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PINS & NEEDLES... THE LATEST WAY TO "ROLL" AWAY THE YEARS?

by Dr. Patrick Tracey

In the last few decades we have seen the dramatic rise in the use of treatments such as laser skin resurfacing using ablative lasers and deep phenol chemical peels promoted as successful methods for rejuvenating ageing skin. Yet, the downside of these procedures, notably the removal of the upper layers of skin, which leave one looking somewhat like a lobster straight out of the stock pot, with a long and painful recovery ahead, have meant that many people simply don't want to put up with the loss of valuable time and the pain and risk of sometimes permanent side effects involved with such treatment options, no matter how successful the outcome.

Doctors, scientists and aesthetic manufacturers have therefore sought out other ways to help restore the youthful appearance of the skin using methods which fall into the class of non- or less invasive procedures. Options including the further development of non-ablative and fractional lasers, Intense Pulsed Light (IPL), as well as radiofrequency devices have dominated the headlines and the aesthetic industry conferences for a number of years now, but another growing area, little talked about until recently, is medical skin needling.

BACKGROUND

The clinical concept of using surgical needles in minimally invasive skin rejuvenation and repair procedures started to develop as a recognised technique during the mid 1990s.

In 1995, Orentreich et al published a procedure for treating depressed subcutaneous scars and wrinkles, now known as subcision from the phrase "subcutaneous incisionless surgery", where a tri-bevelled hypodermic needle was inserted through a puncture in the skin surface, adjacent to the scar, and its sharp edges were manoeuvred under the defect. The procedure attempts to raise the base of the defect to the level of the surrounding skin surface by surgically releasing the skin from its attachment to deeper tissues, which results in skin elevation, and by the introduction of a controlled trauma which initiates wound healing with the consequent formation of connective tissue that raises the depressed scar.

Shortly after, Camirand et al published their use of a commercial tattoo machine, without the tattoo ink, to produce multiple punctures in achromic and hypertrophic scars and found significant improvement in the appearance of the scars and in some cases were able to obtain re-pigmentation of the area.

Dr Des Fernandes then delivered a paper in 1996 on upper lip line treatment using a "needle stamp" for percutaneous collagen induction. There is more on his developments in this field later in this article.

Following on from this early work the development of skin-needling devices and procedures have somewhat taken their time, particularly as laser and radio frequency treatments have shown such rapid growth. However it is felt that the significant benefits that medical skin needling can provide are now coming to the fore and beginning to establish themselves

as key treatment options available to medical physicians and aesthetic practitioners.

WHAT IS MEDICAL SKIN NEEDLING?

Medical Skin Needling, also referred to as Collagen Induction Therapy (CIT) and Micro-Needling, is considered to be a relatively new concept within the plethora of aesthetic treatment options available for skin rejuvenation, having come about in the format that we now see within the last 5 years.

Like many of the other treatments available it is aimed at stimulating the body's own collagen production to reduce the appearance of fine lines and wrinkles, stretch marks, skin laxity and scarring such as that caused by acne or chicken pox.

This is achieved by introducing a series of fine, sharp needles into the skin following the administration of a topical local anaesthetic, in the case of medical grade devices, to reduce discomfort. The needles are attached to a single use, sterile roller which is moved over the surface of the skin to create many microscopic channels or columns, approximately 0.07- 0.25mm wide, at various depths of penetration. In the case of medical rollers this is within the papillary dermal layer of the skin where collagen and elastin fibres are located (see illustration). Cosmetic rollers however reach a much shallower level in the epidermis where they aid absorption of topical ingredients. These minute punctures close over almost immediately as the skin heals.

This "damage" to the dermis encourages the body to produce more new collagen and elastin which generate new skin cells to literally "repair" itself, thus the skin becomes thicker, plumper and more youthful. Although primarily used on the face, this procedure can be carried out anywhere on the body, such as on stretch marks on the thighs and abdomen, and generally on all skin types.

There are a number of different devices now available to the UK and Irish marketplace aimed at medical skin needling. These vary in needle length, from approximately 0.02mm, designed for personal, cosmetic use at home, often in conjunction with a skin care regime, as the minute skin punctures assist the absorption of any active ingredients which improve and maintain the appearance of the skin. Needle length on some devices can reach up to 3mm, designed for professional, medical use which will achieve a more significant result on skin regeneration when used by a trained practitioner to induce new collagen formation. Often, the at-home roller will be recommended for use for several months during and following conclusion of a treatment programme with the professional roller, in conjunction with an appropriate skincare regime to both promote and maintain rejuvenation results. Use of the so called cosmetic rollers is deemed safe to carry out at home due to the minimal level of needle insertion and is considered to be virtually painless by most people.

