

Skin Cancer Prevention

Progress Report 2016



**Centers for Disease
Control and Prevention**
National Center for Chronic
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Health Promotion

US Department of Health and Human Services
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National Center for Chronic Disease Prevention and Health Promotion
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Skin Cancer Prevention Progress Report 2016

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Background

Skin cancer is the most commonly diagnosed cancer in the United States, yet most cases are preventable. Every year in the United States, nearly 5 million people are treated for skin cancer, at an estimated cost of \$8.1 billion.¹ Melanoma causes more deaths than any other type of skin cancer, resulting in over 9,000 deaths each year.² Unlike many other cancers, skin cancer rates have continued to rise in recent years.³

As a public health community, we are taking concrete steps to address this serious public health concern. In July 2014, the Office of the Surgeon General released [The Surgeon General's Call to Action to Prevent Skin Cancer](#), establishing skin cancer prevention as a high priority for our nation.⁴ The *Call to Action* described effective prevention strategies and called on all community sectors to play a role in protecting

Americans from ultraviolet (UV) radiation from the sun and artificial sources, such as indoor tanning devices (Table 1).⁴

The federal government and its partners in skin cancer prevention across the United States have made important progress, but much work remains. This second annual *Skin Cancer Prevention Progress Report* provides a comprehensive summary of the most recent data available and highlights developments and success stories following the *Call to Action* and since the release of the *2015 Progress Report*. By continuing to update the report annually, we can monitor progress, celebrate and learn from successes, recognize areas that need improvement, and identify opportunities to work with partners in government, health care, education, business, and communities.

Table 1. Strategic Goals and Partners to Support Skin Cancer Prevention in the United States

Strategic Goals

Goal 1: Increase opportunities for sun protection in outdoor settings.

Goal 2: Provide individuals with the information they need to make informed, healthy choices about UV exposure.

Goal 3: Promote policies that advance the national goal of preventing skin cancer.

Goal 4: Reduce harms from indoor tanning.

Goal 5: Strengthen research, surveillance, monitoring, and evaluation related to skin cancer prevention.

Partners in Prevention

- Federal, state, tribal, local, and territorial governments.
- Businesses, employers, and labor representatives.
- Health care systems, insurers, and clinicians.
- Early learning centers, schools, colleges, and universities.
- Community, nonprofit, and faith-based organizations.
- Individuals and families.

Source: *The Surgeon General's Call to Action to Prevent Skin Cancer*.⁴



What's New This Year?

The past year has brought successes and continued attention to skin cancer prevention as a public health priority. Below are some recent highlights.

Article Examines Trends in Indoor Tanning

Published in the November 2015 issue of *JAMA Dermatology*, data from the National Health Interview Survey (NHIS) showed [reductions in indoor tanning](#) among US adults. The percentage of adults using indoor tanning devices dropped from 5.5% in 2010 to 4.2% in 2013 (8.6% to 6.5% among women; 2.2% to 1.7% among men). Despite these reductions, an estimated 7.8 million women and 1.9 million men continue to engage in indoor tanning in the United States.⁵

Editorial Calls for Response to Rising Incidence of Melanoma

In November 2015, the *Journal of the National Cancer Institute* published an [editorial on the rising incidence of melanoma](#) in the United States. The editorial highlights the importance of skin cancer prevention efforts, which can reduce the health and economic burden of melanoma in the United States.⁶

MMWR Publishes CDC Grand Rounds: Prevention and Control of Skin Cancer

CDC's *Morbidity and Mortality Weekly Report (MMWR)* published an [article](#) based on the [April 2015 Public Health Grand Rounds](#) on the prevention and control of skin cancer. The article, published in December 2015, describes evidence-based strategies for skin cancer prevention and the potential benefits of implementing community prevention programs in the United States.



FDA Proposes New Safety Measures for Indoor Tanning Devices

In December 2015, the US Food and Drug Administration (FDA) proposed [two rules](#) that would restrict access to tanning beds to adults aged 18 years and older, encourage informed decision making by requiring adult users to sign consent forms acknowledging the risks, and require manufacturers and indoor tanning facilities to take more actions to improve the overall safety of indoor tanning devices.

Article Highlights Association of Indoor Tanning and Melanoma in Younger Men and Women

[New research](#) published in *JAMA Dermatology* in March 2016 suggests that indoor tanning is a likely factor in the steeper increase in melanoma rates in the United States among younger women compared

with younger men, given the timing of when women initiated indoor tanning relative to diagnosis. Women in the study younger than 30 were 6 times more likely to have melanoma if they tanned indoors compared to women who did not tan indoors.⁷

The journal also published an accompanying [editorial](#) promoting the reduction of exposure to UV radiation from indoor tanning as an important strategy for melanoma prevention. The authors stated that although age restrictions are likely effective at reducing indoor tanning among minors, other concerns are not addressed by age restrictions: compliance and enforcement of existing policies, focus on minors when most indoor tanners are adults, direct sales of tanning devices to the public, and deceptive advertising by the industry.⁸

CDC Releases NHIS Data on Skin Cancer Risk Factors

In June 2016, the latest [National Health Interview Survey](#) data (collected in 2015) were made publically available. These data include information on sun protection, indoor tanning, sunburn, sunless tanning, and skin cancer screening among US adults, and findings from these data will be included in future editions of this progress report.



Success Stories from the Field

Broader Access to Free Sunscreen in Boston and Beyond

In the summer of 2015, the [Melanoma Foundation of New England](#) (MFNE), a nonprofit established to reduce the incidence of melanoma, launched a pilot program called [Practice Safe Skin](#) that provides free sunscreen to the public. Through this initiative, 50 sunscreen dispensers were placed in parks and other recreational areas throughout Boston for public use.

Following the success of the pilot program, *Practice Safe Skin* is expanding to cities, nonprofit organizations, and businesses across the country, providing an easy way to promote sun safety year-round. Sunscreen



dispensers have been set up in both public and private recreation areas, including playgrounds, ski areas, beaches, and civic buildings.

“Our pilot program this past summer to install sunscreen dispensers within the City of Boston and on Massachusetts’ state beaches was a huge success,” said Deb Girard, executive director of MFNE. “We are thrilled to be able to expand on that

program and offer the sunscreen units for public and private distribution throughout New England and across the country.”

