	4
Female	16
Avg. Age	31.4 years

* Exclusion criteria: Refer to Appendix B

Table 1: Tabulated result of total reduction in acne within the patients

Timeline	Baseline	Week 1	Week 2	Week 3
Avg. No. of Acne	26.25	12.65	6.9	3
Minimum	14	2	2	0
Maximum	59	34	21	15
Standard Deviation	11.07	7.28	4.7	3.77
Change / Improvement (%)	-	**54%**	**75%**	**90%**

Table 2: Reduction of acne over the course of treatment

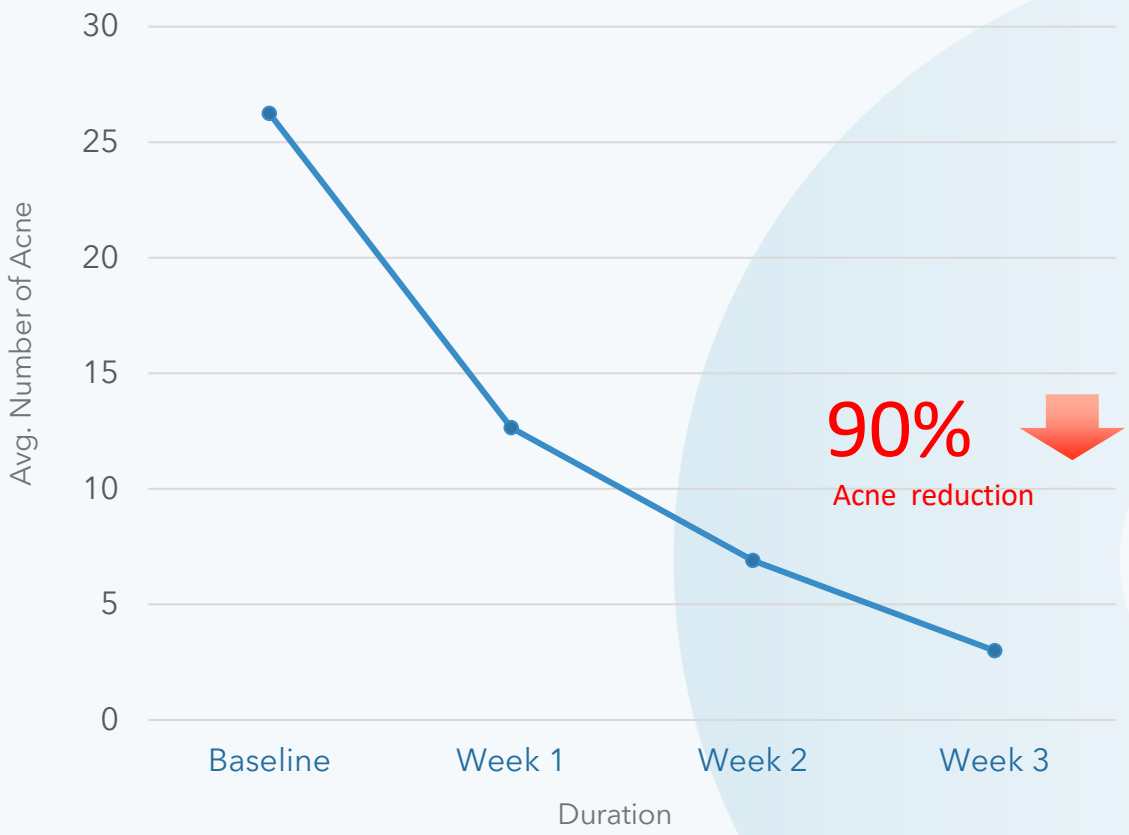


Table 3: Change in Erythema Index (EI) within the patients

Timeline	Baseline	Week 1	Week 2	Week 3
Avg. EI	3.1	1.95	1.55	0.95
Minimum EI	2	1	1	0
Maximum EI	4	4	3	2
Standard Deviation	0.72	0.94	0.69	0.6
Change / Improvement (%)	-	**37%**	**50%**	**69%**

Table 4: Reduction of Acne severity versus baseline

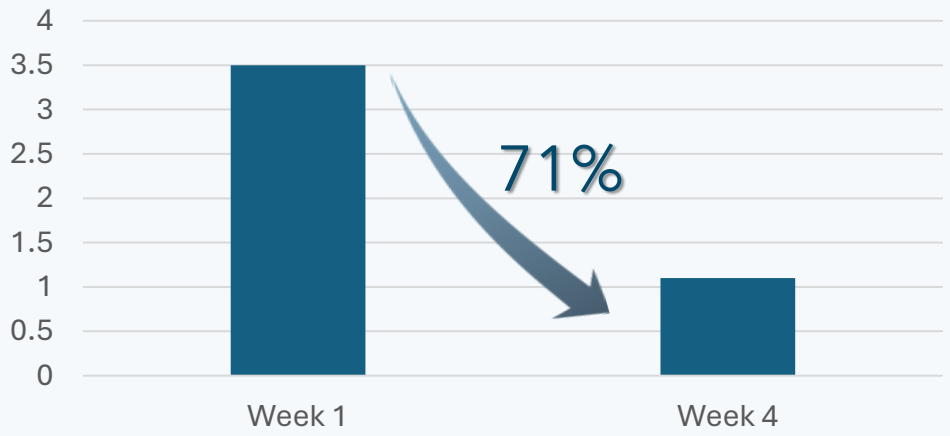
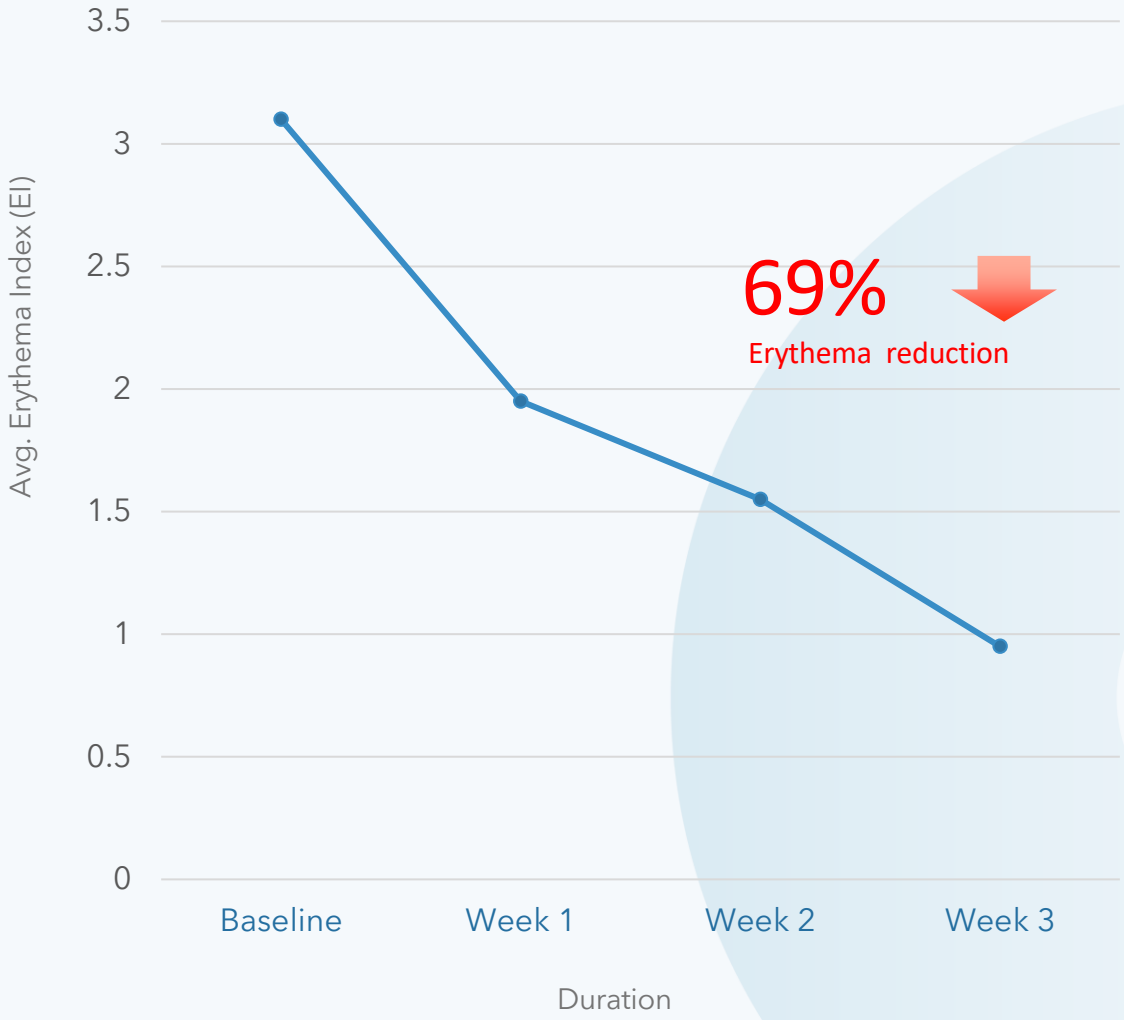
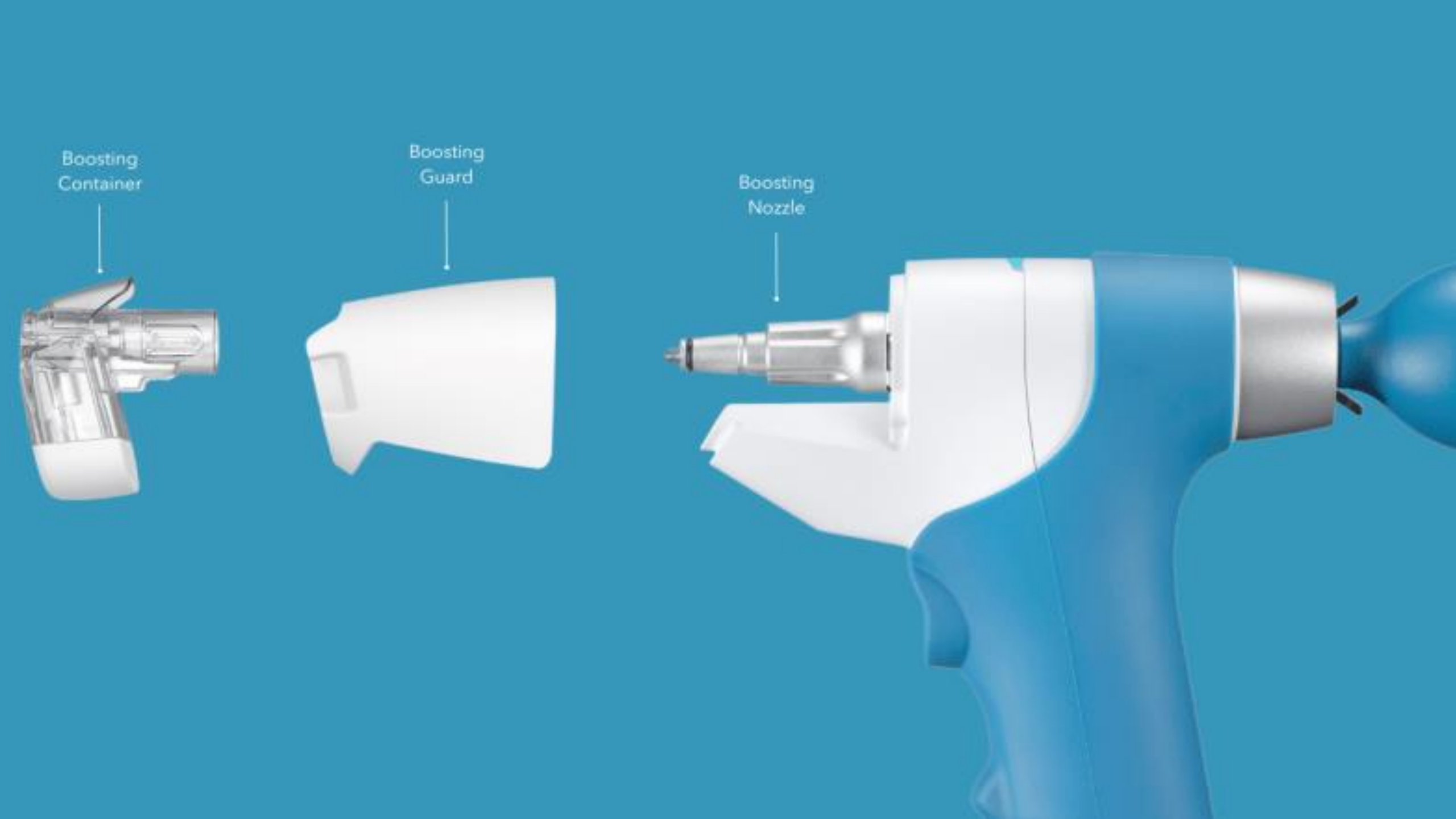


