Skin boosters are a new and modern concept that gives us the tools to improve the skin's texture, elasticity, hydration and surface tone. Skin boosters can be synergistically combined with other aesthetic treatments (advanced skincare, micro-needling, toxins, light treatments) to maximise the anti-ageing and collagen stimulating effect. This article explores the current evidence for skin boosters, their various uses and how they can be used to maximise aesthetic and cosmetic results.

**WHAT ARE SKIN BOOSTERS?**

Traditionally skin boosting has referred to mesotherapy, a technique invented by French physician Dr Michel Pistor in 1952. Dr Pistor to this day is seen as the founding father of mesotherapy. Mesotherapy refers to the practice of injecting medicine into the mesoderm or middle layer of the skin. Dr Pistor initially used mesotherapy for pain management and rheumatology. Modern day applications of mesotherapy use microinjections of ingredients scientifically designed to stimulate skin rejuvenation, hydration, collagen stimulation, fat breakdown, cellulite reduction and hair regrowth.

To this day mesotherapy is commonly practised in France where it is taught in medical school and is recognised as a distinct medical specialty by the French National Academy of Medicine. Mesotherapy is practised by an estimated 18,000 physicians worldwide and is especially popular in France and South America.

Mesotherapy has, to date, typically involved non-standardised and variable blends of vitamins, minerals, low-grade hyaluronic acid, amino acids, plant extracts, homeopathic remedies and collagen stimulating ingredients. There has been some concern in the past about exactly what people use as ‘mesotherapy’ and concern about exactly what is being put into the treatment syringe. This concern over its efficacy resulted in The American Society for Dermatologic Surgery announcing in 2005 that ‘further study is warranted before this technique can be endorsed’. (1)

Claims for mesotherapy have often been anecdotal and not always based on well-conducted clinical trials or empirical evidence. Clinical improvements with mesotherapy have been difficult to quantify.
Commercially available skin boosters include Restylane® Vital, Restylane® Vital Light, Juvederm® Hydrate, Teosyal® Meso and Teosyal® Redensity. They are all a scientifically improved variation of traditional mesotherapy and are made with a customised and standardised hyaluronic acid base. Restylane Vital has cross-linked, stabilized nonanimal HA of 20mg/ml, Teosyal® Meso is a non-stabilized, nonanimal HA of 15mg/ml and Juvederm Hydrate is 13.5mg/ml non-stabilized HA with 0.9% mannitol.

Skin boosters are injected in micro droplets into the superficial (Teosyal®) or mid-dermis (Restylane®) as per manufacturer recommendations. Best results will be seen with a minimum of three treatments placed two to four weeks apart. Clinical studies on skin boosters have mainly involved a minimum of three treatments (6). They can be used generally over the lower face, in the upper and lower lip to address smokers lines, to the décolletage area, to the dorsum of the hands and more recently to the upper and lower lip to address smokers lines, to the upper arms (7). Vital comes in a 2ml injector pen to ensure that standardised micro droplet amounts are delivered to each injection area. Juvederm® Hydrate and Teosyal® Meso come in prepackaged syringes of 1ml.

The key clinical difference in these skin-boosting products is whether the hyaluronic acid is stabilized or not. The stabilisation process of hyaluronic acid means that the native polysaccharide is made more resistant against natural degradation through a means of chemical cross-linking of a small proportion of the polysaccharide chain. This technology is unique to the Restylane® range of skin boosters and is patented under the NASHA technology. Restylane® has two stabilized, nonanimal skin boosters in its range: Restylane® Vital and Restylane® Vital light.

Both stabilized and non-stabilized hyaluronic acid skin boosters have been shown to clinically improve the elasticity and hydration of the skin, helping to minimise the appearance of fine lines and wrinkles and reduce skin surface roughness (8). The difference is that stabilized HA’s have been found to produce a statistically significant improvement in all of these parameters, whereas non-stabilized HA’s show a trend for improvement but this is not statistically significant.

Stabilized HA skin boosters have been shown in a study by Dr Stefanie Williams to produce superior and longer lasting results in the skin compared to non stabilized HA skin boosters. In the study Restylane® Vital was injected into the dorsum of the hands and was shown to increase cutaneous elasticity and stratum corneum hydration while reducing skin surface roughness and TEWL. In this study ‘stabilized HA seemed to exhibit a longer duration of effect and was found to be superior to non-stabilised HA according to all parameters at week 12’. Dr Williams chose Restylane® Vital as the stabilized HA in the study and Teosyal® Meso as the non-stabilized HA as these are two of the most popular commercially available skin booster brands.