Arizona SunWise Skin Cancer Prevention School Program

In 2003, in an effort to reduce skin cancer rates in the state, the Arizona Department of Health Services (ADHS) began a three-pronged sun-safety program to educate children in Arizona’s 1,100 elementary and middle schools. On the basis of targeted research that teaching good sun-safety habits is most effective and sustainable with children younger than 13, ADHS adopted the Environmental Protection Agency [SunWise Program](#) curriculum, modified it to meet Arizona education standards, and created a *SunWise* module related to physical activity. The program’s success led Arizona to mandate this curriculum in all K-8 public schools.



The [Arizona SunWise Program](#) conducts ongoing evaluations of outcomes. An online educator survey tracks quick, measurable responses to 30 questions

on student behaviors before and after educators are trained in the curriculum. The 2014 survey collected responses from 281 educators. Respondents reported high levels (90% and above) of student interest in the curriculum and increases in sun-safety

knowledge and behaviors, including increased use of sunscreen, hats, long sleeves, sunglasses, and shade. Results from the evaluation will be used to update the design of the educator survey and will help to further identify needs of educators in teaching sun safety.



Community-wide Intervention in Montclair, New Jersey: The First “SunSmart City” in America

As the first community in the United States to implement the [SunSmart City](#) project, Montclair, New Jersey is taking a comprehensive approach to sun safety in an effort to be the “SunSmartest Town in America.” This community-wide initiative is championed and managed by the [Live SunSmart Foundation](#) and inspired by the *Call to Action*.

SunSmart City combines mass media campaigns with environmental and policy changes to support UV-protective behaviors among Montclair residents, workers, and visitors. The program encourages all stakeholders in Montclair to provide educational and awareness messaging and shade opportunities throughout the community. The program works to:

- Provide shade in parks, schools, and shopping districts.
- Support policy changes to include worksite education and sun protection guidelines.
- Incorporate sun protection and UV exposure education in schools.
- Partner with existing health and wellness organizations to address skin health.



“Many of the individual components were being instituted in towns throughout the country, but Montclair is the first community to implement all of the recommended measures to create a 360 perspective on the topic of sun protection,” said Teri Festa, the executive director of *Live SunSmart*. Through a partnership with Montclair State University’s Public Health Department, *SunSmart City* will track progress and effectiveness over time by using monitoring and surveying methods. The initiative is transforming the town into a community that encourages people to live, work, and play while being sun-smart.

Sun-Safety Education in Idaho Schools and Communities

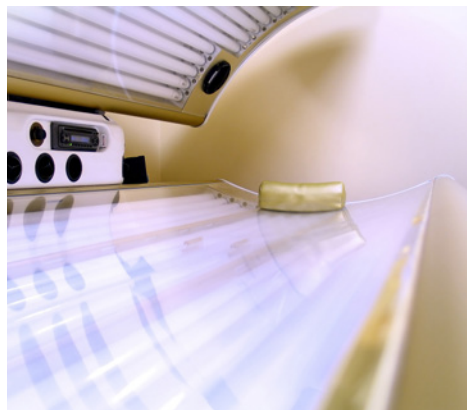
Aware of the high rates of melanoma in Idaho, the staff of the St. Luke's Mountain States Tumor Institute (MSTI) are committed to educating communities about skin cancer prevention. St. Luke's MSTI provides a sun-safety program for middle and high school students designed to teach students how to reduce their risk of getting skin cancer. Classroom presentations use an interactive format, educating students on the health effects of too much sun exposure and giving them the opportunity to do skin self-exams and view existing sun damage using a skin analyzer machine. Students are also given free broad spectrum sunscreen and lip balm, as well as sun-safety materials to share with their families.



"The program has been exceptionally successful and well-received within my school," said Cassie Tipton, health educator at Fairmont Junior High School. In 2015, about 350 students at Fairmont participated in the program. Cassie has received glowing feedback from teachers, students, and parents. One parent said that her son "actually really enjoyed it" and "came home with lots of information for the family!" The St. Luke's MSTI sun-safety program involves additional community outreach with local partners. For example, St. Luke's MSTI partnered with the Boise Hawks semi-pro baseball team to spread the word about the importance of skin cancer prevention throughout the community.

Addressing Deceptive Business Practices in the State of New York

Given the increased attention to the issue of skin cancer as a public health concern, New York State Attorney General Eric T. Schneiderman took action against indoor tanning businesses in the state that were in violation of state laws against deceptive business practices. The formal petitions against the tanning locations cited the *Call to Action* as part of the evidence behind the complaints, stating, "In July 2014, the US Surgeon General issued a *Call to Action To Prevent Skin Cancer*, a report documenting the rise in skin cancers and outlining action steps to prevent these cancers going forward,



including reduction of intentional, and unnecessary, ultraviolet (UV) light exposure for the purpose of tanning." One chain of fitness gyms that previously offered indoor tanning to some customers entered into a settlement agreement with the attorney general's office and has agreed to stop offering unlimited tanning packages and to provide additional training to employees. The fitness chain has also agreed to provide information to customers about the risks of indoor tanning, consistent with state law, as part of the settlement.

Outcome Indicators

Healthy People 2020 Objectives

Table 2 presents the skin cancer-related objectives included in Healthy People 2020, the national agenda for improving the health of all Americans.

Table 2. Progress Toward the Healthy People 2020 Skin Cancer-Related Objectives

| Objective for 2020 | Target | Baseline | Current Data | Data Source |
|---|-----------------------------------|---|--|--|
| C-8 Reduce the melanoma cancer death rate | 2.4 deaths per 100,000 population | 2007: 2.7 deaths per 100,000 population | 2013: 2.7 deaths per 100,000 population | National Vital Statistics System (NVSS)—Mortality, US Census |
| C-20.1 Reduce the proportion of adolescents in grades 9 through 12 who report sunburn | NA | 2015: 55.8% | 2015: 55.8% | Youth Risk Behavior Surveillance System (YRBSS) |
| C-20.2 Reduce the proportion of adults aged 18 years and older who report sunburn | 33.8% | 2010: 37.5% | NA | National Health Interview Survey (NHIS) |
| C-20.3 Reduce the proportion of adolescents in grades 9 through 12 who report using artificial sources of ultraviolet light for tanning | 14.0% | 2009: 15.6% | 2011: 13.3% 2013: 12.8% 2015: 7.3% | YRBSS |
| C-20.4 Reduce the proportion of adults aged 18 and older who report using artificial sources of ultraviolet light for tanning | 3.6% | 2010: 5.6% | 2013: 4.3% | NHIS |
| C-20.5 Increase the proportion of adolescents in grades 9 through 12 who follow protective measures that may reduce the risk of skin cancer ^a | 11.2% | 2009: 9.3% | 2011: 10.8% 2013: 10.1% | YRBSS |
| C-20.6 Increase the proportion of adults aged 18 years and older who follow protective measures that may reduce the risk of skin cancer | 73.7% | 2008: 67.0% | 2010: 70.0% | NHIS |
| ECBP-4.4 Increase the proportion of elementary, middle, and senior high schools that provide school health education in sun safety or skin cancer prevention to promote personal health and wellness | 79.6% | 2006: 72.4% | 2014: 66.0% | School Health Policies and Practices Study (SHPPS) |

Abbreviations: NA, not available.

