

Cosmetic Concerns in Skin of Color, Part 1

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The term *skin of color* encompasses a wide range of ethnic groups, skin complexions, and cultures that characterize individuals with deeply pigmented skin. Structural and functional variations, as well as cultural practices, contribute to variations in clinical presentation and prevalence of dermatologic conditions. Cultural perceptions of beauty also impact the leading cosmetic skin concerns observed in skin of color and may influence patient expectations. Here, the authors review common cosmetic concerns of patients with skin of color. By understanding ethnic variations in perceptions of beauty, skin structure and function, and aesthetic goals, the cosmetic dermatologist will be well equipped for the successful management of diverse patient populations.

Standards of beauty are largely based on cultural and racial beliefs, practices, traditions, and perceptions and differ among ethnic groups. Physical appearance is established by various internal and external factors, including genetics, morphology, physiology, culture, and socioeconomics. Darker skinned populations, traditionally classified as Fitzpatrick skin types IV through VI,¹ make up the majority of the world's population² and by 2050 will constitute half of the US population.³ An increasing proportion of cosmetic procedures in the United States are being performed on nonwhite individuals. According to the American Society for Aesthetic Plastic Surgery,⁴ racial and ethnic minorities had undergone approximately 20% of all cosmetic procedures in 2008 (Figure 1).

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STRUCTURAL AND PHYSIOLOGICAL DIFFERENCES

Several structural and functional differences exist among darkly pigmented skin types, many of which have important clinical implications for disease and aesthetics and may play a role in their response to cosmetic dermatologic treatments. Darker pigmented individuals contain an increased amount of melanin, derived from melanocytes located in the basal cell layer of the epidermis. These dendritic, pigment-producing cells contain melanosomes, the membrane-bound granules in which melanin synthesis takes place.⁵ Studies have shown that there is no major difference in the number of melanocytes between ethnic groups; however, melanosomes, are not only more numerous in darkly pigmented skin, but are also larger, more singly dispersed, higher in melanin content, with a slower rate of degradation.⁵ Therefore, the primary basis for differences in pigmentation, and possibly the increased incidence of pigmentary disorders, is due to variation in number and distribution of melanosomes. Pigment lability, which manifests through exaggerated responses of melanocytes to cutaneous injury (eg, sunlight, irritating topical medications, or medical conditions),⁶ is also a prominent feature observed in skin of color and contributes to the development of dyschromias. Conversely, higher melanin levels offer greater UV radiation protection, with consequently lower incidences of

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Figure 1. Total cosmetic procedures in the United States in 2008 by race/ethnicity. Reprinted with permission from The American Society for Aesthetic Plastic Surgery.⁴ All rights reserved.

skin cancer and photodamage in darker skin types.^{7,8} This is evidenced in part by the inverse relationship between melanin content and DNA damage in the skin in response to UV light.⁸ Black skin has mean protective factors of 5.7 and 13.4 from UVA and UVB, respectively, with comparative figures of 1.8 and 3.4 for white skin.⁷ Therefore, an average of almost 5 times as much UV radiation (UVA and UVB) reaches the upper dermis in white individuals as that in individuals with black skin.⁷ This is a significant factor in terms of actinic damage that may lead to both skin cancer and photoaging.

Darkly pigmented skin also has a thicker and more compact dermis and contains many fiber fragments composed of collagen fibrils and glycoprotein.⁹ Fibroblasts are also larger and more numerous than those found in white skin, suggesting heightened activity (or reactivity), which could affect keloid and hypertrophic scar formation. These conditions are common in individuals of African and Asian ancestry.⁹ Additionally, it has been reported that black skin has a higher lipid content, a decreased ceramide content, and a superior capacity to recover after tape stripping than white skin.^{6,10,11} Although there is no difference in stratum corneum thickness, black skin contains more cell layers.

In hair morphology, the features of individuals of African ancestry are unique when compared to other ethnic groups. Black individuals possess hair shafts that arise from a curved hair follicle, are flattened or elliptical on cross-section, and are helical or spiral-shaped on light microscopy. In addition, hair of individuals of African descent have the smallest mean cross-sectional area of any ethnic group.¹² African hair also tends to be drier and more susceptible to breakage.¹³⁻¹⁵ Asian hair shafts are round and have the largest diameter on cross-section, and are straight on light microscopy. By comparison, hair

of white individuals is more oval on cross-section and wavy on light microscopy.¹² These intrinsic properties are important for understanding certain conditions such as pseudofolliculitis or cultural grooming practices.

