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Journal of Cancer Prevention & Current Research

Mini Review

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Tanning bed legislation in 2016: are we any closer to closing the lid?

Volume 5 Issue 6 - 2016

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Received: August 01, 2016 | **Published:** October 03, 2016

Introduction

In the Surgeon General's 2015 "Call to Action" on skin cancer, one of the identified goals was to reduce harms from indoor tanning, in particular melanoma, which remains the leading cause of cancer death in women aged 25-30.[1] The most frequent indoor tanners in the United States are Caucasian females between the ages of 16 and 29, [2] and while a clear association between tanning bed use and skin cancer has been well-established, education on these health risks has provided little impact on use. Despite the medical community's understanding of melanoma as a potentially fatal yet highly preventable illness in young men and women, the incidence is rising,[3] and the tanning bed industry remains financially robust, taking in approximately $3 billion annually.[4] A 2013 study from the National Health Interview Survey estimates those 7.8million women and 1.9million men in the United States tan indoors each year;[5] female high school students have the highest rates of use, and not surprisingly, skin cancer incidence rates are increasing in this demographic.[6]

By numbers, a 2014 meta-analysis estimated that more than 400,000 cases of skin cancer may be related to indoor tanning in the United States each year: 245,000 basal cell carcinomas, 168,000 squamous cell carcinomas, and 6,000 melanomas.[7] In the latter case, over the last 15years there has been a significant increase in truncal melanomas in females, especially in geographic areas reporting a high prevalence of indoor tanning,[8] and in a 2014 National Cancer Institute study of melanoma patients, indoor tanning was four times as likely to be disease associated compared to sunburn (odds ratio, 3.87; P=0.002).[9] Couple this with the enormous rise in medical costs associated with skin cancer treatment: the average annual expenditures increased from $3.6 billion (2002-2006) to $8.1 billion (2007-2011), an increase of 126% (compared to 25% in other cancers).[10] This makes for a resounding argument, long made jointly by the scientific and policy communities, in opposition to indoor tanning. Why, then, have public health efforts appeared to flounder?

Indoor tanners are not risk averse

In 2009, as a response to data highlighting the risks associated with indoor tanning, the World Health Organization International Agency for Research on Cancer (IARC) placed artificial sources of UV radiation alongside tobacco and asbestos in the highest category of carcinogen.[11] Arguably the dangers of UV radiation are not as immediately apparent as smoking, and a common misconception among indoor tanners is that artificial UVR produces a "safer" tan than outdoor sunlight.[12] Appearance concerns are among the most consistent motivators of indoor tanning:[13] a study of US adolescents reported it was "worth getting burnt to get a good tan" and that tanned skin was preferred over pale skin.[14] The concept of being addicted to high-risk behavior has been theorized as physiologic, and may explain why even patients diagnosed with melanoma may continue to tan indoors.[15] The antiquated association of a tanned complexion with good health contributes further to this problem,[16] and may be transferred generationally: increased indoor tanning among parents presents an increased risk of indoor tanning to their children.[17]

Ease of access promotes use

Proximity to tanning salons is a major contributor to use: Mayer et al found that living within 2miles of an indoor tanning facility was associated with a greater likelihood of indoor tanning among adolescents,[18] and there are approximately 18,000 to 19,000 indoor tanning salons and 15,000 to 20,000 other facilities, such as health clubs, spas, and other commercial establishments, that offer tanning services in the U.S.[4] The emergence of indoor tanning facilities on college campuses is even more problematic: a 2015 study of 125 US colleges and universities showed 48.0% had indoor tanning facilities either on campus or in off-campus housing, and 14.4% allowed campus cash cards to be used to pay for tanning.[19] Most alarming: although on-campus tanning facilities was more significantly associated with enrollment (p=.01), most off-campus housing facilities with indoor tanning (96%) provided it free to tenants. While the health and beauty industry have attempted to address the issue in popular articles in *Cosmopolitan*[20] and *Allure*,[21] it seems little has impacted this dangerous behavior, given the widely accessible (and often free) service.

Policy implementation: still more to do

The Society of Behavioral Medicine issued a position statement calling for a ban on indoor tanning in minors in 2014, and the American Academies of Dermatology and Pediatrics also support a total ban on indoor tanning in individuals under the age of 18.[22].As of 2015, more than 41states (and the District of Columbia) have passed age-related bans on indoor tanning,[23] and in May 2014 the FDA issued a final order reclassifying indoor tanning devices as Class II medical devices, requiring mandatory warning displays.[24] Unfortunately studies have shown failure with this compliance, as salons continue to promote false safety benefits of indoor tanning and continue to provide services to underage tanners.[25] The 10% tax on indoor tanning imposed by the Affordable Care Act in 2010 has shown some potential: a 2012 study of tanning salons in Illinois reported 26% of salons had a drop in

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patronage after tax enforcement, although the authors noted that they were unable to completely distinguish the impact of the tax from the economic climate at the time of the study.[26]