Source: US Department of Health and Human Services. Healthy People 2020. Available at: <https://www.healthypeople.gov/2020/topics-objectives>. Accessed March 2, 2016.

^a Current data for this objective refers to answers of “always” or “most of the time” to the question, “When you are outside for more than 1 hour on a sunny day, how often do you wear sunscreen with an SPF of 15 or higher?”

Disease Surveillance Indicators



Health care providers and pathologists who diagnose or treat melanomas are required to report cases to a central cancer registry in all 50 states, the District of Columbia, and Puerto Rico. These melanoma surveillance data allow for long-term evaluation of skin cancer prevention efforts. Because melanomas often

develop after years of exposure to UV radiation, it will likely be several decades before melanoma incidence rates reflect the effects of current prevention efforts.

Tables 3 and 4 and Figures 1 and 2 present the most recent data available on melanoma incidence and deaths in the United States.

Table 3. Invasive Melanoma Incidence, by Sex and Race/Ethnicity, United States, 2008–2012^a

| Race/Ethnicity | US Population | | Male | | Female | |
|----------------------------------|---------------|----------------------|------|----------------------|--------|----------------------|
| | Rate | Average Annual Count | Rate | Average Annual Count | Rate | Average Annual Count |
| All Races | 19.9 | 65,332 | 25.5 | 37,971 | 16.0 | 27,361 |
| White | 22.6 | 61,769 | 28.4 | 36,117 | 18.4 | 25,652 |
| White, Hispanic ^b | 4.3 | 1,257 | 4.8 | 574 | 4.2 | 683 |
| White, non-Hispanic ^b | 25.1 | 60,512 | 31.2 | 35,543 | 20.7 | 24,969 |
| Black | 1.0 | 341 | 1.1 | 155 | 1.0 | 186 |
| American Indian/Alaska Native | 4.6 | 134 | 5.7 | 71 | 4.0 | 64 |
| Asian/Pacific Islander | 1.3 | 191 | 1.5 | 94 | 1.2 | 96 |
| Hispanic ^b | 4.2 | 1,346 | 4.7 | 615 | 4.1 | 731 |

Source: Surveillance, Epidemiology, and End Results (SEER) Incidence Database.⁹

Note: Data covers approximately 99.1% of the US population.

^a Rates are per 100,000 people and are age-adjusted to the 2000 US Standard Population.

^b Race and ethnicity are not mutually exclusive. Counts may not always sum to the total because of rounding and because cases with “other” and “unknown” race are included in totals.

Table 4. Melanoma Death Rates, by Sex and Race/Ethnicity, United States, 2008–2012^a

| Race/Ethnicity | US Population | | Male | | Female | |
|----------------------------------|---------------|----------------------|------|----------------------|--------|----------------------|
| | Rate | Average Annual Count | Rate | Average Annual Count | Rate | Average Annual Count |
| All Races | 2.7 | 9,071 | 4.1 | 5,936 | 1.7 | 3,135 |
| White | 3.1 | 8,872 | 4.6 | 5,838 | 2.0 | 3,033 |
| White, Hispanic ^b | 0.8 | 210 | 1.1 | 123 | 0.6 | 87 |
| White, non-Hispanic ^b | 3.4 | 8,651 | 5.0 | 5,709 | 2.1 | 2,942 |
| Black | 0.4 | 132 | 0.5 | 63 | 0.4 | 70 |
| American Indian/Alaska Native | 0.7 | 19 | 1.0 | 11 | 0.6 | 8 |
| Asian/Pacific Islander | 0.4 | 48 | 0.4 | 24 | 0.3 | 24 |
| Hispanic ^b | 0.8 | 214 | 1.0 | 125 | 0.6 | 88 |

Source: Surveillance, Epidemiology, and End Results (SEER) Mortality Database.¹⁰

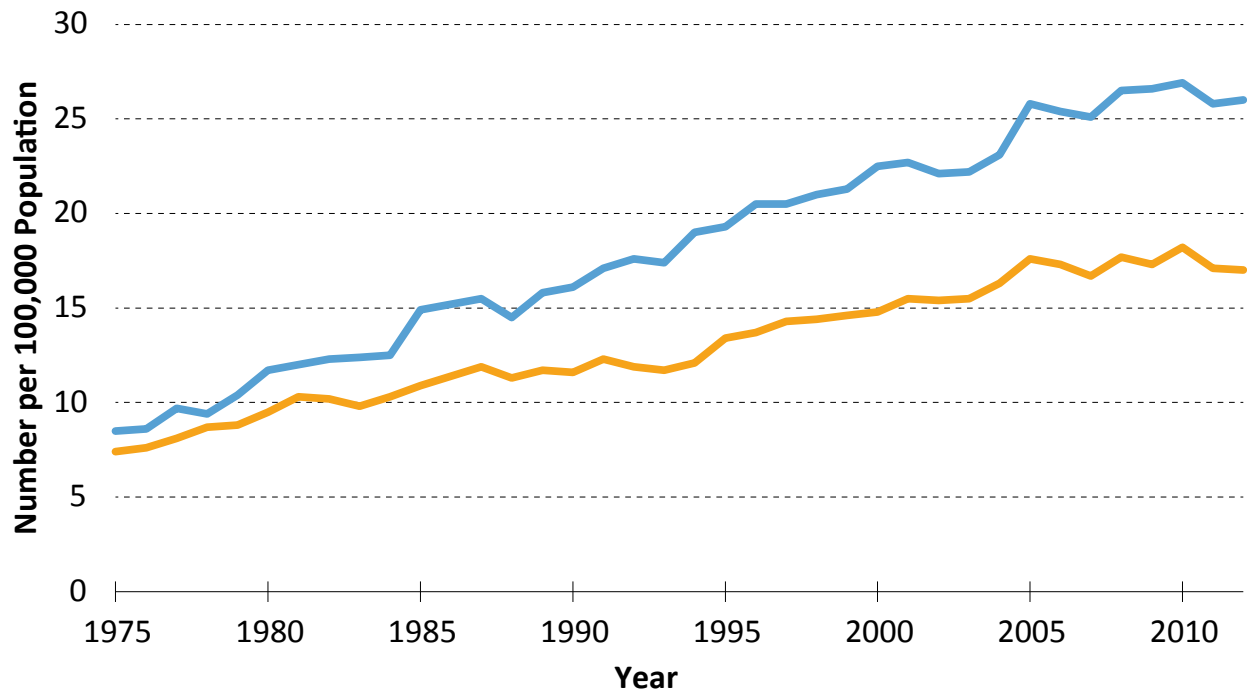
Note: Underlying mortality data provided by the National Center for Health Statistics.