Table 5: Reduction of Erythema Index (EI) over the course of treatment



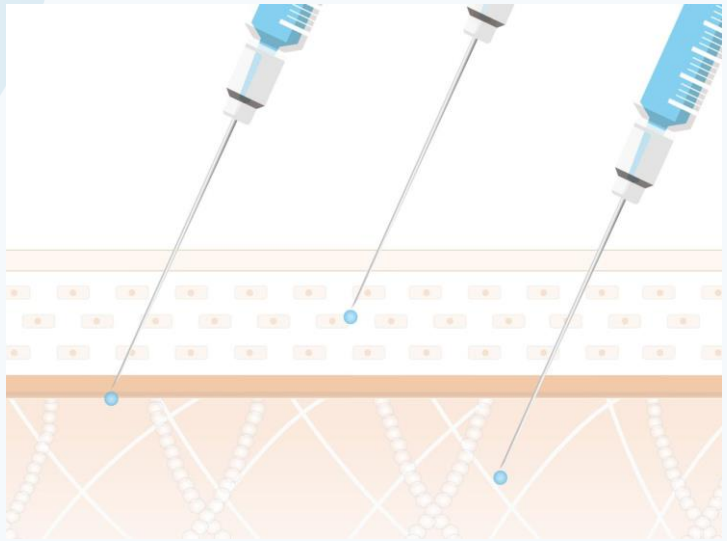

Boosting
Container
Boosting
Guard
Boosting
Nozzle

What is TargetCool Boosting ?

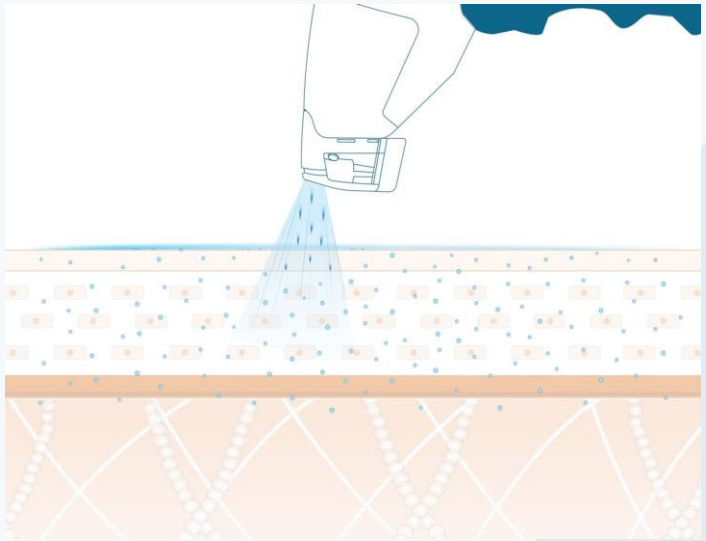
TargetCool Boosting Procedure

*cooperation in filming: Clinique Hus,hu

Needleless Cooling Delivery System



The depth and the amount of solution injected during a skin booster procedure using a syringe may not be consistent, depending on the practitioner's proficiency.



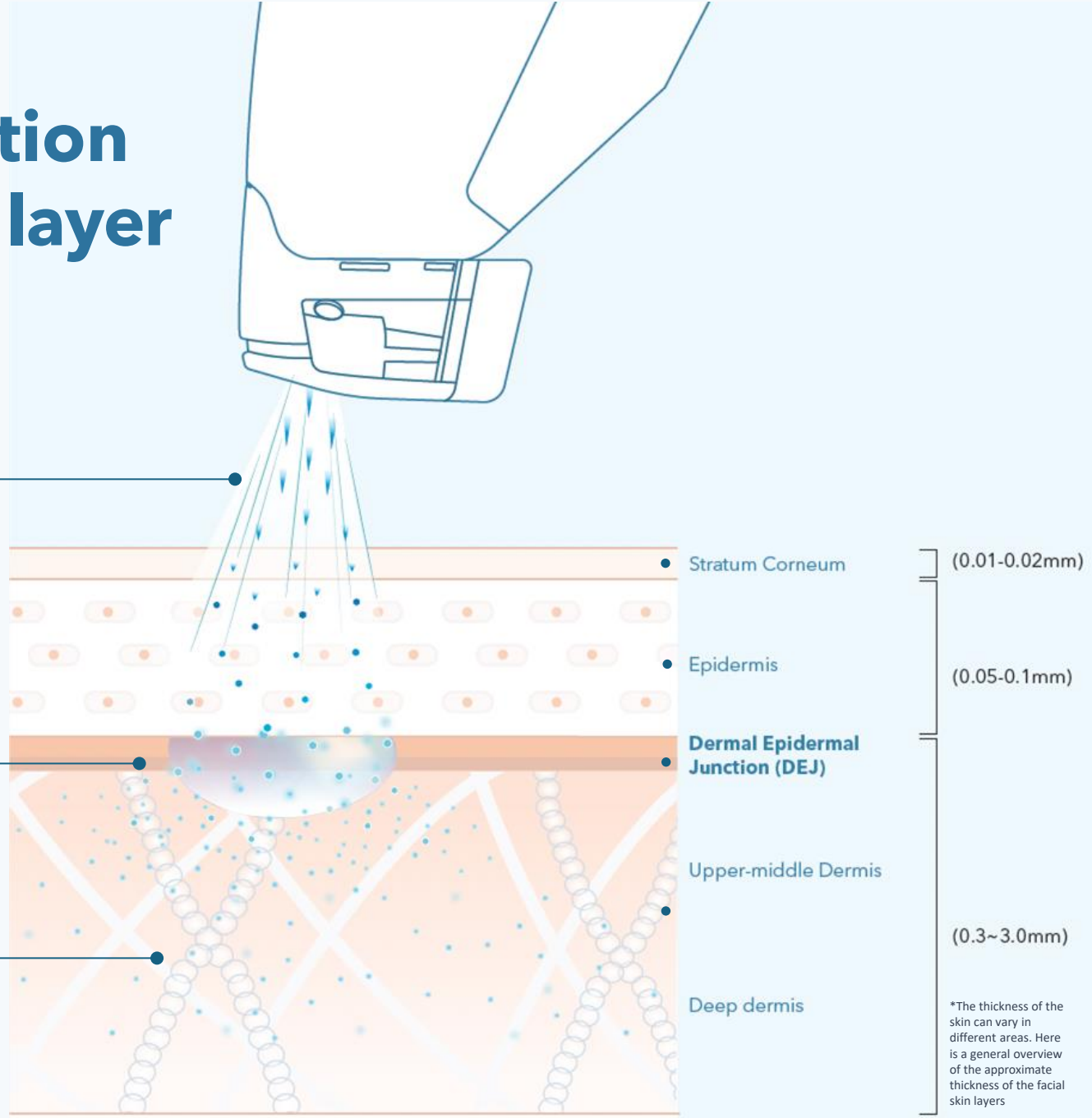
The Boosting Mode ensures consistency, allowing for the absorption of the solution at a predetermined location. From the perspective of skin boosters, the boosting mode has a very good effect on absorbing the solution evenly over a large area.

