



Collagen Induction Therapy & Regenerative Medicine

Microneedling with MDerma by Dermapen

Collagen Induction Therapy (CIT)

- Cosmetic procedure
- Involves repeatedly puncturing the skin with 12, 33 gauge, sterile, stainless steel needles (microneedles)
- All Fitzpatrick skin types

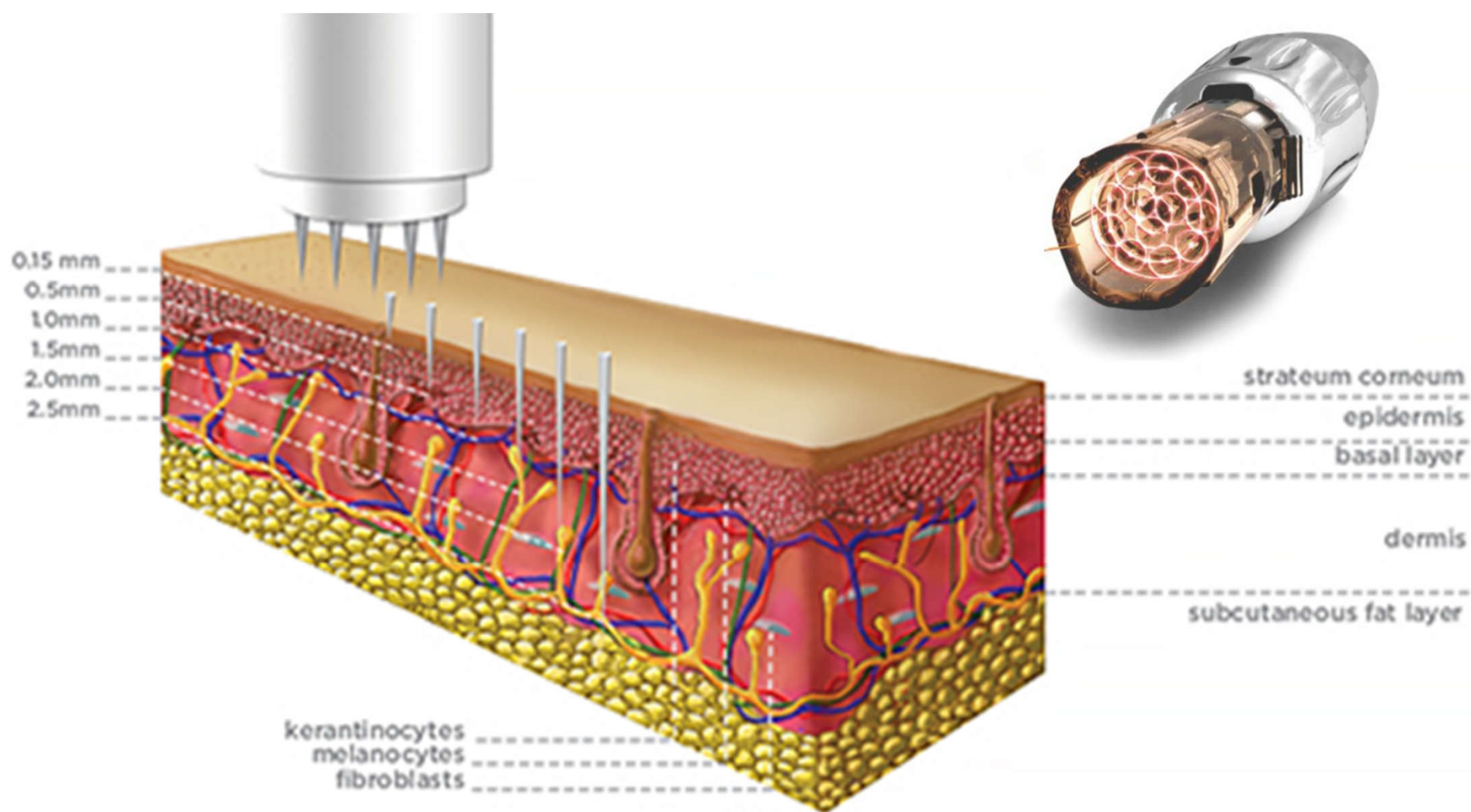




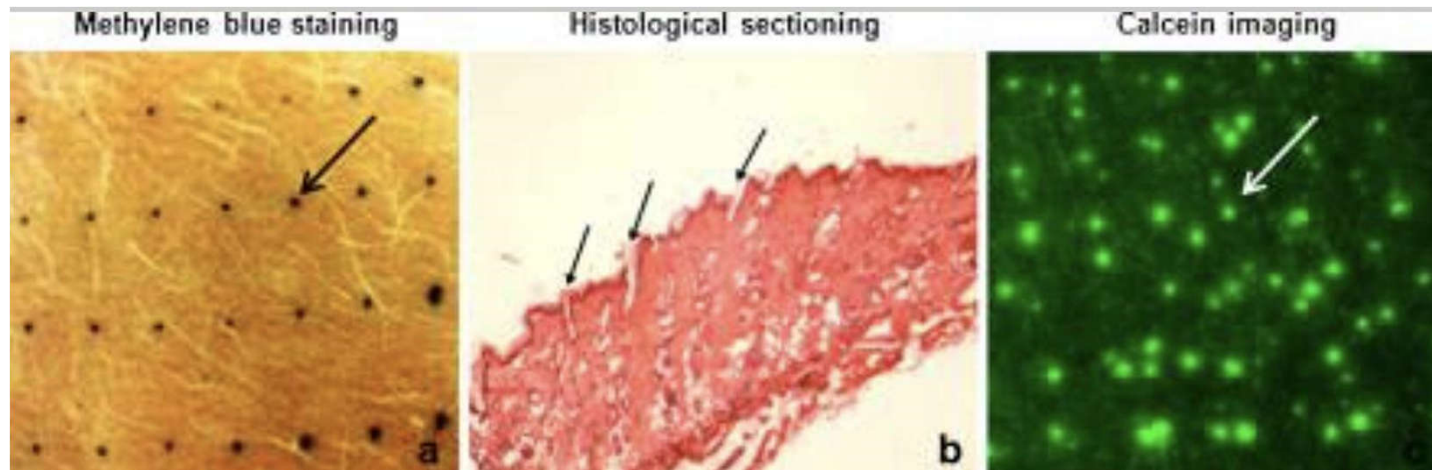
- Minimally invasive
- Clinical results are based on dermal regeneration caused by physical trauma
- The needles penetrate the stratum corneum and create small holes known as micro-channels with **minimal damage to the epidermis**
- Platelets and neutrophils release TGF-alpha, TGF-beta, PDGF
- Collagen and elastin production



- Microneedling **leads to reorganization of collagen fibers and laying down of new collagen, elastin, and capillaries** leading to the effect of skin tightening