^a Rates are per 100,000 people and are age-adjusted to the 2000 US Standard Population.

^b Race and ethnicity are not mutually exclusive. Counts may not always sum to the total because of rounding and because cases with “other” and “unknown” race are included in totals.

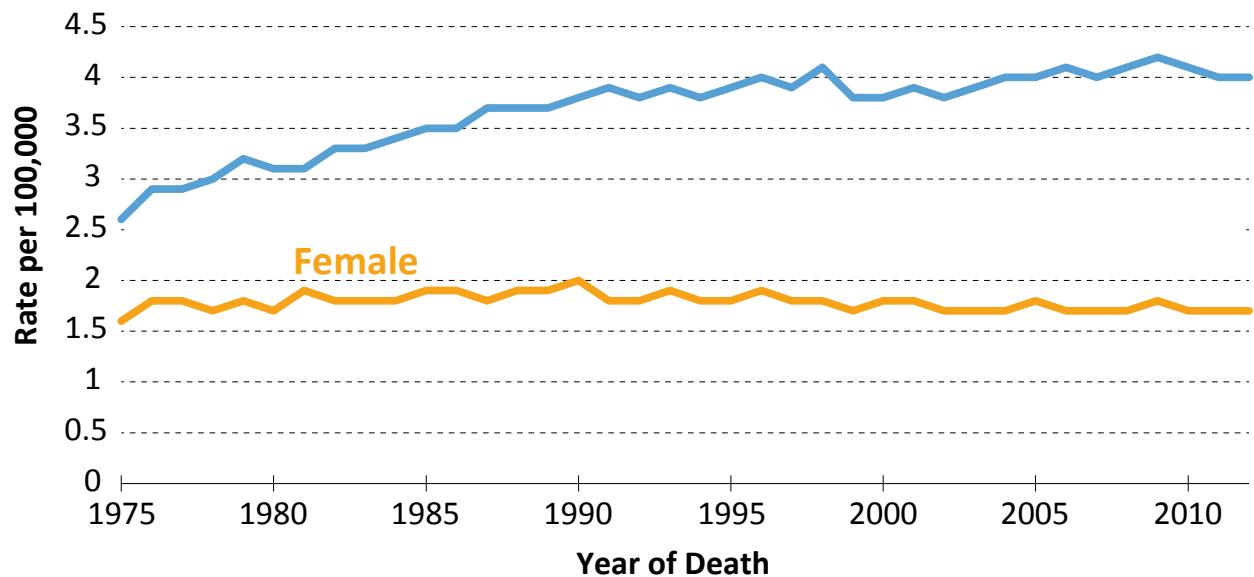


Figure 1. Age-Adjusted Melanoma Incidence Rates, by Sex, United States, 1975–2012



Source: Surveillance, Epidemiology, and End Results (SEER) Incidence Database.⁹
Note: Rates are per 100,000 people and are age-adjusted to the 2000 US Standard Population.

Figure 2. Age-Adjusted Melanoma Death Rates, by Sex, United States, 1975–2012



Source: Surveillance, Epidemiology, and End Results (SEER) Mortality Database.¹⁰
Note: Underlying mortality data provided by the National Center for Health Statistics.

Behavioral Surveillance Indicators

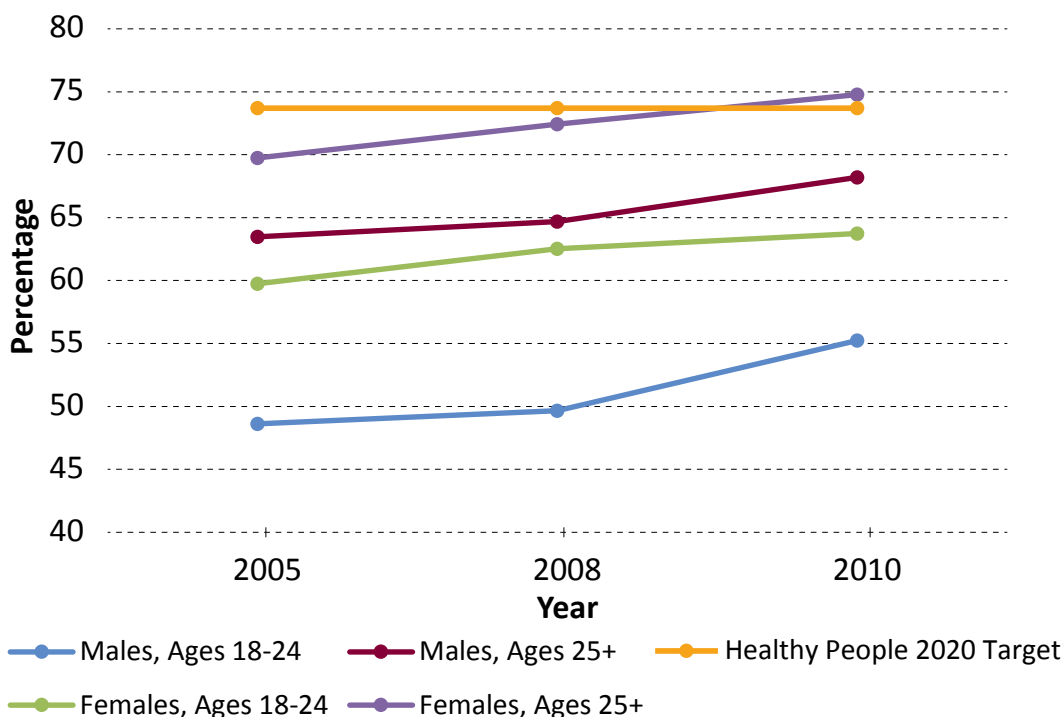
Increasing the use of sun protection and decreasing the prevalence of sunburn and indoor tanning are critical to preventing future cases of skin cancer. While it may be decades before skin cancer incidence rates reflect the effects of prevention efforts, these behavioral surveillance indicators can provide more immediate information about our progress. New data from the 2015 national Youth Risk Behavior Survey (YRBS) are available on sunburn and indoor tanning among US high school students. The most recent data on adult sun protection, sunburn, and indoor tanning are from the 2010 and

