To tan or not to tan

Even in February, it's tan time.

This après-winter-break week finds the return of some otherwise pale vacationers with bronzed skin - a sign they've defied scientific wisdom about the sun's ultraviolet rays' potential for danger. Even now, the conventional science is being challenged by a tanning industry campaign that touts the sun's healthier side.

But "there is no such thing as a safe tan," says Dr. Darrell Rigel, a clinical professor of dermatology at New York University in Manhattan who does laboratory research on melanoma and other skin cancers.

Last summer, Rigel was one of the researchers who argued the point at a Food and Drug Administration meeting on the safety of tanning beds. They came armed with studies, including a new analysis suggesting that people who routinely use tanning beds had increased their risk of skin cancer twofold. "We want them banned for people under 18," Rigel said.

But some scientists have begun to argue that our avoidance of sunlight has a cost: The sun, after all, is powered with the most potent source of vitamin D, and humans may be experiencing an epidemic of vitamin D deficiency. It's a concern, they say, because insufficient vitamin D may be linked to medical conditions including prostate and breast cancers.

The tanning wars come as the search for a safer tan continues. Tanning pills have been developed but so far haven't emerged from the research lab. The latest craze is a spray-on tan, which dermatologists say is a good, safe alternative.

The tanning industry has found a measure of support from Dr. Michael Holick, director of the Bone Health Care Clinic at Boston University Medical Center. Though still director of the clinic, Holick was recently stripped of his title in the university's dermatology department because, he said, his colleagues thought that his message was not in line with dermatology's push to reduce skin cancers.

Boston University's dermatology chairwoman, Dr. Barbara Gilchrest, said Holick resigned after it became clear that "his message was doing a disservice to the field and to the public." She termed the evidence for an epidemic of vitamin D deficiency weak and "absurd," and said linking it to medical illnesses is "schlock" science.

Holick argues that sunshine can easily boost people's vitamin D levels and lower their risk for a number of medical problems. He is convinced that 10 minutes in the midday sun, two to three times a week, is valuable and will supply sufficient levels of the vitamin. After that, he says, it's important to use a sunscreen, which protects the skin but, he says, also prevents the body from storing the vitamin D from the sun.

"I am just trying to promote sensible sun exposure," he said in a telephone interview. He concedes that some of his research funding comes from

unrestricted grants from the Indoor Tanning Association. Gilchrest, his former boss at the BU dermatology department, said the funds amount to hundreds of thousands of dollars.

Dermatologists are enraged.

"It's downright dangerous," said Dr. James Spencer, vice chairman and associate professor in the department of dermatology at Mount Sinai School of Medicine in Manhattan. He believes those hearing Holick's message will see it as a reason to spend extended time in sunlight or on tanning beds.

"If Holick wants to promote vitamin D, I have no problem with that," Spencer said. "But tell people to drink another glass of milk or take a vitamin supplement. Don't risk getting skin cancer."

Unlike the case with some other cancers, "the cause of skin cancer is not confusing," Spencer said. "One thing causes it: overexposure to the ultraviolet rays of the sun. Period. It's a short-term cosmetic benefit with long- term damage."

Risking skin cancer

Carla Newman wishes now that she understood that message when she was growing up. Newman, a 41-year-old from Manhattan, remembers basking in the sun as a girl and frequenting tanning salons as a young adult.

"It almost became an addiction," she said. "I just always felt better when I had a tan."

But when she was 28, a mole on her rib cage was diagnosed as melanoma, the harshest form of skin cancer. "Of course, now I regret all the years I stayed in the sun," said Newman, the mother of a newborn daughter. "I will do everything I can to protect her. I paid the price."

More than a million new skin cancers are diagnosed each year in the United States, and rates are climbing. The most aggressive and deadly is melanoma, diagnosed in 50,000 people a year. Unchecked, melanoma thickens and spreads and is responsible for 7,600 deaths a year, according to federal statistics.

The two other types of skin cancer - basal cell and squamous cell - are slow-growing and can generally be caught in time for successful treatment. Still, squamous cell carcinoma claims about 2,200 lives a year.

Skin gets its color from a hormone called melanin, a brown pigment that is produced by a body cell called a melanocyte. It actually works like a natural sunscreen; the more melanin produced by the body, the less risk for skin cancer and wrinkles. That's why African-Americans have significantly less skin cancer than fair-skinned people of European ancestry.

A tan is actually the result of the body's producing more melanin - a way of protecting itself from further damage.

But UV rays damage the genetic material in the skin cells, and the cumulative damage leads to mutations and abnormal cell proliferation. The result is cancer.

Scientists have also found that certain UV rays produce activated oxygen molecules that can damage DNA and shut down the immune system's ability to repair skin cells. "The development of cancer is not a single event," Spencer said.

According to industry estimates, 28 million Americans tan indoors annually in about 25,000 tanning salons around the country.

In 1994, the American Medical Association called for a ban on the sale and use of tanning equipment for cosmetic purposes. But the U.S. Federal Trade Commission, which regulates the sale and marketing of tanning equipment, opted against a ban - instead telling the industry it could not make health claims. Still, many Web sites promote what they call the benefits of tanning.

A study last summer found a two-and-a-half times greater risk of skin cancers in people who visit tanning salons once a month or more. The review article was published in last month's issue of Pigment Cell Research, a British journal.

"It is so preventable," NYU's Rigel said. "You can't undo the damage that you've already done. But you can prevent even more damage."

An instant tan

Sharon Low has tried the spray-on alternative. "It's an instant tan," said the Bethpage hairdresser. "I get a darker and more even tan." The sprayed- on tan lasts about a week and costs $25.

The sprays contain a stain made from a food coloring known as DHA. Humans have safely ingested foods colored brown with DHA for decades, and scientists say that there are no known ill effects. The Food and Drug Administration is now trying to regulate how much DHA can be used in a single spraying session, which lasts six seconds.

"There's no UV risk," added Dr. Stephen Greenberg, a plastic surgeon with offices in Woodbury and Manhattan. "It's definitely the safest tan one can get."

Holick's enthusiasm for exposure to sunshine came in the 1980s, when he discovered that vitamin D could successfully treat psoriasis. His work helped convince juice manufacturers to add the vitamin to its products.

Tests that Holick and other vitamin D scientists have done suggest that 60 percent of people are vitamin D deficient most of the time. Other scientists insist that vitamin D deficiency is quite rare, as evidenced by the disappearance of rickets, a once common childhood malady.

People in sunny climates can make more vitamin D in their skin, Holick said, and those who don't show a greater risk of colon, prostate and breast cancers and possibly high blood pressure. The link between these illnesses and vitamin D deficiency is weak, BU's Gilchrest said.

Still, Holick is a believer. To test the blood pressure theory, he asked 39 hypertensive patients to participate in a study. Half spent 10 minutes two to three times a week under tanning bed UVA lights, and the other half went under tanning UVB lights. The UVB light spectrum has been associated with reddening and skin cancer. But after three months, Holick said, only those who had exposure to UVB rays had normal blood pressures. The study was published in Lancet in 1998.

He's willing to concede that too much exposure to the sun is dangerous. "There is no question that chronic exposure to sun increases the risk of basal and squamous cell cancers," he said. "But if I am right, exposure to the sun will increase vitamin D, and that could protect against so many other cancers and other conditions."

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