- A significant **increase in levels of collagen type I, III, and VII**, newly synthesized collagen and tropoelastin from baseline was observed after 6 microneedling sessions at 2-week interval
- Leads to an overall **reduction in fine lines and wrinkles, reducing pore size, increased suppleness, and elasticity**



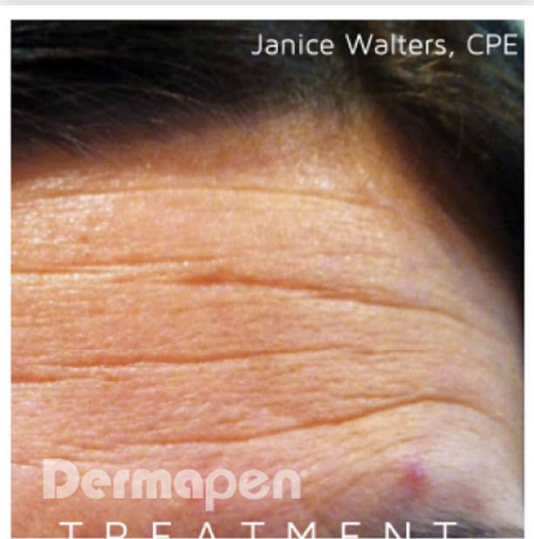
Metal microneedles successfully created microchannels in skin as indicated by a) methylene blue staining, b) histological sectioning, and c) calcein imaging studies.



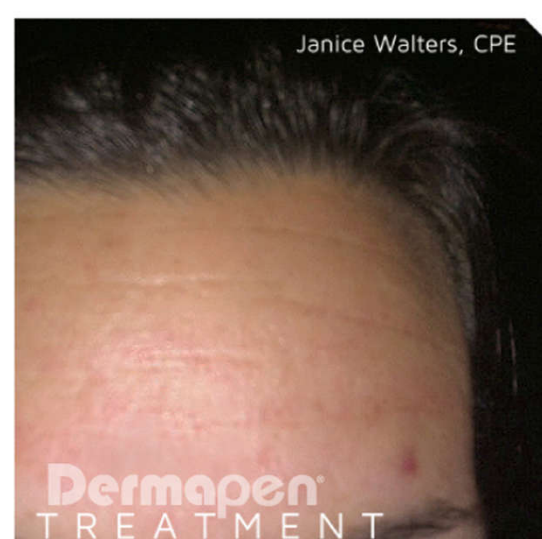
Haripriya K et al. Characterization of Microchannels Created by Metal Microneedles: Formation and Closure The AAPS Journal, Vol. 13, No. 3, September 2011

The process stimulates your skin's natural ability to heal itself and in the process produces collagen and elastin. This repair process begins almost immediately and results in a thicker dermis and softened wrinkles or scars.

