4. Dogan S, Atakan N. Multiple lentigines confined to psoriatic plaques induced by biologic agents in psoriasis therapy: a case and review of the literature. *Cutan Ocul Toxicol*. 2015;34(3):262-264.
5. Wang CQ, Akalu YT, Suárez-Fariñas M, et al. IL-17 and TNF synergistically modulate cytokine expression while suppressing melanogenesis: potential relevance to psoriasis. *J Invest Dermatol*. 2013;133(12):2741-2752.

https://doi.org/10.1016/j.jaad.2020.02.025

Temporal trends in primary and secondary skin cancer prevention in the United States

To the Editor: Skin cancer incidence is rising in the United States despite public health efforts encouraging skin cancer prevention.[1] We analyzed temporal trends of skin-cancer related primary (concerned with disease prevention) and secondary (concerned with early disease detection) preventive behaviors to look for potential areas for improvement.

The National Health Information Survey (NHIS) was examined over a 10-year period from 2005 to 2015.[2] The NHIS conducts representative population-based annual interviewing of the adult US population and had response rates of 70.1% to 80.7% during the examined period.[2] Our outcomes of interest were use of sun-protective measures (including sun avoidance, protective clothing, and sunscreen use), lifetime history of full-body skin examination by a physician, and histories in the past year of indoor tanning and 2 or more sunburns. Specifically, use of sun-protective measures were defined as use always or most of the time when outside for more than 1 hour on a warm, sunny day. Protective clothing included at least 1 of the following: long pants, hat, or long-sleeved shirt. A small percentage of individuals answered the sun protection questions by stating that they don't go out in the sun.[2] These individuals and those with unknown or missing responses were excluded from the analysis.[2]

Multivariable logistic regression analyses were used to assess the association between time period and weighted prevalence of sun-protective behaviors, adjusting for sex, region, health insurance, alcohol use, smoking status, education, personal and family histories of skin cancer, income, race, and skin reaction to the sun. *P* values were adjusted for multiple comparisons. Because of substantial missing data for income, NHIS imputed data were used.[2]

The unweighted study included a total of 67,471 individuals. From 2005 to 2015, the unadjusted and adjusted prevalence of most skin cancer—preventive behaviors rose, including sun avoidance, sunscreen use, and full-body skin examination, with the

Table I. Unadjusted and adjusted prevalence of sun protective behaviors by survey year

	Year, unadjusted prevalence, % (95% CI)					Year, adjusted prevalence, % (95% CI)				
	2005	2010	2015	P_{trend} value*	Adjusted $P_{2015\ vs\ 2005}$ value†	2005	2010	2015	P_{trend} value*,‡	Adjusted $P_{2015\ vs\ 2005}$ value†
Sun avoidance	31.1 (30.2-32)	35.4 (34.5-36.3)	37.5 (36.5-38.4)	**<.001**	**<.001**	31.7 (30.9-32.6)	35.5 (34.7-36.4)	36.8 (35.9-37.6)	**<.001**	**<.001**
Protective clothing	35.5 (34.7-36.3)	38.5 (37.5-39.4)	37.5 (36.6-38.4)	**<.001**	**.006**	35.9 (35.1-36.7)	38.4 (37.5-39.2)	37.2 (36.3-38.1)	**<.001**	.098
Sunscreen ASE	30.6 (29.8-31.3)	32.7 (31.7-33.6)	35.5 (34.7-36.4)	**<.001**	**<.001**	31.5 (30.7-32.2)	33.1 (32.2-34)	34.3 (33.5-35.1)	**<.001**	**<.001**
Full body skin exam	18.1 (17.4-18.7)	22 (21.2-22.8)	23.6 (22.9-24.4)	**<.001**	**<.001**	19.0 (18.4-19.6)	22.4 (21.7-23.1)	22.4 (21.7-23)	**<.001**	**<.001**
Indoor tanning	14.8 (14.1-15.5)	6.2 (5.7-6.7)	3.9 (3.5-4.3)	**<.001**	**<.001**	14.1 (13.5-14.8)	6.2 (5.7-6.7)	4.1 (3.8-4.5)	**<.001**	**<.001**
Sunburn	18.7 (18.1-19.3)	21.0 (20.2-21.7)	19.6 (18.8-20.4)	**<.001**	.198	18.2 (17.7-18.8)	21.1 (20.4-21.8)	19.9 (19.2-20.7)	**<.001**	**.001**

Adjusting covariates include sex, census region, health insurance coverage, alcohol use, smoking status, education level, personal history of skin cancer, family history of skin cancer, income, race, and skin reaction to the sun. Bold *P* values are statistically significant at the .05 level.
*Wald tests based on the logistic regression were performed to test for any change in log odds over 2005, 2010, and 2015.
†Pairwise Wald tests based on the logistic regression were performed to test for change in log odds in any two time points. *P* values were adjusted for multiple comparisons using Benjamini & Hochberg (1995).[5]
‡Median *P* rule was used to obtain the final adjusted *P* values due to multiple imputation for income.

