



# American Academy of Dermatology and AAD Association

## INDOOR TANNING FACT SHEET

### Who Tans Indoors?

- On an average day in the United States, more than 1 million people tan in tanning salons.<sup>1</sup>
- Nearly 70 percent of tanning salon patrons are Caucasian girls and women, primarily aged 16 to 29 years.<sup>2</sup>
- Nearly 28 million people tan indoors in the United States annually. Of these, 2.3 million are teens.<sup>3,4</sup>
- The indoor tanning industry's revenue was estimated to be \$2.6 billion in 2010.<sup>5</sup>

### Risks of Indoor Tanning

- The United States Department of Health & Human Services and the World Health Organization's (WHO) International Agency for Research on Cancer panel have declared ultraviolet (UV) radiation from the sun and artificial sources, such as tanning beds and sun lamps, as a known carcinogen (cancer-causing substance).<sup>6</sup>
- Indoor tanning equipment, which includes all artificial light sources including beds, lamps, bulbs, booths, etc., emits UVA and UVB radiation. The amount of radiation produced during indoor tanning is similar to the sun and in some cases may be stronger.<sup>7,8</sup>

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<sup>1</sup> Whitmore SE, Morison, WL, Potten CS, Chadwick C. Tanning salon exposure and molecular alterations. *J Am Acad Dermatol* 2001;44:775-80.

<sup>2</sup> Swerdlow AJ, Weinstock MA. Do tanning lamps cause melanoma? An epidemiologic assessment. *J Am Acad Dermatol* 1998;38:89-98.

<sup>3</sup> Kwon HT, Mayer JA, Walker KK, Yu H, Lewis EC, Belch GE. Promotion of frequent tanning sessions by indoor tanning facilities: two studies. *J Am Acad Dermatol* 2002;46:700-5.

<sup>4</sup> Dellavalle RP, Parker ER, Ceronisky N, Hester EJ, Hemme B, Burkhardt DL, et al. Youth access laws: in the dark at the tanning parlor? *Arch Dermatol* 2003;139:443-8.

<sup>5</sup> "Tanning Salons in the US: 81219c." IBISWorld Industry Report. 2009 August 7.

<sup>6</sup> U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program. Report on carcinogens, 11th ed: Exposure to sunlamps or sunbeds.

<sup>7</sup> Hornung RL, Magee KH, Lee WJ, Hansen LA, Hsieh YC. Tanning facility use: are we exceeding the Food and Drug Administration limits? *J AM Acad Dermatol*. 2003 Oct;49(4):655-61.

<sup>8</sup> Miller, SA, Hamilton, SL, Wester, UG, Cyr, WH. An analysis of UVA emissions from sunlamps and the potential importance for melanoma. *Photochem Photobiol* 68(1998), 63-70.

- Studies have found a 59 percent increase in the risk of melanoma in those who have been exposed to UV radiation from indoor tanning before age 35, and the risk increases with each use by 1.8 percent per session per year.<sup>9,10,11</sup>
- Evidence from several studies has shown that exposure to UV radiation from indoor tanning devices is associated with an increased risk of melanoma and non-melanoma skin cancer such as squamous cell carcinoma and basal cell carcinoma.<sup>1,2, 10, 12</sup>
- Studies have demonstrated that exposure to UV radiation during indoor tanning damages the DNA in the skin cells. Excessive exposure to UV radiation during indoor tanning can lead to premature skin aging, immune suppression, and eye damage, including cataracts and ocular melanoma.<sup>1,13,14,15, 16</sup>
- In addition to the above mentioned risks, frequent, intentional exposure to UV light may lead to an addiction to tanning.<sup>17</sup>
- Indoor tanning beds/lamps should be avoided and should not be used to obtain Vitamin D because UV radiation emitted from indoor tanning equipment is a risk factor for skin cancer. Vitamin D can be obtained through a healthy diet and oral supplements.
- In a recent survey of adolescent tanning bed users, it was found that approximately 58 percent had burns due to frequent exposure to indoor tanning beds/lamps.<sup>18</sup>
- The FDA estimates that there are approximately 3,000 hospital emergency room cases a year due to indoor tanning bed and lamp exposure.<sup>19</sup>

<sup>9</sup> Lazovich, D, et al. "Indoor Tanning and Risk of Melanoma: A Case-Control Study in a Highly Exposed Population." *Cancer Epidemiol Biomarkers Prev.* 2010 June;19(6):1557-1568.