TargetCool's Targeted solution delivery to DEJ and dermal layer

1. The solution is instantly cryo-frozen into micro-particles and accelerated close to the speed of sound by a supersonic CO_2 jet

2. Ultra high-speed cryo-frozen micro-particles penetrate through the stratum corneum and accumulate in extremely high concentrations below the DEJ layer and penetrate extend up to the upper dermis(approx. 0.3mm).

3. Facilitate the diffusion of the solution into the dermis and surrounding tissues.



What is the DEJ (Dermal-Epidermal Junction)?

Beauty with Comfort TargetCool

Contents lists available at ScienceDirect

Mechanisms of Ageing and Development

journal homepage: www.elsevier.com/locate/mechagedev

Short communication

The impact of intrinsic ageing on the protein composition of the dermal-epidermal junction

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ABSTRACT

The dermal-epidermal junction of human skin exhibits age-related remodelling, resulting in a flattened appearance and reduced surface area. Despite this, a paucity of information is available regarding which protein components change with advancing age. Here we report a significant reduction in the protein distribution of collagen IV ($P < 0.0001$), collagen VII ($P < 0.001$), collagen XVII ($P < 0.01$), integrin β4 ($P < 0.001$) and laminin-332 ($P < 0.0001$) in intrinsically aged skin. The functional implication of this altered protein composition appears to be loss of structural integrity and may, in part, explain the increased fragility of aged skin.

In human skin, the dermal–epidermal junction (DEJ) joins and maintains the association of two very different tissue compartments: the cellular epidermis and the connective tissue-rich dermis. Ultrastructurally, the DEJ consists of four zones, characterised by the ubiquitous expression of distinct protein components. Basal keratinocytes abut this basement membrane, inserting a network of intermediate filaments into hemidesmosomes, characterised by integrin α6β4 and collagen XVII expression. The basement membrane connects the epidermal keratinocytes to the dermis via anchoring filaments which traverse the upper lamina lucida (laminin-332) and connect the hemidesmosomes to the lamina densa (collagen IV and perlecan). From the lamina densa, anchoring fibrils (collagen VII) extend towards the papillary dermis and reach the dermal fibrillar collagen meshwork (Aumailley et al., 2006). The complex network of interconnecting DEJ proteins and the finger-like projections of rete ridges help to provide skin with both structural integrity and mechanical stability (1, s1). However, with intrinsic skin ageing, the DEJ becomes significantly thinner (Vazquez et al., 1996) and exhibits a flattened appearance with a reduced surface area due to loss of rete ridges (s2). Hence, aged skin is less resistant to shearing forces and more vulnerable to injury (Kurban and Bhawan, 1990). Despite such structural changes, few investigations have specifically identified which components of this region change with increasing age; we have therefore examined whether DEJ composition changes during human skin ageing. Skin biopsies were obtained from photoprotected buttock skin of Caucasian participants, stratified into two distinct age groups: a young group ranging from 18 to 30 years (mean age 23.4 years, SD 3.8 years, males n = 8; females n = 6) and an aged group ranging from 65 to 75 years (mean age 71.5 years, SD 3.6 years, males n = 6; females n = 8). In order to characterise the gross morphology of the skin from each volunteer, frozen sections were prepared and morphometric measurements of epidermal thickness, rete ridge depth and DEJ convolution were performed. Consistent with earlier reports of skin ageing, there was no statistically significant difference in epidermal thickness between the two age groups. However, when compared to the young group, the buttock skin of the aged individuals exhibited the characteristic flattened DEJ ($P < 0.0001$) and accompanying rete ridge shortening ($P < 0.01$; Supplementary Fig. S1 and Supplementary Table S1). Next, sections were immunostained for the major protein components found within distinct zones of the DEJ. Analysis of the immunostaining was performed by taking measurements of fluorescence intensity across a standardised line positioned across the region. In the aged cohort, a significant reduction in the distribution and intensity of immunostaining across the DEJ was identified for collagen XVII ($P < 0.01$), integrin β4 ($P < 0.001$), collagen IV ($P < 0.0001$), laminin-332 ($P < 0.0001$) and collagen VII ($P < 0.001$), as compared to the young cohort. However, perlecan was found to be unchanged as

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E-mail address: rachel.watson@manchester.ac.uk (R.E.B. Watson).

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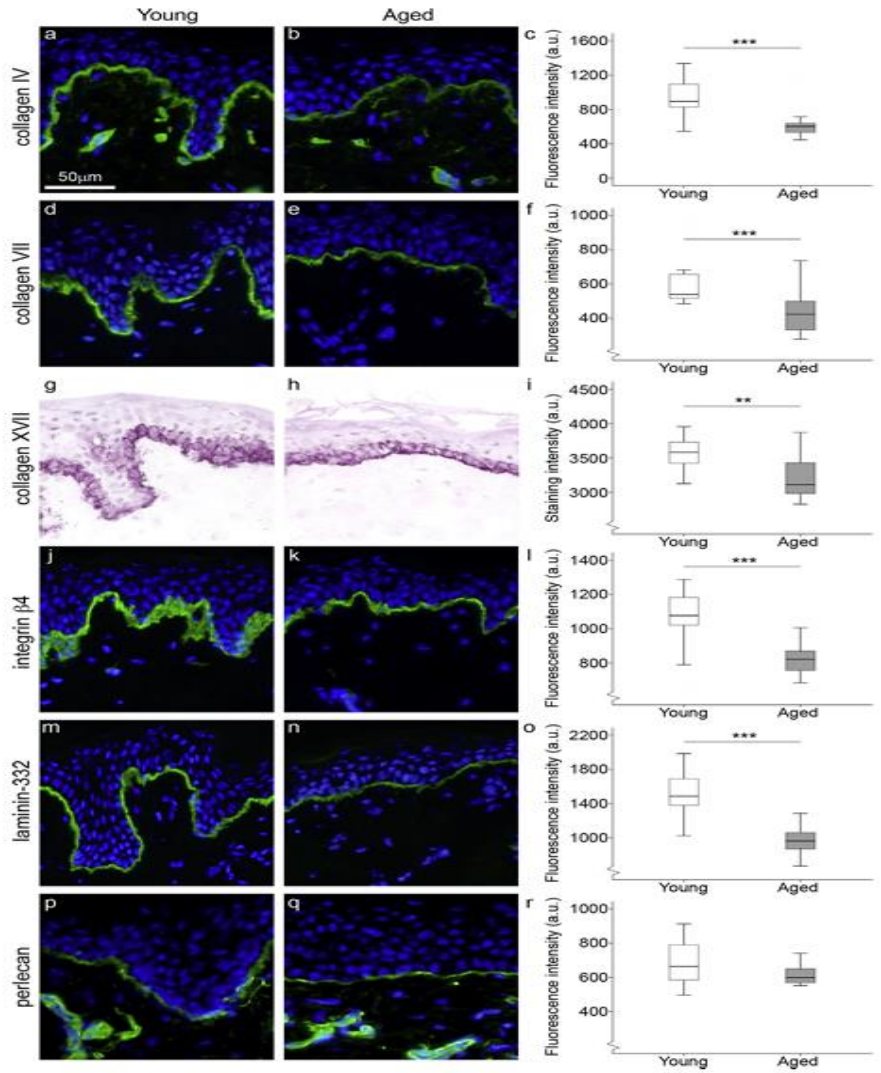
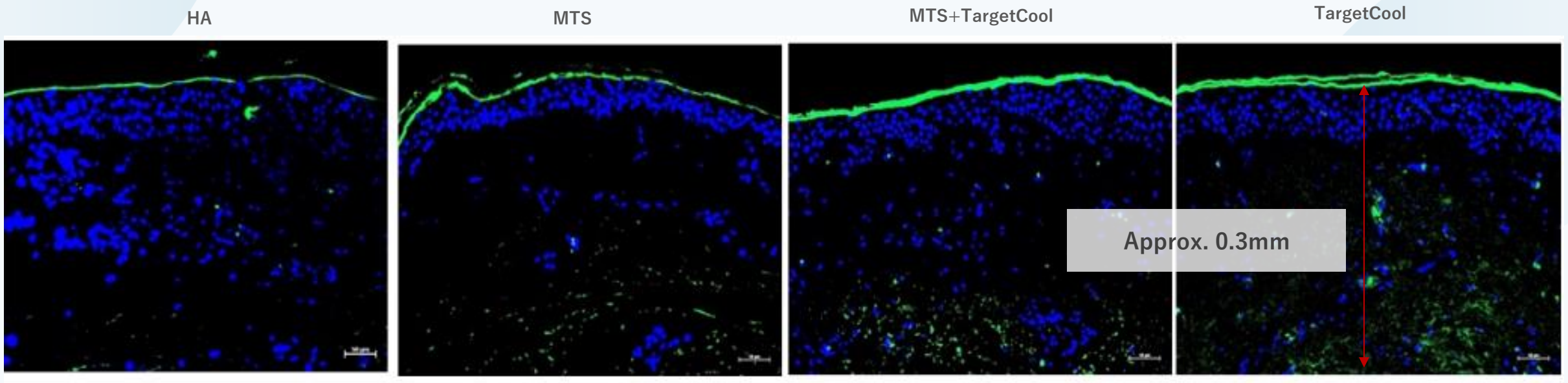


Fig. 1. Immunohistochemical staining of DEJ components was performed using antibodies raised against collagen IV (a–c), collagen VII (d–f), collagen XVII (g–i), integrin β4 (j–l), laminin-332 (m–o) and perlecan (p–r). In skin from young volunteers, abundant staining for each DEJ component was observed. However, analysis of skin samples from intrinsically aged volunteers identified significant diminution of signal for each of the markers examined, except perlecan. Scale bar = 50 μm, ** $P < 0.01$ & *** $P < 0.001$.