CULTURAL DIFFERENCES

In the United States, the media-projected perceptions of beauty may differ greatly from what various ethnic groups consider aesthetically pleasing. Often westernized images may conflict not only with morphological features of ethnic groups but also with important cultural values. For many cultures, smooth, flawless skin (free from scars or pigment abnormalities) is considered particularly attractive and desirable. Individuals of South Asian and Middle Eastern descent often believe that fair skin equals beauty. In a survey of Arab Americans, more than half viewed very fair or fair skin as visually pleasing.¹⁶ Participants in this study also identified uneven skin tone, skin discoloration, dry skin, acne, and facial hair as the most pressing skin concerns. Likewise, Hispanic and African-related ethnic groups place importance on skin tone, fair complexion, and smooth skin texture. Bleaching and use of lightening agents has been a common practice for lightening the complexion or correcting dyschromias in these groups. East Asians tend to find the wide, bright-eyed look aesthetically pleasing. However, the eyelid structure in the majority of East Asians does not lend itself to this appearance, and therefore prompts requests for cosmetic procedures to obtain a larger, more open appearance of the eye.¹⁷

COMMON COSMETIC CONCERNS IN SKIN OF COLOR

While there are several studies that have examined the incidence of dermatoses in skin of color, published data pertaining to the leading cosmetic dermatologic concerns in nonwhite ethnic groups are currently limited. In a 1983 survey of a predominantly black private dermatology practices, Halder et al¹⁸ found that the most common disorders affecting this group included acne vulgaris, eczema, pigmentary disorders, seborrheic dermatitis, and alopecia. Similarly, a recent survey of a hospital-based practice by Alexis et al¹⁹ noted that acne vulgaris, dyschromia, eczema, alopecia, and seborrheic dermatitis were commonly diagnosed conditions affecting black participants. Sanchez²⁰ noted the most commonly recorded diagnoses in 3000 Latino patients (1000 private practice patients, 2000 clinic patients) were eczema and acne. In this same study,²⁰ hyperpigmentation and facial melasma were included in the top 10. Pigmentary disorders occur more frequently and are of significant concern in the Latino population.^{20,21} A community-based survey of

Arab Americans found that acne, eczema, dermatitis, and melasma were among the 5 most common self-reported cutaneous diseases based on a prior diagnosis made by a physician.¹⁶ Eczema, dermatitis, and melasma also appear to be common in Asians.²² From these and other studies, it is apparent that pigmentary disorders are of significant cosmetic concern in darker skinned ethnic populations. Other common aesthetic concerns include textural changes in skin, such as prominent pore size, roughness, and oily skin; benign growths, such as dermatosis papulosa nigra (DPN) and seborrheic keratoses; hair disorders, such as pseudofolliculitis barbae and unwanted or excessive hair; and special concerns related to the aging face.

Dyschromias

Often described by patients as uneven or blotchy skin, pigmentary disorders or dyschromias are a common subset of dermatologic disorders that cause significant distress and disfigurement in darker skinned ethnic groups.²³⁻²⁵ Dyschromia includes any disorder of pigmentation of the skin and can be present as hypopigmentation or hyperpigmentation. The most common dyschromias in darkly pigmented patients include melasma and postinflammatory hyperpigmentation (PIH).¹⁸⁻²⁰

Melasma

Melasma, also referred to as chloasma or the mask of pregnancy, is an acquired disorder of hyperpigmentation that commonly affects darker Fitzpatrick skin types. Clinically, it is characterized by light brown to dark brown or gray patches, with irregular borders appearing primarily on the central face. Distributed symmetrically, the patches commonly appear on the lateral forehead, cheeks, nose, chin, and upper lip (sparing the philtrum) (Figure 2). Other sites may include the forearms and the mid upper chest.



Figure 2. A 52-year-old Hispanic female with melasma.

Melasma primarily affects women who are of Hispanic, Asian, or African descent. The incidence of pregnancy-induced melasma has been reported to be as high as 50% in Mexican women.²⁰ Although 10% of cases of melasma occur in men, they are less inclined to seek treatment.²⁰ The etiology of melasma is unclear, but it is thought that exposure to UV irradiation or another inducer causes hyperactive melanocytes to produce increased amounts of melanin. Other factors that may play a role include a genetic predisposition or hormonal influence, such as estrogen²⁶; this may partly explain the appearance or exacerbation of the disease during pregnancy or while a patient is on oral contraceptives or hormone replacement therapy. The impact on one's quality of life (QOL) with this disorder is substantial. Hispanic patients surveyed using a Spanish language melasma QOL scale identified physical health, emotional well-being, social life, and financial matters as aspects most affected by their melasma.²⁴

Postinflammatory Hyperpigmentation

Typically, PIH may result from any cutaneous inflammatory disorder (eg, acne, eczema, dermatitis) or injury to skin of color. The increased lability of melanocytes contributes to the high prevalence of PIH in patients with skin of color.^{6,27} Inflammation or trauma triggers an increase in melanogenesis or a release of melanin from labile melanocytes.^{11,27} A history of previous inflammatory insult to the skin, along with clinical evidence of hyperpigmentation in the affected area usually leads to the diagnosis (Figure 3). The immediate goal of treatment is to target and control the primary inflammatory process, thus preventing further alteration in pigment. Once controlled, the pigment alteration itself can then be addressed.

