



# GLOBAL SKIN AND SKIN CANCER

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**THE WORLD IS MADE UP OF DIVERSE POPULATIONS,** with 80 percent of the inhabitants being non-Caucasian. These inhabitants in the U.S. have migrated away from their country of origin into a more racially blended society. The terms of race and ethnicity are poorly defined or understood, even though they are used interchangeably. It is more of a method of classifying diverse populations into socially and politically defined categories. Race is classified as more of a biological phenomenon, which includes one's skin color, skin tone, eye and hair color, as well as a tendency toward developing certain diseases. Ethnicity identifies individuals and populations on the basis of shared social variables such as religion, language, diet and customs.

## Skin color

The most obvious physical feature anyone has is their skin color. Regardless of one's skin color and geographic location, the purpose, function and biological requirement of cells remains similar in all individuals. However, there are some differences between race groups and origins with evolving genetic adaptive characteristics unique to each.

- The closer one originates from locations in the proximity of the equator, the darker their skin, with the skin color adapting accordingly. Populations living in the colder latitudes north and south of the equator are lighter in skin color.

BY PAMELA SPRINGER

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- The skin serves as a protective envelope for our body's organs. One of its most important features is the built-in UV exposure-regulating cell called a melanocyte. It is responsible for producing a pigment called melanin, a polymer that shields important cellular components within the dermal layers from overexposure to ultraviolet radiation.

## The red head gene: MC1R

Recent scientific research has uncovered important findings regarding genetic factors that increase the risk for cancer in very fair skin types. The differences in skin color or pigment type are mostly due to the melanocortin-1 receptor (MC1R) gene. This receptor is located on the surface of the melanocyte and provides instructions for making a protein called melanocortin 1, which controls the type of melanin that is produced. When activated, melanocortin 1 triggers a cascade of chemical reactions inside the melanocytes to stimulate the making of the darker pigment, eumelanin. In the event that the receptor is not activated or is blocked, pheomelanin is manufactured instead of eumelanin. Pheomelanin (yellow-red pigment) produces more free radicals, and can worsen the effects of UV exposure.

Each person has two copies of the MC1R gene—one from each parent. This gene comes in two forms, a standard form or a variant (mutated). Some variant forms are responsible for producing more pheomelanin, resulting in the fair skin, freckles and red hair. Fair skin is more susceptible to sunburn and oxidative stress. Additionally, these individuals do not tan well and prove to be at higher risk for melanomas. Most importantly, this risk factor surrounding the MC1R gene means that there is a propensity for inflammation and reaction during skin treatments.

Caution should be taken when analyzing global skin tones because they may possess this hidden gene, even if the skin color appears dark. Doing a thorough assessment of their skin history, including their cultural inheritance, can uncover clues regarding potential skin responses.

## Skin cancer in skin of color

There is overwhelming evidence that UV radiation is carcinogenic. Overexposure to ultraviolet radiation, including the earth's atmosphere, is certainly a determining factor that leads to the potential for skin cancer. Studies show that the incidence of skin cancer has increased significantly during the last decade. Even though skin cancer is considered the most common of all carcinomas, most of the information reported comes from studies primarily conducted on Caucasian skin types. Reports involving skin of color are rare because there is a false belief that skin of color is exempt from the dangers of UV radiation due to the skin's melanin enriched content. This false sense of security has led to late detections or

misdiagnoses, causing a lower survival rate. When compared to Caucasian skin types, people of African, Asian, Hispanic and Native American descent have a higher morbidity and mortality rate from squamous cell carcinomas and melanoma skin. These cutaneous lesions tend to develop differently in skin of color, and reports suggest they become more aggressive. According

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For Asians, Hawaiians, Native Americans, African Americans and others of African descent, melanoma appears in the mouth, palms of the hands, soles of the feet and under the nails.

to the Skin Cancer Foundation, the five-year survival rate of African Americans with melanoma is 59 percent, compared to 85 percent in Caucasians. Among Latinos, the incidence of melanoma increased by 32.4 percent between 1992 and 2005.

The most common forms of skin cancers are basal cell carcinoma, squamous cell carcinoma and melanoma.

## Basal cell carcinoma

- Most common in Caucasians, Hispanics, Chinese and Japanese Asians.
- Also common in Africans, Americans and Asian Indians.
- 89 percent of basal carcinoma on skin of color occurs on the head or neck.
- There is a higher incidence among darker-skinned populations living in sunnier climates (i.e., Hispanics residing in New Mexico and Arizona).

## Squamous cell carcinoma

- Most common among African Americans and Asian Indians.
- Second most common among Hispanics and Chinese/Japanese Asians.
- Among African Americans and native Africans, SCC occurs mainly on the legs and anogenital regions.
- Among people of African descent, scarring or chronic inflammation (discoid lupus, burns, scars and non-healing skin ulcerations, radiation therapy and physical or thermal trauma) has a higher tendency to lead to metastasis and death.

*continues*



## Melanoma in global skin

Malignant melanoma is the most dangerous and deadly form of skin cancer in people of color.

- For Asians, Hawaiians, Native Americans, African Americans and others of African descent, it appears in the mouth, palms of the hands, soles of the feet and under the nails.
- In fair-skinned Hispanics, it appears on the trunk and legs.
- In dark-skinned Hispanics, melanoma appears on the feet.
- Other reported risk factors include albinism, burn scars, radiation therapy, trauma, immunosuppression and pre-existing moles (especially on the palms/soles of feet and mouth).

## Acral lentiginous

Acral lentiginous is one of the most common forms of melanoma in people with dark skin, especially Asians and African-Americans.

- Tends not to affect Caucasians.
- Usually seen as a black or brown discoloration on the palms of hands and feet or under the surface of nails. It is one of the least diagnosed conditions because of its odd location.
- Acral lentiginous spreads superficially before tumors begin penetrating deeper organs.

Due to delayed diagnoses, melanoma is frequently fatal for African Americans, Latinos and Asians.

Because research is limited, many health care professionals are not armed with enough information to educate their patients. Estheticians are not allowed to diagnose, but they should have a referral system of physicians who specialize in a variety of procedures. If your client has an ethnic background and you see an unusual lesion that you suspect may be an indicator of something, refer them to a dermatologist who specializes in skin cancer, preferably one who is educated in ethnic dermatology. ■

**Pamela Springer** is a licensed educator, speaker and author, and conducts monthly *Don't Be Afraid of the Dark* webinars on skin management programs for darker skins. She is the product developer for Global Skin Solutions, and founder of The Skin & Makeup Institute of Arizona and the Academy of Advanced Aesthetics and Permanent Cosmetics. Springer volunteers her time as the director of National Aesthetic Spa Network for Arizona. She can be reached at [info@pamelaspringer.com](mailto:info@pamelaspringer.com).



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