

## RESEARCH LETTERS

### Sunscreen Use: Non-Hispanic Blacks Compared With Other Racial and/or Ethnic Groups

Although up to 14% of non-Hispanic blacks (NHBs) experience sunburns, they rarely use sunscreen.<sup>1,2</sup> Whites are at least twice as likely to wear sunscreen than NHBs.<sup>3,4</sup> Hispanics are more likely to wear sunscreen than NHBs, even though many Hispanics have a darker skin phototype than some NHBs.<sup>5-7</sup> Given these differences, we sought to determine factors influencing sunscreen use in NHBs compared with other racial and ethnic groups.

**Methods.** Data from the dermatology section of the 2003-2006 National Health and Nutrition Examination Survey (NHANES)<sup>6</sup> were examined. The 2 following questions were analyzed: (1) If after several months of not being in the sun you then went out in the sun without sunscreen or protective clothing for half an hour, which of the following would happen to your skin? and (2) When you go outside on a very sunny day for more than 1 hour, how often do you use sunscreen?<sup>6</sup> Sex, ethnicity and/or race, age, annual income, and education were evaluated for their association with the dermatology survey answers.

Weighted estimates of responses to each question and the subject characteristics were created using survey frequency and means procedures. Survey logistic regression procedures, assuming proportional odds, were fit to each question. When the proportional odds assumption was questionable, inferences were compared against those of the generalized logit model. A multivariable model for sunscreen use was fit using all univariable predictors. Interactions between each variable and ethnicity and/or race were evaluated. Where interactions were significant, subgroup analyses were performed comparing ethnicities and/or races within each level of the other variable included in the model. Analyses were performed using SAS software, version 9 (SAS Institute Inc, Cary, North Carolina).

**Results.** Participants' demographic characteristics and answers to survey questions are summarized in **Table 1**. The **Figure** shows skin reactivity to the sun based on ethnicity and/or race. Multivariable analysis revealed that ethnicity and/or race, sex, income, education, and skin reactivity affected sunscreen use (**Table 2**).

Further analysis showed that NHBs who reported severe sunburns were 7 times less likely to use sunscreen than were non-Hispanic whites who reported severe sunburns. Among participants who had severe sunburns, there was no difference in sunscreen use for the other ethnic groups (Mexican American, other Hispanic, and other race) compared with non-Hispanic whites.

**Comments.** In this study, NHB participants had a similar relative likelihood of not wearing sunscreen even if

Table 1. Characteristics of Sample

Characteristic	Raw Frequency, No. (Weighted %)
Ethnicity and/or race	
Mexican American	1377 (9)
Other Hispanic	251 (4)
Non-Hispanic white	3071 (69)
Non-Hispanic black	1525 (12)
Other race, including multiracial	325 (6)
<b>Total</b>	<b>6549 (100)</b>
Sex	
Male	3082 (49)
Female	3467 (51)
<b>Total</b>	<b>6549 (100)</b>
Age, y	
20-29	1977 (25)
30-39	1688 (25)
40-49	1631 (28)
50-59	1253 (22)
<b>Total</b>	<b>6549 (100)</b>
Annual income, \$US	
<45 000	3456 (46)
>45 000	2829 (54)
<b>Total</b>	<b>6285 (100)</b>
Education	
<High school	1545 (16)
High school or GED	1574 (24)
>High school	3425 (60)
<b>Total</b>	<b>6544 (100)</b>
Skin reaction to sun	
Severe sunburn blisters	149 (3)
Severe sunburn peeling	522 (10)
Mildly burned tanning	1612 (31)
Darker without sunburn	1435 (20)
Nothing in half an hour	2761 (36)
<b>Total</b>	<b>6522 (100)</b>
Use sunscreen	
Always	579 (11)
Most of the time	745 (14)
Sometimes	1167 (22)
Rarely	792 (14)
Never	3177 (39)
<b>Total</b>	<b>6460 (100)</b>

Abbreviation: GED indicates general educational development.