Proven effect of TargetCool's solution delivery

Fluorescence Transillumination Imaging Results from Ex Vivo Human-Derived Skin Tissue

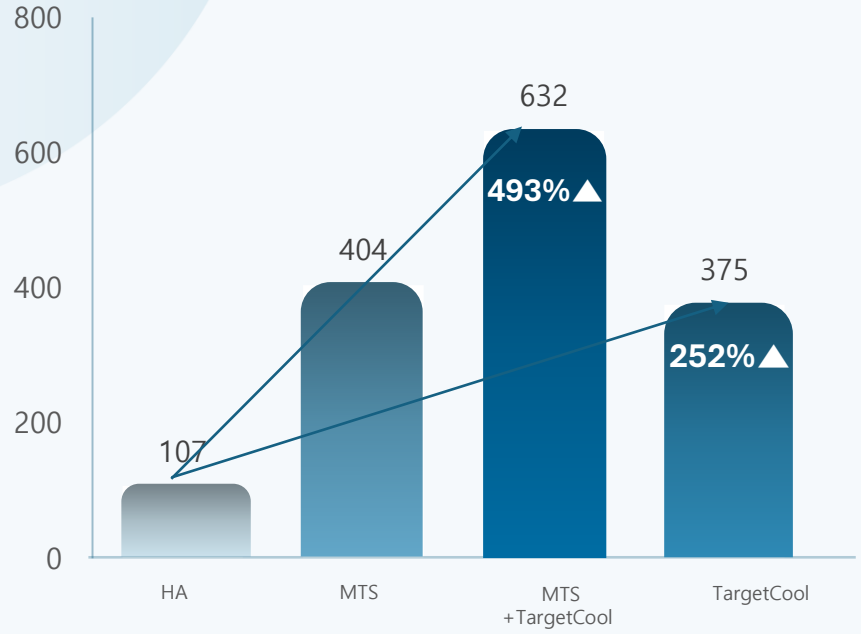
TargetCool helps increase skin penetration and absorption of the solution



Proven effect of TargetCool's solution delivery

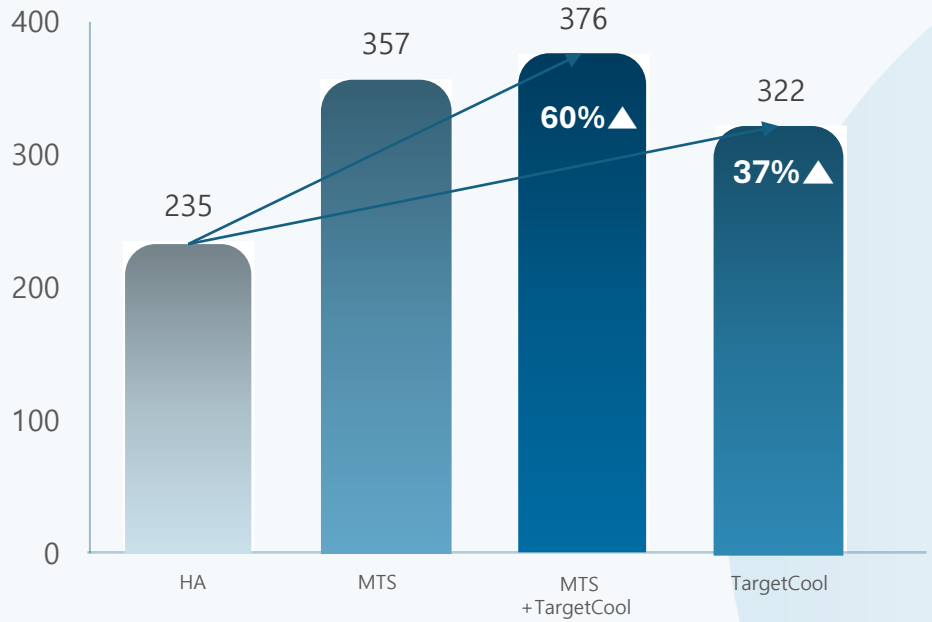
Skin Absorption

[Fluorescence intensity]



Depth of skin penetration

[Fluorescence penetration depth_μm]



- **TargetCool** showed a **252% increase in fluorescent intensity** and a **37% increase in penetration depth** compared to the negative control group.
- **MTS+TargetCool** showed the **highest level of fluorescence intensity and penetration depth**.

Case 1 (F/41)

Baseline | After treatment | 2 days | 4 days | 6 days

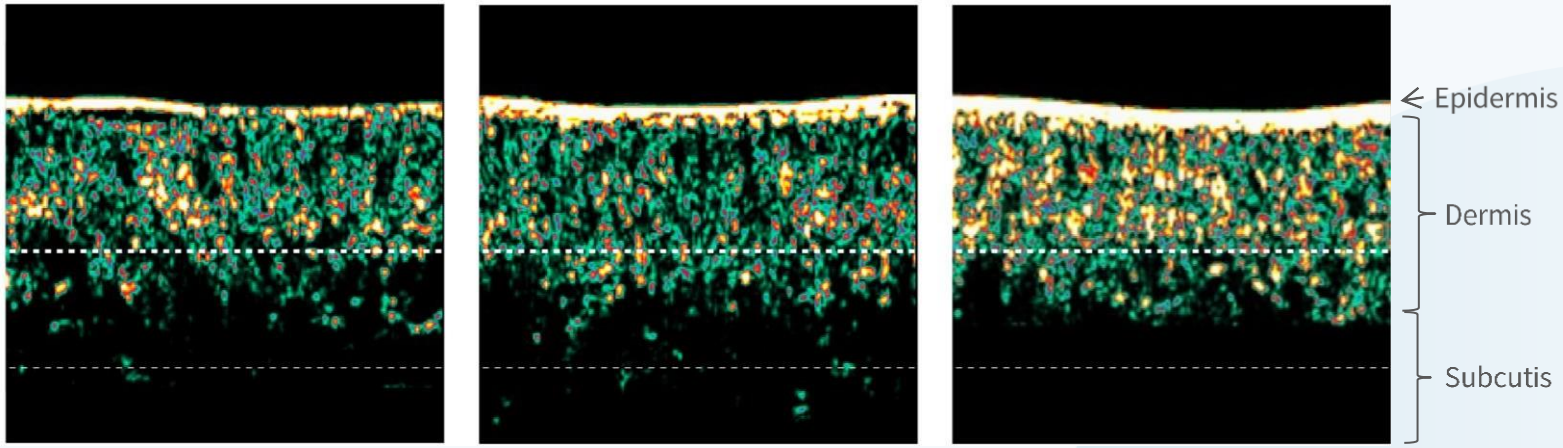
- (**Right**) **Injector**: Post-procedure **Needle Marks**, **Bumps**, and **Redness** Persist for Up to 4 Days
- (**Left**) **TargetCool Boosting**: Post-procedure **Slight Redness, Same-Day Recovery**

Case 1 (F/41) _Ultrasonographic Images

TargetCool Boosting achieving equivalent improvement as with Injector Procedure.

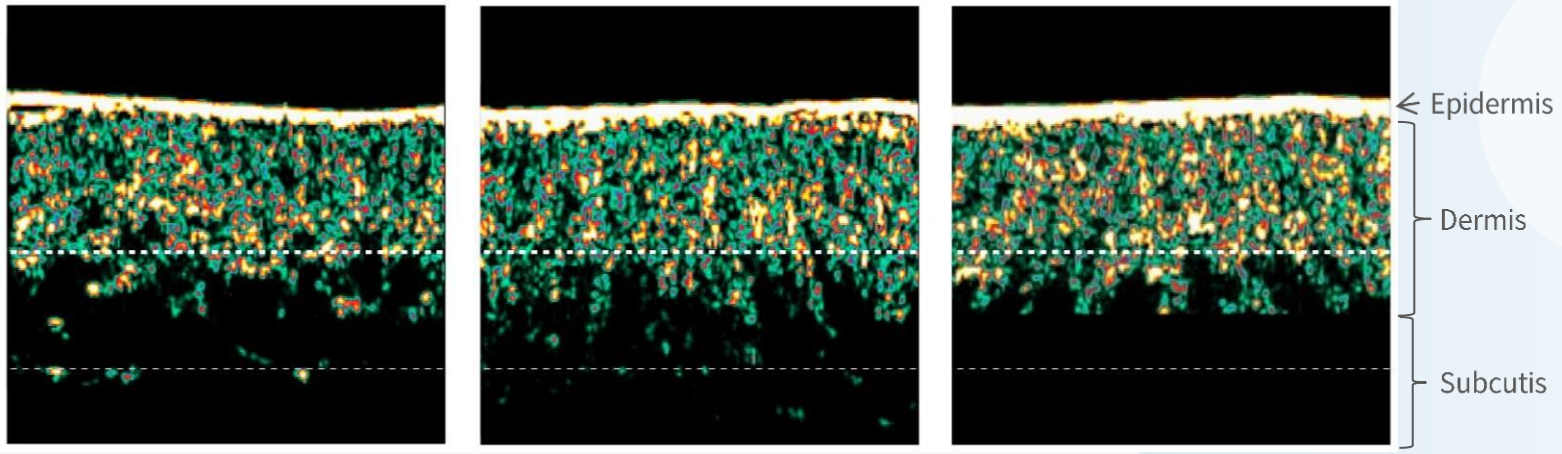
Enhanced dermis density,
increased skin thickness,
and demonstrates improvement in
skin structure on both sides