2013 national Health Interview Survey (NHIS) and have not changed since the *2015 Progress Report*. These data will be updated in subsequent reports as the recently released 2015 NHIS data are analyzed.

Sun Protection

Although use of sun protection appears to be increasing, there is still much room for improvement. More than one-quarter of women and one-third of men do not consistently use sun protection (Figure 3) and sun protection strategies differ by sex (Figure 4).

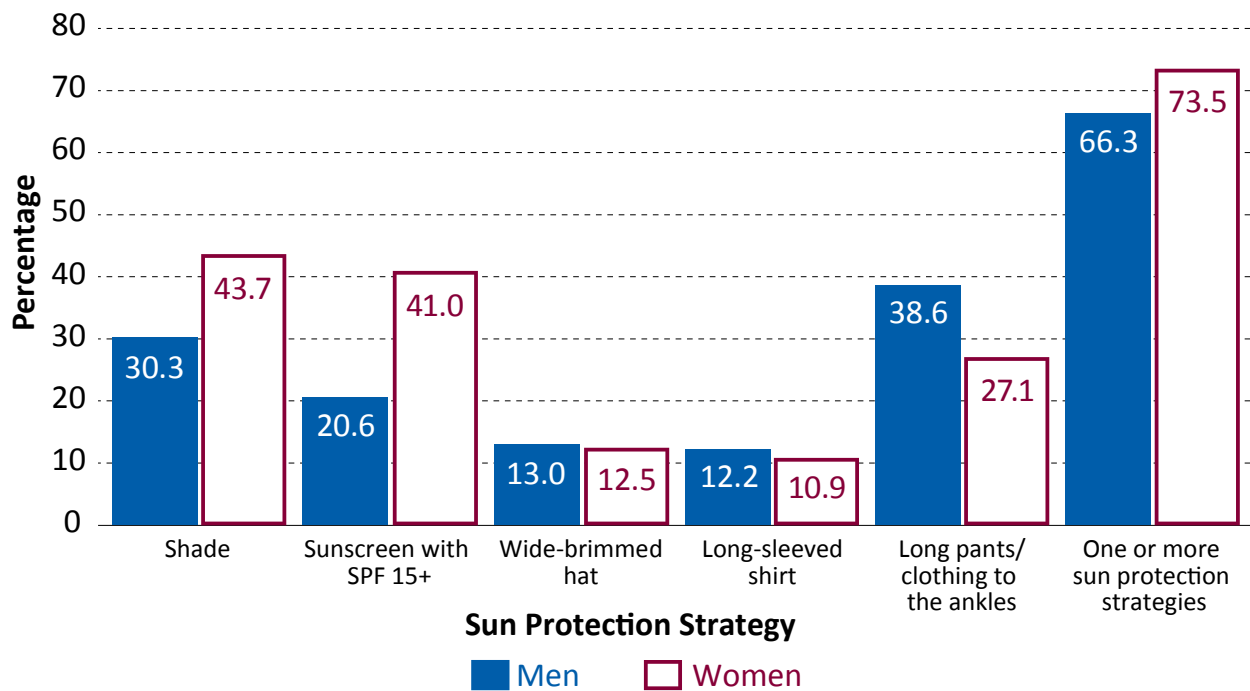
Figure 3. Percentage of US Adults Who Usually or Always Protect Themselves from the Sun, by Sex and Age, 2005–2010



Source: National Health Interview Survey. 2013. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Health Statistics. Available at: <https://www.cdc.gov/nchs/nhis/index.htm>. Accessed March 23, 2016.
 Note: Data are age-adjusted to the 2000 US Standard Population. Ages 18–24 are age-adjusted using age groups 18–19 and 20–24. Ages ≥25 are age-adjusted using age groups 25–34, 35–44, 45–64, and ≥65.



Figure 4. Percentage of US Adults Who Use Sun Protection Always or Most of the Time When Outside on a Warm Sunny Day for More Than 1 Hour, 2010



Source: National Health Interview Survey, 2013. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Health Statistics. Available at: <https://www.cdc.gov/nchs/nhis/index.htm>. Accessed March 23, 2016.

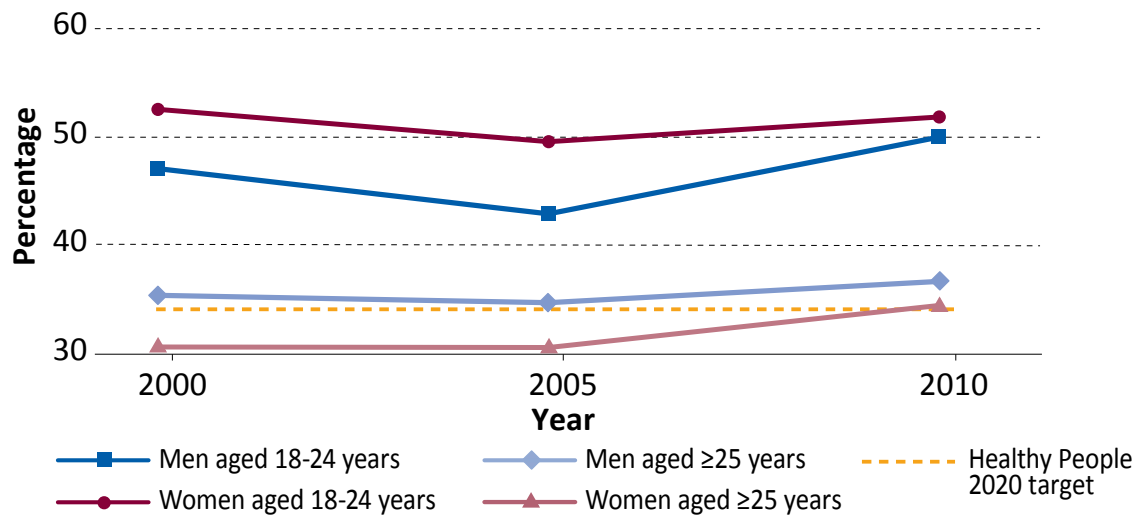
Note: Data are age-adjusted to the 2000 US Standard Population using age groups 18–24, 25–34, 35–44, 45–64, and ≥65 years.

