Aerolase® LightPod Neo®

Clinical Insights

Combination Therapy with a 650-Microsecond 1064nm Nd:YAG Laser for the Treatment of Melasma in Skin of Color

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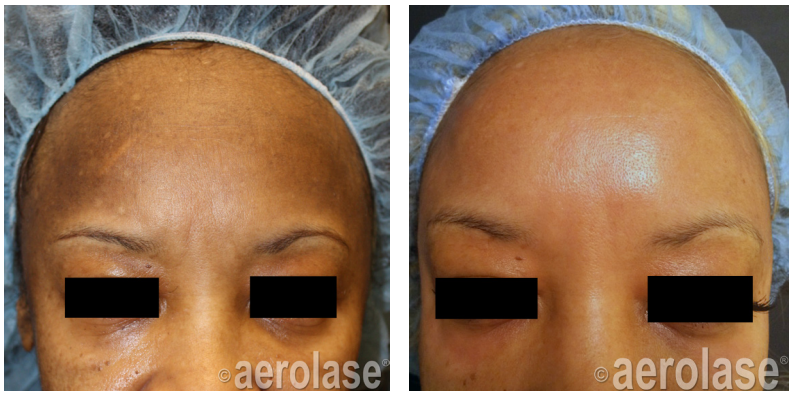
Melasma is widely known as a pigmentation disorder that has a profound effect on quality of life for those with the affliction[1]. Studies report patients with pigmentation disorders feel self-conscious, unattractive, that it affected their daily activities and they felt the need to put effort into hiding their condition or else others would be attentive to it[1]. While melasma affects people of all skin types, it is predominant in women with darker skin (Fitzpatrick III-VI)[2], which can add further difficulty to an already hard-to-treat, chronic disorder[3].

Melasma is becoming increasingly common. Some dermatologic centers cite it as being the most commonly seen condition next to acne[4], yet there is a large percentage of that population who are not seeking treatment largely due to unawareness of treatment options[5]. For those that do seek treatment, a familiar, collective approach to address melasma (in the medical setting) has traditionally come in the form of hydroquinone or other topical compounds, chemical peels, microdermabrasion or Q-switched lasers[3].

Building upon these traditional treatment options, Aerolase, with the clinical expertise of Washington DC based dermatologist, Cheryl Burgess, MD, have developed a two-step, "one-two punch" protocol to effectively address melasma in all skin types within a single treatment session. First, Aerolase's 650-microsecond 1064nm Nd:YAG laser technology offers a solution to address the deeper, dermal melanin and vascular components[6] of melasma, while also helping to break up the epidermal pigment. The laser energy is painted over the entire facial area at fluences of up to 28 J/cm^2. Then, depending on the patient's skin type and condition, either a light to medium chemical peel or hydroquinone compound is applied to address the remaining epidermal pigmentation.

"We have had great success removing dermal pigmentation with the Neo due to its depth of penetration and speed of the pulse," says Dr. Burgess. "Then, we (typically) layer that with either a chemical peel or hydroquinone to generate a new epidermis to remove superficial pigmentary concerns and if blending is needed, we may use a hydroquinone compound," she continues. "Furthermore, this overall treatment promotes a complete skin rejuvenation, tightening and brightening by refreshing both the dermal and epidermal layers of the skin."

What separates Aerolase laser treatments from other traditional laser modalities in treating melasma is the ability to achieve deeper penetration with higher fluences in a pulse duration that is short enough to eliminate adverse effects. 650-microsecond 1064nm Nd:YAG laser technology enables deeper penetration than Q-switched Nd:YAG lasers so that the laser energy will reach pigmentation at both epidermal and dermal layers. It also enhances the safety profile of the prior generation long-pulsed Nd:YAG lasers by shortening the pulse duration below the thermal relaxation time of the skin. This adds a greater margin of safety, reduces the risk of burns, hypo- or hyperpigmentation, and eliminates the need for skin cooling.



After 1 Tx LightPod Neo Combined with Glycolic Peel

After 1 Tx LightPod Neo Combined Hydroquinone 6%

After 1 Tx LightPod Neo Combined with TCA Peel

All photos courtesy of Cheryl Burgess, MD

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The combination of high power in a short pulse duration is what enables 650-microsecond laser technology to be so effective yet so safe and gentle. The gentleness of the treatment is what allows practitioners to apply a chemical peel immediately post-laser treatment and make this treatment combination so highly unique and effective.

Combination treatment for addressing difficult conditions is now trending to be common practice. This approach to treating melasma comes as a new and exciting possibility, especially for patients with skin of color who routinely require a more cautious approach towards treating their condition. Some of the well-documented complications stem from irritation with certain triple combination topicals or either hypo- or hyperpigmentation that can be induced with laser, microdermabrasion or chemical peels that are too aggressive[7], which will, undoubtedly, only add to the already prominent negative effects on a patient's quality of life.
Dr. Burgess addresses this stating, "It is better to be on the cautious side when treating melasma rather than speeding up the treatment to see results quicker. There are aggressive treatment options, but they run the risk of stressing the skin, especially in darker skin types, which can have undesired results and cause further complications. Taking more precautions allows a safe option to achieve desired and more predictable results. This protocol, utilizing advanced laser technology, allows for heightened degrees of efficacy while negating risk."

Due to melasma's high rate of recurrence and array of triggers, preventative steps and ongoing treatment need to be adhered to. Sunscreen and UV protection are essential in the ongoing battle with melasma and can help promote long-term success, with longer periods of clearance. Advances within UVA and UVB blocks have enabled heightened protection against this trigger of melasma and should be applied everyday[8].

The LightPod Neo's 650-microsecond 1064nm laser technology, in combination with chemical peels or hydroquinone, provides a new, advanced solution for treating melasma. It proves to be an enhancement towards effectively addressing melasma in patients with skin of color and drastically increases the margin of treatment safety to deter any historical adverse effects.

References

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