Injector



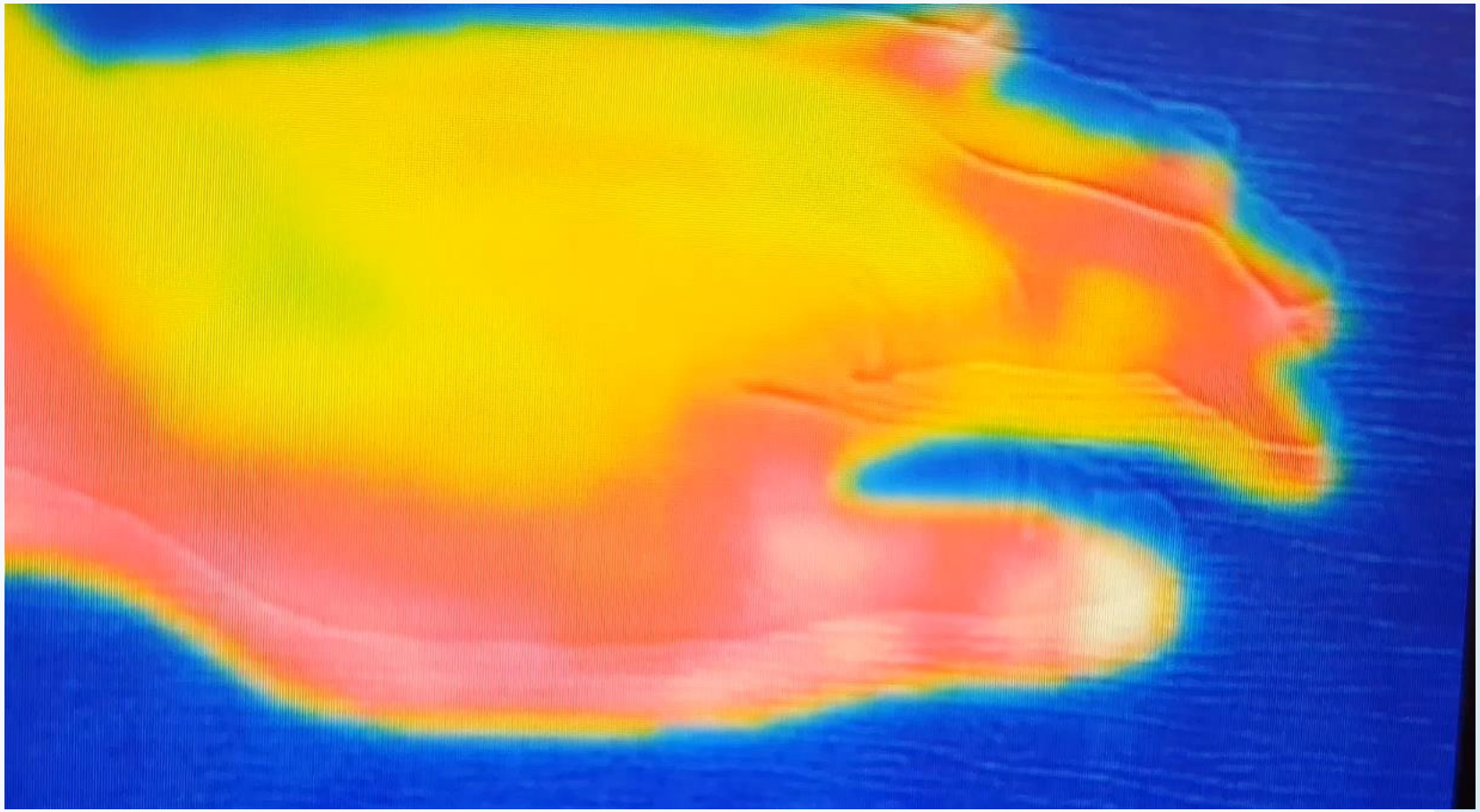
Baseline 1 month 3 months

TargetCool Boosting



Baseline 1 month 3 months

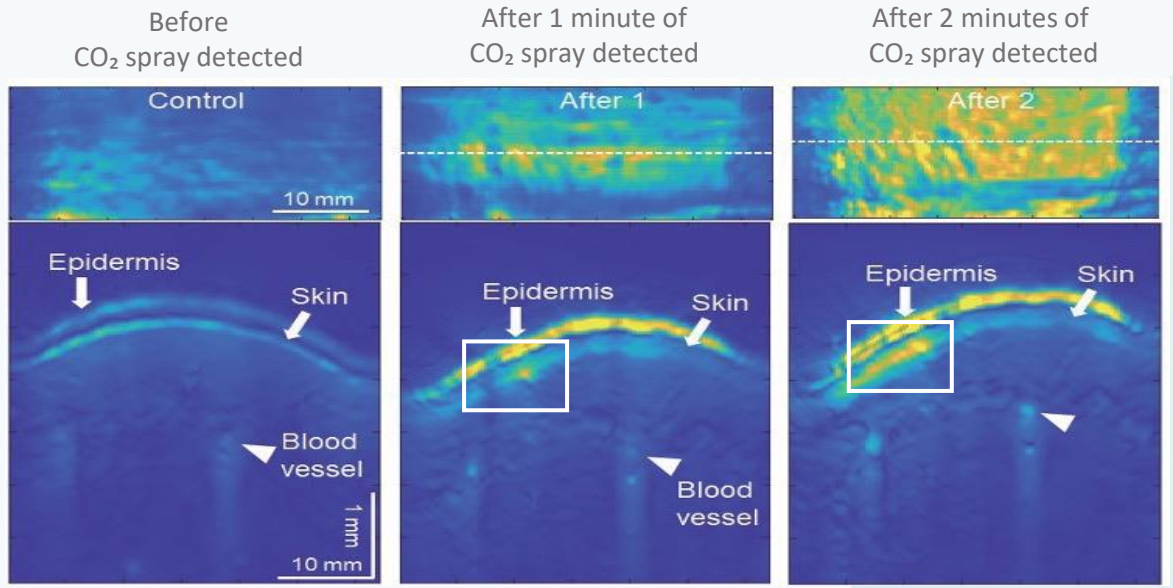
Thermal camera video of using Boosting mode on the skin



Benefits of CO_2 Cooling

1. Reduce inflammation: CO_2 regulates NF-kappa B, which induces the expression of genes that cause inflammation.
2. Improvement of blood circulation: CO_2 induces vasodilation, providing nutrients and oxygen to the skin tissue.
3. Oxygen supply: CO_2 lowers blood pH and induces the Bohr effect to supply oxygen to cell tissues.
4. Formation of blood vessels: Increase vascular endothelial growth factor to form new blood vessels and promote blood circulation.

