Although skin cancer is less prevalent in people of color than in Caucasians, skin cancer does indeed occur in this population. In fact, skin cancer in people of color often presents at a more advanced stage, and thus prognosis tends to be worse. A number of factors may contribute to increased morbidity and mortality in non-white patients with skin cancer. These range from socioeconomic elements, such as access to care, to a general lack of awareness about skin cancer as a significant health threat for patients of color. However, the broader lack of ability to identify skin cancers on the part of patients is mirrored by a similar lack of ability among practitioners to diagnose skin cancer, due in part to atypical presentation of both non-melanoma skin cancers (NMSC) and malignant melanoma. Also contributing to the general lack of awareness regarding skin cancer in people of color is that there are few public health initiatives for education, which no doubt plays a role in patients being unaware of possible preventive measures.

WHAT WE SHOULD KNOW ABOUT SKIN CANCER IN PATIENTS OF COLOR

Skin cancer often presents differently in patients of color. Certain skin cancers that are non-pigmented in whites are pigmented in patients of color, which mandates increased index of suspicion when examining individuals of color. In terms of non-melanoma skin cancer, basal cell carcinoma (BCC) is the most common skin cancer in Hispanics, Chinese, and Japanese Asians, and it is most likely to occur on the head and neck in patients of color due to sun exposure. On the other hand, squamous cell carcinoma (SCC) is the most common skin cancer in African Americans and Asian Indians, occurring most often in sites of chronic inflammation or scarring. Melanoma in patients of color also presents somewhat differently than in white individuals. Melanoma is the third most common type of skin cancer among all racial groups. Recent findings have indicated that the five-year survival rate for African Americans is 78 percent, as compared to 92 percent for whites. The same study found that incidence of melanoma is increasing in Hispanics of Puerto Rican and Mexican descent.

While the role of ultraviolet (UV) light in melanoma in Caucasian patients is more definitive, it is less clear for patients of color. The reason for this is that the frequent location of melanoma in patients of color is on non-sun-exposed sites. This phenomenon was analyzed in a 2004 study, in which authors examined age-adjusted, race/ethnicity- and sex-specific incidence rates of melanoma from similar time periods, obtained from six cancer registries. To examine the relationship between invasive malignant melanoma and UV radiation exposure in Hispanics and blacks in the US, the investigators correlated incidence rates of melanoma with the annual mean UV index and the latitude of residency. They found that, for both Hispanics and blacks, the incidence of melanoma was positively associated with the UV index and negatively associated with the latitude of residency. In addition, the results suggested a statistically significant correlation between melanoma and the UV index and latitude in black males.

The study was unable to examine the role of UVR exposure, specifically in the development of acral lentiginous melanoma, as incidence rates by melanoma subtype were not available. Nonetheless, the study concluded that Hispanics and African Americans have a significantly lower incidence of melanoma.
In recent years, national data has demonstrated increasing vitamin D insufficiency among the general population, particularly in people of color. Racial and ethnic differences in vitamin D levels may have important implications for known health disparities, since black and (to a lesser extent) Hispanic Americans have markedly higher prevalence of vitamin D insufficiency and higher incidence and worse outcomes for cardiovascular disease, certain cancers, diabetes mellitus, and renal disease, all of which have been linked to vitamin D insufficiency.

In a 2006 study by Giovannucci, et al., incremental increase of serum 25(OH)D by 25nmol/L was found to be associated with a 45 percent reduction in digestive system cancer mortality, a 29 percent decrease in all cancer mortality, and a 17 percent reduction in total cancer incidence. Black men were at a higher risk of total cancer incidence and mortality than whites. A 2011 meta-analysis by Chung, et al. reviewed randomized, controlled trials and observational studies reporting incidence of death from cancer and fracture outcomes. Analysis of association between cancer and vitamin D status in 28 observational trials showed an increased risk for total cancer mortality among men with higher baseline vitamin D concentrations, but not among women. When different cancer types were examined individually, most studies found that higher vitamin D levels were associated with lower risk for colorectal cancer. No relationships between vitamin D and breast or prostate cancer were identified.

To determine if African Americans are indeed vitamin D deficient, we must examine how physiologically normal vitamin D levels are calculated. Vitamin D levels >30ng/ml are commonly considered normal levels. This is based upon levels at which 25(OH)D maximally suppresses parathyroid hormone (PTH). Using segmented regression, Wright, et al. determined that iPTH appeared to stabilize at a lower 25(OH)D level in African Americans (approximately 20ng/ml) as compared to Caucasians (approximately 30ng/ml). This suggests that optimal vitamin D levels in Caucasians may not be applicable to African Americans. Therefore, one must consider the possibility that normal levels vary between Caucasians and African Americans with levels as low as 20nm/mg possibly representing normal levels for these individuals but further investigation is needed.

There are several genes that control the synthesis, transport, circulation, and degradation of vitamin D. A study by Signorello, et al. found statistically significant associations with three SNPs (rs2298849 and rs2282679 in GC gene, and rs10877012 in the CYP27B1 gene) and vitamin D levels but only in African Americans. This raises the possibility that currently defined insufficient vitamin D levels may be hereditary and perhaps may not reflect insufficient levels after all.

