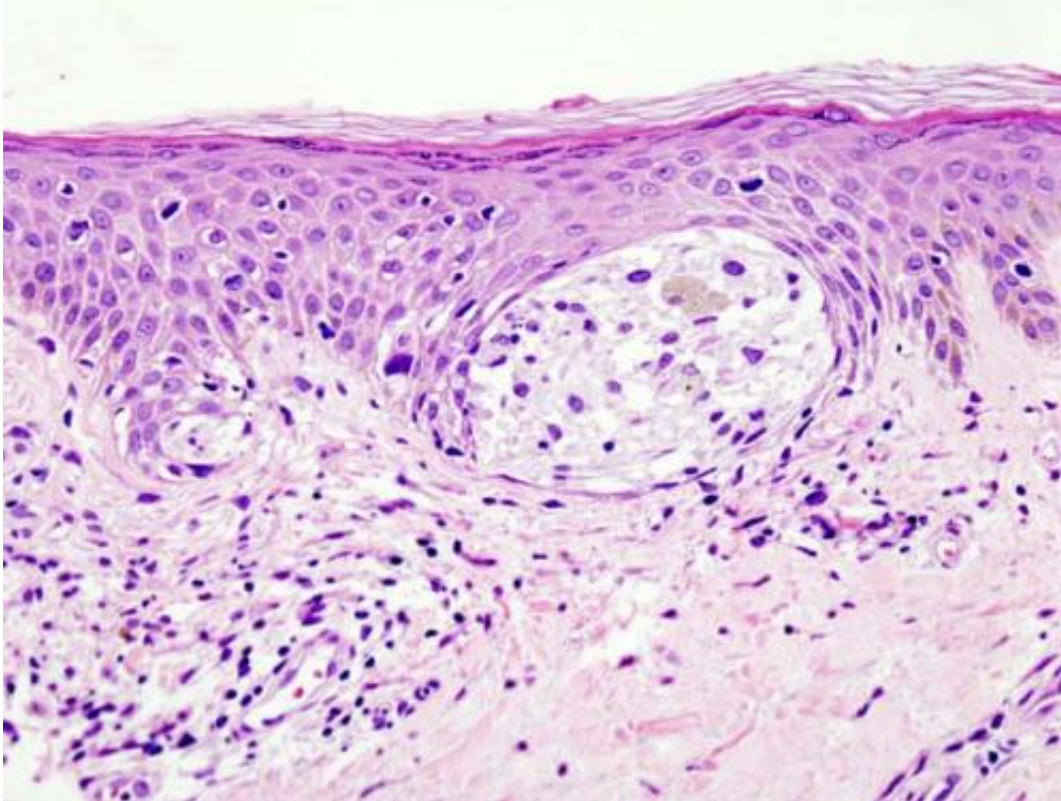


# How artificial tanning can lead to melanoma

May 1 2015, by Scott Gilbert

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Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

Young women may be up on the latest fashions and trends as they prepare for prom season. But what many don't know is that the tan that looks oh-so-good with their dress may be the first step toward skin cancer.

And cancer is not glamorous.

These may be the same children whose parents slathered them with 30 SPF sunscreen during beach vacations. Dr. Rogerio Neves, deputy director of the Penn State Hershey Melanoma and Skin Cancer Center, said artificial tanning is where the problem lies.

Melanoma is no longer showing up only in women who have had five or six decades of sun exposure during their lives. It is now the second most common cancer found in women ages 20 to 30 years old. In just the past decade, the number of [young women](#) in that age bracket who have been diagnosed with melanoma has increased eightfold. The numbers also increased four-fold for young men of the same age.

"We said, 'Wow, why is that?'" Neves said. "It was clearly not related only to regular exposure." Childhood sunburns and ultraviolet (UV) exposure in adulthood may also contribute to melanoma risk, but the rise in the use of indoors tanning beds is one of the main reasons behind this trend.

Many gyms and fitness centers offer free, unlimited tanning as a perk of membership and market to high school and college students. Although many of the young users are introduced to tanning beds as a one-time thing they plan to do for prom, it can become addicting.

"When you are under that lamp, it helps release endorphins, which make you feel relaxed and well," Neves said.

Nearly a quarter of 5,600 high school students who participated in a recent study said they participated in indoor tanning more than once. More than half said they had used an artificial tanning bed more than 10 times in the past year.

The lamps used in tanning beds emit over 95 percent UVA rays and minimal UVB rays. The UVB rays that come from natural sunshine are what make you feel burned and red, and cause you to seek shade and protection. Because they are present in such small quantities in the tanning beds, Neves said, "You can stay in there frying and you are not feeling any bad sensations."

UVA radiation is also more harmful than UVB in that it penetrates deeper into the skin and create more harmful mutations.

"There is no such thing as a healthy tan," Neves said. That is why individuals who have darker skin because of their ethnic backgrounds must still use sunscreen and other precautions to avoid prolonged exposure outdoors.

As if [skin cancer](#) weren't enough of a danger, artificial tanning can cause other problems such as cataracts, reactions with medications and early-onset aging of the skin which makes you look older than you really are.

And then there is the question of how hygienic the [tanning beds](#) are. "There have been cases of people contracting HPV and herpes infections from poorly sanitized beds," Neves said.

His native Brazil banned artificial tanning nationwide in 2009, and Australia and several European countries have followed suit since then.

In May 2014, Pennsylvania Governor Tom Corbett signed a law that teenagers 16 and younger cannot use indoor tanning facilities and those who are 17 must have parental consent. Two months later, the U.S. surgeon general issued a call to action against the \$5 billion tanning industry. Following California's ban in 2011, 10 other states have since passed under-18 legislation: Vermont, Nevada, Texas, Oregon, Illinois, Washington, Minnesota, Hawaii, Louisiana and Delaware.

Neves said those who work in the industry won't be out of jobs – they'll simply switch to safer methods such as spray tanning, which interacts with the keratin in the skin to more safely produce a temporary glow. He hopes the political bans and attention will make a difference: "When the surgeon general comes in, that's when people start to listen."

Provided by Pennsylvania State University

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