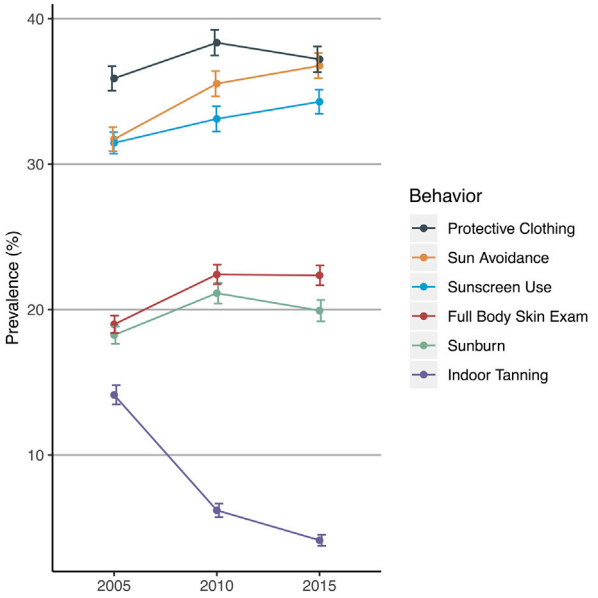

Fig 1. Adjusted prevalences of sun-protective behaviors over time. The prevalences are the predictive marginal means. Adjusting covariates include sex, census region, health insurance coverage, alcohol use, smoking status, education level, personal history of skin cancer, family history of skin cancer, income, race, and skin reaction to the sun.

exception of wearing protective clothing (Table I and Fig 1). Although the adjusted prevalence of indoor tanning decreased, that of sunburn increased (Table I and Fig 1).

Indoor tanning is substantially decreasing, implying the success of targeted legislative and public health efforts.[3] Nevertheless, despite increases in most sun-protective behaviors, the rates of primary and secondary skin cancer–preventive behaviors remain suboptimal, and the prevalence of multiple sunburns is rising. It is unclear whether the rise in sunburns is due to heightened sun awareness causing increased reporting or inadequate use of sun protection. Researchers in Australia have examined temporal changes in sun-protective behaviors and found improvements after the implementation of the SunSmart public health campaign, with decreases in reported sunburns and tan preference and increases in the use of sun-protective behaviors, although these benefits may be plateauing more recently.[4] Further research is needed in the US population to examine why the prevalence of multiple sunburns is rising and the impact of increased adoption of sun-protective behaviors on skin cancer incidence. Additionally, the success of public health efforts against indoor tanning may provide guidance for future public health efforts aimed at skin cancer prevention.

Nicole L. Bolick, MPH, MS,[a,b] Linglin Huang, MS,[a] Arash Mostaghimi, MD, MPH,[c] and Rebecca I. Hartman, MD, MPH[c,d]

From the Harvard T.H. Chan School of Public Health, Boston, Massachusetts[a]; The Brody School of Medicine at East Carolina University, Greenville, North Carolina[b]; Department of Dermatology, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts[c]; Department of Dermatology, VA Integrated Service Network (VISN-1), Jamaica Plain, Massachusetts.[d]

Ms Bolick and Ms Huang are cofirst authors.

Funding sources: Dr Hartman is supported by an American Skin Association research grant (120795).

Conflicts of interest: None disclosed.

IRB approval status: Exempt. Uses publicly available dataset.

Reprints not available from the authors.

Correspondence to: Rebecca Hartman, MD, MPH, Department of Dermatology, Brigham and Women's Hospital, 221 Longwood Ave, Boston, MA 02115.

E-mail: rhartman@bwh.harvard.edu

REFERENCES

1. US Cancer Statistics Working Group. U.S. cancer statistics data visualizations tool, based on November 2018 submission data (1999-2016).. Available at: www.cdc.gov/cancer/dataviz. Accessed January 30, 2020.
2. National Center for Health Statistics. Survey Description, National Health Interview Survey, 2015. Hyattsville, MD: National Center for Health Statistics; 2015.
3. Lazovich D. Effect of parental permission and age restriction laws on US adolescent indoor tanning trends. *Am J Public Health*. 2018;108(7):851-853.
4. Dobbinson SJ, Wakefield MA, Jamsen KM, et al. Weekend sun protection and sunburn in Australia. *Am J Prev Med*. 2008; 34(2):94-101.
5. Benjamini Y, Hochberg Y, Benjamini Y, Hochberg Y. Controlling the false discovery rate: a practical and powerful approach to multiple testing. *J R Stat Soc*. 1995;B57:289-300.

https://doi.org/10.1016/j.jaad.2020.02.027

Metric selection by dermatologists in the 2017 Merit-Based Incentive Payment System

To the Editor: The Merit-Based Incentive Payment System (MIPS) has reinforced the importance of performance metrics in the provision of value-based care.[1] Although dermatology-specific