they have a propensity to severely sunburn, a finding comparable to other studies.<sup>1,2</sup> Also consistent with other studies is the positive influence on sunscreen use of female sex, higher income, and higher education.<sup>4</sup> The lack of sunscreen use by NHBs, including those who sunburn, may be explained by underlying cultural differences as well as limited knowledge about skin cancer.<sup>7</sup> One survey found 70% of NHBs, 14% of whom experienced burns, were not aware that NHBs can develop skin cancer.<sup>2</sup> Another survey of NHBs found 43% had the propensity to sunburn, yet only 35% felt that they had a risk to develop skin cancer.<sup>8</sup> Acknowledgment of skin cancer risk did not influence their sun protection behavior.<sup>8</sup>

The lack of sunscreen use by NHBs may have stemmed from rare familial and community experiences of skin can-

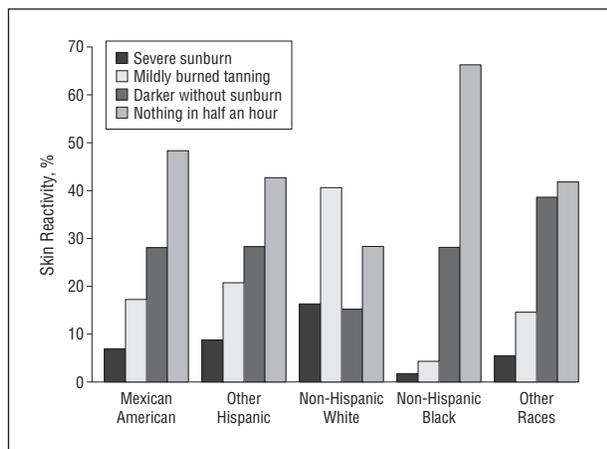


Figure. Weighted percentages of skin reactivity by ethnicity and/or race.

Table 2. Multivariable Proportional Odds for Sunscreen Use

Comparison	Odds Ratio (95% Confidence Interval)
<b>Ethnicity and/or race</b>	
Mexican American vs non-Hispanic white	0.75 (0.64-0.88)
Other Hispanic vs non-Hispanic white	0.67 (0.47-0.97)
Non-Hispanic black vs non-Hispanic white	0.14 (0.12-0.17)
Other race, including multiracial, vs non-Hispanic white	0.72 (0.52-0.98)
<b>Sex</b>	
Female vs Male	2.66 (2.31-3.06)
<b>Age, y</b>	
30-39 vs 20-29	1.03 (0.86-1.24)
40-49 vs 20-29	1.11 (0.94-1.30)
50-59 vs 20-29	0.88 (0.72-1.09)
<b>Annual family income \$US</b>	
≥45 000 vs <\$45 000	1.84 (1.60-2.12)
<b>Education</b>	
High school vs <high school	1.87 (1.41-2.47)
>High school vs <high school	4.71 (3.72-5.97)
<b>Skin reaction to sun</b>	
Severe sunburn with blisters or peeling vs nothing	2.77 (2.42-3.18)
Mildly burned vs nothing	2.03 (1.80-2.30)
Darker without sunburn vs nothing	1.29 (1.09-1.54)

cer and lack of dialogue within families and with health care providers.<sup>7</sup> Prior national dermatology screening and education programs only included 1.2% of NHBs, thus limiting interaction with health care providers.<sup>9</sup> In addition, mainstream magazines with predominantly white readership had 5 times as many sun protection ads as magazines oriented toward NHBs.<sup>10</sup> Future education of NHBs on skin cancer risk and sunscreen use is warranted, especially for the group that experiences sunburns.

Pamela Summers, MD  
 James Bena, MS  
 Susana Arrigain, MA  
 Andrew F. Alexis, MD, MPH  
 Kevin Cooper, MD  
 Jeremy S. Bordeaux, MD, MPH

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**Author Affiliations:** Department of Dermatology, University Hospitals Case Medical Center, Case Western Reserve University, Cleveland, Ohio (Drs Summers, Cooper, and Bordeaux); Departments of Dermatology (Dr Summers) and Quantitative Health Sciences (Mr Bena and Ms Arrigain), Cleveland Clinic, Cleveland; Skin of Color Center, Department of Dermatology, St Luke's Roosevelt Hospital, New York, New York (Dr Alexis); and Louis Stokes VA Medical Center, Cleveland (Dr Cooper).

**Correspondence:** Dr Bordeaux, 11 100 Euclid Ave, Cleveland, OH 44106 (jeremy.bordeaux@uhhospitals.org).

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