Skin preparation with the application of vitamin A and C creams may be recommended for up to 4 weeks prior to the commencement of the procedure. Treatment sessions with medical grade rollers take between 10 minutes and an hour depending on the size of the area being treated. Pain should be minimal due to the application of the topical anaesthetic; however you may still feel some discomfort. The skin will be pink or red in appearance following treatment, with some minor bleeding and bruising possible, depending on the aggressiveness of the procedure, i.e. the length of needle used for the particular indication being treated and

the number of times it is rolled across the treatment area. Recovery may therefore take 24 hours or up to a few days; most people should however be able to return to work the following day. Potential complications include minor flaking or dryness of the skin, with scab formation in rare cases. Milia may also form on the skin which can be removed by the practitioner. Hyperpigmentation can occur very rarely and usually resolves after a month. If you have a history of cold sores, this could possibly flare up after treatment.

It can take between 4 – 8 weeks before visible signs of skin regeneration are seen and the process will continue over the following months, providing a gradual enhancement. A single treatment can produce noticeable results, however a programme of 2 – 5 treatments spaced 2 – 3 months apart is often recommended to achieve optimum results, in conjunction with the at-home regime. The specific number of sessions required will depend on the area being treated and the severity of the indication, as well as the level of natural response from the individual's body.



There are three main brands of roller devices. These are all tried and tested and offer a range of needle lengths depending on the user and condition being treated.

There are three main brands of roller devices. These are all tried and tested and offer a range of needle lengths depending on the user and condition being treated. The popularity of this type of procedure has also led to a rise in the number of inferior copies now also flooding the market to satisfy consumer demand, with some Internet sites selling medical only needle lengths which are somewhat hazardous to the at-home user when used without medical advice, with the potential risks including scarring and infection. For this reason, it is recommended that all consumers interested in such a procedure should seek out a reputable and trained practitioner.

DERMAROLLER™

The Dermalroller™ device originates from Germany and was first commercialised in 2005, after initial prototype testing started in 1999. It was the first such device to be given a European CE mark classification as a medical device and is also licensed in the USA.

Due to the increase in copycat and inferior products using the 'dermaroller' name within their description and product names, the original Dermalroller™ has been forced to now refer to itself as the Genuine Dermalroller™. A single, in-clinic treatment with Genuine Dermalroller™ is likely to cost from €250 - €400, depending on the practitioner, including post treatment skincare. Further sessions, should they be required will be less and are often combined at a discount in a programme.

Other derivatives of this device are also available from the German creators including the Beauty Mouse®, which features three cosmetic rollers, (a total of 480 needles), mounted in a hand-held unit, much like a computer mouse designed to give more coverage on larger areas such as the thighs, for increasing circulation and aiding the penetration of cellulite targeted products. This is designed as a home use product.

Plus the DermaStamp® which has been designed for treating difficult to access, smaller scars such as those caused by acne or chicken pox. It has a needle length of 2mm and is for professional use only. Images of this device are not available due to the sensitivities of the manufacturer to copycat attempts.

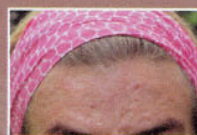
STRETCH MARKS



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER

Images provided courtesy of Aestheticare Ltd.



Dr. Patrick Treacy, Medical Director of Ailesbury Clinics Ltd is a firm advocate: "I started using this technique in Australia for acne scarring during the late nineties and I am a long time favourer of the procedure. In essence it is in many ways similar to fractionalised laser skin resurfacing as the skin is broken by numerous punctures, dormant fibroblasts are kicked into action and the surrounding skin allow fast healing' 'One notices a very pleasing improvement in a patients skin about six weeks after the treatment. Genuine Dermalroller™ will be a treatment that I can confidently recommend to my patients." This article is courtesy of Consulting Room™ of which Dr. Patrick Treacy is Medical Advisor.

For further information log onto www.ailesburyclinic.ie or phone 01 2692255