SKIN REJUVENATION



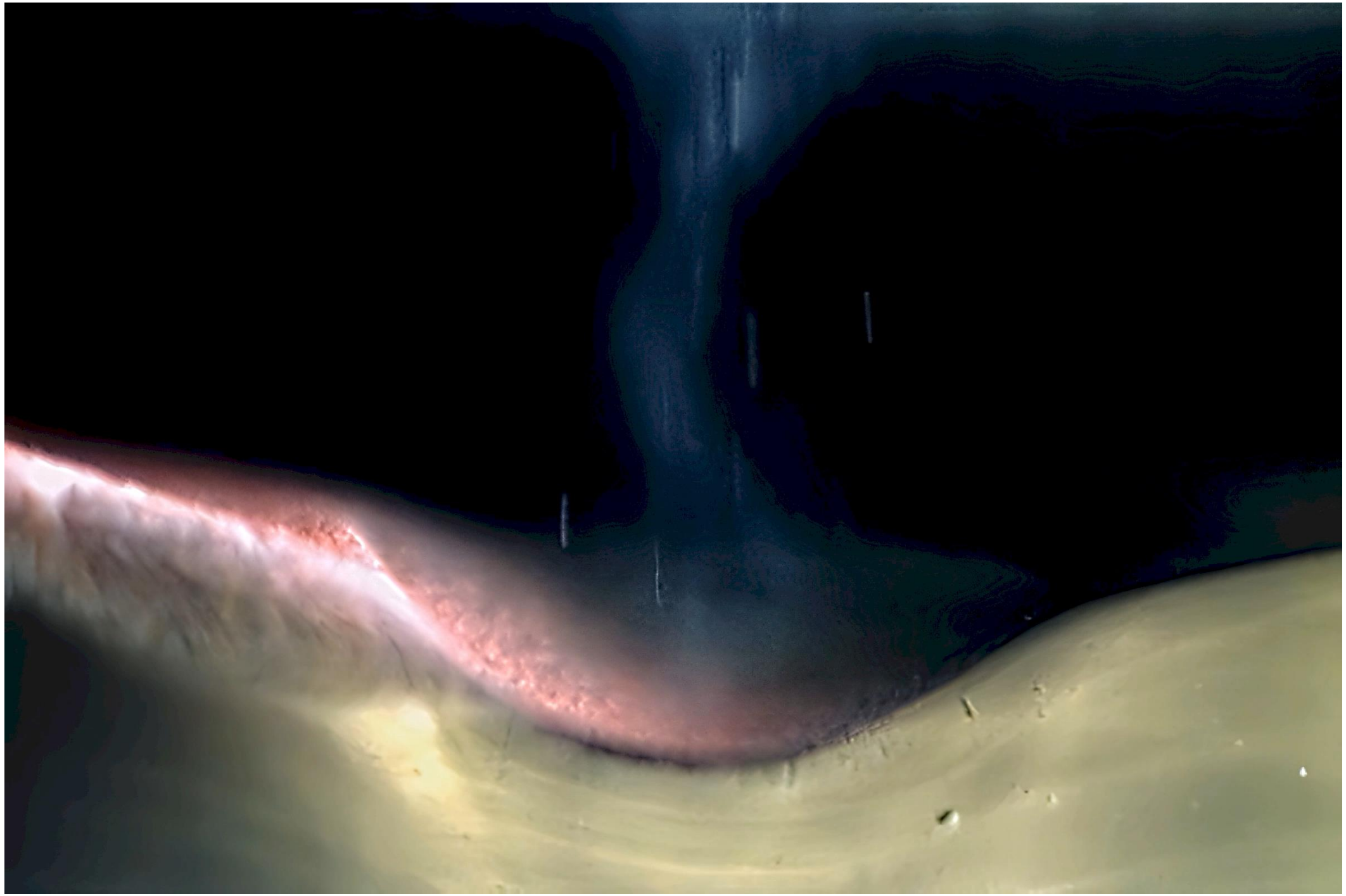
CO_2 detection in the epidermis

CO_2 detection in the epidermis and upper of the dermis

Ultimately CO_2 diffuses and reaches the dermis with TargetCool

*References: Postech, Ultrasound imaging

48



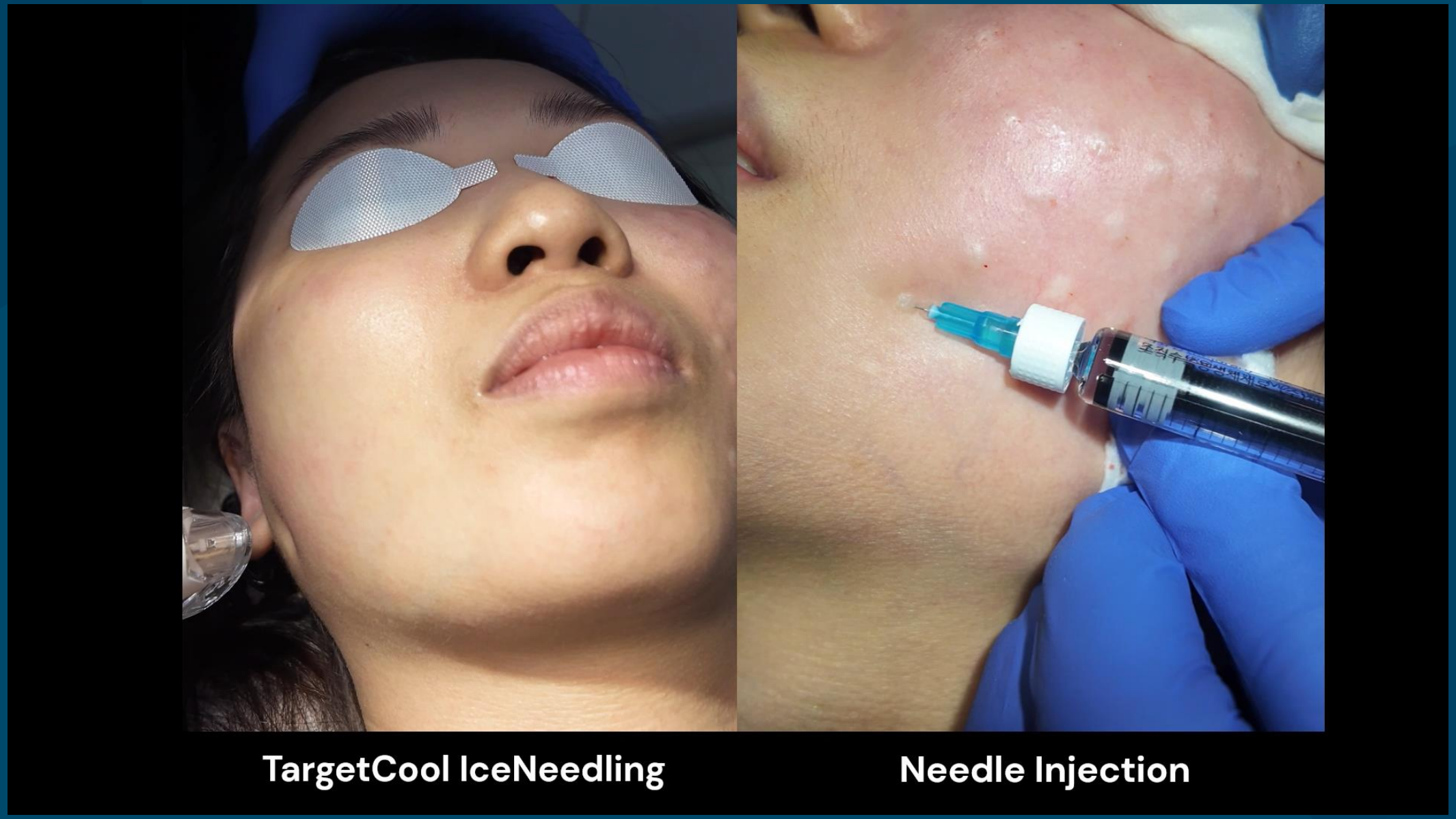
Recommended Container Type by Solutions

Boosting mode is designed to finish 2~2.5ml liquid within 2 minutes.

Image	Ampoule	Brand	Type
	General Saline Solution	-	Custom
	E-50 (exosome)	E-50	Type 3
	ASCE+ SRLV	EXOCOBIO	Type 4
	Rejuran Healer	Pharma Research	Type 3
	Klardie Ruby	HansBiomed	Type 1+

Image	Ampoule	Brand	Type
	Klardie Dia	HansBiomed	Type 3
	715 C LINE	CYTOCARE	Type 2
	JALUPRO Classic Bundle	PROFESSIONAL DERMA	Type 2
	JALUPRO (Super Hydro)	PROFESSIONAL DERMA	Type 4
	JALUPRO (HMW)	PROFESSIONAL DERMA	Type 4

Procedure Video



Conclusion (Result comparison after 6weeks)

Result Criteria	IceNeedling PN product	Needle Injection PN product
Downtime	Zero	Minimum of 4 days
Skin Texture	Effective	Effective
Skin Lifting	More Effective	Effective
Skin Redness	Recovered	Recovered
Skin Density	Increase	Increase

- IceNeedling showed Zero Downtime. Where as, injection showed minimum of 4 days recovery.
- IceNeedling showed consistent performance compared to injection method in the 4 selected skin criteria: Texture, Lifting, Redness and Density.
- IceNeedling is a safe and effective delivery system of PN product.

IceNeedling
PN product

Method

IceNeedling throughout the face

Benefits of IceNeedling

Pain reduction through non-contact
No needle marks, bruising, swelling

Needle Injection
PN product

Method

Inject by hand (70~80 injections)