Dermatosis Papulosa Nigra

Most commonly found in those of African descent, DPN is a benign epithelial neoplasm found predominantly in darkly pigmented populations. Reportedly, the incidence of DPN is between 35% to 77% in African Americans.^{28,29} It tends to affect women more than men at a 2:1 ratio and usually increases with age.²⁸

Clinical Features—Gradually, DPN appears as hyperpigmented (dark brown to black) smooth or pedunculated papules measuring 1 to 5 mm in size. Typically occurring symmetrically on the face favoring the malar eminences, DPN may also involve the neck, chest, and upper back. A genetic predisposition is thought to be a key factor in its etiology, as a positive family history is often found. However, because DPN tends to be distributed in sun-exposed areas, some authors have suggested that sun also plays a



Figure 3. A 48-year-old black female with postinflammatory hyperpigmentation secondary to acne vulgaris.

role, which is a hypothesis that has also been reported for seborrheic keratoses in some populations.^{30,31} In a study from Senegal, Niang et al³² also comments on this hypothesis. It was observed that lesions were generally prominent in sun-exposed sites, as well as in 8 of 10 patients who had profuse (>100) DPN, and were documented as having practiced some form of artificial depigmentation with high potency topical corticosteroids in the past.³² Further studies are needed to investigate if sun or other nongenetic factors play any role in the pathogenesis.

Large Pore Size, Oily Skin, and Textural Abnormalities

Oily skin, acne, and large pore size may cause considerable concern and impact the QOL in patients with skin of color. In 1987, *Essence* magazine conducted a survey that examined the cosmetic needs in 2000 black women. At that time, it was reported that more than half the women surveyed wanted cosmetics that would control their oily or dry skin.¹⁴ In a survey by Grimes,¹⁴ 100 women with skin of color (81 African Americans, 16 Hispanics, and 3 Asians) were asked about their major cosmetic concerns. The participants ranged in age from 21 to 71, with a mean age of 41. The survey included questions of cosmetic use, skin sensitivity, texture, sebum production,

pore size, pigmentation, and satisfaction with cosmetics. Hyperpigmentation or dark spots were mentioned by 87% of respondents as a major cosmetic concern, whereas 76% complained of combination or oily skin, and 40% complained of rough skin.

While the distribution of skin type (dry, normal, combination, or oily) does not differ between white and non-white populations, both dry and oily skin tend to be more apparent on darker skin. Sebum, secreted by the sebaceous glands, is the major component of the lipid film that covers the face. Studies show no difference between measurements of sebum between African Americans and white individuals.³³ However, a positive correlation is noted in Asian women between darker pigmentation and the amount of skin surface lipids.³⁴ Salicylic acid peels are useful in the management of enlarged pores and oily skin in patients with skin of color. In a study by Grimes,³⁵ 5 of 5 patients with oily skin, enlarged pores, and rough textural changes showed significant improvement of each, following a series of salicylic acid peels.

AGING IN SKIN OF COLOR

Extrinsic Aging

In aging skin, cumulative exposure to sun remains the factor most responsible for unwanted aesthetic effects, such as fine lines and wrinkles, dyschromia, and textural alterations. In fair skinned individuals, these signs tend to appear as early as one's 20s and 30s. However, because of the photoprotection conferred by melanin, darker ethnic groups tend to have a delayed onset of signs of photoaging,⁷ as well as decreased occurrence of premalignant and malignant skin lesions.

Montagna and Carlisle³⁶ documented that the stratum lucidum in black skin, however, rarely showed areas of atrophy, became altered by exposure to sunlight, or demonstrated significant elastosis. Mild solar elastosis has been observed in sun-exposed facial skin of Korean patients at 20 years of age.³⁷

Intrinsic Aging

Aging in darker ethnic groups tends to demonstrate later onset of aging features with less severe or slightly different manifestations. In darker skinned ethnic groups, the features of intrinsic skin aging are often more notable than extrinsic aging. In general, darker-skinned patients develop muscular or expressive lines as opposed to photoinduced wrinkles. Additionally, a loss of bone structure of the face contributes to sagging skin and laxity.

