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ORIGINAL ARTICLE

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Breaking Barriers: Advancing Cosmeceuticals and Integrated Skincare for Skin of Color

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ABSTRACT

Common signs of skin aging include wrinkles, fine lines, and pigmentary disorders. Patients with skin of color present with unique dermatologic challenges due to differences in how skin conditions manifest on darker skin tones, such as melasma and post-inflammato y hyperpigmentation. As a result, dermatologists and aestheticians need to be aware of these concerns and how to adequately address them. Many prescription and over-the-counter topical medications are now available to treat patients' dermatologic conditions. By combining such treatments with in-office physical therapies, an integrated approach to patient skincare is now possible. Therefore, clinicians should be aware of available comprehensive skincare approaches that can be tailored to the individual aesthetic concerns and skin health needs of their patients.

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Common Conditions in Skin of Color

Wrinkles, sagging, and pigmentation issues—inevitable skin changes indicative of the aging process—can occur in patients of any skin tone. However, hyperpigmentation skin conditions, such as post-inflammatory hyperpigmentation (PIH) and melasma, are particularly concerning for patients with skin of color (SOC) due to the appearance of dark spots and patches on the skin.[1,2] Photoaging is another common cause of hyperpigmentation in individuals with SOC. While certain signs of aging may be delayed by 10 to 20 years in Black patients compared with those with lighter skin, alterations in skin quality—such as wrinkles/deep expression lines, periorbital and perioral subcutaneous volume loss, and skin laxity—become more noticeable in SOC as patients age.[3-6]

Factors Influencing the Aging of Skin

Factors that influence the aging of skin include both intrinsic and extrinsic factors. Intrinsic factors that contribute to aging skin include biological and physiological differences between dark and light skin.[1,2] For example, the stratum corneum in Black skin appears to have a greater degree of layering that contributes to its more compact and cohesive nature.[4,6-8] Accordingly, increased stratum corneum compactness may lessen skin fragility and susceptibility to sun damage, consistent with the finding that 5 times more ultraviolet (UV) light reaches the upper dermis in White skin compared with SOC.[9] As a result, this may contribute to the delay in visible signs of skin aging commonly seen in Black individuals compared with those with lighter skin. Other intrinsic factors include genetics, cellular metabolism, and hormonal changes.[10]

Extrinsic factors that influence the aging process of the skin include exposure to blue light, UV light, environmental pollutants, smoking, and poor nutrition and physical activity, which can contribute to coarse wrinkles, loss of elasticity, laxity, and the development of a rough-textured appearance.[11-13] Other external factors include the negative effects of stress on skin aging, and sleep deprivation.[10,11]

Aging Skin: Prevention

Modifying factors contributing to the aging process is critical for patients as this can significantly change self-perception and impact psychosocial wellness. Individuals who look younger may feel younger and, as a result, feel healthier overall.[5,11] This supports the observation that aged skin is associated with one's nutritional status and poorer health and disease, serving as an aesthetic measure reflecting a pe son's general health and vitality.[5]

In a recent observational, cross-sectional, online survey of women (N = 1646) in the United States, participants were asked about perceptions of representation in skin aging prevention information.[14] An important finding was that, among women of color (Blacks, Asians), some of the most important features of skin aging include fine lines and wrinkles, laxity (sagging), poor texture, and dyspigmentation (brown discoloration).[14] Therefore, the implementation of skincare strategies aimed at mitigating the consequences of photoaging is of paramount importance to patients with SOC.

Ethnic and Racial Differences in Skin of Color

Skin Type Approximation Scales

Dermatologic conditions may manifest differently in SOC, and dermatologists need to consider skin tone when making clinical assessments and treatment choices for patients with SOC. The Fitzpatrick skin classification scale is the most widely used scale to classify skin color. In the original iteration of the Fitzpatrick Skin Type (FST) scale, 6 different skin types (I-VI) were included and used to understand how different doses of UV light therapy cause tanning or burning of skin in patients with psoriasis.[15-17] However, the FST is associated with several limitations. The effects of UV light irradiation may not be accurately captured or appear differently on darker shades of skin, and this system was largely based on patients with lighter skin colors (FST I, II, III, and IV). Consequently, other scales that are more inclusive of all skin tones and types have been developed.[17-19]

An update of the Fitzpatrick classification was recently undertaken to address SOC and is named the Skin Color and Ethnicity Scale.[20] In this proposed scale, features of skin that can be used to defin skin type are included such as freckling and wrinkling. This scale also seeks to help clinicians define the risk of scarring and PIH in different skin types following a dermatologic procedure.[20] Therefore, this scale may help guide clinicians in selecting appropriate cosmetic and surgical procedures for their patients. However, consensus-based initiatives to foster the development of validated and reliable tools remain an unmet need in the dermatologic care of patients with SOC.[21] Clinicians should be aware that many competing skin tone classification scales exist that offer varying benefits to clinicians in assessing skin, and that there is no one universally accepted scale that is both comprehensive and easy to use.

