Unique Nd:YAP 1340 nm Handpiece Offers Effective Acne and Acne Scar Tx

By John Jesitus, Contributing Editor

By providing deeper treatments safely, the unique and innovative Nd:YAP 1340 nm ProDeep handpiece for the ETHEREA-MX laser from VYDENCE Medical (São Carlos, Brazil) is an effective and FDA cleared option for non-ablative skin resurfacing.

According to Maurice Adatto, MD, the medical director at SKINPULSE Dermatology & Laser Center in Geneva, Switzerland, the ProDeep handpiece is unique due to its 1340 nm non-ablative neodymium:yttrium-aluminum perovskite (Nd:YAP) laser, which can penetrate up to nine times more deeply than other non-ablative lasers due to both its higher optical conversion efficiency than 1320 nm Nd:YAG and its water absorption curve specificity.

"The target of this infrared wavelength is water," said Dr. Adatto. "If we look at the water absorption curve, 1340 nm penetrates deeper than the traditional 1540 – 1550 nm, offering potentially better efficacy."

Also unique, is ProDeep's ability to work in either bulk-heating mode, with a 6 mm collimated handpiece, or in fractional mode, with lenses offering either 100 or 400 microthermal zones (MTZ), he added. This range of versatility inspired Dr. Adatto's research on using ProDeep for active acne and acne scarring. "For improving acne scars, heating the dermis produces new collagen. For reducing active inflammatory acne, the mechanism should directly target sebaceous glands, which are responsible for acne."

ProDeep heats and shrinks these glands, thereby reducing their activity. In a study of nine patients with nodular-cystic acne resistant to isotretinoin, ProDeep treatment reduced average per-patient lesion counts from 16 to six – a 65% reduction.[1]

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Before and after five sessions with the ProDeep handpiece

Photos courtesy of Valeria Campos, MD

"No topical anesthesia is needed and a good cleansing of the skin is mandatory prior to the session," Dr. Adatto stated. "Our favorite settings for the face are two passes of 100 MTZ, 80 – 90 mJ and 3 ms pulses, always with cold air that is attached to the handpiece." Patients typically require two to six sessions (the latter for very severe cases) spaced three to four weeks apart.

ProDeep can apply up to 220 mJ per MTZ in fractionated beams, generating greater heat in subdermal tissue, which results in deeper collagen remodeling in targeted tissues as well as quicker recovery times.

"Because the wavelength reaches deeper, patients have less visible erythema," Dr. Adatto reported. Patients usually have slight redness for 24 hours post treatment, and some may have mild edema for 12 hours, he elaborated. Patients can usually return to normal activities the day after treatment.

A new 8 mm square spot shape available with the 100 MTZ lens ensures greater operator visibility, treatment coverage and accuracy. The square shape offers a 25% larger treatment area than round spots of the same size, which translates into faster treatments. Furthermore, the square spot enables the device to operate with a 30% smaller fractionated microbeam.

In practice, optical improvements increase the irradiance and depth of action as a function of the smaller total area while increasing safety and homogeneity of coverage area. The treatment is well-tolerated by most patients.

Dr. Adatto added that ProDeep is very easy to handle, with no consumables or preheating required. "You can start treatment in less than two minutes," he stated.

ProDeep is part of the ETHEREA-MX platform, which incorporates seven technologies, five laser wavelengths and more than 70 FDA-cleared treatment indications. The device is also effective for reducing mild-to-moderate wrinkles and stretch marks, according to VYDENCE.

Reference:

1. Antonio CR, Antonio JR, de Oliveira G, Tridico LA, Borim MP. Use of non-ablative fractional 1,340 nm Nd:YAP laser in the treatment of nodulocystic acne resistant to isotretinoin. *Surg Cosmet Dermatol.* 2013;5:310-314.