Skin Rejuvenation

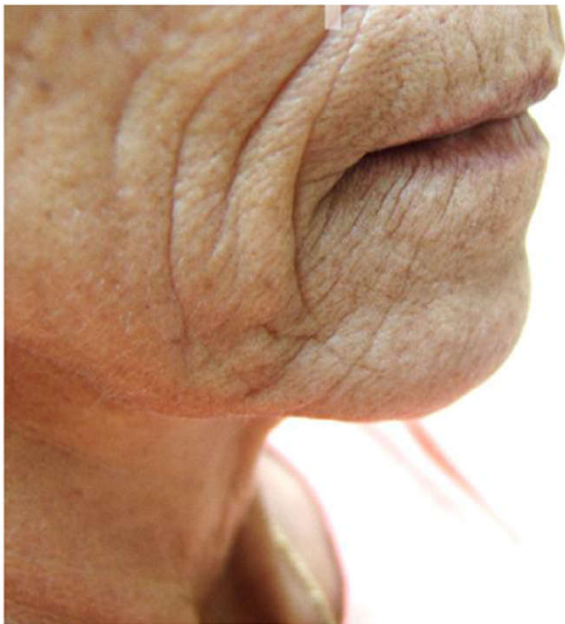


before



after

Skin Rejuvenation



before



after

Scar Revision



Scar Revision



before



after

Acne Scar Revision



BEFORE



AFTER

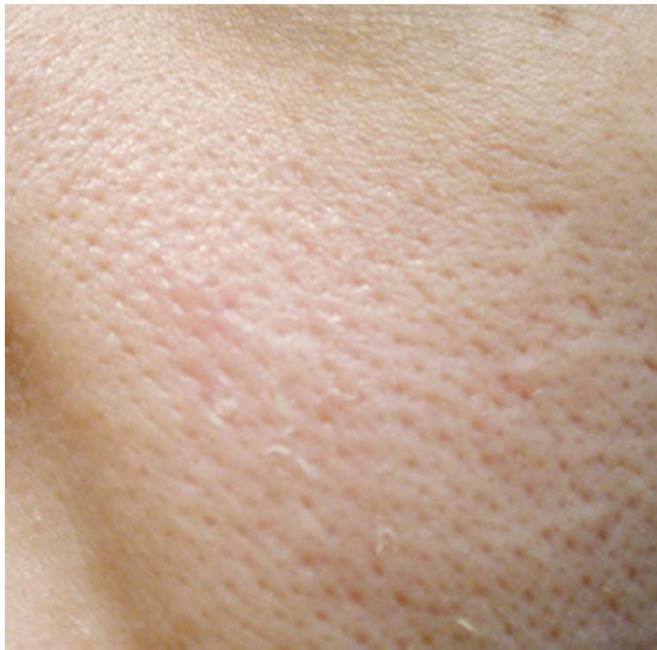
Acne Scars



Stretch Marks



Texture/Pore Size



Hyperpigmentation



Tone/Texture



Benefits of Adjunctive Therapies



Author	Year	No. of patients	Objective	Outcome
Clementoni <i>et al.</i> ^[28]	2010	21	Photodynamic photorejuvenation of the face with a combination of microneedling, 1 hour ALA incubation followed by red light and broadband-pulsed light	90% of patients judged clinical improvement to be greater than 50% at 6 months compared to baseline photography
Calderhead <i>et al.</i> ^[27]	2013	499	Multicentre study to evaluate efficacy of microneedling fractional radiofrequency	80-89% overall improvement, 30-36% decrease in wrinkle size, 25-29% decrease in wrinkle depth after 2-3 sessions
Seo <i>et al.</i> ^[29]	2013	15	Comparison of FMRF with and without stem cell medium	Combination found to be better
Lee <i>et al.</i> ^[26]	2014	25	To study efficacy of microneedling with human stem cell conditioned medium	Combination better than microneedling alone ($P<0.05$)
El-Domyati <i>et al.</i> ^[25]	2015	10	To study objective and histological efficacy of microneedling	Increased collagen I, III, VII, and tropoelastin ($P<0.05$)

Singh A. Microneedling: Advances and widening horizons. Indian Dermatol Online J. 2016 Jul-Aug; 7(4): 244–254.