Sunburn

Sunburn is an indicator of both the intensity of a person's UV exposure and the person's sun sensitivity, making it a useful measure of our progress toward reducing skin cancer incidence rates. Although use of sun protection has increased slightly in recent years, sunburn prevalence remains high. Figure 5

illustrates changes in sunburn over time among US adults. Data from the 2015 national YRBS indicate that 55.8% of adolescents in grades 9 through 12 (52.0% of boys and 59.8% of girls) reported being sunburned in the past 12 months.¹¹

Figure 5. Percentage of US Adults Who Were Sunburned in the Past Year, by Sex and Age, 2000–2010



Source: National Health Interview Survey. 2013. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Health Statistics. Available at: <https://www.cdc.gov/nchs/nhis/index.htm>. Accessed March 23, 2016.

Note: Data are age-adjusted to the 2000 US Standard Population. Ages 18–24 are age-adjusted using age groups 18–19 and 20–24. Ages ≥25 are age-adjusted using age groups 25–34, 35–44, 45–64, and ≥65.



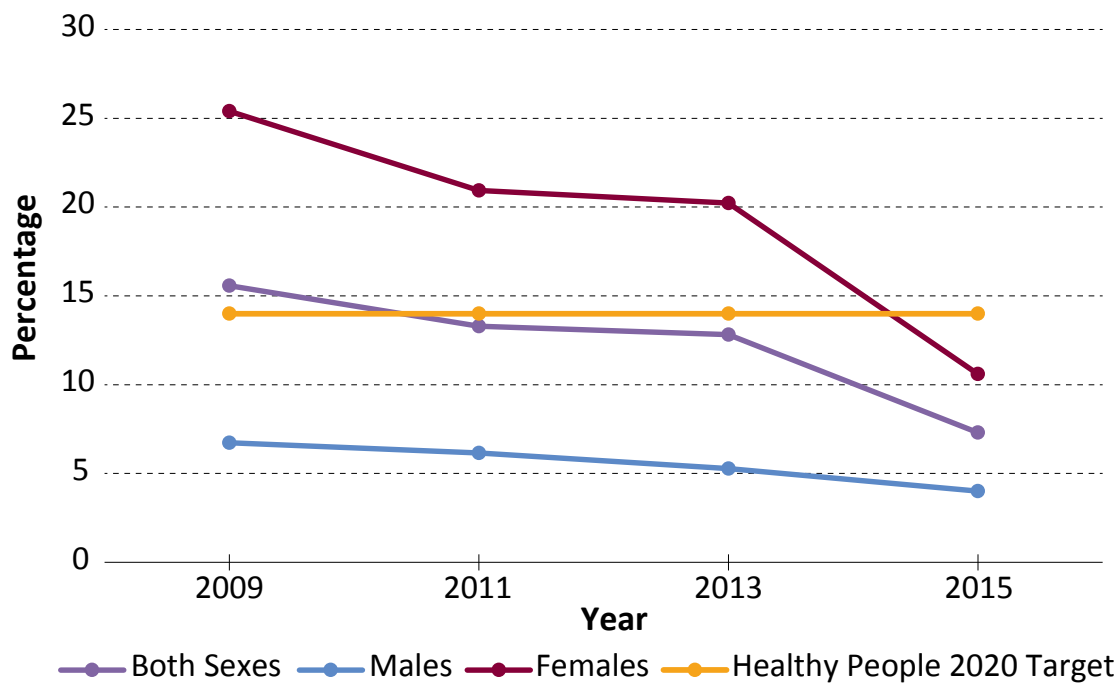
Indoor Tanning

Data from the national YRBS and NHIS indicate that use of indoor tanning may be decreasing among US high school students (Figure 6) and US adults (Table 5). Decreases among high school students may be

due in part to increased state restrictions on the use of indoor tanning among minors.¹² Indoor tanning remains highest among young women and non-Hispanic whites (Table 5).



Figure 6. Percentage of US High School Students Who Used an Indoor Tanning Device in the Past Year, by Sex, 2009–2015



Source: High School Youth Risk Behavior Survey. 2015. Atlanta, GA: Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/healthyouth/data/yrbs/index.htm>. Accessed March 23, 2016.

Note: Indoor tanning defined as using an indoor tanning device (such as a sunlamp, sunbed, or tanning booth) one or more times during the 12 months before the survey. It does not include getting a spray-on tan.

Table 5. Prevalence of Indoor Tanning Among Adults, 2010 and 2013^a

| Characteristic | Total, % | | Women, % | | Men, % | |
|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2010 N = 25,233 | 2013 N = 33,912 | 2010 N = 14,107 | 2013 N = 18,777 | 2010 N = 11,126 | 2013 N = 15,135 |
| Total | 5.5 | 4.2 ^b | 8.6 | 6.5 ^b | 2.2 | 1.7 ^b |
| Age, y | | | | | | |
| 18–29 | 11.3 | 8.6 ^b | 18.9 | 14.2 ^b | 3.9 | 2.9 |
| 30–39 | 5.9 | 5.5 | 9.2 | 8.5 | 2.5 | 2.2 |
| 40–49 | 5.9 | 4.3 ^b | 9.2 | 6.8 ^b | 2.6 | 1.8 |
| ≥50 | 2.1 | 1.5 ^b | 3.0 | 2.0 ^b | 1.0 | 0.9 |
| Race/ethnicity | | | | | | |
| Non-Hispanic white | 7.4 | 5.7 ^b | 11.5 | 8.9 ^b | 3.1 | 2.3 ^b |
| Nonwhite | 1.3 | 1.1 | 2.1 | 1.5 | 0.3 | 0.6 ^b |
| Type of indoor tanner | | | | | | |
| Infrequent (1–9 times/y) | 2.6 | 1.9 ^b | 3.7 | 2.8 ^b | 1.4 | 1.0 ^b |
| Frequent (≥10 times/y) | 2.9 | 2.2 ^b | 4.8 | 3.6 ^b | 0.9 | 0.8 |

Source: National Health Interview Survey, 2013. Table adapted from Guy GP, et al.⁵

^a Indoor tanning defined as using an indoor tanning device (such as a sunlamp, sunbed, or tanning booth) one or more times during the 12 months before the survey. It does not include getting a spray-on tan. Estimates are based on weighted data. Sample sizes are unweighted and may not add to the total because of missing data. Percentages are based on weighted population estimates.