It is difficult to arrive at recommendations for daily vitamin D supplementation for this population. Guidelines from the Institute of Medicine suggest supplementation levels between 200 IU and 600 IU. The 2005 Dietary Guidelines from the United States Department of Agriculture (USDA) and the American Academy of Dermatology (AAD) call for a recommended dietary intake of 1000 IU for groups at risk for vitamin D deficiency, including dark-skinned individuals. Until additional data becomes available, it is prudent to support the recommendations of the USDA and AAD.


than whites, while African Americans have the lowest rates of melanoma. These results suggest that UV exposure may have a larger than expected role in the development of melanoma in darker pigmented populations.

**SKIN CANCER AND PHOTOPROTECTION IN PATIENTS OF COLOR**

Given the atypical presentation of many skin cancers in nonwhite populations as well as the importance of prevention, photoprotection in individuals of color is essential. Several studies have revealed photoprotection trends in non-white populations that are worth noting. A 2009 survey of more than 4,000 elementary school students in Florida found that overall students’ knowledge of skin cancer and sun protection were low, with less than 40 percent of questions being answered correctly, on average. Rates of sunscreen application have also been shown to be low. The same study found that 51 percent of non-Hispanic white students used a sunscreen with SPF of greater than 15 “most of the time or always,” as compared with 35 percent of Hispanics and 13 percent of non-Hispanic black students.

Numbers from other published studies are equally disconcerting. One study found that 74 percent of African Americans never used sunscreen, while a poll of African Americans in California found that 62 percent of more than 2,000 respondents never used sunscreen.

These data underscore an unsettling reality about perceptions of skin cancer in patients of color. One study surveying 100 African Americans, Asians, or Hispanics found that 65 percent of respondents believe that they were not at risk for
skin cancer, while 35 percent believe that they had some risk.8 Findings from another survey of 1,246 whites, blacks, and Hispanics indicated that blacks perceived the likelihood of developing skin cancer in the future as low.9

RECOMMENDATIONS FOR PHYSICIANS AND THE PUBLIC

Given the alarming lack of awareness and education about skin cancer in individuals of color, the important question facing clinicians is whether we can make a difference in the lives of our patients of color in regards to skin cancer. If so, what do we need to do as practitioners to make that difference?

The American Academy of Dermatology (AAD) convened the Photoprotection for Skin of Color Work Group to answer these questions. The group arrived at recommendations for patients of color for the prevention and early detection of skin cancer and had several recommendations for physicians. The group recommends that clinicians educate patients of color about being at risk for developing skin cancer and thus encourage sun protective behaviors. Physicians should also recommend that patients perform monthly self-skin exams, avoid tanning salons, and obtain a regular skin exam by a dermatologist.

The work group also recommends evaluating and biopsying changing pigmented lesions, non-healing ulcers, hyperkeratotic or poorly healing lesions in chronic DLE lesions or in scars, as well as atypical appearing keloidal plaques or those with growth or development with no history of trauma.

When it comes to performing skin cancer examinations, the group recommends including areas infrequently exposed to the sun, such as palms and soles. This means asking patients to remove their shoes and socks for the exam. Also, it is important to monitor changes in pigmented lesions, including those of mucousal, palmar, plantar, interdigital space, and subungual surfaces. The AAD guidelines also recommend giving advice for vitamin D supplementation as indicated (see sidebar on previous page).

As for general public education campaigns, the AAD work group suggests that such campaigns should promote self-skin examination, stress the importance of photoprotection, stress avoidance of tanning bed use, and emphasize early detection and treatment. Recent findings support the potential for educational intervention to improve photoprotection practice.

In one study, 93 patients of color received instruction on the ABCDEs of melanoma and skin self-examination, 21 percent of which reported a skin phenotype with at least “sometimes burning” and 32 percent had at least one blistering sunburn.10 After three months, 71 of the 93 patients returned and had improved knowledge of melanoma as a skin cancer, including warning signs. Moreover, the perception of being at risk to develop malignant melanoma significantly increased after the intervention and was retained at three months.10

The authors noted that performance of monthly self-skin checks dramatically improved after intervention. In addition, monthly checking of the skin, especially acral sites (palms, soles, periungual), increased significantly immediately after the intervention. The authors also noted that people of color benefit from specific physician recommendations explaining their risk for developing melanoma and which anatomic sites to check. And since acral lentiginous melanoma among ethnic minorities tends to present in non-sun-exposed but visible areas (particularly volar and subungal sites), the authors suggest that skin self-examination educational materials for minority populations incorporate these anatomic sites.

EDUCATION IS PARAMOUNT

As data have further elucidated skin cancer in skin of color, education and careful diagnostic consideration has become even more essential. Whether actively becoming involved in public awareness campaigns or simply taking initiative to educate patients of color in their own practices, clinicians play an important role in the efforts to curb skin cancer among patients of color, as well as all skin types.

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IDEAL SUNSCREEN PRODUCTS FOR SKIN OF COLOR

Finding the right sunscreen for those with darker skin types has in the past proven to be a challenge. Many sunscreens leave a film on pigmented skin, discouraging patients of color from using sunscreens. Fortunately, sunscreen manufacturers have addressed these challenges, resulting in more aesthetically pleasing products that tend to be better accepted by people of color. Some of these include:

- Anthelios SPF 60 Ultra Light Sunscreen
- Aveeno Positively Radiant SPF 30
- CeraVe AM SPF 30
- Cetaphil Facial Lotion 30
- Neutrogena UltraSheer SPF 55
- L’Oreal Sublime Sun Sheer Protect Sunscreen Oil Spray, SPF 50+