

## UV Dependence

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*The hole in the ozone layer  
Is all right by me  
Makes England warmer in the summer  
Them tropical guys had it too good too long  
High time they learned to sing a different song*

*And anyway, what's wrong with the odd melanoma  
If it gets us all out of the coma*

Marillion<sup>1</sup>

As these tongue-in-cheek lyrics indicate, UV exposure can have an uplifting effect. In fact, it has been hypothesized that many individuals actually may be addicted to UV exposure, either in the form of natural sunlight or indoor tanning. We all have those patients who, despite our warnings about potential risks, cannot go without their “fix” of sun or indoor tanning. They enjoy the feeling it produces or they refuse to give up their tan. For these patients, topical sunless tanning products will not suffice.

Nearly 30 million people utilize indoor tanning in the United States each year (2.3 million teenagers).<sup>2</sup> The estimated revenue of the indoor tanning industry is \$5 billion, a fivefold increase from 1992.<sup>3,4</sup> In the United States, more than 1 million people tan indoors on an average day.<sup>5</sup> Disturbingly, indoor tanning bed users in Norway and Sweden were reported to have a 55% increase in their melanoma risk.<sup>6</sup>

Some recently published studies suggest that indoor tanning can be addictive.<sup>7,8</sup> Zeller et al<sup>7</sup> investigated if indoor tanning leads to dependency. By conducting telephone interviews with

1275 adolescents, aged 14 to 17 years, the researchers assessed self-reported difficulty in quitting indoor tanning in 267 adolescents (20.9% of total) who tanned indoors more than once in the previous year in relation to age of initiation, frequency of use, and positive or negative consequences of the practice.<sup>7</sup>

Zeller et al<sup>7</sup> found that it was more difficult for someone to quit indoor tanning if they began at a younger age ( $\leq 13$  years old vs 16–17 years old; odds ratio, 4.3; 95% confidence interval, 1.3–14.7) and had a higher frequency of use ( $P = .009$ ). Teenaged subjects who agreed that tanning improved their mood also were more likely to say that indoor tanning would be difficult to quit. Other factors, such as knowing someone with skin cancer or being aware that indoor tanning increases one's risk of developing skin cancer, did not affect a teenaged subject's response to the question, “How hard would it be for you to stop tanning indoors?” The researchers concluded that these findings, though preliminary, for age at initiation and frequency of use in relation to difficulty of quitting indoor tanning are consistent with other potentially addictive behaviors adopted during adolescence.<sup>7</sup>

Kaur et al<sup>8</sup> recently evaluated if opioid antagonism blocks potential reinforcing effect of indoor tanning in 8 frequent tanners and 8 infrequent tanner control subjects. The researchers found that opioid blockade reduced UV preference in frequent tanners. Four of 8 frequent tanners, but no infrequent tanners, exhibited withdrawal-like symptoms with naltrexone administration. Further study confirming a high prevalence of withdrawal symptoms among frequent tanners treated with opioid blockade would further demonstrate the addictive nature of UV exposure.<sup>8</sup>

Given the potential for addiction, it would be beneficial to integrate this new information

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into our approach to chronic indoor tanners. If we can learn to identify people at highest risk for addiction, early counseling or referral to a mental health professional might be beneficial. Fighting addiction is a challenge for both patients and physicians, but successful intervention on our part may save a lot of lives.

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