

# Just the Facts: Skin Cancer

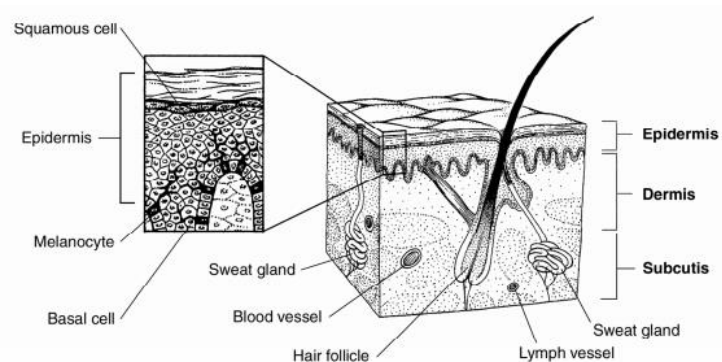
Skin cancer is the most commonly diagnosed cancer in the United States, and rates have been rising for the past 30 years.<sup>1</sup> Over 104,300 *invasive* skin cancers will be diagnosed in the U.S. in 2019, and more than 96,400 of these cases will be melanoma, the most serious and deadliest form of skin cancer.<sup>1</sup> Additionally, over 95,800 cases of *non-invasive* melanomas and millions of cases of basal (BCC) and squamous cell (SCC) skin cancers will also be diagnosed in 2019.<sup>1</sup> In total, over 11,600 men and women are expected to die of skin cancer this year, and over 7,200 of those deaths will be from melanoma.<sup>1</sup>

The costs associated with skin cancer exceed \$8 billion each year – \$3.3 billion of that total is for melanoma treatment.<sup>2</sup>

## Three Types of Skin Cancer

There are three main types of skin cancer:<sup>3,4</sup>

1. *Melanoma* – begins in the melanocytes and is the deadliest form of skin cancer.
2. *Squamous cell cancers* – starts in the squamous cells of the skin and typically appear on sun-exposed areas.
3. *Basal cell cancers* – begins in the basal cell layer of the skin and grow slowly and rarely spread to other parts of the body.



## Risk Factors for Skin Cancer

Exposure to ultraviolet (UV) radiation, in any form, can lead to DNA damage to skin, resulting in short-term adverse effects such as sunburn, eye damage, fainting, and suppression of the immune system.<sup>1,5,6</sup> The damage of UV radiation is cumulative over an individual's lifetime.<sup>1</sup> Repeated exposure can result in long-term effects such as premature aging of the skin, wrinkles, solar keratosis (scaly growth on the skin), permanent eye damage, and skin and ocular cancers.<sup>1,3</sup>

The two types of UV radiation that cause the most damage to skin are:<sup>7,8</sup>

- UVA – The most common kind of UV light which penetrates below the top layer of skin. Wavelength ranges from 315 to 400 nanometers (nm).
- UVB – UV light which does not penetrate as deeply as UVA rays, but still damages the skin. Wavelength ranges from 280 to 315 nm.

Other risk factors include:<sup>9</sup>

- Use of indoor tanning devices
- Fair skin, freckling, and/or light hair
- Presence of atypical, larger, or numerous (more than 50) moles
- Personal or family history of skin cancer, especially melanoma
- Older age
- Weakened immune system
- Smoking
- Long-term skin conditions, rare inherited conditions, and certain treatments for some medical conditions.

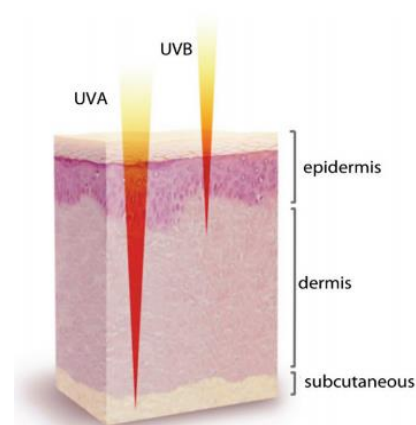


Image Citation: U.S. Department of Health and Human Services. "Surgeon General's Call to Action to Prevent Skin Cancer." Washington, DC: U.S. Dept of Health and Human Services, Office of the Surgeon General; 2014.

## Prevention of Skin Cancer

Avoiding exposure to UV light is the best way to prevent skin cancer.<sup>9</sup> This can be done by:<sup>4,9</sup>

- Avoiding indoor tanning devices.
- Seeking shade when outdoors in the sun, especially between 10 a.m. and 4 p.m.
- Wearing sun-protective clothing, such as long sleeves, pants, hats, and UV protective sunglasses.
- Using broad spectrum sunscreen with a SPF of 30 or greater to exposed skin.

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<sup>1</sup> American Cancer Society. *Cancer Facts & Figures 2019*. Atlanta, GA: American Cancer Society; 2019.

<sup>2</sup> Guy GP Jr, Machlin SR, Ekwueme DU, Yabroff R. Prevalence and costs of skin cancer treatment in the U.S., 2002-2006 and 2007-2011. *Am J Prev Med*. 2015; 48(2): 183–187. doi:10.1016/j.amepre.2014.08.036.

<sup>3</sup> American Cancer Society. What are Basal and Squamous cell *skin cancers*? Accessed August 2019.

<https://www.cancer.org/cancer/skin-cancer/prevention-and-early-detection/what-is-skin-cancer.html>.

<sup>4</sup> National Cancer Institute. Skin cancer prevention – Patient version. Updated April 10, 2019. Accessed August 2019.

[https://www.cancer.gov/types/skin/patient/skin-prevention-pdq#section/\\_4](https://www.cancer.gov/types/skin/patient/skin-prevention-pdq#section/_4).

<sup>5</sup> Eller MS, Maeda T, Magnoni C, Atwal D, Gilchrist BA. Enhancement of DNA repair in human skin cells by thymidine dinucleotides: evidence for a p53-mediated mammalian SOS response. *Proc Natl Acad Sci U S A*. 1997;94(23):12627-12632.

<sup>6</sup> Guy GP, Watson M, Haileyesus T, Annet JL. Indoor tanning-related injuries treated in a national sample of US hospital emergency departments. *JAMA Internal Medicine*. 2015; 175(2): 309-311.

<sup>7</sup> Centers for Disease Control and Prevention. What is skin cancer? Updated June 24, 2019. Accessed August 2019.

[http://www.cdc.gov/cancer/skin/basic\\_info/what-is-skin-cancer.htm#uv](http://www.cdc.gov/cancer/skin/basic_info/what-is-skin-cancer.htm#uv).

<sup>8</sup> National Toxicology Program U.S. Department of Health and Human Services. Scientific review of ultraviolet (UV) radiation, broad spectrum and UVA, UVB, and UVC. Accessed August 2019.

<https://ntp.niehs.nih.gov/ntp/roc/content/profiles/ultravioletradiationrelatedexposures.pdf>.

<sup>9</sup> American Cancer Society. *Cancer prevention and early detection facts & figures 2019-2020*. Atlanta: American Cancer Society; 2019.