Author	Year	No. of patients	Objective	Outcome
Sharad ^[30]	2011	60	Comparison of microneedling with and without glycolic acid peels	Combination found to be better
Dogra <i>et al.</i> ^[31]	2014	36	To study efficacy in atrophic facial acne scars	Mean improvement of 50-75% from baseline
Chawla <i>et al.</i> ^[32]	2014	30	Microneedling with PRP vs Microneedling with vitamin C	PRP combination found better ($P=0.01$)
Chandrashekar <i>et al.</i> ^[24]	2014	31	Evaluation of Microneedling Fractional Radiofrequency Device	Improvement-58% moderate and 29% minimal Adverse effects-mild erythema, postinflammatory hyperpigmentation, track marks of the device
Gadkari <i>et al.</i> ^[33]	2014	30	Comparison of subcision with dermaroller vs. subcision with cryoroller	Cryorolling better than microneedling
Fabbrocini <i>et al.</i> ^[34]	2014	60	To analyze efficacy in different skin phototypes	Significant reduction in scars ($P<0.05$) in all phototypes without dyspigmentation in any, 31% reduction in skin irregularity
Hassan ^[35]	2015	70	Comparison of microneedling with and without subcision	100% efficacy with combination, 77% with microneedling alone
El-Domyati <i>et al.</i> ^[36]	2015	10	To assess objective and histological efficacy	Improvement seen, increased collagen ($P<0.05$)
Pandey <i>et al.</i> ^[37]	2015	30	To assess efficacy of microneedling alone	Mean 80% improvement
Puri ^[38]	2015	30	Comparison of microneedling with TCA CROSS	Comparable results
Cachafeiro <i>et al.</i> ^[39]	2016	46	Comparison of Nonablative Fractional Erbium Laser 1340 nm and Microneedling	Comparable results



Microneedling for Acne/Burn Treatment

Indication	Author	Year	No. of patients	Objective	Outcome
Burn scars	Kim <i>et al.</i> ^[40]	2010	25	To study the effectiveness of Dermastamp	Improvement seen ($P<0.05$)
Burn scars	Aust <i>et al.</i> ^[15]	2010	16	To study efficacy of microneedling in reducing post-burn scars without damaging epidermis	80% improvement in scarring, 45% thickened stratum spinosum, normal rete ridges after 1 year
Burn scars	Sofanov ^[41]	2011	1		Good improvement
Varicella scars	Costa <i>et al.</i> ^[42]	2014	1	Assessment of efficacy	Significant improvement



Microneedling Trials for Alopecia

Indication	Author	Year	No. of patients	Objective	Outcome
Androgenic alopecia	Dhurat <i>et al.</i> ^[47]	2013	100	Comparison of topical minoxidil with and without microneedling	Combination better ($P=0.039$)
Alopecia areata	Chandrashekar <i>et al.</i> ^[50]	2014	2	To study the efficacy of microneedling with topical triamcinolone acetonide	Response seen
Androgenic alopecia	Dhurat <i>et al.</i> ^[48]	2015	4	To study efficacy in patients not responding to minoxidil and finasteride	Up to 75% improvement
Patterned hair loss	Farid <i>et al.</i> ^[49]	2016	40	Comparison of PRP microneedling with topical 5% minoxidil	Minoxidil remains better



Microneedling for Hyperpigmentation

Indication	Author	Year	No. of patients	Objective	Outcome
Melasma	Fabbrocini <i>et al.</i> ^[51]	2011	20	Comparison of combined skin needling with depigmenting serum and depigmenting serum alone	Reduction in MASI score more on combination side compared to serum alone ($P<0.001$)
Periorbital hypermelanosis	Sahni <i>et al.</i> ^[20]	2013	1	To study the efficacy of Dermafrac	75-90% improvement
Melasma	Budamakuntla <i>et al.</i> ^[52]	2013	60	Comparison of tranexamic acid microinjections against tranexamic acid with microneedling	44.41% reduction in MASI score in microneedling group compared to 35.72% reduction with microinjections
Melasma	Lima ^[53]	2015	22	To evaluate efficacy in recalcitrant cases	Improvement seen
Periorbital hypermelanosis	Markantoni <i>et al.</i> ^[54]	2015	13	Combination of microneedling and 10% TCA peels	Improvement in 92.3% patients
Periorbital hypermelanosis	Kontochistopoulos <i>et al.</i> ^[55]	2016	13	Combination of microneedling and 10% TCA peels	Improvement seen



