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SEPTEMBER 2014

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Treating Acne in Skin of Color

By Jennifer Linder, MD

ACNE REMAINS THE MOST PREVALENT SKIN CONDITION EXPERIENCED THROUGHOUT ALL ETHNICITIES FROM PUBERTY TO ADULTHOOD.[1] IT HAS BEEN ESTIMATED THAT 90% OF PEOPLE STRUGGLE WITH ACNE AT SOME POINT IN THEIR LIVES, MAKING THIS PARTICULAR SKIN CONDITION CRITICAL TO UNDERSTAND.[2]

Furthermore, experts estimate that the majority of the population of the United States is rising in terms of Fitzpatrick skin type, making the pathogenesis of acne in those with higher Fitzpatrick skin types even more vital for a skin care professional to understand. (See **Fitzpatrick Skin Type Classification Scale** on Page 75.)

Differences in ethnicities

Although the physiological differences between ethnic groups are small, they can make for significant differences in determining a client's tendency toward specific skin conditions and how the skin reacts. Variances in skin thickness, transepidermal water loss (TEWL), sebum production and melanocyte activity can each play a significant role when determining the correct treatment for acne.

African-American skin, in particular, tends to have a thicker stratum corneum—with as many as 22 layers—as opposed to Caucasian skin's 17 layers, on average. This suggests that darker-skinned individuals may have a denser stratum corneum, which could lead to an increase in breakouts due to trapped debris and sebum within the follicle.

TEWL, due to an impaired barrier function, is more common in Asian, Hispanic and African-American skin. Experts suggest that extreme TEWL can result in a disruption in the barrier function of the skin, leading to a reduction in the skin's ability to protect vital nerve endings. This could provide an explanation as to why higher Fitzpatrick skin types are often sensitive to topical stimulation. With an excessive amount of moisture loss, a compacted stratum corneum and an increase in sebaceous activity, acne lesions can worsen in clients with a higher Fitzpatrick skin type.

Although more conclusive information is needed, some studies have suggested that African-American and Hispanic skin

have higher amounts of sebaceous activity than those with lighter complexions. This could be due to larger oil glands. Regardless of the Fitzpatrick skin type, an overproduction of sebum can significantly increase the occurrence of acne lesions.

Melanocyte activity is a more obvious difference between ethnic groups; however, the number of melanocytes is consistent throughout all skin colors, no matter how dark or light. The distribution of melanosomes and their functionality is what makes all the difference. Those with darker skin have melanosomes filled with larger melanin granules that are dispersed more evenly across the basal layer. This makes for more active melanocytes that are prone to hyperpigmentation, especially post-inflammatory hyperpigmentation (PIH). Therefore, treatment selection for acne in those with darker skin types is absolutely crucial for overall success.

The acne pathway in skin of color

Clients with darker Fitzpatrick skin types are not necessarily more predisposed to acne than lighter Fitzpatrick skin types, but the lingering effects are often much more severe in darker skin. The formation of acne lesions, regardless of ethnicity, is due to a combination of increased keratinization within the follicle, increased sebum production, proliferation of *Propionibacterium acnes* (*P. acnes*) bacteria and inflammation. When *P. acnes* bacteria are able to proliferate, inflammation often follows. PIH generally results from the proliferation of bacteria and the inflammation that ensues. This complex combination of acne and PIH is what makes treating this condition in skin of color so challenging. Aggressive products often used to treat acne can worsen PIH; therefore, taking a progressive approach generally provides clients with the best possible results.

Acne does not necessarily afflict one ethnic group more than another, but the types of acne lesions seen in different ethnicities may vary. Research indicates that Grade IV acne, the most severe type consisting of cysts and nodules, is more pronounced in Caucasians and Latinos. African-American skin is more prone to comedonal acne that presents with an increased amount of inflammation not generally seen in lighter skin types. Those with a hereditary background comprised primarily of Asian or Middle Eastern ancestry tend to experience papular lesions, although the exact origin of their ancestry seems to affect the severity of the condition.

Customizing an effective treatment plan

Hereditary background must be taken into consideration when developing a customized treatment plan to overcome acne. No matter the skin color, the most effective treatment plans for acne include gentle exfoliation, the control of excess sebum production, and the minimization of inflammation and bacteria proliferation.

Exfoliation. Gentle exfoliation is important for the successful treatment of acne for two reasons. First, acne tends to be a sluggish skin condition due to the overproduction of sebum. This sebaceous material can act like glue, holding on to keratinocytes and keeping the normal cellular turnover cycle from shedding as it should. Second, clients with darker skin are predisposed to PIH because their melanocytes are more active and contain denser pigment granules. The key to overcoming hyperkeratolytic buildup is integrating ingredients to encourage cellular turnover without causing an inflammatory response.

- *Alpha hydroxy acids (AHAs).* These dissolve the desmosomes, or bonds, that act as intercellular glue holding the keratinocytes

together, allowing for exfoliation to take place. Lactic acid is especially effective when treating skin of color with acne, because it provides ancillary benefits, such as bacteria control, pigment-inhibition and hydration.

- *Salicylic acid (SA).* This beta hydroxy acid (BHA) is able to penetrate oil-filled follicles in order to dissolve excess sebum production. SA is also a strong anti-inflammatory and keratolytic. Its larger molecule size allows for slower absorption into the skin, making it a safer option when treating higher Fitzpatrick skin types.
- *Blended chemical peels.* Because of the combination of multiple ingredients, blended chemical peels are a preferred treatment option to help increase desquamation. These low-percentage acid blends allow multiple skin conditions to be treated at one time without increasing the risk of inflammation. Blended peels containing 2% hydroquinone along with lactic, kojic and L-ascorbic acids, will address acne lesions while also controlling the resultant PIH.