^b Value for 2013 is significantly different than the value for 2010 ($P < .05$).

Vitamin D

Vitamin D is needed for overall health and to maintain strong bones.^{13,14} The body makes vitamin D when skin is directly exposed to the sun, and the vitamin is also found in some foods.^{13,14} Recommended dietary intakes of vitamin D are set on the assumption of little sun exposure because of public health concerns about skin cancer.¹⁴ However, improving sun protection across the population could potentially lead to reduced vitamin D concentrations for some people if not compensated for by increased vitamin D intake from diet or supplements.

The National Health and Nutrition Examination Survey regularly collects data on serum vitamin D concentrations in the US population.¹³ These data can be used to monitor vitamin D levels and document potential unintended consequences of skin cancer prevention interventions, such as increases in vitamin D deficiency.¹⁵



According to the National Academy of Medicine (formerly the Institute of Medicine), people with serum vitamin D levels less than 40 nmol/L are at increased risk for adverse health outcomes, and levels greater than 125 nmol/L may also be reason for concern.¹⁴ Table 6 shows the prevalence of low serum vitamin D concentrations from 1988 to 2010, the most recent years for which data are available, among the US population aged 12 years and older.¹⁵

Linear trend analyses indicate that the prevalence of low serum vitamin D concentrations has not changed significantly over time. The data also indicate that most people in the United States are getting enough vitamin D. However, those with dark skin are more likely to have lower levels of vitamin D than those with fair skin, most likely because lighter colored skin produces vitamin D more quickly than darker skin when exposed to the sun.^{13, 14}

Table 6. Prevalence of Low Serum Vitamin D Concentrations (<40 nmol/L) for the US population aged ≥12 Years, 1988–2010^a

| | 1988–1994 | 2001–2002 | 2003–2004 | 2005–2006 | 2007–2008 | 2009–2010 | P value ^b |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------|
| Less than 40 nmol/L | 16% | 17% | 17% | 18% | 14% | 15% | .20 |
| Sample size | 18,851 | 6,816 | 6,553 | 6,480 | 5,536 | 6,910 | |

Source: National Health and Nutrition Examination Survey. Table adapted from Schleicher RL, et al.¹⁵

^a Values are weighted proportions; data for 1988–2006 were standardized to liquid chromatography-tandem mass spectrometry (LC-MS/MS) equivalents; data for 2007–2010 were generated by using LC-MS/MS.

^b Linear trend based on Wald *F* test.



Policy and Program Indicators

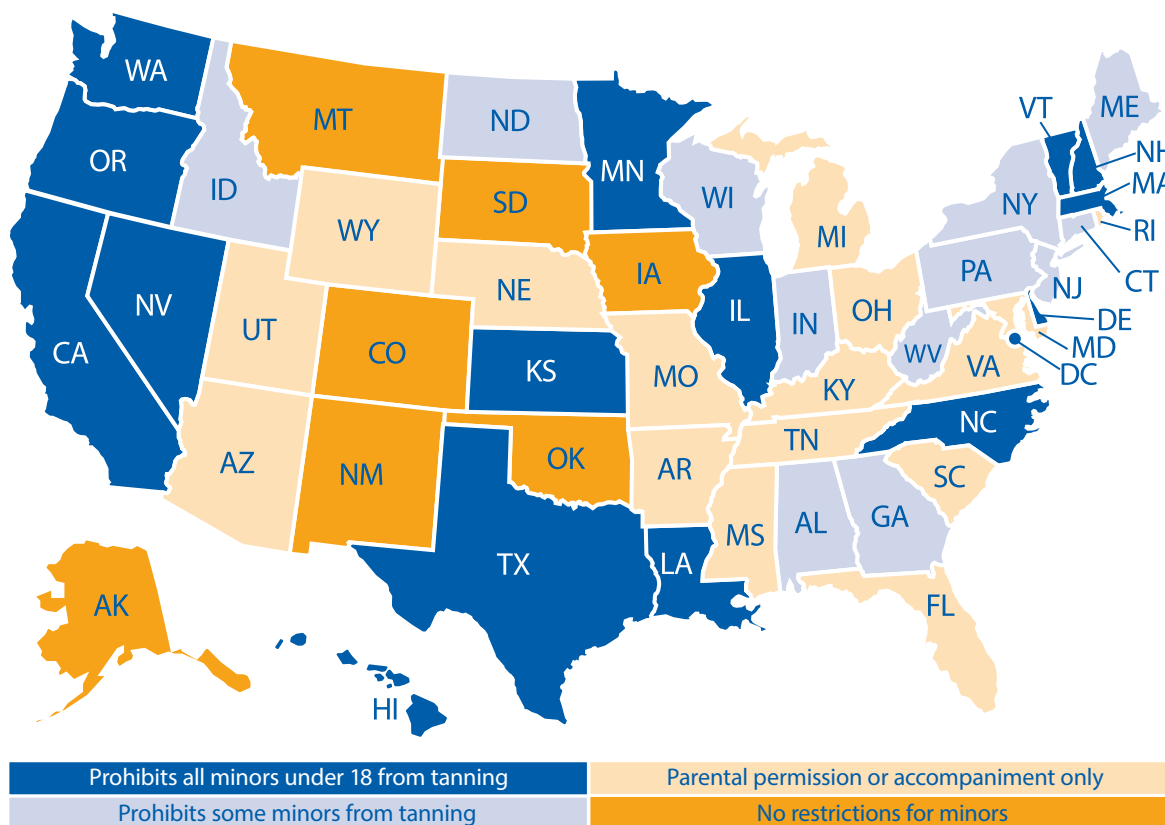
Interventions that change the context in which health behaviors occur can help make the healthy choice the default or easy choice. Many potential points of intervention can decrease overexposure to UV radiation and increase use of sun protection.