General Skincare Needs for Patients With Skin of Color

Photoprotection

Patients with SOC can achieve their skincare goals by fi st addressing their general skincare needs. Clinicians can recommend sunscreens, which have several benefits, including shielding the skin from harmful rays, preventing skin discolorations, reducing the risk of developing skin malignancy, and reducing the effects of skin aging.[22] Photoprotection in individuals with SOC should be recommended, including use of broad-spectrum sunscreen with a sun protection factor (SPF) ≥ 30 at 2 mg/cm^2, applied 15 min before sun exposure and every 2 hours thereafter. Tinted sunscreens based on nonmicronized inorganic filte s should be used for protection against UV and visible light.[22] For patients with SOC who wish to avoid sunscreen that causes a white cast, a nanosized inorganic filter (with zinc oxide or titanium oxide) or organic filte -based sunscreen may be desired, due to their transparent formulations (less visible upon application).[22-25] However, these sunscreens protect only against UV irradiation, not visible light. It is also important to counsel patients on the need to wear hats, sunglasses, and other sun-protective clothing (preferably with an ultraviolet protection factor [UPF] ≥ 40), and to avoid sun exposure during peak daylight hours to reduce the short- and long-term effects of photoaging.[22]

Anti-Aging Care

In addition to sunscreen products, several agents can be used to combat the effects of photoaging and other skin concerns. Agents that may be useful in combatting the signs of aging include antioxidants, which protect against reactive oxygen species (ROS) and UV radiation; metal-chelating agents, which protect against environmental pollutants; peptides/growth factors, which enhance skin firmness and reduction in fine lines; and lipids/ceramides, which promote skin barrier health.[26-34] The latter may be of particular interest for patients with darker skin tones since ceramides have been reported to be lower in patients of African descent vs other racial/ethnic groups.[7] Topical retinoids can also be applied to target signs of aging, including fine lines and changes to skin texture.[4,26,35] Glycation inhibitors are an emerging class of novel compounds that are actively being studied for their ability to avert the toxic accumulation of intracellular molecular entities known as advanced glycation end-products (AGEs), which have been implicated in the pathobiology of aging and other chronic metabolic diseases (eg, cardiovascular, diabetes).[33,36,37]

Addressing Hyperpigmentation

Agents used to treat hyperpigmentation disorders include tyrosinase inhibitors and melanosome transfer inhibitors.[38,39] The use of the tyrosinase inhibitor, hydroquinone, has historically been a fi st-line recommended approach for managing hyperpigmentation and melasma.[4,40] However, clinicians should be aware that even brief use of hydroquinone can result in serious or harmful skin side effects such as exogenous ochronosis, skin rash, and facial swelling.[40,41] In light of this, the US Food and Drug Administration (FDA) has issued a warning letter concerning the use of products containing hydroquinone.[42] Accordingly, safer alternatives to hydroquinone are available in dermatology practice and should be considered. These include compounds with moderate to strong evidence, such as cysteamine and tranexamic acid. Other agents have been studied, albeit with weaker/limited clinical evidence, due to various problems including small trial size, poorly designed studies, and safety issues.[38,43]

FIGURE 1. Skin type and tanning ability according to the updated Fitzpatrick classification scale.[20]

