

For years, the art of laser resurfacing has been instrumental in the elimination of facial pigmentation marks, acne scars – and our dreaded fine lines and wrinkles. Laser resurfacing on Caucasian skin is usually a straightforward procedure and is reportedly highly effective. However greater care must be taken when dealing with darker skin types.

**ASM asked three of its esteemed contributors – Johannesburg based Aesthetic Physicians**

**Dr Riekie Smit, Dr Maureen Allem and Dr Anushka Reddy – to comment on the effects of laser resurfacing on dark skin.**

## Skin Deep

### **Dr. Riekie Smit reports...**

Mediterranean, Asian and African skin respond differently to injury. Laser treatments cause controlled and specified depth injury to the skin to induce a healing process and repair certain imperfections. This 'injury' to the skin in these types can often result in even more pigmentation problems if not applied correctly and if the skin was not well prepared.

Firstly, because fractional laser treatment does not treat the whole target area but only sections ('fractions') of the specific area, this technology is already a huge step in making it more useable in darker skin types. This fractional photothermolysis (light focused damage) technology has reduced the risks for complications and side effects because the untreated fractions of skin cells surrounding the treated skin cell zones helps to heal those areas and healing therefore occurs faster than a full zone treatment with laser.

Two different types of fractional laser applications are available on the market with different outcomes and different risk profiles: ablative (skin resurfacing laser) and non-ablative (skin

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rejuvenating laser) fractional laser treatments. The other variables come in with the varying wavelengths of the different lasers. This fractional treatment approach claims to obtain similar results to conventional ablative laser resurfacing with an Erbium Yag or CO2 laser, but with reduced side effects and downtime.

Although the risk for pigmentary changes after treatment is reduced, the risk still exists – especially in patients prone to post-inflammatory hyperpigmentation (darkening of the skin after inflammation/ injury to the skin). This is especially seen in darker skin types.

This side effect can greatly be reduced with a good pre-treatment protocol for six weeks prior to the treatment, and for three months after the treatment. Your doctor will prescribe a depigmenting cream and high quality

sunblock to use for six weeks before and for 12 weeks after the fractional laser. This protocol makes it possible for darker skin to also have the benefits of this treatment but without the risks that exists in their skin for pigmentary changes.

In my experience with resurfacing treatments, I have seen that this pre- and post-treatment protocol, when followed diligently, truly removes the risk of post-inflammatory hyperpigmentation in darker skin types after any type of resurfacing treatment.

This strict protocol combined with the reduced risk of fractional laser and respect for this specific skin type can have wonderful benefits for these patients seeking improvement in skin texture, wrinkles, pigmentary problems or acne scars.

“ Skin rejuvenation with lasers in people of colour should be able to address most of the concerns; such as pigmentation, acne scars, sagging, wrinkles and a dull complexion.”

## Dr Maureen Allem reports...

People of colour are a very large group, which in South Africa includes people of African and Asian descent. It also includes patients of mixed backgrounds who have more darkly pigmented skin. Darker skin type people represent a significant and growing group of patients seeking aesthetic procedures. This is because of the increased awareness of safe, affordable aesthetic procedures. These procedures include amazing new lasers that are colour blind and are less invasive than previous generations of lasers. Yet special concerns have to be addressed when treating skin of colour. One of the concerns with this group in regard to laser treatments is scarring and post treatment hyperpigmentation which can occur if the incorrect laser/light treatment is given. Intense Pulsed Light or IPL, a light treatment available at select beauty salons, is great for skin rejuvenation in lighter skin tones but is not indicated for darker skin tones as there is a high risk of burns, PIH and scarring. Skin rejuvenation with lasers in people of colour should be able to address most of the concerns such as pigmentation, acne scars, sagging, wrinkles and a dull complexion.

Traditional skin rejuvenation treatments such as peels, microdermabrasion and bleaching agents are not successful for pigment such as melasma and post inflammatory hyperpigmentation PIH that has leached into the dermis. That is when the use of certain lasers such as the long pulsed Nd Yag become effective to safely treat darker skin including skin type 6. The Laser Genesis procedure by Cutera gently heats the dermis, causing cavitation bubbles, which disrupt the unwanted dermal pigment, breaking it into smaller particles which are able to move upward to the epidermis where it can be removed with exfoliation.

The Laser Genesis procedure also safely treats acne scarring, pores, fine lines, wrinkles and keloids in skin of colour. As with most non ablative procedures, eight to 10 monthly treatments are necessary to see an improvement. At a different setting, the Nd Yag can safely be used for laser hair removal.

For sagging skin, infra red light treatments such as Titan safely heat up the dermis in all skin types to cause an immediate tightening effect and collagen stimulation down the line.

People of colour who are looking at skin rejuvenation treatments with lasers or lights would be well advised to consult with a medical doctor with experience in treating skin of colour to prevent unwanted effects such as full thickness burns, permanent scarring and post inflammatory hyperpigmentation. The laser/light treatments mentioned above offer exceptional skin rejuvenation results with minimal discomfort and downtime for all skin types.

“ Laser resurfacing can provide an effective means for improving the appearance of uneven skin tones in patients with darker skin types ”

## Dr Anushka Reddy reports:

The two types of lasers most commonly used in laser resurfacing are carbon dioxide (CO2) and erbium. Each laser vaporizes superficial, damaged skin cells and both reduce the risk for the patient because they limit the amount of heat absorbed by the skin.

For darker skin tones, I would recommend erbium laser resurfacing.

Erbium laser resurfacing is designed to remove superficial and moderately deep lines and wrinkles on the face, hands, neck, or chest. One of the benefits of erbium laser resurfacing is minimal burning of surrounding tissue. This laser causes minimal side effects, such as swelling, bruising and redness, so the recovery time is more rapid than with CO2 laser resurfacing.

Laser resurfacing can provide an effective means for improving the appearance of uneven skin tones in patients with darker skin types. Although the degree of cosmetic improvement is possible following ablative laser skin resurfacing in patients with skin types I and II (lighter skins), it may not be attainable in patients with darker skin tones. Pre-laser skin preparation with Retin A and meticulous post-laser care are essential for success when treating patients with darker skin types.

I would emphasize that effective patient education and comprehensive information about the most commonly experienced side effects, especially post-inflammatory hyper pigmentation, is crucial in the management of patients with darker skin tones. While transient hyper pigmentation is the most commonly experienced side effect after laser skin resurfacing (affecting approximately one third of all patients), the incidence rises to 68%-100% among patients with skin types greater than type III (olive to dark skinned individuals).

Of particular importance for individuals with darker complexions, especially those living in South Africa where ultraviolet radiation is most intense, is the strict avoidance of excessive sun exposure and the consistent use of full-spectrum sunscreens both before and after laser treatment. ●

