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# Reducing Indoor Tanning-An Opportunity for Melanoma Prevention

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**The incidence of melanoma** has been rapidly increasing in the United States. Since exposure to UV radiation from indoor tanning is preventable, reducing exposure is an important strategy for melanoma prevention.[1] The article by Lazovich et al[2] in this issue of *JAMA Dermatology* provides an in-depth analysis of a case-control study conducted in Minnesota examining the association between indoor tanning and melanoma. The authors[2] found that indoor tanning was strongly associated with increased melanoma risk among women, especially among women younger than 30 years, for whom indoor tanning was associated with a 6-fold increase in the likelihood of developing melanoma. Nearly all women in the study (96.8%) diagnosed as having melanoma when younger than 30 years had engaged in indoor tanning, all initiating indoor tanning before age 25 years, and nearly all (90.5%) engaging in frequent indoor tanning (>10 times per year).

Several other studies[3,4] have noted increases in melanoma among young white women and hypothesized that increases among this demographic may be related to increases in indoor tanning. By focusing on sex and age at diagnosis, Lazovich et al[2] provide important additional support for this hypothesis. Their findings are also consistent with those of a study[5] demonstrating the widespread use of indoor tanning among young non-Hispanic white women. This article[2] builds on the previous literature and demonstrates the importance of public health efforts in reducing indoor tanning. While all exposure to UV radiation can increase the risk of melanoma, exposure to artificial UV radiation from indoor

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tanning is a completely avoidable risk factor. In addition, UV radiation from indoor tanning is often more intense than UV radiation from the sun, and users often expose more areas of the body.

Federal and state policies aim to reduce the harms from indoor tanning and prevent future cases of skin cancer. The US Food and Drug Administration continues to examine the risks of indoor tanning and in 2014 changed the classification of indoor tanning devices to reflect an increased understanding of their risks, and stated that minors younger than 18 years should not use indoor tanning devices.[6] State laws regarding youth access to indoor tanning have evolved rapidly in the past decade. In 2009, only 5 states had any law addressing youth access to indoor tanning; 2 states required parental permission and 3 states had age restrictions. However, by June 2015, a total of 42 states had laws addressing youth access: 13 states restricted indoor tanning among minors (<18 years), 12 states prohibited minors at a younger age (eg, 14–17 years), and 17 states required parents to give permission or to accompany minors while indoor tanning (Figure).

Previous research[7] has demonstrated that age restrictions may be effective in reducing indoor tanning. Over the past few years, significant reductions in indoor tanning rates have been observed, which may be due, in part, to stronger policies regarding indoor tanning among minors.[8,9] Indoor tanning among female high school students decreased from 25.4% in 2009 to 20.2% in 2013.[8] Declines have also been noted among adults, with national rates decreasing from 8.6% to 6.5% among women and from 2.2% to 1.7% among men between 2010 and 2013.[9] Despite these reductions, an estimated 11.3 million Americans continue to engage in indoor tanning each year, over 85% (9.7 million) of whom are adults.[8,9] Indoor tanning is most common among young non-Hispanic white women ages 16 to 25 years.[5] Among this population, indoor tanning use is not only widespread but frequent use is common, with over half of indoor tanners engaging in indoor tanning more than 10 times per year.[5] From a public health perspective the continued use of indoor tanning, along with the frequency of its use, is a cause for concern. Regardless of age, each time an individual engages in indoor tanning he or she is further increasing the risk for melanoma.[10]

Although age restrictions may be effective at reducing indoor tanning among minors, these policies leave many gaps unaddressed. First, previous studies[1,11] have found poor compliance rates among indoor tanning facilities for parental permission laws and significant variations in enforcement provisions among states with age restrictions. The potential reduction of youth indoor tanning and its associated risk cannot be fully realized without proper enforcement of youth access laws.[11]

Second, as stated herein, most indoor tanners are adults, with about 85% estimated to be 18 years or older, and therefore unaffected by age restrictions among minors. Recent research has demonstrated that nearly half of the top 125 colleges and universities had indoor tanning facilities available either on campus or in off-campus housing.[12] Also, many colleges and universities allow school-issued debit cards to be used to pay for indoor tanning.[13] Widespread availability of indoor tanning facilities on and around campus may encourage their use and increase the risk of skin cancer. In addition, nearly half of young female indoor tanners in a nationally representative sample reported indoor tanning outside of a salon

setting, such as in a gym, private home, or apartment complex common area.[14] Although state and federal regulations generally apply in these settings, enforcement varies and is likely lower in these settings that generally have fewer trained staff to monitor operation of the devices. To help address ongoing increases in melanoma among young white women, colleges and universities can adopt campus policies that discourage indoor tanning by their students on campus. For example, they can reconsider campus practices that may encourage indoor tanning, such as the use of university debit cards to purchase indoor tanning services; financial arrangements between student organizations and the indoor tanning industry; and on-campus advertising of indoor tanning services.