New York State, which has long been a stalwart of public health issues, recently made a high-profile win against the tanning industry. In November 2015, the exercise giant Planet Fitness reached a settlement with state Attorney General Eric Schneiderman, after an April 2015 filing claimed the company violated state law by failing to provide required warnings to customers. Planet Fitness agreed not to offer "unlimited" indoor tanning sessions as part of its premium membership packages, agreed not to make claims about the potential health benefits of red lamp devices, and was fined $50,000 in fees and penalties.[27] Unfortunately, the tanning industry has found ways to fight back: In July 2015, Nebraska-based salon operators filed a lawsuit against the Nebraska Cancer Coalition, stating the group's false and misleading anti-tanning campaign has harmed the plaintiffs' reputations and livelihoods.[28]

Heeding the call to action

As a scientific community, it is doubtless that melanoma scientists and physicians have made a tremendous impact on the lives of our patients. However, our science is challenged multifold by outdated beauty concepts, ease of access, and poor understanding of the risks of indoor tanning. Ongoing grassroots efforts should continue to combat the ongoing prevalence of risky behavior in our youth and the policy challenges described above, and represent opportunities for us, and our society, to engage patients, families, and policy stakeholders in closing this issue once and for all.

Acknowledgments

None.

Conflicts of interest

Author declares there are no conflicts of interest.

References

1. http://training.seer.cancer.gov/melanoma/intro/
2. Swerdlow AJ, Weinstock MA. Do tanning lamps cause melanoma? An epidemiologic assessment. *J Am Acad Dermatol*. 1998;38(1):89–98.
3. https://www.aimatmelanoma.org/about-melanoma/melanoma-stats-facts-and-figures/
4. Tanning Salons in the US. *Tanning Salons Market Research Report IBIS World Industry Report*. NAICS 81219c; 2005.
5. Guy GP, Berkowitz Z, Holman DM, et al. Recent changes in the prevalence of and factors associated with frequency of indoor tanning among US adults. *JAMA Dermatol*. 2015;151(11):1256–1259.
6. Guy GP, Berkowitz Z, Everett Jones S, et al. Trends in Indoor Tanning Among US High School Students, 2009-2013. *JAMA Dermatol.* 2015;151(4):448–450.
7. Wehner MR, Shive ML, Chren MM, et al. Indoor tanning and non-melanoma skin cancer: systematic review and meta-analysis. *BMJ.* 2012;2012(345):e5909.
8. Vogel RI, Ahmed RL, Nelson HH, et al. Exposure to indoor tanning without burning and melanoma risk by sunburn history. *J Natl Cancer Inst*. 2014;106(6):1–112.
9. Bradford PT, Anderson WF, Purdue MP, et al. Rising melanoma incidence rates of the trunk among younger women in the United States. *Cancer Epidemiol Biomarkers Prev.* 2010;19(9):2401–2406.
10. http://www.cdc.gov/media/releases/2014/p1110-skin-cancer.html
11. El Ghissassi F, Baan R, Straif K, et al. A review of human carcinogens-part D: radiation. *Lancet Oncol*. 2009;10 (8):751–752.
12. CDC The Burning Truth; 2014.
13. Mayer JA, Woodruff SI, Slymen DJ, et al. Adolescents' use of indoor tanning: a large-scale evaluation of psychosocial, environmental, and policy-level correlates. *Am J Public Health*. 2011;101(5):930–938.
14. Geller AC, Colditz G, Oliveria S, et al. Use of sunscreen, sun burning rates, and tanning bed use among more than 10 000 US children and adolescents. *Pediatrics*. 2002;109(6):1009–1014.
15. Petit A, Lejoyeux M, Reynaud M, et al. Excessive indoor tanning as a behavioral addiction: a literature review. *Curr Pharm Des.* 2013;20(25):4070–4075.
16. http://www.skincancer.org/prevention/tanning/is-a-tan-ever-a-good-thing
17. Cokkinides V, Weinstock M, Lazovich D, et al.Indoor tanning use among adolescents in the US, 1998 to 2004. *Cancer.* 2009;115(1):190–198.
18. Mayer JA, Woodruff SI, Slymen DJ, Adolescents' use of indoor tanning: a large-scale evaluation of psychosocial, environmental, and policy-level correlates. *Am J Public Health.* 2011;101(5):930–938.
19. Pagoto SL, Lemon SC, Oleski JL, et al. Availability of Tanning Beds on US College Campuses. *JAMA Dermatol*. 2015;151(1):59–63.
20. http://www.cosmopolitan.com/college/a47045/tanning-beds-college-campuses/
21. http://www.allure.com/beauty-trends/health/2015/college-tanning-bed-cancer-risk
22. Pagoto S, Hillhouse J, Heckman CJ, et al. Society of behavioral medicine (SBM) position statement: ban indoor tanning for minors. *Transl Behav Med*. 2014;4(1):124–126.
23. Aa M. Indoor Tanning Legislation; 2014.
24. FDA. *News Release: FDA to require warnings on sunlamp products*. Food and Drug Administration: USA; 2014.
25. Forster JL, Lazovich D, Hickle A, et al. Compliance with restrictions on sale of indoor tanning sessions to youth in Minnesota and Massachusetts. *J Am Acad Dermatol*. 2006;55(6):962–967.
26. Jain N, Rademaker A, Robinson JK. Implementation of the federal excise tax on indoor tanning services in Illinois. *Arch Dermatol.* 2012;148(1):122–124.
27. http://www.syracuse.com/state/index.ssf/2015/11/planet_fitness_halts_unlimited_tanning_at_ny_gyms.html
28. http://americansuntanning.org/litigation/