



TREATMENTS FOR THE GLOBAL GUEST

EXOLIATING SOLUTIONS

APPROXIMATELY 80 PERCENT OF the world's population is considered ethnic. According to the U.S. Census Bureau, the ethnic population is steadily increasing, and it is estimated that by the year 2050, 49.5 percent of all the inhabitants of the United States will be non-Caucasian. With this trend, ethnic groups are not only growing in size, but also have an increased buying power of more than \$1 trillion.

Given the most recent trends, clinicians and medical professionals who want to market to these groups must be prepared to provide realistic programs and understand the expectations of the global consumer. The priority is to begin with an assessment that helps evaluate the similarities as well as some of the differences surrounding skin color and its origin, the potential risk factors for each ethnic group, and the treatment modalities that accomplish optimal results.

Structural differences in darker skin tones

It is important to know the unique ways that darker skin tones differ from others when working with global skin types. Due to the melanin activity, there is a higher propensity for hyperpigmentation. The following is just an overview highlighting some of the significant differences.

Epidermis: The stratum corneum (SC), which is the principal barrier in preventing water loss, provides protection from outside environmental and bacterial influences. The cells of the SC are plate-like structures, approximately 0.2 to 0.4 mm or 1/1,000 of an inch thick. They are stacked in layers, the numbers of which vary between anatomical body sites and races. For example, various studies show the SC of black skin types consists of more cell layers when compared with Caucasians. These cell layers may be increased, but the thickness of the SC is the same in both races. There were 20 cell layers in black skin types as compared to 16 cell layers in comparable sites in white skin types, suggesting a more compact SC in black skin.

Another important factor when considering exfoliating darker skin is

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that the SC pH is lower in black skin compared to Caucasian skin. Studies showed that these skin types have less permeability to certain chemicals. Also, the greater corneocyte desquamation results in a higher transepidermal water loss (TEWL), thus leaving an impaired acid mantle with possible allergic skin conditions or sensitivity. The loss of the water content has a direct correlation to lower ceramide levels. The skin of Asians showed greater skin than any other race due to its higher ceramide and water content levels. The recovery of the skin barrier varied between skin types II, III and IV. Darker skin types had a faster barrier recovery and displayed a more resistant barrier than skin of lighter pigmentation. These differences are mainly related to the protective role of melanin present in races with darker skin. The initial intervention is to repair the acid mantle.

It is important to remember that the darker the skin and the larger the pigment granules are, the more likely it is that this skin type will present with post inflammatory hyperpigmentation (PIH) after an inflammatory event or skin trauma.

Understanding the reactive nature of melanocyte stimulation is crucial when considering chemical peeling. Darker skin types have increased tyrosinase activity, resulting in increased melanin content. The melanocyte cell located in the basal layer is a specialized dendritic cell. The dendrites or projections extend into the granulosum layer of darker skins. In Caucasian and lighter global skin types, the dendrites only extend to the spinosum layer.

To achieve skin color, the melanocyte produces melanosomes (pigment granules). These granules travel to the keratinocyte to be deposited over its nucleus. Because the pigment cells of darker skins are larger, they are distributed singularly. Pigment cells in white and lighter skins are distributed in a cluster surrounded by a membrane.

It is important to remember that the darker the skin and the larger the pigment granules are, the more likely it is that this skin type will present with post inflammatory hyperpigmentation (PIH) after an inflammatory event or skin trauma. As a side note, with racial blending, skin types V and VI may have hidden traits that cause sunburn and potential dyschromias.

Dermis

The connective tissues in the dermis serve as a support structure for the skin. The fibroblasts, housed in the dermis, are larger, numerous and very active in darker skins. These active fibroblasts produce more collagen bundles, giving additional support to the epidermis. With this extra support, treatments to produce more collagen are not a primary concern. Elastin fibers are sparse throughout the dermis, but there is an increase in dilated blood vessels, nerve endings and sweat glands.

Common global skin conditions

There are common skin conditions in skin types III to VI, such as disorders of pigmentation, acne and melasma, but some conditions are more prevalent in a certain ethnic group.