Post Treatment downfalls

Painful procedure involving bleeding
Needle marks, bruising, swelling

MTS + IceNeedling PN product

Before

Skin Texture: +++

After

PN product Injection

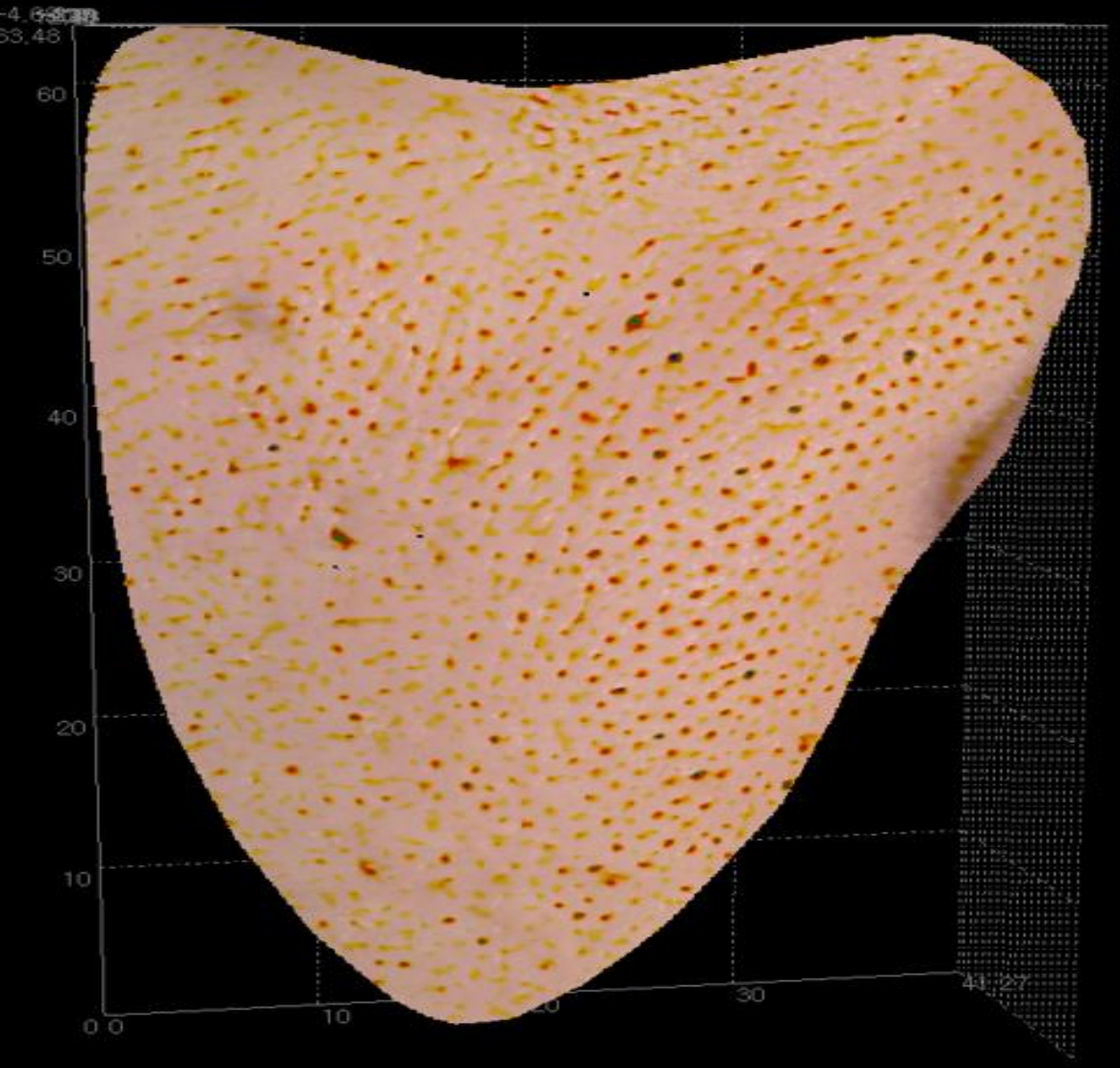
Before

Skin Texture: ++

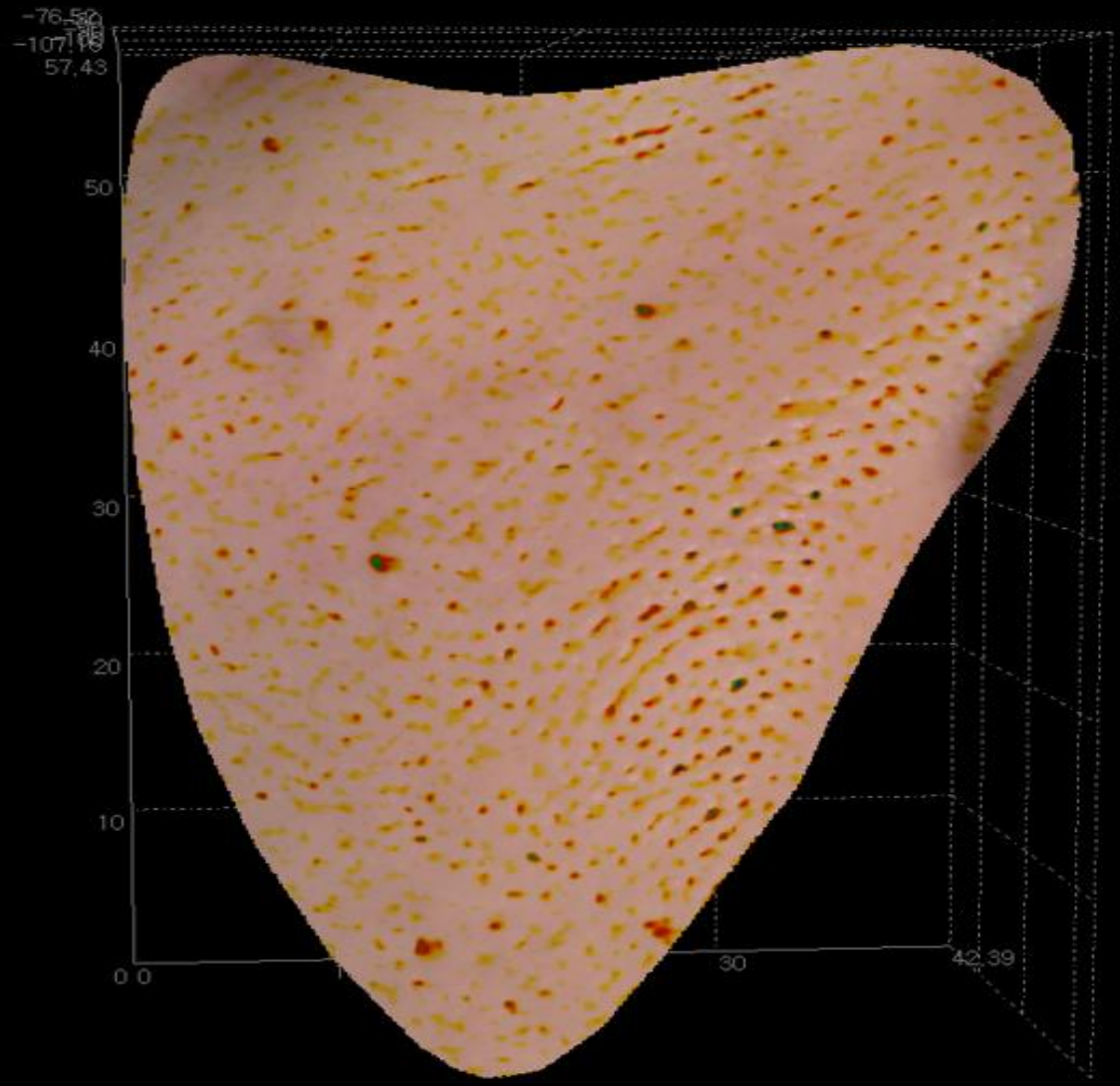
After

Pores : MTS + IceNeedling w PN product

Before

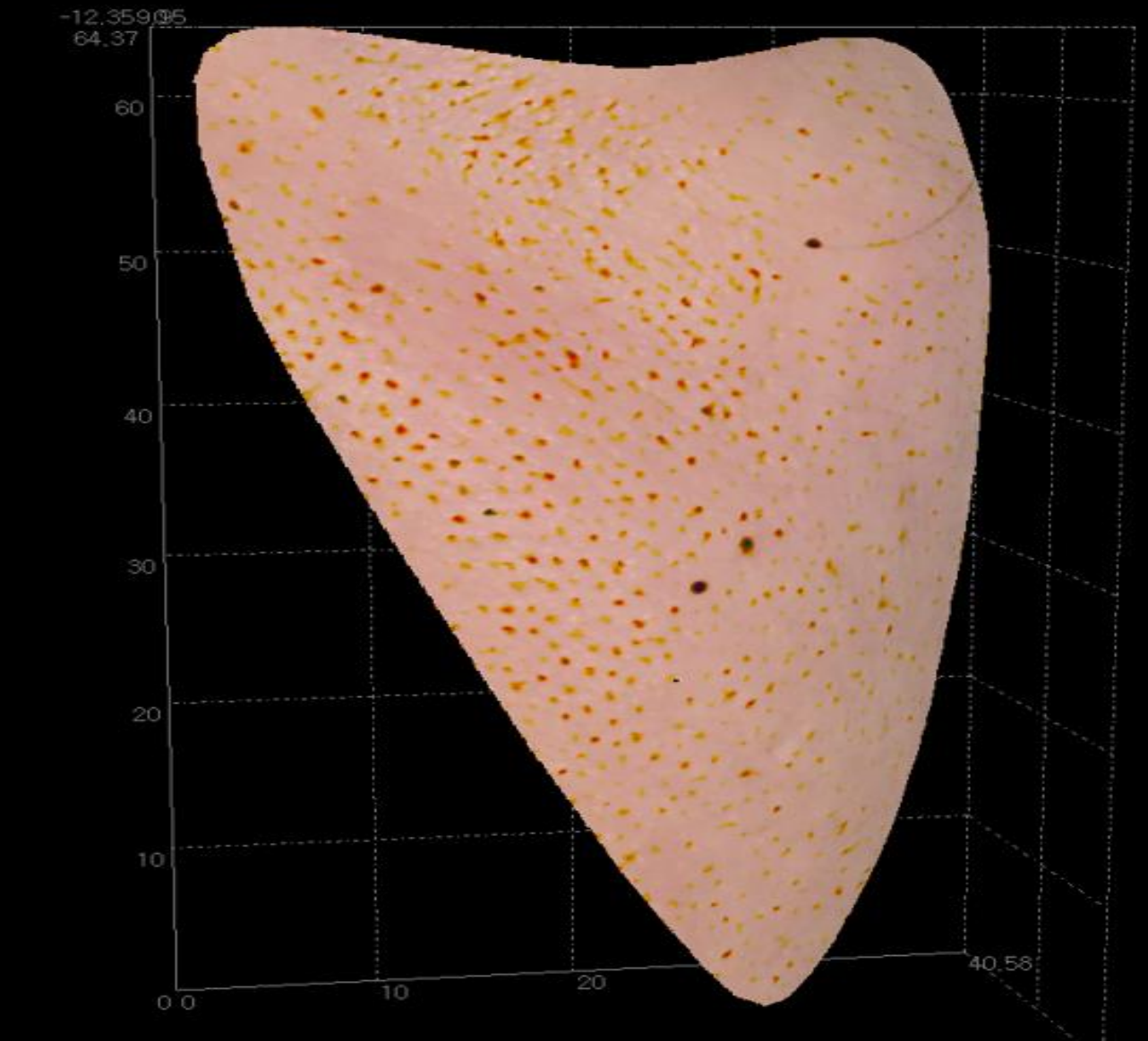


After

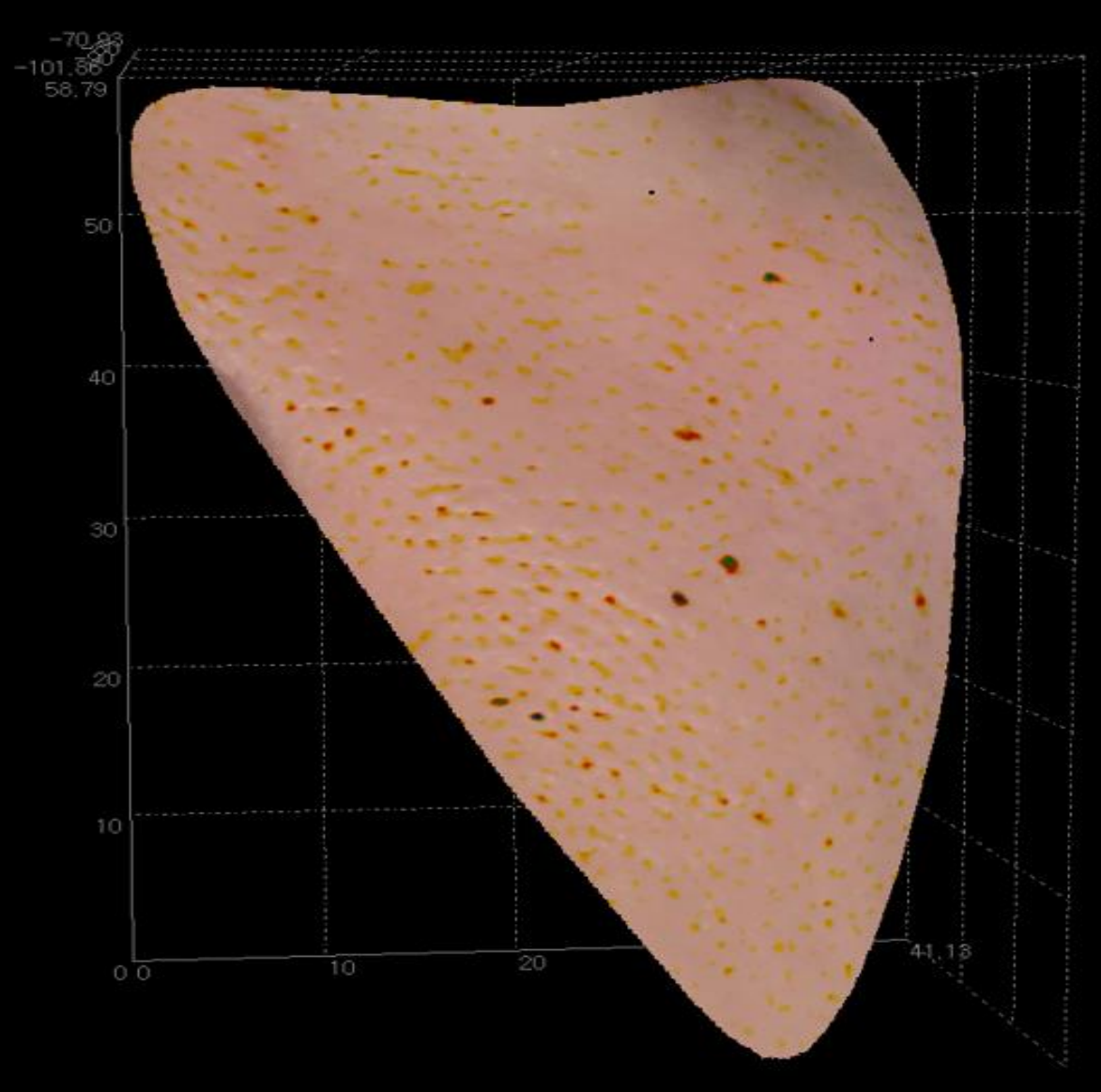


Pores : PN product Injection

Before



After



Lifting : MTS + IceNeedling w PN product

Skin Lifting : +++

Lifting : PN product Injection

Skin Lifting : +

Redness : MTS + IceNeedling w PN product

Before Treatment

2 Month
After Treatment

3 Month
After Treatment

Redness: PN product Injection

Before Treatment

2 Month
After Treatment

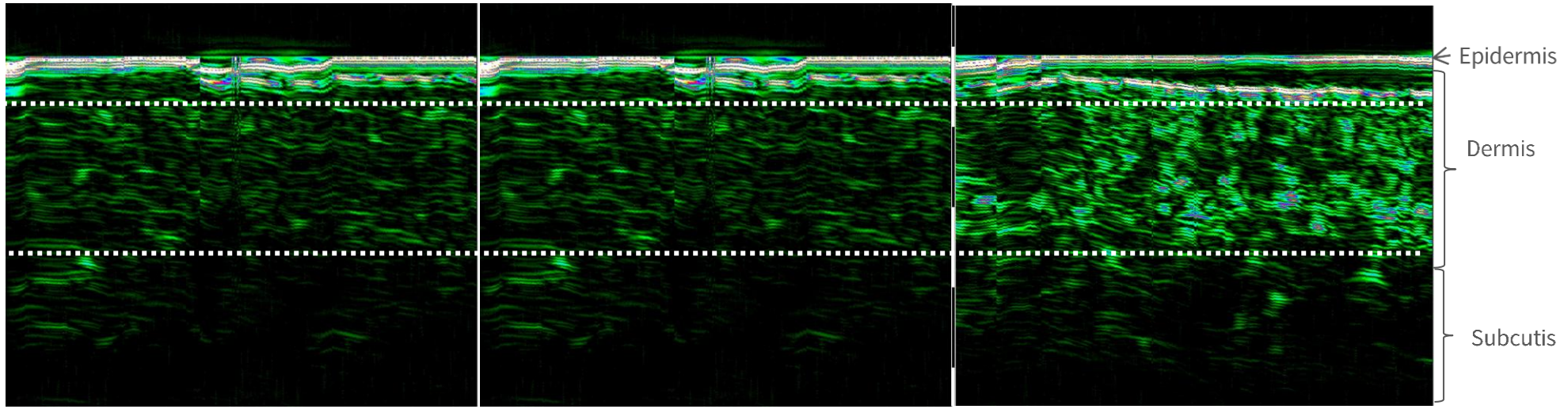
3 Month