Microneedling Trials for Other Indications

Indication	Author	Year	No. of patients	Objective	Outcome
Actinic keratosis	Bencini <i>et al.</i> ^[56]	2012	12	To study efficacy of microneedling with topical PDT	83% showed complete response
Acinic keratosis and photodamage	Torezan <i>et al.</i> ^[57]	2013	10	Comparison of PDT with and without microneedling	Combination better ($P=0.004$)
Primary axillary hyperhidrosis	Kim <i>et al.</i> ^[58]	2013	20	To study efficacy of FMRF	Reduced number and size of sweat glands
Striae rubra	Sanad <i>et al.</i> ^[59]	2015	30	Comparison of microneedling with and without trichloroacetic acid peeling	Combination better ($P<0.05$)
Rosacea	Park <i>et al.</i> ^[60]	2015		To study efficacy of microneedling fractional radiofrequency	25-58% improvement
Post-acne erythema	Min <i>et al.</i> ^[61]	2015	25	FMRF in post inflammatory acne erythema	Improvement seen ($P<0.05$)

- Skin laxity after weight loss, liposuction, or due to aging

ADVERSE EFFECTS

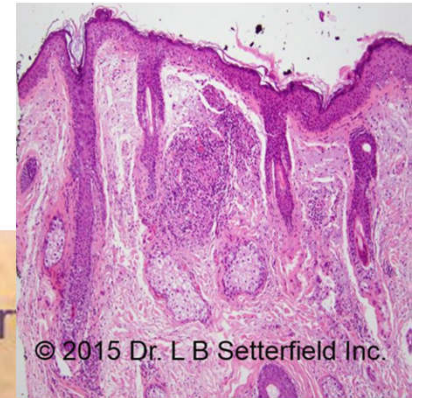


- **Post procedural erythema and irritation** (typically subsides within a few hours)
- Post-inflammatory hyperpigmentation
- Aggravation of acne
- Reactivation of herpes (pretreatment is helpful)
- Systemic hypersensitivity, allergic granulomatous reactions and local infections following the use of a nonsterile instrument and improper topicals
- Allergic contact dermatitis

Nickel Hypersensitivity Reaction



Granuloma



CONTRAINDICATIONS



1. Active acne
2. Herpes labialis or any other local infection such as warts
3. Moderate to severe chronic skin disease such as eczema and psoriasis
4. Blood dyscrasias, patients on anticoagulant therapy
5. Extreme keloidal tendency
6. Patient on chemo/radiotherapy

Safety Issues

1. **Single Use, Sterile Tips**
2. **Pre Treatment**
 - a. Hold Retin A (Up to one week)
 - b. Consider Anticoagulation
 - c. Cold Sore Prophylaxis
3. **During Treatment-** Sterile Water
4. **Same Day-** Serum (Vit C, HA, Peptide, Phyto-botanical)
5. **Day 2-** Serum, Moisturizer, Physical Sunblock



Treatment Pearls



- 30 Day Treatment Intervals
- 4-6 Treatments (Packages) for Optimal Results
- Inderma Serums to optimize therapeutic benefits
- Maintenance Treatments every 6 months

What to Look for in A Microneedling Device



Powerful, Reliable Motor

Long life, powerful, high quality Japanese motor, doesn't drag

Perfect Penetration

Patented Algorithm, SurSpace Technology

Comfortable Handpiece

Ergonomically designed with minimal moving parts and seams and no external plastic parts

One Hand Operation

Does not overheat. Durable.

Smooth Glide

Minimizes cross contamination

Scalloped/Vented Tip

Improves patient experience and clinical results

What to Look For



Backflow Protection

Safe, Reliable, Needle Cartridge

Made in the USA

Lifetime Warranty

RPMs are not POWER!

Prevents transmission of bloodborne diseases

7 Proven Patented Features for superior performance, reduced the risk of contamination, and increased reproducibility of results

Global technology, designed & assembled in the USA
(Manufacturer defects)



Some micropen motors have **high RPMs** (speed), but **LOW POWER** and cannot penetrate thicker skin (high resistance) without drag

mDerma™

BY

Dermapen®

THE WORLD'S MOST ADVANCED MICRONEEDLING DEVICE



Dermapen is Synonymous With MICRONEEDLING

BEWARE OF COUNTERFEIT DEVICES

- Patients Ask For Dermapen By Name
- Dermapen is Googled more than Microneedling
- As a licensed Dermapen provider, you can use “Dermapen” in your advertisements
- Get referrals by being listed on our website