African Americans/Black skin

- **"Ashy," dehydrated skin:** This is a problem for clients of all skin colors, but may be especially distressing to people with darker skin tones. It is uncomfortable and easily noticeable in people with darker skin because of its grayish, "ashy" appearance. The skin does not have enough water; heaters, dry climates, soaps, detergents and skin disorders can deplete the oil and water in the skin.
- **Uneven skin tones:** Sections of the face can be lighter or darker than the normal skin tone. The cause is generally from sun exposure, but hormones or pigmentation disorders may also be a factor.
- **Discoloration or dark spots:** Caused by increased production of melanin. Probable causes include ultraviolet exposure, inflammation, hormonal disorder, trauma and medication.
- **Hyperkeratosis:** Increased buildup of dead cell layers
- **Keloids:** A raised formation of fibrous scar tissue caused by excessive tissue repair in response to trauma or surgical incision.
- **Pseudofolliculitis barbae:** A medical term for persistent inflammation caused by shaving.
- **Discoïd Lupus Erythematosus (DLE):** An autoimmune disease that presents as a chronic skin condition of sores, with inflammation and scarring favoring the face, ears and scalp; at times appearing on other body areas as well. These lesions develop as red, inflamed patches with a scaling, crusty appearance. The center areas may appear lighter in color, with a rim darker than the unaffected skin.
- **Acne cosmetica:** A term referring to acne that is caused by or made worse by hair products that are oily, greasy or waxy. The use of after-shampoo conditioners and shampoo-conditioner combination products may also cause this anomaly.
- **Lichenification (thickened pigmented patches):** "Lichenified" means that the skin has become thickened and leathery. This often results from continuous rubbing or scratching on an area of skin. Chronic irritation due to conditions such as eczema can cause lichenified skin.
- **Dermatosis papulosa nigra:** A skin disorder similar to seborrheic keratosis, characterized by dark-brown papular lesions on the face and upper body.

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Hispanic/Latinos

- **Excessive sebum production**
- **Easy scarring**
- **Melasma:** A patchy brown or dark brown skin discoloration that usually occurs on a woman's face. Also known as chloasma or the "mask of pregnancy" when present in pregnant women, it is a tan or dark facial skin discoloration. Although it can affect anyone, melasma is particularly common in women, especially pregnant women and those taking oral contraceptives or hormone replacement therapy medications.
- **Hypertrophic scarring:** Takes the form of a raised lump on the skin, but does not grow beyond the boundaries of the original wound. This often improves in appearance after a few years.
- **Atopic dermatitis:** Also known as eczema, this is a dry, itchy, hypersensitive skin disorder affecting many people. The client or some of their family members may have other hypersensitive conditions such as asthma or hay fever. The rash may appear red, wet and weepy or dry, thick and scaly. Scratching often aggravates the rash. The skin thickens and becomes darker. It is a chronic condition. It can affect any part of the body, particularly the elbow bends, backs of the knees and neck.

Asians

- **Delicate skin, with a porcelain appearance.**
- **High degree of sensitivities to:**
 - Fragrances
 - Preservatives
 - Harsh chemicals
 - Mechanical stimulation
- **Mature skin**
- **Solar lentigos:** Blemishes on the skin associated with aging and exposure to ultraviolet radiation from the sun. They range in color from light brown to red or black and are located in areas most often exposed to the sun, particularly the hands, face, shoulders, arms, forehead and the scalp (if bald).

South Asians

- **Dark circles**
- **A combination of heredity and genetics**

Exfoliating global skins

The skin structure and function may vary for each global skin type. The priority is to design a customized skin management program, beginning with a skin analysis that includes a written health evaluation form filled out by the client. The confidential skin care analysis should determine if the client is prone to scarring, keloids, hyperpigmentation, ingrown hairs, etc.

This extensive evaluation should address whether chemical or manual exfoliation treatments, cosmetic surgeries, laser treatments or injectables have been performed.

Clients on photosensitizing drugs or suffering from photosensitive disorders are at high risk for PIH. Any past history of a response to trauma will assist in evaluating an expectant outcome of peels. Examination of the face, arms and legs may reveal dark spots from low-grade trauma from acne, insect bites or friction sites such as the elbows.