**COMBINATION TREATMENTS**

Skin boosters play a vital role in improving the hydrobalance, elasticity and texture of ageing skin and can be used in combination with other aesthetic treatments to great effect. Combining skin booster treatments with active skin care, micro-needling, toxins and pigmentation treatments can boost the desired results and dramatically improve areas of cosmetic concern. Perhaps one of the most exciting areas is the combination of skin boosters and micro-needling, a new technique dubbed ‘Gel Needle Lifting’. Both techniques are clinically proven to improve the appearance of the skin and pose an exciting new direction for skin rejuvenation.

**SKIN BOOSTERS AND TOPICAL TREATMENTS**

Although creams and lotions can help rehydrate and moisturise the skin, there is a limit to how much the skin’s texture and quality can be improved with topical preparations alone. Topical hyaluronic acid is not cross-linked and has a short half-life limiting its longevity. As Hannah John and Richard Price note in their recent paper on HA fillers, ‘in the superficial epidermis (HAs) act as a humectant contributing to (improved) moisture content and reducing transepidermal water loss’. In the deeper
dermis hyaluronic acid acts to increase turgidity. Non cross linked hyaluronic acids have a short half life so need to be applied continuously and frequently if the plumping and hydration effects are to be seen. In order to get around this and to achieve a deeper and more lasting dermal hydration within the skin, we can place the HA deeper within the skin with skin boosters. Combining skin boosters with daily topical application of a hyaluronic acid based product will maximize the skin’s hydration and improve the skin’s texture, fine lines and wrinkles.

SKIN BOOSTERS AND TOXINS

Toxins are one of the most popular aesthetic treatments on the market with an estimated 12 million people using them globally. Toxins complement skin booster treatments as they extend the cosmetic response of the hyaluronic acid through muscle relaxation. This can be used to good effect in the glabellar,crow's feet, smoker’s lines and neck regions.

SKIN BOOSTERS AND MICRO-NEEDLING

Micro-needling is a relatively new technique that can be done with or without introducing products transdermally (dry vs wet). Micro-needles are Class 1 medical devices that do not have to be FDA approved. It is therefore advisable to use good quality micro-needles for the best cosmetic results. There are a number of poor quality imitation roller devices that have inundated the market recently and these have been associated with needle breakages in the skin and unnecessary skin trauma.

Micro-needling and skin boosting combined can give dramatic effects on the overall skin outcome. It is a practice that is being used more and more in clinics and anecdotally gives superior results than one treatment modality alone, rather like 1 + 1 = 3. To date there is very little empirical evidence for combination treatments of micro-needling and skin boosters as few clinical studies have been conducted. But both treatments are known to have good clinical outcomes individually and simple clinical observation shows the two treatments work synergistically and enhance one another.

Techniques used include using Restylane® Vital 2ml injector pen 15 minutes prior to a micro-needle treatment. The immediate benefit of this is that the Vital contains lidocaine and helps reduce micro-needle discomfort. Other practitioners will place the HA gel over the skin and then roll the booster into the skin rather than inject it prior. This allows transdermal delivery of the skin booster via the roller needles in a mesotherapy like technique.

Three simultaneous treatments of a skin booster and micro-needling are thought to be deliver the best clinical results. This new combination treatment has been coined ‘Gel Needle Lifting’ and is being used with Restylane® Vital, Juvederm® Hydrate and Teosyal® Meso.

Clinicians are citing dramatic results as the skin boosters help achieve dermal hydration and plumping whilst the micro-needle treatment stimulates collagen and skin resurfacing. Use of a topical vitamin C and vitamin A will super boost the results as vitamin C is an important cofactor for vitamin A for new collagen production.

Optimum needle length has been something of a debate recently but it is generally accepted now that 1-1.5mm is the ideal depth for micro-needle the face as it allows penetration into the papillary dermis to stimulate neocollagenesis but doesn’t over traumatize the skin. Apart from erythema there are few other side effects. The micro trauma holes close almost immediately so post procedure infections do not occur.

With all of these treatments it is important to be aware that the better your client’s overall health, hormonal and nutritional state, the better the outcome from any of these therapeutic procedures. General lifestyle and skincare advice should always form part of the initial consultation and will ensure that suitable patients are being chosen for these rejuvenating techniques.

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