

New study links tanning beds to non-melanoma skin cancer

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Indoor tanning beds can cause non-melanoma skin cancer – and the risk is greater the earlier one starts tanning, according to a new analysis led by UCSF.

Indoor tanning is already an established risk factor for [malignant melanoma](#), the less common but deadliest form of [skin cancer](#). Now, the new study confirms that indoor tanning significantly increases the risk of non-[melanoma](#) skin cancers, the most common [human skin](#) cancers.

In the most extensive examination of published findings on the subject, the researchers estimate that indoor tanning is responsible for more than 170,000 new cases annually of non-melanoma skin cancers in the United States – and many more worldwide.

Young people who patronize tanning salons before age 25 have a significantly higher risk of developing basal cell carcinomas compared to those who never use the popular tanning booths, the researchers reported.

The study will be published online October 2, 2012 in *BMJ*, the British general medical journal.

"The numbers are striking – hundreds of thousands of cancers each year are attributed to [tanning beds](#)," said Eleni Linos, MD, DrPH, an assistant professor of dermatology at UCSF and senior author of the study. "This creates a huge opportunity for [cancer prevention](#)."

The study was a meta-analysis and systematic review of medical articles published since 1985 involving some 80,000 people in six countries and data extending back to 1977.

The popularity of indoor tanning in the United States first began in the 1970s, and now millions of people annually patronize [tanning salons](#).

The [National Cancer Institute](#) and the federal [Centers for Disease Control and Prevention](#) in 2010 reported that 5.6 percent of the American public used indoor tanning during the prior year, with higher rates among women, whites, and young adults.

Currently, there are some 19,000 indoor tanning businesses, according to an industry trade organization.

But in pursuit of golden hues, many people may unknowingly subject themselves to dermatological danger.

The World Health Organization has said that ultraviolet tanning devices cause cancer in people and the International Agency for Research on Cancer considers indoor tanning a "Class 1" carcinogen. Government officials in the U.S. and abroad are increasingly restricting and regulating tanning facilities.

The new study adds to the mounting evidence on the harms of indoor tanning, showing significant elevated risk of the most common forms of skin cancer.

"Several earlier studies suggested a link between non-melanoma skin cancer and indoor tanning. Our goal was to synthesize the available data to be able to draw a firm conclusion about this important question," said co-author Mary-Margaret Chren, MD, professor of dermatology at UCSF.

The researchers studied both early life exposure and regular use of tanning booths.

Those who exposed themselves to indoor tanning had a 67 percent higher risk of developing squamous cell carcinoma and a 29 percent higher risk of developing basal cell carcinoma, compared to people who never did indoor tanning.

The scientists noted several limitations including the broad timeframe that the data spans. Also, indoor tanning devices have changed over the years "from high UVB output to predominantly UVA output," the authors said. But, they point out, numerous studies have indicated that both UVB and UVA can cause significant skin damage.

"Australia and Europe have already led the way in banning tanning beds for children and teenagers, and Brazil has completely banned tanning beds for all ages," Linos said. "I hope that our study supports policy and public health campaigns to limit this carcinogen in the United States."

More information: Indoor tanning and non-melanoma skin cancer: systematic review and meta-analysis, *BMJ*, 2012.

Provided by University of California, San Francisco

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