Before performing a chemical peel, it is the clinician's responsibility to understand the characteristics of each product and peeling agent, including the mechanism of action, depth of penetration, method of application and process of healing.

Since racial blending has dramatically increased, identifying the client's genetic and ancestral background is imperative. A family history of a global skin tone IV to VI will caution you to perform conservative treatments that gradually improve the condition while avoiding the risks that accompany incorrect or overly aggressive treatment choices.

Another key component is to ensure that the client is sun protection compliant. Darker skinned clients have the false belief that their darker complexion protects them from the sun, and that sunscreen is not intended for their use. Although research shows that very dark, black skin has a natural SPF of about 13 and filters twice as much ultraviolet radiation, daily use of an SPF 15 to 30 should be advised.

It is important to make it clear to the client what their expectations should be and their possible risk factors. Once the client has gathered all the appropriate information from the client, they can then provide a realistic program that includes home care products and in-clinic corrective treatments.

The next step is to repair the acid mantle. This can be achieved by placing the client on a home care regimen two to four weeks prior to any exfoliating service. This regimen should include hydrating and occlusive ingredients for dry skin and hydrating products for oily skin.

Before performing a chemical peel, it is the clinician's responsibility to understand the characteristics of each product and peeling agent, including the mechanism of action, depth of penetration, method of application and process of healing. This understanding increases the efficacy of the treatment without inducing possible risk factors, especially PIH and scarring.

Choosing an exfoliating agent

Chemical peeling agents create a chemical interaction with the skin and may cause a varying degree of irritation, triggering an immune response. The superficial removal of the upper layers of the epidermis activates a wound-healing response.

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The alternative to chemical peels is enzymes, which are the safest method to perform on darker skin tones.

The pH is very important when using acids on darker skins. The lower the pH, the stronger the acid, and the higher the incident of PIH. A conservative approach using acids between 2.5 and 3 will lessen the risk factors associated with these skin types.

Enzymes

The alternative to chemical peels is enzymes, which are the safest method to perform on darker skin tones. Enzymes are found in all living things. They are vital in maintaining normal cellular activity, as well as assisting in the cell's repair process. Enzymes act as a catalyst to enhance the natural enzymes of the skin. Once the process of the breaking down and dissolving of dead skin cells is achieved, the skin becomes healthier, with the skin's pH being closer to its normal level of 4.5 to 5.5. The most common enzymes used by clinicians are papain and bromelain, found in papaya and pineapple, respectively.

INDICATIONS FOR ENZYME USE

- Follicular impactions
- Prep for application of another exfoliating agent
- Acneic skins with pustules and macules on the face or back
- Sensitive skins
- Keratin buildup
- Helps speed up the skin's natural renewal process

Alpha hydroxy acids (AHAs)

Alpha hydroxy acids are naturally occurring compounds derived from food sources such as sugar, milk and fruit. These peels are well-tolerated by global skin types III to VI. Alpha hydroxy acids are water-soluble and work best on dry skin types that need hydration. These agents have to be neutralized.

Lactic acid

This agent, a source from fermented milk, contains natural moisturizing factors and regulates the pH of the skin. It supports the realignment of the bi-layers and promotes dispersion of melanin granules. Because the lactic acid molecule is larger than its cousin, glycolic acid, there is less penetration. This helps to achieve a gentler exfoliating response.

INDICATIONS FOR LACTIC ACID USE

- Hyperkeratinization
- Hydrophilic
- Suitable for compromised skins

Glycolic acid

Glycolic acid improves the appearance of dull, ashy skin types by removing the hyperkeratinized cells known to afflict darker skins. Removal of these cells promotes an improved barrier function, helping water-binding agents (common product ingredients) to become more permeable.

INDICATIONS FOR GLYCOLIC ACID USE

- Hyperkeratinization
- Caution should be used when applying to lipid-dry skins.

Pyruvic acid

The effect of pyruvic acid depends on the concentration used. Lower concentrations of about 25 to 30 percent are considered to be superficial peeling agents. This exfoliant is found in honey, vinegar and fermented fruit. It helps improve the skin's texture, moisturizes, lightens pigmentation and provides antiseptic properties.

