

## Natural Rejuvenation Process Optimises Skin's Cellular Health

**Skin health is influenced by numerous factors including lifestyle, environment, genetics, hormones and nutrition, to name a few. Aging results in poor absorption of ingested skin nutrients and poor delivery to the target areas.**

Photo-aging, or sunlight induced aging, is generally treated using ablative procedures that injure the epidermis and basal membrane, leading to fibrosis of the papillary dermis. Significant damage to the epidermis can cause adverse effects such as dyspigmentation. Clinical trials have shown skin needling or percutaneous collagen induction (PCI) therapy to be a safe alternative for treating wrinkles and scars and for smoothing the skin without the risk of dyspigmentation.<sup>1</sup>

Under topical anaesthesia, a sterile medical roller with very fine needles is used to create microscopic channels deep into the dermis of the skin, stimulating the body to produce new collagen and elastin, resulting in skin that is thicker, plumper and more youthful. These channels also improve the penetration of topical products.

### **PCI triggers the wound healing cascade of:**

- Inflammation
- Proliferation (tissue formation)
- Tissue remodelling.

As a result of slight swelling, the holes close quickly. With thousands of small holes placed next to each other the effects virtually merge, with a sheet of collagen being laid down just below the epidermis. Collagen shortens slowly after a few months causing a progressive tightening of the skin.

The up-regulation of growth factor TGF-Beta3 through this process produces natural collagen regeneration following needling, as opposed to scar collagen resulting from growth factors TGF-Beta1 and Beta2 associated with thermal injury. Laser resurfacing and deep peeling may be aesthetically effective, but they cause epidermal thinning, papillary dermis fibrosis and cicatricial healing.<sup>2</sup>

Pioneer of PCI, Dr Des Fernandes, who is internationally recognised in the worlds of anti-aging skincare, medical aesthetics and cosmetic surgery, developed the roller as a means of stimulating the body to produce the growth factors responsible for normal collagen and elastin production.

### **PCI is indicated for:**

- Restoring skin tightness in the early stages of aging
- People with very thin skin
- Scarring, including those from burns or surgery

- Acne scarring
- Lax skin
- Fine wrinkles
- Hypo-pigmentation
- Stretch marks
- Telangiectasia (spider veins).

A study by Zeitter et al found that repetitive micro-needling sessions showed an increase in epidermal thickness of 658% and dermal connective tissue, especially when combined with skin-care containing vitamin A and C.<sup>3</sup>

Vitamin A regulates many important cellular processes including cellular proliferation, differentiation and apoptosis and hence has a role in many essential physiological processes including maintenance of immunity and barrier integrity.<sup>4</sup> Growing evidence shows that vitamin A also acts non-genomically to directly regulate intracellular signaling pathways.<sup>5</sup>

Topical vitamin A is well known for its normalising effects. However, when it comes to wrinkles and sagging skin, the problem lies in the dermis, where collagen damage has caused thinning.

### **Needling frequency**

Since 2006, Dr Fernandes has used a once-a-week course of six sessions to produce the desired results. Currently a trial is underway with sessions every second or third day for a course of six sessions in two weeks. This has seen an overlapping of growth factor release to present a far greater dose to the skin than before. Preliminary clinical results are showing an enhanced growth effect.

Needling can start when patients are in their early 20's so as to keep the structure of the skin as dense as possible. It is highly recommended by Dr Fernandes for all face lifts. Needling done on skin grafts has seen the return of sensation as growth factors stimulate nerve functioning.

The results of treatment are ongoing and endure for many years. The long-term outcome of treatment is dependent on and enhanced with the continued use of vitamin A, C, E and anti-oxidants to provide food and protection to the skin.

*References available on request.*



*Acne scarring before and after treatment.*



“There are two great things you can do for your skin. Firstly use vitamin A and secondly do needling.”

~ Dr Des



## Breakthrough: Collagen Induction Therapy for the body

Dr. Des Fernandes, founder of Environ® Skin Care has lead the way in exploring techniques that effectively stimulate the skin's own natural collagen production. As a result of his research, the original **Environ Medical Roll-CIT™** was the world's first instrument to be introduced - a simple tool that medical doctors could use to address a variety of conditions including the reduction of scarring, stretch marks and improvement of elasticity of the skin with a simple pain-free procedure that produces dramatic visible results.

To simplify and speed up treatments, Dr. Fernandes produced two instruments for larger areas of the body. They work on the same principle of collagen channelling to produce dramatic results.

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