<sup>10</sup> The International Agency for Research on Cancer Working Group on artificial ultraviolet (UV) light and skin cancer. The association of use of sunbeds with cutaneous malignant melanoma and other skin cancers: A systematic review. *International Journal of Cancer:* 2006 March 1;120:1116–1122.

<sup>11</sup> Cutaneous melanoma attributable to sunbed use: systematic review and meta-analysis. *British Medical Journal* 2012;345:e4757. Erratum: *British Medical Journal* 2012;345:e850313. Karagas M, et al. Use of tanning devices and risk of basal cell and squamous cell skin cancers. *Journal of the National Cancer Institute.* 2002 February 6;94(3):224-6.

<sup>12</sup> Karagas M, et al. Use of tanning devices and risk of basal cell and squamous cell skin cancers. *Journal of the National Cancer Institute.* 2002 February 6;94(3):224-6.

<sup>13</sup> Piepkorn M. Melanoma genetics: an update with focus on the CDKN2A(p16)/ARF tumor suppressors. *J Am Acad Dermatol.* 2000 May;42(5 Pt 1):705-22; quiz 723-6.

<sup>14</sup> Vajdic CM, Krickler A, Giblin M, McKenzie J, Aitken JF, Giles GG, Armstrong BK. Artificial ultraviolet radiation and ocular melanoma in Australia. *Int J Cancer.* 2004 Dec 10;112(5):896-900.

<sup>15</sup> Walters BL, Kelly TM. Commercial tanning facilities: a new source of eye injury. *Am J Emerg Med* 1987;120:767-77.

<sup>16</sup> Clingen PH, Berneburg M, Petit-Frere C, Woollons A, Lowe JE, Arlett CF, Green MH. Contrasting effects of an ultraviolet B and an ultraviolet A tanning lamp on interleukin-6, tumour necrosis factor-alpha and intercellular adhesion molecule-1 expression. *Br J Dermatol.* 2001 Jul;145(1):54-62.

<sup>17</sup> Fisher DE, James WD. Indoor tanning--science, behavior, and policy. *N Engl J Med* 2010;363:901-3.

<sup>18</sup> Cokkinides V, Weinstock M, Lazovich D, Ward E, Thun M. Indoor tanning use among adolescents in the US, 1998–2004. *Cancer* 2009; 115: 190–198.

<sup>19</sup> The FDA - accessed September 2009. <http://www.fda.gov/Radiation->

## Legislation/Regulation

- On May 6, the FDA issued a proposed order that recommends against the use of tanning beds by minors under 18, calls for the reclassification of indoor tanning devices from a Class I to a Class II medical device, and would require labeling on indoor tanning devices that clearly communicates the risks of skin cancer to all users. The Academy supported the proposed order.
- In 2013, Illinois, Nevada, Oregon and Texas passed laws that prohibit minors under the age of 18 from indoor tanning. Additionally, Connecticut and New Jersey passed laws that prohibit minors under the age of 17 from using tanning devices.
- On Oct. 9, 2011, California became the first state in the nation to prohibit the use of indoor tanning devices for all children and adolescents under the age of 18. On May 2, 2012, Vermont became the second state to ban indoor tanning for those 18 years and younger.

## Academy Position Statement on Indoor Tanning

- The American Academy of Dermatology Association (AADA) opposes indoor tanning and supports a ban on the production and sale of indoor tanning equipment for non-medical purposes.
- The American Academy of Dermatology supports the WHO recommendation that minors should not use indoor tanning equipment because indoor tanning devices emit UVA and UVB radiation and over exposure to UV radiation can lead to the development of skin cancer.
- Unless and until the FDA bans the sale and use of indoor tanning equipment for non-medical purposes, the Academy supports restrictions for indoor tanning facilities, including:
  - No person or facility should advertise the use of any UVA or UVB tanning device using wording such as “safe,” “safe tanning,” “no harmful rays,” “no adverse effect” or similar wording or concepts.