Another potential gap in policy relates to direct sales of indoor tanning devices to the public and their use in unsupervised settings. Certain indoor tanning restrictions may be easily circumvented with unsupervised access to indoor tanning in private settings, such as apartment complexes, beauty salons, fitness centers, and homes. The World Health Organization recommends banning unsupervised tanning facilities to complement restricting indoor tanning among minors in an effort to prevent minors from accessing unsupervised tanning facilities where access is not controlled.[15]

Deceptive advertising by the indoor tanning industry can mislead consumers.[16,17] In 2010, the Federal Trade Commission (FTC) sanctioned the Indoor Tanning Association (ITA), a trade association representing the industry, for making false and misleading health and safety claims about indoor tanning.[16] The ITA reached a settlement with the FTC that restricts the ITA from making deceptive claims and requires certain ITA advertisements to contain prominently displayed disclosures.[16] However, despite the settlement with the FTC, there is reason to believe that salons and industry groups may be continuing to misrepresent the scientific evidence about the risks of indoor tanning.[17] For example, the State Attorney General of New York brought lawsuits against 2 indoor tanning salon chains for falsely advertising health benefits of indoor tanning and unlawfully concealing the risks of indoor tanning.[17]

Counteradvertising to address social norms around tanned skin may also be effective, especially when paired with comprehensive, communitywide strategies to prevent skin cancer. Although the study by Lazovich et al[2] has the most pronounced implications for young non-Hispanic white females, efforts are needed to address indoor tanning at the population level. While indoor tanning is most common among young non-Hispanic white females,[5] it is not uncommon among different demographic groups. For example 7.9% of Hispanic female high school students engage inindoor tanning each year.[8] In addition, gay and bisexual men seem to engage in indoor tanning at rates comparable with those of women,[18] and frequent indoor tanning is common among the 0.8 million male indoor tanners 40 years or older.[9] Thus, while focusing on the most common indoor tanners may be an efficient way for communications initiatives to disseminate messages, targeted outreach to other groups may be needed as well.

In conclusion, the article by Lazovich et al[2] highlights the need to address indoor tanning among young white women, among whom indoor tanning is most common. Reducing exposure to UV radiation from indoor tanning is an important strategy for melanoma

prevention. Ongoing surveillance can be used to determine the impact of policies on reducing the use of indoor tanning and the incidence of melanoma.

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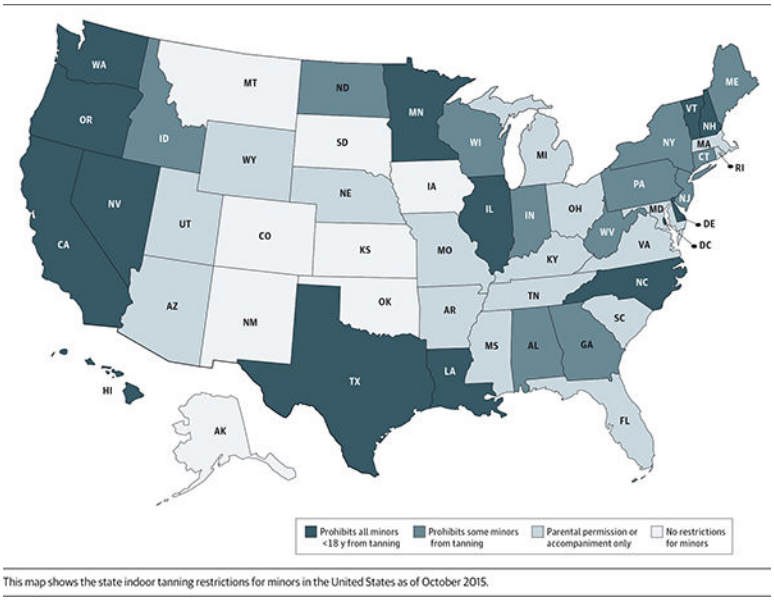


**Figure.**

Indoor Tanning Restrictions for Minors 17 Years or Younger, as of October 2015