I		▪ Burns frequently, rarely tans ▪ Freckling ▪ Wrinkles ▪ Deep lines ▪ Truncal nevi	▪ No Palmar/plantar nevi ▪ No restrictions with lasers or peels including deep peels ▪ Rare keloid tendency ▪ Post inflammatory erythema more likely than PIH
II		▪ Occasionally burns, can tan ▪ Freckling ▪ Wrinkles ▪ Deep lines and solar elastosis	▪ Truncal nevi ▪ No Palmar/plantar nevi ▪ No restrictions with lasers or peels including deep peels
III		▪ Tans more than burns ▪ Freckling ▪ Fine wrinkles ▪ Etched in lines in the upper face	▪ GH on the chest and legs ▪ Truncal nevi ▪ No Palmar/plantar nevi ▪ Care with peels and lasers
IVa		▪ Tan, rarely burns ▪ Freckling ▪ Fine wrinkles ▪ Etched in line in upper face	▪ Fewer truncal nevi ▪ Labial lentigos ▪ Occasional palmar/plantar nevi ▪ Care with medium peels ▪ Caution with lasers ▪ Beware of keloid scarring
IVb		▪ Tan ▪ Freckling ▪ Fine wrinkles ▪ Etched in line in upper face	▪ Minimal truncal nevi ▪ Labial lentigos ▪ Palmar/plantar nevi ▪ Caution with medium peels ▪ Caution with lasers ▪ Beware of keloid scarring
Va		▪ Tans easily ▪ Etched in line in upper face ▪ Minimal truncal nevi ▪ Labial lentigos	▪ Palmar/plantar nevi ▪ Caution with medium peels ▪ Warning with lasers ▪ Beware of keloid scarring
Vb		▪ Tans easily ▪ Features if VI but may have reactive dyschromia like a Va ▪ May have etched in lines in the upper face	▪ No truncal nevi ▪ Labial lentigos ▪ Palmar/plantar nevi ▪ Warning with medium peels ▪ Warning with lasers ▪ Beware of keloid scarring
VI		▪ Tans easily ▪ Reactive dyschromia likely ▪ May have etched in lines in the upper face ▪ No truncal nevi	▪ May have labial lentigos or mottled lip pigmentation ▪ Palmar/plantar nevi ▪ Warning with medium peels ▪ Warning with lasers

Coleman W, Mariwalla K, Grimes P. Updating the Fitzpatrick classification: the skin color and ethnicity scale. *Dermatologic Surgery.* 2023:49(8):725-731.

Integrated Skincare: Significance and Strategies for Skin of Color

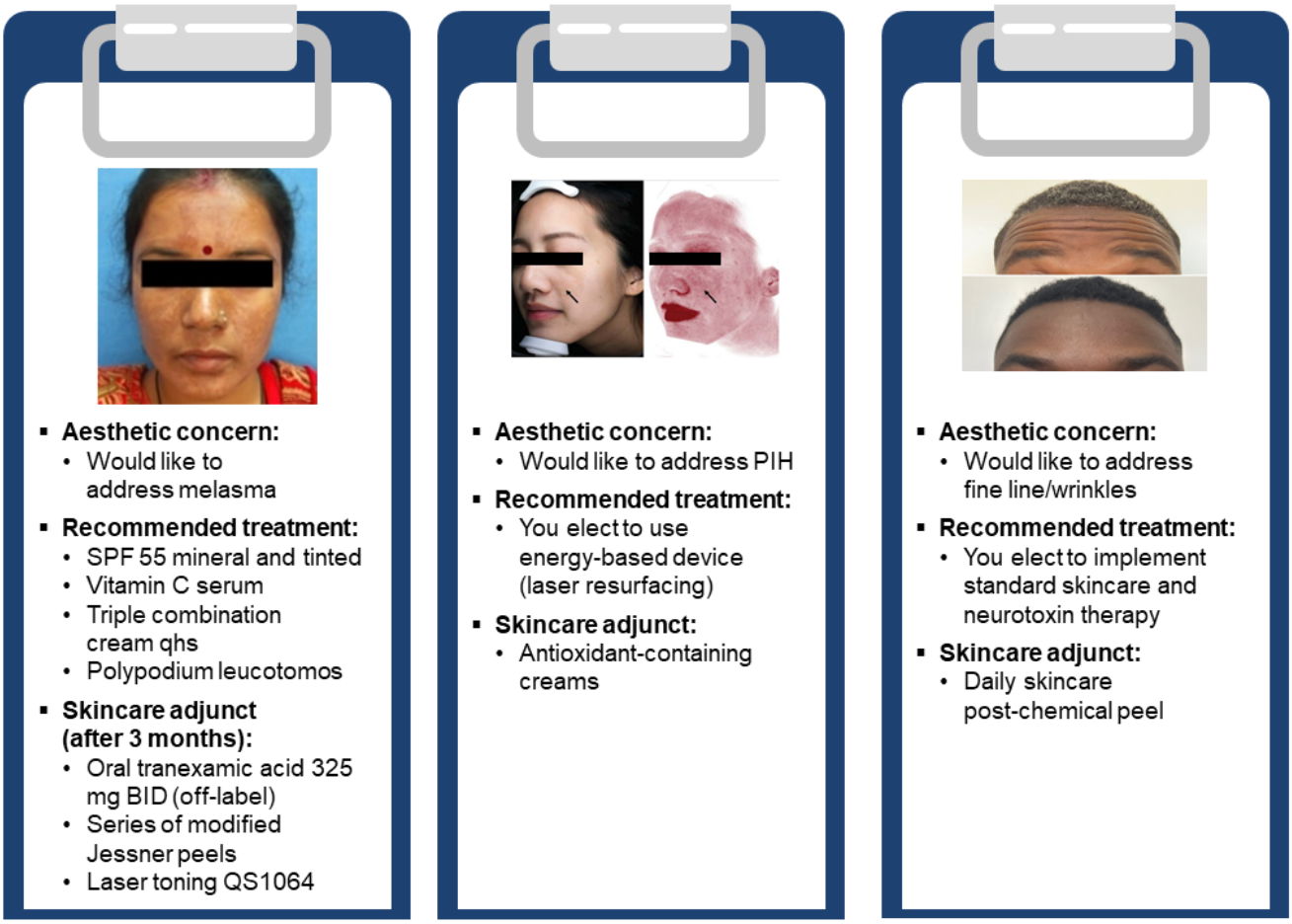
Based on individual concerns and goals of the patient, a multipronged approach to skincare may be warranted. This can best be accomplished using an integrated skincare strategy that incorporates a combination of chemical and physical procedures (Figure 2), which may include microdermabrasion, laser treatments, and chemical peels.[44-47] Additionally, the skincare agents highlighted above are of germane interest to patients with skin of color, not only in the context of addressing daily cosmetic problems, but also for preprocedure and postprocedure management.[1,4,46-48] This is especially important for preventing exacerbation of preexisting skin conditions, such as hyperpigmentation and signs of aging. In this context, it is important that treatment be spaced apart or milder protocols be selected to prevent overstimulation or overexposure, which can cause irritation or deep desquamation.[4,47,48]