Black Skin

In persons with skin of color, specifically black individuals, signs of skin aging tend to occur in the deeper

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Figure 4. A 66-year-old black female with fine lines, prominent nasolabial folds, textural irregularities, and dermatosis papulosa nigra.

muscular layers of the face. One of the first signs of aging in deeply pigmented skin occurs in the periorbital area with infraorbital hollowing. At an early age, malar fat pads atrophy and descend toward the nasolabial folds. Additionally, in the middle to lower face, signs include tear trough deformity, ptosis of the subcutaneous adipose tissue in the malar region, increasing nasojugal groove prominence, and deepening of the nasolabial fold.³⁸ Bimaxillary protrusion in the presence of infraorbital hypoplasia is a common feature in individuals of Hispanic, Asian, and African ancestry, which may also predispose midface soft tissue to the effects of gravity because of loss of bony support. Ptosis of the upper eyelid tends to appear during one's 30s in fair skinned individuals and in one's 40s in darker skin.³⁸ In the lower face, darker skinned groups experience jowl formation and pronounced melomental lines (marionette lines) (Figure 4).³⁸

Grimes¹⁴ surveyed 100 women with skin of color regarding their concerns about wrinkles. The data were compared against an age-matched population of 143 white women. Sixty-five percent reported that their skin was not wrinkled compared with 20% of white women. This demonstrated a marked difference in perceived

photoaging between the 2 groups. Clinical manifestations of photodamage in deeply pigmented skin include mild wrinkling, dyschromias, textural alterations, and possibly DPN.

Asian Skin

While pigmentary changes (eg, mottled pigmentation, solar lentigines, and melasma) and seborrheic keratoses are thought to be the major manifestations of actinic damage in Asian skin,³⁹ visible wrinkling has also been documented as being apparent in Asians by 50 years of age.^{40,41} In a study on photodamage in 407 Koreans, a standardized photographic scale was used to evaluate severity of wrinkles and dyspigmentation.⁴⁰ Both wrinkles and dyspigmentation were features of photoaging in Koreans. Women showed a propensity for more severe wrinkles and a predominance of hyperpigmented macules, whereas men had a tendency toward developing seborrheic keratoses. The number of pigmented lesions increased with each decade. Cigarette smoking was an independent risk factor for wrinkles, but not dyspigmentation. In a different Korean study, Kwon et al³⁰ reported that seborrheic keratoses on the face and the dorsum of the hands increased with age, with 78.9% of Korean males having seborrheic keratoses by their 40s, 93.9% by their 50s, and 98.7% by their 60s. Both aging and cumulative sunlight exposure were found to be independent contributory factors (Figure 5).

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Figure 5. A 52-year-old Asian female with early signs of extrinsic aging, along with freckling and solar lentigines present on the malar eminences and nasal bridge.

Hispanic Skin

The Hispanic population includes an eclectic group of individuals of Spanish descent.⁴² This heterogeneous population represents individuals with countries of origin ranging from Mexico to South and Central America to Spain and the Caribbean islands. In addition to this geographic diversity, the Hispanic population includes the full spectrum of skin complexions and Fitzpatrick skin types I to VI. Aging in this population depends largely on the skin type, in addition to regional and cultural factors. Sanchez²⁰ reported photoaging as the third most common dermatologic concern in 1000 Hispanics seen in a private practice. In the United States, leading cosmetic concerns among Hispanics vary with Fitzpatrick skin type, with fairer skinned individuals aging similar to white individuals and deeply pigmented skin similar to African Americans, including melasma, solar lentigines, fine lines, rhytides, and laxity.

UNWANTED HAIR

Human hair is not only of cosmetic importance, it also functions as a sensory aide, reduces friction, provides thermal insulation, aids in pheromone dissemination, and plays both social and sexual roles. Patients suffering from abnormal hair loss or the development of unwanted hair are prone to psychological and cosmetic disturbances and often seek medical advice.⁴³

Excessive body or facial hair is usually an undesirable trait and can be very distressing among ethnic groups and is more commonly seen in some subgroups, such as South Asians.⁴⁴ In men with skin of color, hair removal is most often sought for medical indications, including pseudofolliculitis barbae (Figure 6), acne keloidalis nuche, and dissecting cellulitis. Conversely, in women with skin of color, hair removal is usually



Figure 6. A 26-year-old black male with pseudofolliculitis barbae on the neck.

desired for aesthetic purposes (eg, unwanted facial hair). However, pseudofolliculitis can also be a concern in this population.

CONCLUSION

As the population of those with skin of color increases, they will continue to seek solutions to their cosmetic concerns. In managing cosmetic concerns in patients with skin of color, the cosmetic dermatologist requires knowledge of the important issues in ethnic skin, which are based on the structural, functional, cultural, and perceptual variations among ethnic groups. Pigmentary disorders are of major concern within all deeply pigmented populations. Approaches to treatment of cosmetic concerns in patients with skin of color will be discussed in part 2 of this article.

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