

[← Back to Original Article](#)

Sunless tanning safer but can have a dark side

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A glowing suntan is still glorified in the U.S., despite decades of public education campaigns about the relationship between sun exposure and skin cancer. According to the American Cancer Society, rates of melanoma, the most lethal form of skin cancer, have continued to increase through the last 30 years. And though death rates from melanoma have recently decreased, largely due to earlier diagnoses, almost every hour one American dies of the disease.

In light of these statistics, it's no wonder that sunless tanning options — creams, aerosol sprays and pills — continue to flood the market, promising consumers who seek darker skin tones a golden glow without the harmful effects of UV radiation.

But is there really such thing as a "safe tan"?

The most popular options for sunless tanning are sprays and creams containing dihydroxyacetone (DHA), a Food and Drug Administration-approved color additive. DHA is a sugar compound that reacts with proteins in the outermost layer of dead skin cells to produce a brownish hue that lasts until the skin sloughs off.

Dr. James Beckett, a dermatologist at the Palo Alto Medical Foundation, says sunless tanning creams containing DHA appear to be a reasonable alternative for those who can't resist the appeal of a tan-looking skin. "They are much safer than sunbathing," he says. But though he's never seen patients with an allergic reaction to DHA itself, he believes it's possible for people to develop a reaction to the preservatives, perfumes and other ingredients in tanning products. Indeed, the FDA has received a few reports of allergic rashes from the items.

No studies have looked at health effects of regular, long-term use of sprays and creams containing DHA, but Dr. Martin A. Weinstock, professor of dermatology and epidemiology at Brown University, says there's no reason to expect any danger. "We do have a number of years of experience with people using [the products], so we have a fair amount of confidence that they're not harmful," he says.

But some of that confidence about safety disappears when a person walks into a spray-tan booth that provides a full-body blast of tanner, warns Dr. Jennifer M. Fu, a dermatologist at Solano Dermatology Associates. "We don't know if dihydroxyacetone is safe for use around the eyes, lips or other mucous membranes, or for inhalation, ingestion or absorption into the bloodstream. Appropriate safety studies just haven't been done," she says.

The FDA has received reports of coughing, dizziness and fainting from people who've used sunless tanning booths — but it's unclear whether these symptoms came about in reaction to sunless tanners or if they were related to preexisting medical conditions. A number of sunless-tanning-booth manufacturers have said that they plan to conduct studies demonstrating the safety of the process, but none has yet provided data to the FDA.

Sunless tanning facilities don't always make the experience as safe as it can be. Fu led a small 2004 study examining safety practices, which found that standards varied: All 17 of the facilities surveyed encouraged customers to close their eyes, 13 recommended that customers hold their breath, but only one offered safety equipment — disposable eyewear, petroleum jelly for the lips, and cotton balls for the nostrils.

Tempted by "tanning pills"? Beware. The pills work by tinting the skin with high doses of color additives, most often a naturally occurring pigment called canthaxanthin. Though canthaxanthin is FDA-approved for human consumption as a food coloring (often found in items such as ketchup and salad dressing), the dosage required to give an orange-brown hue to human skin is much higher than anything you'd get from eating.

In the early 1990s, a company submitted an application to the FDA for the approval of tanning pills containing canthaxanthin, but the application was withdrawn because of side effects that included yellow crystal deposits in the eyes, liver damage, nausea, cramping, diarrhea, severe itching and welts. Despite FDA regulations banning the sale of canthaxanthin as a tanning agent, these pills continue to be sold over the Internet and elsewhere.

There's another possible problem with all of these products: Beckett worries that they might encourage people to let down their guard against UV radiation. Unlike a real suntan, a tan from a bottle does not provide any long-term protection against harmful rays, and studies have found that many people who turn to sunless tanning are dangerously cavalier about UV exposure. They get a lot of sunburns, they aren't especially likely to use sunscreen or protective clothing when outdoors and they spend a lot of time in indoor tanning salons.

Vilma E. Cokkinides, strategic director in risk factor surveillance at the American Cancer Society, says that she would ultimately like to see sunless tanning substitute for UV tanning — but that's not what she's seen thus far. In a large population study of adolescents that was published in the Archives of Dermatology last year, she and her colleagues found that teens who practice sunless tanning were also more likely to use indoor tanning.

"People are using them interchangeably," she says. In other words, the products continue to promote tanning appeal but don't necessarily reduce indoor tanning use.

There's some room for optimism, though: A study published in the same issue of that journal found that people can embrace fake tanning *and* stay out of the sun if they get the right encouragement. Female beach-goers in the study received skin cancer education, were shown attractive pictures of women with sunless tans and free samples of sunless tanning product as well as sunscreen — plus a motivational follow-up 10 months later. Compared with a control group, they spent less time in the sun during the following year.

Weinstock, who coauthored the Archives of Dermatology study on adolescents and tanning, agrees that sunless tanning products do have potential to replace

UV tanning — but that promoting them may also perpetuate the allure of the suntan.

"Part of the problem that got us into this skin cancer epidemic we've been experiencing is that there is glorification of the tan," he says. "People who have light skin want to have darker skin. That leads to increased skin cancer risk."

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