

Strategies to Reduce Youth Indoor Tanning Injuries

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Perusal of any lifestyle magazine reveals photographs of movie stars with sun-kissed skin. One can imagine their carefree lives afford ample time outdoors, a vast departure from the pasty masses trapped in their office cubicles. Our cultural norms dictate that a glowing look is a sign of health and attractiveness. Light-skinned individuals must receive regular exposure to sunlight to maintain their bronzed color. Over the last century, the indoor tanning industry has expanded to fill the niche created by the ceaseless pursuit of the ideal complexion.

Indoor tanning use causes up to 170,000 cases of skin cancer per year worldwide.¹ Accumulating sunburns early in life is a leading risk factor for melanoma, the deadliest form of skin cancer. Campaigns to spread awareness about the link between UV radiation and skin cancer are ubiquitous. The US Food and Drug Administration (FDA) recommends against the use of tanning beds by minors, and several states have passed laws restricting their access. However, adolescents continue to engage. White female high school students remain frequenters of this practice, with more than 15% reporting current use of indoor tanning facilities.² It seems targeted outreach and media campaigns are unsuccessful in influencing their behavior, and new approaches are needed.

Tanning-Related Injuries

Concentrated exposure to UV radiation during indoor tanning sessions carries the potential for immediate harm. Public health campaigns have focused on long-term skin cancer risk while overlooking thousands of injuries that occur annually at tanning salons across the country. The US Consumer Product Safety Commission first noted injuries associated with the largely unregulated tanning industry in 1974.³ In response, the FDA limited radiation

levels, required indoor tanning devices to have timers and manual off switches, and mandated the use of protective eyewear. These changes sparked industry backlash due to the cost of compliance. The Indoor Tanning Association (no longer in operation) hired a lobbying firm in 2009 that successfully fought to resist further regulation.³

More than 3000 indoor tanning-related injuries are treated in emergency departments annually.⁴ White women aged 18 to 24 years who visit tanning salons are most likely to sustain injuries. In one study, severe skin burns accounted for 80% of emergency department visits, while the rest were due to fainting, eye injuries, and infections from unsanitary equipment. Timer malfunctions may play a role in tanning bed injuries, as several injured patients have reported falling asleep while tanning.⁴ Only 5% of tanning salons in North Carolina complied with FDA-recommended exposure schedules in 2003, suggesting that neglect or deliberate override of safety features also may contribute to injury.⁵

Challenges in Changing Tanning Behaviors

Use of indoor tanning facilities by adolescents is boosted by their misperceptions of peer engagement. Many teenagers overestimate the number of their peers who tan, which influences their own behavior.⁶ This phenomenon illustrates the importance of perceived social norms in this demographic group. Motivating adolescents to take actions that violate these norms poses a considerable challenge.

To teenagers, the perceived immediate benefits of indoor tanning far outweigh perceived costs. The immediate benefit of indoor tanning is having attractive skin, which may improve social standing and perceived self-worth. When adolescents weigh costs and benefits at different points in time, the present value of future events is

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discounted when compared to current events. For example, an immediate loss of \$1000 is more impactful than losing \$1000 ten years down the road. Adolescents are motivated to succeed in the short-term and may heavily discount future adverse effects such as the risk for developing cancer or premature aging of the skin. Therefore, getting a tan may be the “rational” decision even if there is an increased risk of future skin cancer.⁷

The addiction theory of tanning seeks to explain why individuals continue to tan despite knowledge of the associated risks. Exposure to UV radiation releases endorphins, producing a natural narcotic effect.⁸ The relaxing feeling sunbathers experience may lead to a phenomenon similar to addictions to opioids, alcohol, tobacco, and sugar. Behavior change is a process that unfolds over time. The 5 stages are precontemplation, contemplation, preparation, action, and maintenance.⁹ Education falls on deaf ears when the recipients are not ready to consider change. Individuals who are already thinking about cutting back on tanning fall into the category of contemplators and are the most open to educational techniques.⁹

Potential Solutions

Despite the dire long-term consequences of melanoma, warning adolescents of the increased cancer risk from tanning is an ineffective dissuasion strategy.¹⁰ Solutions that aim to limit tanning behaviors in this population should instead center on decreasing the present utility of a tan. Emphasis on the risk of immediate injury may be one effective route. The costs of potential damage to current appearance, vision, and overall health are not readily discounted by adolescents. Teens who devote time and money to the pursuit of a golden glow place high value on attractiveness. Such individuals respond best to loss-framed messages that focus on the impact of UV exposure on appearance, not just their health.¹¹ However, appearance-motivated individuals may feel threatened by interventions that aim to reduce their decision freedom and display high reactance, leading them to reassert their freedom by resisting antitanning messages.¹² Another strategy is altering media messaging to support a wider swathe of skin tones, reducing the social benefits of a tan. To swing the needle on our cultural norms, this intervention will require an enduring effort with backing from media outlets and celebrities.

Taxes on tanning salons and devices provide a basic economic disincentive to adolescents who typically have limited funds. State cigarette tax increases successfully reduced youth consumption of tobacco in the 1990s.¹³ A provision of the Patient Protection and Affordable Care Act levied a 10% excise tax on tanning salons with promising early results.¹⁴ Further taxation may generate revenue for educational campaigns on the injury risks of

tanning. Continued safety improvements that limit user exposure to UV radiation and enforcement of FDA regulations also will decrease injury rates. Minimizing the UV output of tanning beds and designing protective equipment for tanners are 2 potential objectives. Improvement of over-the-counter sunless tanning agents also will provide alternatives to catching rays for adolescents who wish to attain a bronzed complexion.

Final Thoughts

Health care providers must assess a patient’s readiness for change and tailor interventions accordingly. Regardless of the method, new approaches to combat adolescent tanning injuries may reduce health care costs and minimize serious public health concerns for the next generation.

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