Creating a comprehensive skincare regimen can help clinicians provide patients with the positive outcomes they strive to achieve. This is supported by the goals of integrated skincare, which aims to[51-55]:

- Reduce postprocedure downtime
- Decrease patient healing time
- Improve patient satisfaction
- Enhance procedure outcomes

To help patients reach their desired skin quality, clinicians can recommend moisturizers after chemical peels, the latter of which can be readily performed using alpha-, beta-, and polyhydroxy acid-based regimens.[54,56] Antioxidants may be employed to speed up recovery following an energy-based device procedure, while topical regimens can benefit patients who have undergone facial

FIGURE 2. The integrated approach to managing common aesthetic concerns in patients with skin of color.[49,50]



BID, twice daily.
Third image courtesy of Dr DiAnne Davis MD.

rejuvenation (eg, submental fat reduction) with injectables (eg, deoxycholic acid injection).[52,54,55] Patients can also try light-emitting diode face masks (photobiomodulation therapy) in the comfort of their homes, which helps create even skin tone and texture to address aesthetic concerns such as inflammatory acne, fine wrinkles, scars, and photoaged skin.[57,58] Independent of the strategy used, careful selection of appropriate adjunctive skincare, timing, dosing, and formulation to optimize nonsurgical outcomes is key to successful treatment.[4,48]

Clinical Pearls and Key Takeaways for the Clinician

Clinicians should partner with their patients with SOC to develop a comprehensive treatment plan that addresses all aspects of skincare. This includes combining multiple approaches ranging from topical agents and prescribed therapies to in-offic procedures and medical devices that can safely be used at home.[4,48] When insurance coverage is a limiting factor, patients should have confidence in knowing that over-the-counter alternatives exist to meet their skincare needs (eg, treat hyperpigmentation).[43] Lastly, due to the implementation of multiple treatment modalities along with their safety concerns, dermatologic care should be provided under the guidance of a medical expert such as a dermatologist, or a highly trained skin aesthetician and other professionals (eg, nurse practitioners, physician assistants) involved in the skincare of patients.[59,60]

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