INDICATIONS FOR USE OF PYRUVIC ACID

- Diminishes cohesion of corneocytes
- Comedolytic
- Prevents thickening of horny layer
- Antiseptic

Mandelic acid

Extracted from bitter almonds, this AHA is less of an irritant. It helps to repair the stratum corneum by reducing thickness and absorbs at a slower rate, preventing melanocyte stimulation. Mandelic acid has antibacterial properties benefiting adult acne and oily skins.

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INDICATIONS FOR USE OF MANDELIC ACID

- Acne and problematic skins
- Anti-inflammatory
- Use for post-laser resurfacing to prevent gram-negative bacterial infections
- Improves appearance of hyperpigmentation

Beta hydroxy acid: This acid is self-neutralizing and is not meant to be removed.

Salicylic acid

Derived from the willow bark plant, this acid is known as a keratolytic agent, having anti-inflammatory, antiseptic and antibacterial properties. Beta hydroxy acids are lipid soluble, working best on oily skins. Global skin tones III to VI respond well to a beta hydroxy acid. A 20- to 30-percent acid in an ethanol base with a pH of 2.5 to 3 has proven to be effective when treating acne vulgaris, razor bumps and ingrown hairs in darker skins. Higher concentrations with a low pH can facilitate erythema, pruritus and burning sensations, resulting in possible PIH and scarring.

INDICATIONS FOR USE OF SALICYLIC ACID

- Acne vulgaris
- Comedonal impactions
- Oily skins
- Melasma
- Razor bumps
- Ingrown hairs

Advanced peeling agents

Modified Jessner's/Jessner's solutions: These combination solutions are therapeutic agents that minimize excessive keratinized layers of the stratum corneum. They address the textural and pigmentary changes often seen in global skin tones III to VI. When used for excessive buildup, the sebaceous follicular debris is easily removed and beneficial ingredients penetrate deeper into the skin's layers.

The Jessner's solution has the resorcinol component. Each ingredient of equal percentages (14 percent) has its own distinct purpose. The salicylic helps to remove the intercellular bond and aids in the detachment of the dead cells. The lactic assists in disengaging and sloughing off the dead cells while maintaining the skin's pH. The resorcinol, a by-product of phenol, assists in deeper penetration of other ingredients.

The Modified Jessner's solution is non-resorcinol formula with equal percentages (14 percent) of lactic, salicylic and either citric or glycolic acid. With the absence of resorcinol, the penetration of this product is greatly diminished.

To achieve optimum results, global skin tones III to VI should be prepped with a pre-peel home care regimen prior to the application of any Jessner's solution. This regimen should consist of a glycolic-based cleanser, toner and possibly a moisturizing cream. Most importantly, a tyrosinase inhibitor is required to suppress melanin. Lastly, a physical sunscreen containing zinc oxide or titanium dioxide is required. These products are to be used for four to eight weeks, depending on the skin's level of lightness or darkness.

Alpha and beta hydroxy acids deliver predictable results. They work best in a series that can be performed weekly on clients with acute conditions such as dark spots and discolorations, acne vulgaris, melasma, razor bumps and ingrown hairs.

Professional intervention treatments can be administered weekly or every other week. A post-peeling kit or products should go home with the client after application of the non-resorcinol or resorcinol Jessner's. These products should consist of a petrolatum-based balm, nonacid cleanser, toner, moisturizer and physical sunscreen that will reflect the ultraviolet rays. A chemical peeling treatment should not be had within one week prior to this peel.

Results-oriented care

Chemical peeling agents are well-tolerated by all skin types, including skin of color. Alpha and beta hydroxy acids deliver predictable results. They work best as a series of treatments that can be performed weekly on clients with acute conditions such as dark spots and discolorations, acne vulgaris, melasma, razor bumps and ingrown hairs.

Layering techniques using the non-resorcinol and then the resorcinol Jessner's can cause heavier desquamation of the epidermal layers. This process can take up to 7 days, with light flaking subsiding in 10 days.

It is highly recommended that the clinician seek professional training prior to administering these solutions on global skin types III to VI. In addition, all chemical peeling agents require a patch test prior to use. ■



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