Skin Needling

A New Treatment for Scars and Lines
History of Skin Needling

Skin Needling has been performed for many years, using a variety of instruments, to soften depressed scars and deep lines. Dr Philippe Simonin, a Swissfrench Dermatologist, published his results in Baran’s Cosmetic Dermatology 1994, but his groundbreaking technique, which he named Electroridopuncture (ERP), remained largely unknown to the wider medical community.

In his study of 600 patients, he examined results for 2 patient groups – one with Skin Ageing and the other with old Scars. He performed 10 treatments on all patients.

In the patient group with Skin Ageing, 40% showed significant improvement, 22% moderate improvement and 13% some improvement – as measured by comparative skin imprints.

In the patient group with old scars, 60% improved with 5-6 treatments. Best results were obtained for old fibrous and depressed scars.
Another pioneer of Skin Needling was Dr Andre Camirand, a Canadian Plastic Surgeon who made a chance observation of improvement in the texture and depression of the scars of some of his facelift patients, who had undergone tattooing for scar camouflage.

He experimented with tattooing facelift scars without pigment, and noted improvement in texture and colour. He published an article on his results in JACPS in 1992.

Dr Camirand postulated that hypochromic skin repigmented through transplantation of melanocytes from normal skin into the hypochromic skin during the needling procedure.

He also reported flattening of hypertrophic scars. He performed his needling procedures using a high speed tattoo gun, under local anaesthesia and treated each scar to pinpoint bleeding.

He repeated the procedure every 2 to 8 weeks and no side effects or complications were reported.
Making Skin Needling easy

It is possible to obtain good results with ERP for depressed scars and deep lines after 10 – 15 treatment sessions. Performing ERP however is time consuming and requires extreme patience, so during 2003/2004, I worked with an Australian instrument designer to develop an affordable, autoclavable skin roller, that could make Skin Needling easier to perform and assessable to every patient who needed it.

Skin Needling can be safely performed on all skin colours and types. There is no risk of postinflammatory hyperpigmentation, as the melanocytes, which reside in the basal layer of the epidermis, remain, like the dermis, intact during Skin Needling. This is the major distinguishing safety feature between Skin Needling and other invasive procedures that are used to treat deep lines and depressed scars, ie laser resurfacing, deep chemical peels and dermabrasion.
Why Skin Needling works

The normal healing response begins the moment of tissue injury. Blood components spill into the injury site, causing platelets to come into contact with extracellular matrix. This contact triggers platelets to release clotting factors, essential growth factors and cytokines, such as platelet derived growth factor (PDGF) and transforming growth factor beta (TGF beta). Once bleeding has ceased, neutrophils enter the injury site and begin phagocytosis to remove foreign material, bacteria and damaged tissue. Macrophages also enter the injury site and continue phagocytosis and release more PDGF and TGF beta.
Why Skin Needling works

Once the injury site is cleaned, fibroblasts migrate into the injury site and start to produce and deposit new extracellular matrix. The new collagen matrix then becomes crosslinked and organised during the final remodelling phase, which can continue for up to 12 months after the injury occurs.

Skin Needling with a skin roller produces hundreds of tiny dermal injuries. Each dermal injury triggers the normal healing response within the skin and successive treatments build new collagen progressively and progressively fill in depressed scars and deep lines.
THE SKIN ROLLER

- Australian made
- Autoclavable
- Stainless steel acupuncture needles
- 0.25mm needle gauge
- 2mm needle length
Results

- 3 months after skin rolling
- Note significant improvement in scar depth & colour
Results

- Before & 6 weeks after skin rolling
- Note contouring improvement and filling of deep scars

6 weeks after first treatment with Dermaroller
6 Weeks After One Treatment

Before                                      After
Softening of Skin Graft Edge

Before  After
Chicken Pox Scars, 4 Treatments

Before

After
Results After 3 treatments
1) Relapse after 3 x Roaccutane: 2) Control with Stieva A/ hydroquinone /Diane 35: 3) After 3 Medical Roller treatments
Before and After
Before and After
Six weeks after one Medical Roller treatment and regular home rolling with Clearskin 2%/New Skin
Discussion

Previous slides indicate the versatility of the Novaderm Medical Roller to treat a number of different scar types, including depressed acne scarring, hypertrophic surgical scars, particularly the interface of skin grafts with normal skin, chicken pox scars and deep facial lines.

In my experience, results vary between patients, with some patients achieving 90%+ improvement in scarring and others, less than 50%.

All patients however achieve some improvement.

All patients will require multiple treatments to achieve satisfactory results, and I usually advise that they will need between 4 – 6 treatments, that way patient expectations are usually met.

The most exciting feature of Skin Needling is its safety advantages. Skin Needling can be safely performed on Asian and darker skins, as well as skins that have been previously lasered or had dermabrasion.
Skin Needling can be safely performed under local anaesthesia and will become the treatment of choice for depressed acne scarring on young skins, because of its low risk profile and affordability.

Skin Needling can be safely performed by trained nurses.

Skin Needling delivers good results for upper lip lines with a no risk profile, in stark contrast to laser resurfacing.

Skin Needling can be performed for whole face rejuvenation, and when combined with tretinoin and hydroquinone, delivers equivalent results to laser resurfacing with a no risk profile. It can also be regularly repeated as the patient ages to replenish collagen.