Controlling excess sebum production. This is another factor to consider when creating a well-rounded acne treatment plan. It is imperative to keep in mind that overdrying clients' skin, even if it is oily, will result in an overproduction of sebum. This will eventually lead to even more breakouts, as opposed to addressing the problem at hand. Integrating natural astringents that also act as moisturizers will avoid the potential for increased sebum production. In addition, there are several beneficial oils important for the treatment of acne due to their essential fatty acid (EFA) content. Sebaceous glands use EFAs as a normal component of sebum. Those suffering with acne have been found to have significantly low levels of EFA in their surface lipids; this decrease is thought to be one of the causes of excess sebum production. Adding beneficial oils to a comprehensive acne treatment plan can also assist in minimizing oil. Some of the most beneficial oils include the following.

- *Borage seed oil.* This is an excellent source of the omega-6 fatty acid, gamma linolenic acid (GLA). GLA is synthesized from linoleic acid, the most important EFA with potent calming action.
- *Grape seed oil.* Rich in polyphenols and proanthocyanidins, grape seed oil helps to balance oil. These powerful antioxidants improve circulation, assist in cell regeneration and strengthen capillary walls. Grape seed oil also acts as an astringent, making it an appropriate choice for acne-prone skin.
- *Jojoba oil.* Closely resembling human sebum, jojoba oil is easily absorbed by the skin, minimizing excess sebum production.

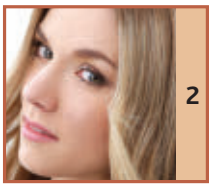
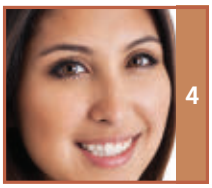
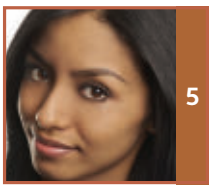
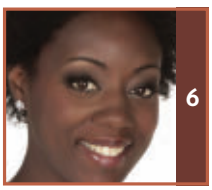
Minimizing inflammation and bacteria proliferation. Reducing the proliferation of *P. acnes* bacteria, and protecting the skin from inflammatory stimulants and UV rays will further address acne in skin of color. Using topical antibacterial and antimicrobial agents helps control the bacteria population. Topical oxygen sources, such as liquid benzoyl peroxide, quickly deliver oxygen to the follicle, killing the anaerobic bacteria.

It is well known that sun exposure can cause an inflammatory response in the skin, leading to an increase in acne lesions for some. Many of the ingredients used to fight acne can also make the skin more sensitive to sun, thereby increasing the risk of damage and PIH. Daily use of a lightweight, broad-spectrum sunscreen is imperative, no matter the client's ethnicity. Topical ingredients to combat UV damage should include, but are not limited to, the following.

- *Benzoyl peroxide.* This topical oxygen source is able to penetrate the follicle, killing *P. acnes* bacteria.

Fitzpatrick Skin Type Classification Scale

When treating a client with a laser or other light-based device, esthetic professionals and cosmetic laser technicians often use the Fitzpatrick Scale as a guide. The scale was developed by Thomas B. Fitzpatrick, a Harvard University dermatologist, in 1975. It has become the industry standard for determining which treatment technique or esthetic device is best for a client.

Skin Type	Skin Color	Reaction to Sun
 1	White; very fair, red or blond hair; blue eyes; freckles	Always burns, never tans
 2	White; fair, red or blond hair; blue, hazel or green eyes	Usually burns, tans with difficulty
 3	Cream white; fair with any eye or hair color; very common	Sometimes burns, gradually tans
 4	Brown; typical Mediterranean-Caucasian skin	Rarely burns, tans with ease
 5	Dark brown; Middle Eastern skin types	Very rarely burns, tans very easily
 6	Black	Never burns, tans very easily

- *Micronized zinc oxide.* An excellent broad-spectrum UV protection agent, micronized zinc oxide is also a powerful anti-inflammatory ingredient capable of inhibiting melanogenesis.
- *Licorice extract.* This ingredient has strong anti-inflammatory and antihistamine properties. Certain components of licorice also reduce sebum production; inhibit 5 alpha-reductase; and fight lipase, the enzyme produced by the acne bacteria that causes local irritation and inflammation. Licorice is also an effective melanogenesis-inhibitor, making it a multitasking acne-controlling ingredient.

Comprehensive treatment

Treating acne in skin of color can be a complex process; however, when a comprehensive treatment plan is put in place, results can be achieved safely and effectively. Gentle exfoliation, sebum and bacteria control, along with anti-inflammatory and UV-protecting ingredients can help clear acne and the resultant PIH without causing further damage to the delicate nature of higher Fitzpatrick skin types.

REFERENCES

1. SC Taylor, Overview of Skin of Color: Structure and Function, American Academy of Dermatology 66th Annual Meeting (Feb 2008)
2. *www.ncbi.nlm.nih.gov/pubmed/14717402* (Accessed Jun 19, 2014)

Jennifer Linder, MD, is a dermatologist and Mohs micrographic skin surgeon, serving as CSO for PCA Skin. She holds a clinical faculty position in the department of dermatology at the University of California, San Francisco; is a spokesperson for The Skin Cancer Foundation; and is a member of the American Academy of Dermatology (AAD), the American Society for Dermatologic Surgery (ASDS), and the American College of Mohs Micrographic Surgery and Cutaneous Oncology (ACMMSCO).