Indoor Tanning Restrictions for Minors

The FDA states that indoor tanning devices should not be used by minors younger than 18 years.¹⁶ CDC research suggests that indoor tanning

laws that include age restrictions may be effective in reducing indoor tanning, particularly among high school girls.¹² As of June 2016, 15 states and the District of Columbia. In December 2015, the FDA proposed a nationwide rule to restrict tanning bed use to adults aged 18 years and older in an effort to protect youth from the risks of indoor tanning.¹⁷ The FDA proposes that any final rule based on this proposal will become effective 90 days after publication of the final rule in the *Federal Register*.¹⁷

Figure 7. State Indoor Tanning Restrictions for Minors Younger than 18 Years, as of June 2016



Source: National Conference of State Legislatures. Indoor Tanning Restrictions for Minors: A State-by-State Comparison. Available at: <http://www.ncsl.org/research/health/indoor-tanning-restrictions.aspx>. Accessed May 25, 2016.
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 Note: State law in Oregon and Washington allow minors younger than age 18 years to use indoor tanning facilities with a doctor's prescription. "Prohibits some minors from tanning" is defined as restrictions for any other age group, including for minors younger than 17, 16, 15, or 14 years.

Skin Cancer Prevention Policies in Schools

Schools are an important setting for addressing skin cancer prevention among youth. Students are typically at school during midday hours when UV rays from the sun are strongest. Recess and other outdoor activities during midday can put students at risk if they are not protected.

School policies can promote skin cancer prevention for students and encourage behaviors that will help them avoid a skin cancer diagnosis later in life. Almost half (47.6%) of schools allow students time

to apply sunscreen at school, and 66.0% teach about sun safety or skin cancer prevention as part of required instruction (Table 7).

Other practices related to sun safety are generally uncommon in US schools, representing missed opportunities for prevention. In addition, some schools have practices that may create barriers to sun safety for students. For example, some schools prohibit students from wearing hats or visors (7.5%) or sunglasses (6.6%) when in the sun during the school day.

Table 7. Percentage of US Schools With Specific Practices Related to Sun Safety, by School Level, 2014

| Practices Related to Sun Safety | Total, % | Elementary Schools, % | Middle Schools, % | High Schools, % |
|--|----------|-----------------------|-------------------|-----------------|
| Outdoor activities almost always or always scheduled to avoid times when the sun was at peak intensity ^a | 15.0 | 14.7 | 18.2 | 11.8 |
| Parents asked to ensure students apply sunscreen before school | 16.4 | 20.9 | 16.9 | 4.2 |
| Teachers allow time for students to apply sunscreen at school | 47.6 | 49.5 | 51.6 | 37.5 |
| Teachers remind students to apply sunscreen before going outside at school | 28.2 | 27.2 | 30.3 | 28.2 |
| Sunscreen made available for students to use | 13.3 | 11.9 | 12.9 | 17.2 |
| Students encouraged to wear protective clothing (e.g., long sleeve shirts or long pants) when in the sun during the school day | 30.4 | 33.4 | 30.8 | 22.2 |
| Students encouraged to wear hats or visors when in the sun during the school day | 33.1 | 35.0 | 37.3 | 22.4 |
| Students prohibited from wearing hats or visors when in the sun during the school day | 7.5 | 7.5 | 7.8 | 7.2 |
| Students encouraged to wear sunglasses when in the sun during the school day | 20.7 | 22.7 | 17.5 | 19.8 |
| Students prohibited from wearing sunglasses when in the sun during the school day | 6.6 | 7.5 | 7.8 | 2.9 |
| Weather-related safety (e.g., avoiding heat stroke, hypothermia, and sunburn while physically active) taught in at least one required physical education class or course | 65.2 | 62.2 | 74.8 | 61.5 |
| Sun safety or skin cancer prevention taught as part of required instruction | 66.0 | 63.4 | 59.4 | 77.1 |
| Skin cancer screening offered to faculty and staff ^b | 3.1 | 3.3 | 2.0 | 4.3 |

Source: Results from the School Health Policies and Practices Study 2014.¹⁸

^a During the 12 months before the study.

^b Regardless of what is covered through their health insurance.

Comprehensive Cancer Control Programs and Skin Cancer Prevention

CDC funds Comprehensive Cancer Control (CCC) Programs in all 50 states, the District of Columbia, 7 tribes and tribal organizations, and 7 US territories to form or support existing coalitions to fight cancer. These coalitions use data to determine the greatest cancer-related needs in their area and develop and carry out cancer plans to meet those needs.

Including skin cancer prevention in CCC plans or objectives is an indicator of commitment to skin cancer prevention (Table 8). In addition, using evidence-based interventions and monitoring and evaluating activities also helps to ensure success.



Table 8. State Comprehensive Cancer Control (CCC) Programs That Mention “Melanoma” or “Skin Cancer” in Their Current Plans or Objectives, 2015–2016

| Plan/Objective | No. of Programs |
|---|-----------------|
| Long-term objective ^a | 16 |
| Short-term objective ^b | 18 |
| Long-term objective OR short-term objective | 19 |
| CCC plan (2015 or later) | 34 |
| Long-term objective OR short-term objective OR CCC plan | 39 |

Source: Chronic Disease Management Information System. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Available at: <https://www.cdc.gov/cdmis/index.html>. Accessed March 25, 2016.

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Note: Numbers of programs are reported for the funding period from 2015-2016. Numbers are based on the 50 US states and do not include the District of Columbia, tribal organizations, or US territories.

^a Set by CCC Program awardees at the beginning of the 5-year project period.

^b Set by CCC Program awardees each year in their annual action plans.

Conclusion

This second annual *Skin Cancer Prevention Progress Report* provides a comprehensive summary of the most recent data available and highlights new developments and success stories following the *Call to Action* and since the release of the *2015 Progress Report*. We will continue to use the indicators outlined in this report to track our progress toward reducing skin cancer incidence and deaths over time. The *Call to Action* provided a clear roadmap for prevention in the United States, and with the continued effort of partners across all sectors, we can stop the increasing incidence of skin cancer.



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Centers for Disease Control and Prevention
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