After Treatment

Sonogram

IceNeedling

PN product

Density ++

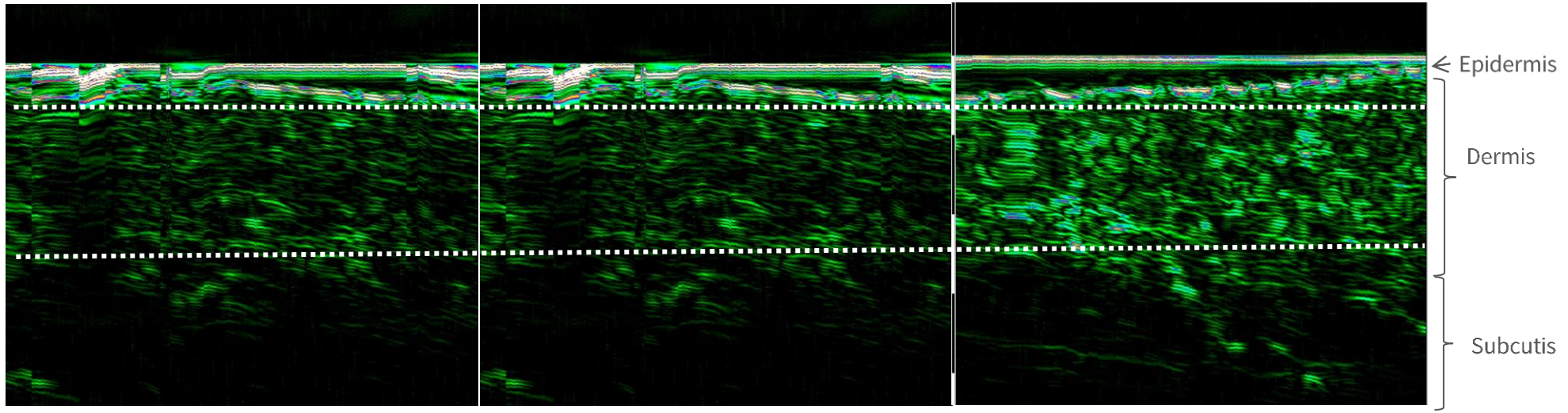


Before **1 month** **3 month**

Needle Injection

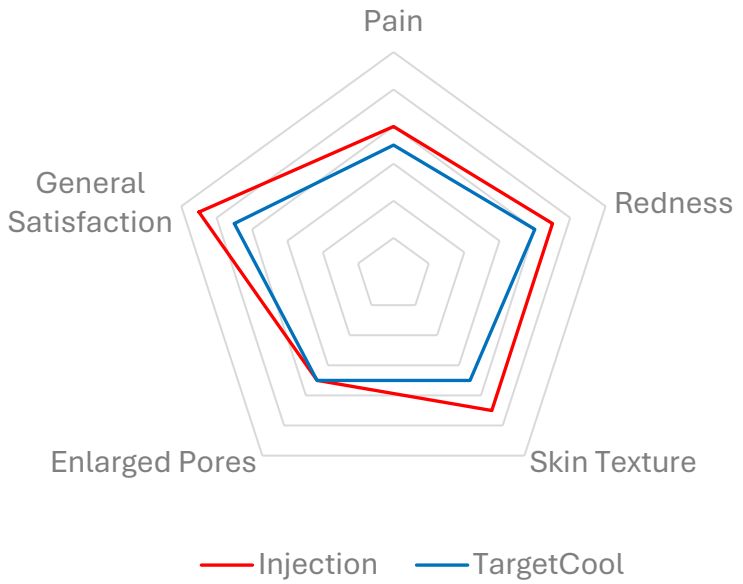
PN product

Density ++



General Treatment Score & VAS (Visual Analogue Scale)

Patient	Case1		Case 2		Case 3		Case 4		Average Score	
Criteria	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	Injection	TargetCool
Pain (VAS)	1	2	2	2	3	2	2	1	**2**	**1.75**
Redness	1	1	2	3	2	3	4	1	**2.25**	**2**
Skin texture	4	2	1	1	1	1	3	3	**2.25**	**1.75**
Enlarged pores	3	2	1	1	1	1	2	3	**1.75**	**1.75**
General satisfaction	4	2	2	2	2	2	3	3	**2.75**	**2.25**



- Overall score on every criteria of the experiment shows similar score.
- Thus, proving treatment TargetCool IceNeedling has similar performance as injection.

Thank You For Your Attention