

Skin Rejuvenation via the PICO CARE Fractional Handpiece

By Byeonggyun Kim, M.D.



Before and after one session of PICO CARE HEXA toning
Photos courtesy of Byeonggyun Kim, M.D.

Regardless of gender or age, the demand for rejuvenation procedures has been increasing. Furthermore, treatment trends over the last few years have shown that patients prefer non-invasive and relatively simple procedures with little to no downtime and natural looking results. For this reason, many non-surgical treatments, such as thread lifting, facial injectables, lasers, radiofrequency (RF) and other energy-based therapies, continue to grow in popularity.

For those patients who want effective rejuvenation without downtime, HEXA toning is an exceptional procedure. HEXA toning rejuvenation is achieved using PICO CARE®, an FDA-cleared picosecond laser system from WonTech Co., Ltd. (Daejeon, South Korea).

HEXA is a novel fractional handpiece featuring multiple Micro Lens Arrays (MLAs) that focus high energy at the center

of each fractionated microbeam. This intense energy is up to 15 times greater than that of the standard handpiece.

PICO CARE is a novel picosecond laser system featuring dual wavelengths (532 nm and 1064 nm) for treatment of benign pigmented lesions and multi-colored tattoo removal. Various handpieces are available with PICO CARE, including 595 nm and 660 nm dye handpieces, which enable treatment of epidermal pigments, blue and green colored tattoos and active acne. The HEXA MLA is used for scarring and skin rejuvenation.

When utilizing the HEXA MLA handpiece with the picosecond laser system, non-linear plasma formation appears below the skin. This creates plasma-induced cavitation in the dermis, which activates fibroblast and collagen synthesis while preserving epithelium and the dermo-epidermal (D-E) junction.

Unlike conventional CO₂ laser systems, this stimulates neocollagenesis and general collagen remodeling via photomechanical effects rather than photothermal, giving it the moniker 'Cold Rejuvenation'. Downtime and risk of thermal damage or/and post-inflammatory hyperpigmentation (PIH) are dramatically reduced.

There are two main types of fractional handpieces available on the market: holographic optical elements (HOE) and MLA. HOE delivers uniform energy intensity at each beam. Nevertheless, this intensity is limited in scar treatments and skin rejuvenation. Conversely, MLA can deliver higher intensity, concentrated at the center of each beam, which is sufficient enough to stimulate neocollagenesis and treat scarring.

The biggest advantage of HEXA MLA is that you can adjust the spot size from 3 mm to 10 mm depending on the treatment area. The wide range of spot sizes and fluences allow physicians to treat certain indications more efficiently. A smaller spot size and higher fluence are ideal for atrophic, hypertrophic or acne scars, while a larger spot size and lower fluence are better for rejuvenation, including improvements of skin irregularities and rhytides.

Q-switched lasers have been used for decades to remove unwanted tattoos and pigmentation. In recent years picosecond

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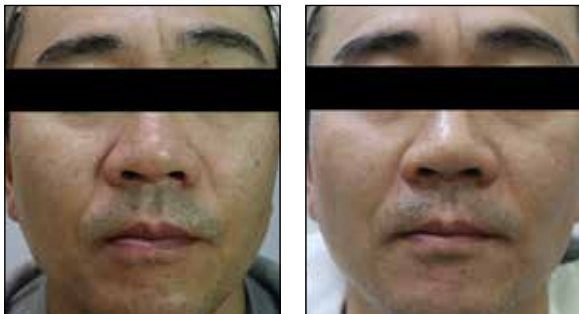
Before treatment
Photos courtesy of WonTech



Immediately after HEXA toning treatment



Two hours after HEXA toning treatment



Before and after one combined treatment with Lavieen and PICO CARE HEXA toning
Photos courtesy of Byeonggyun Kim, M.D.

lasers, which have a pulse duration 100 times shorter than Q-switched lasers, have been developed for better efficacy and safety in tattoo removal and treatment of unwanted pigment.

Picosecond lasers have further evolved with a unique fractional technology that is particularly effective for skin rejuvenation. This innovative approach has expanded the applications available with short pulse laser systems, which were limited to pigment removal, scar treatment and skin rejuvenation.

I have been treating a number of patients with PICO CARE for skin rejuvenation. For dramatic results use 1.0 to 1.6 J/cm² fluence, with one to two passes on wrinkles and scars; however, a more preferable parameter is HEXA toning, which employs 0.3 to 0.4 J/cm² and 2,000 pulses on the entire face. These settings reduce downtime and deliver positive effects on uneven skin texture, dull skin tone, elasticity, enlarged pores and fine lines.

After HEXA toning, mild erythema and edema are present, which resolve within two to four hours, with no obvious petechiae or oozing. There is almost no interference to patients' daily activities with HEXA toning. Discomfort is tolerable and the procedure takes about five to ten minutes, which enables a convenient lunch time procedure.

This treatment is based on a 1064 nm laser – an infrared wavelength emitted in an ultra-short pulse – which is suitable and effective for darker skin types that are sensitive to thermal effects. Patients have higher satisfaction with the treatment and outcomes, and even challenging skin conditions such as melasma are well managed.

In addition, HEXA toning may be performed alone or in combination with other energy-based devices for synergistic effects, especially non-ablative fractional laser or bipolar radiofrequency (RF). The Lavieen® 1927 nm thulium non-ablative fractional laser from WonTech is ideal.

In my experience, non-ablative fractional laser and bipolar RF achieve longer lasting and dramatic rejuvenation effects.

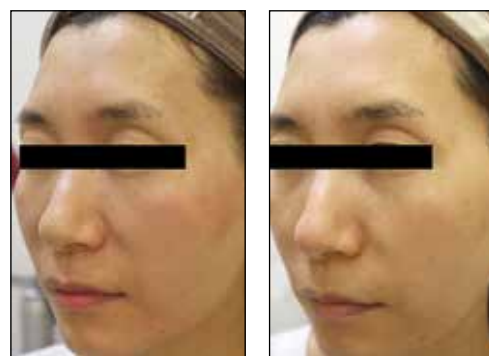
In order to obtain superficial skin resurfacing, including pigment removal, I perform two to three passes of the fractional laser (Lavieen) over the entire face. Pulse duration and power are adjusted based on each patient's individual skin conditions, pigmented lesions and other factors. I follow this with HEXA toning for dermal rejuvenation. This combined treatment affects all layers of the skin for improved rejuvenation results without increasing downtime.

Another effective method is the combination of bipolar RF with HEXA toning. Bipolar RF is commonly used for bulk heating of the dermis, resulting in heat-induced collagen contraction. Combined thermal and non-thermal procedures provide better rejuvenation outcomes including improvements of skin tone, texture and elasticity without the burden of downtime and risk of thermal damage. Two to three sessions of either HEXA toning alone or combined with other devices at two- to four-week intervals are recommended.

In response to rising demand, the advent of the picosecond laser and a fractional handpiece for skin rejuvenation meets the needs of patients who want results with fewer side effects and less downtime. It is excellent for improvement of skin texture, enlarged pores, elasticity, laxity and rhytides, even in one to three sessions.

References:

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Before and after one combination treatment with bipolar RF and PICO CARE HEXA toning

Photos courtesy of Byeonggyun Kim, M.D.



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