

The surgeon general should say that indoor tanning causes skin cancer

It is a widely accepted fact that smoking causes lung cancer. This dates back to 1964, when the Surgeon General's report clearly acknowledged this link. Fifty years later, the Acting Surgeon General, Dr. Lushniak, was asked to identify strategies to achieve skin cancer prevention in the "Surgeon General's Call to Action to Prevent Skin Cancer." Surprisingly, the report did not include a simple statement recognizing ultraviolet radiation (UV) tanning as a cause for skin cancer.

Skin cancer is the leading cause of cancer in the world. It occurs when normal skin cells undergo a transformation that enables them to grow beyond normal limits. Skin cancers are often categorized into one of two groups: non-melanoma skin cancers and malignant melanomas. While non-melanoma skin cancers, including basal cell carcinomas and squamous cells carcinomas, are unlikely to spread to other parts of the body, they can be locally disfiguring if not promptly treated. Malignant melanomas, on the other hand, are highly aggressive, often spread to other parts of the body, and can be fatal.

Nearly 13% of high school students reported using an indoor tanning device in the 2013 Youth Risk Behavior Surveillance System. In fact, one in every three white female high school students reported using one in the past year. With the alarming popularity of tanning bed use, it is important to clearly identify whether it is a direct cause of skin cancer.

In our study, we used a set of nine criteria, formally known as the Bradford Hill criteria, to evaluate whether a causal relationship between UV tanning bed use and skin cancer exists. We then used the same criteria to identify the link between smoking and lung cancer as a comparison. These criteria address questions such as how specific the associations are ("specificity"), how consistent the findings are ("consistency"), and how strong the links are ("strength of association"). In both cases, the only criterion that could not be satisfied was the "experiment" one: it would be unethical to subject humans to a randomized control trial testing the harms of cigarette smoke or UV tanning bed use.

While the recent Surgeon General's "Call to Action to Prevent Skin Cancer" fails to identify indoor tanning bed use a cause of skin cancer, there is no question that this relationship exists. The point needs to be made clear: just as cigarette smoking causes lung cancer, tanning bed use causes skin cancer.

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