# Tanning Bedlam

## The challenge of reducing the rise in melanoma


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## INTRODUCTION

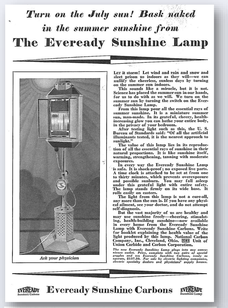
The incidence of melanoma, the deadliest form of skin cancer and the third most common cancer in both women and men aged 20-39, has risen by 46% in the past 15 years. In 2025, 104,000 cases of invasive melanoma are expected to be diagnosed in the US, and 8,430 Americans are projected to die from melanoma. The increase in melanoma has paralleled the rise in tanning bed use, not unlike the dramatic rise in lung cancer in the 20th century as cigarette smoking increased. Of particular concern are the findings of a survey conducted by the American Academy of Dermatology in 2022, in which 38% of Gen Z respondents believed that tanning is safe as long as they don't burn and 28% felt that getting a tan was more important to them than protecting themselves against skin cancer. This poster provides a historical overview of the use and promotion of sunlamps and tanning beds.

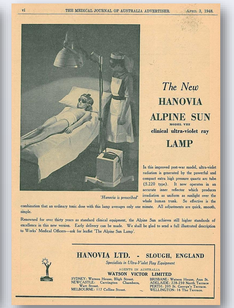
## SUNLIGHT AND HEALTH

For centuries, a pale complexion was a fashionable feature of aristocrats to distinguish themselves from common laborers in an agrarian society. But beginning in the 1760s in England, industrialization resulted in a shift from farming to manufacturing in factories in dense cities. In the 1820's British architect William Fairbairn (1789-1874) designed roofs that admitted indirect natural light to factories. But in 1890 a British medical missionary living in Japan, Theobold A. Palm (1948-1929), hypothesized that the high prevalence of the deforming bone disease rickets in factory workers and children, often called "the English disease," was related to living in cloudy, polluted areas with poor sun exposure. In the 1890s Danish scientist Niels Ryberg Finsen (1860-1904) first used concentrated artificial ultraviolet light (UV) to treat certain skin diseases, for which he was awarded the Nobel Prize in Medicine or Physiology in 1903. In 1919, German pediatrician Kurt Huldschinsky (1883-1940) proved that exposure of young children with rickets to UV radiation from mercury vapor lamps ("artificial sunlight") could resolve the disease by stimulating the skin to produce vitamin D.

## SUNLIGHT AND LOOKS

In the 1920's, French fashion designer Coco Chanel helped popularize a suntan as chic and sporty. The first advertisement for a sunlamp appeared in *Vogue* magazine in 1923. In the 1930's, General Electric promoted the UV light-bulbs in its newly named "sun lamps" as "safe for the whole family." By this time, however, UV light bulbs had been shown to cause skin cancer in laboratory rats.






## FROM SUNLAMPS TO TANNING BEDS

Sunlamps were aggressively promoted by General Electric and Westinghouse throughout the 1940's. In the 1950's, sunlamp advertisements targeting women shifted their emphasis from purported health benefits to cosmetic appeals. The tanning bed, which encloses the user, was invented in 1975 by German scientist Friedrich Wolff (1933-2023). The first U.S. tanning salon opened in 1978 in Arkansas. Today an estimated 10 million Americans use tanning beds at over 27,000 salons.

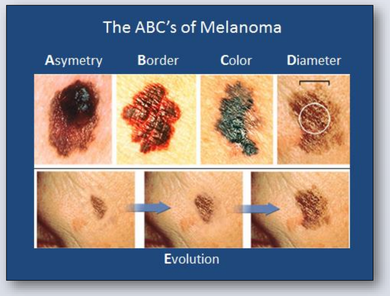


## TANNING BEDS, UV RAYS, AND SKIN CANCER

Vitamin D is found in natural sunlight and ultraviolet radiation. The tanning bed industry promotes this as a beneficial aspect of its devices. However, use of tanning beds results in more intense radiation exposure than from sunlight and causes quicker, deeper damage to skin. In other words, a tan signifies skin damage caused by ultraviolet radiation.

There are two kinds of ultraviolet radiation: UVA and UVB. UVA causes premature skin aging and cancer. Tanning beds emit 12 times more UVA radiation than the sun. UVB causes sunburns and DNA damage that can lead to skin cancer. Contrary to the claims of the tanning bed industry, the beds also emit UVB radiation. Thus, the UV radiation in tanning beds increases users' risk for skin cancer, including melanoma.

Tanning beds are classified as a Group 1 carcinogen. This means that tanning beds have been proven to cause cancer in humans. Those who use tanning beds before age 35 increase their melanoma risk by 75%. Despite this, nearly 70% of tanning salon users are Caucasian women aged 18-29. Researchers at the University of Melbourne found that three-fourths of melanoma cases in persons 18-29 were attributable to tanning beds.




**MELANOMA RISK FACTORS**

- Light skin
- Family history
- Childhood sunburns
- Sensitive skin, including freckles
- Blue/green eyes
- Red/blonde hair
- Moles

**TANNING BED RISKS**

- Melanoma
- Squamous cell carcinoma
- Basal cell carcinoma
- Burns
- Allergic reactions
- Immune suppression
- Injuries to skin/eyes
- Premature aging of skin

## INDOOR TANNING LEGISLATION

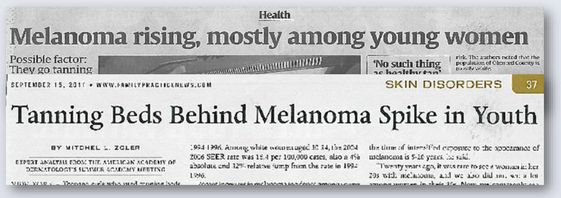
In the U.S. 20 states and the District of Columbia have enacted laws that ban the use of tanning beds by minors under 18. In Australia, which has the world's highest incidence of melanoma, commercial tanning bed establishments have been banned in all states and territories.

## A LETHAL COMPLACENCY

Although virtually all college students who use tanning beds are aware that the devices increase the chances of getting skin cancer, most students also believe that *everything* causes cancer and that tanning bed use is no more risky than many other habits. Upwards of 31%-39% of students who use tanning beds may be addicted to tanning.



student newspaper of the University of Alabama. *Tanning salon advertisements in The Crimson White,* the




## A NEW ONLINE CSTS EXHIBITION DEBUNKS MYTHS OF TANNING BED BENEFITS AND SAFETY

In October 2025, the Center for the Study of Tobacco and Society created an original online exhibition, "Tanning Bedlam," as an educational tool for health professionals and the public.

The exhibition features a video presentation on the epidemiology of melanoma, the mechanism of tanning beds, the health and cosmetic claims used in marketing these devices, and safety myths of tanning beds spread by social media.

## CONCLUSIONS

- 38% of college-age women visit tanning salons regularly, despite increasing evidence that this practice is now considered the foremost avoidable causative factor in the rising incidence of melanoma.
- A single visit to a tanning salon increases the risk of any form of skin cancer.
- Messages by the American Cancer Society and the American Academy of Dermatology about the dangers of tanning beds are being ignored by Gen Z.