

Topic Page: [skin cancer](#)

Definition: **Skin Cancer** from *Encyclopedia of Cancer*

Definition

Refers to cancers involving the skin. About 80% of these skin cancer cases are basal cell carcinoma (BCC), 16% squamous cell carcinoma (SCC), and 4% melanoma.

Summary Article: **Skin Cancer** from *Encyclopedia of Global Health*

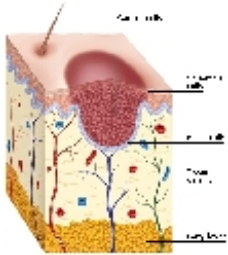


Image from: [Basal cell carcinoma Fast-dividing cells in the... in *The Human Body Book: An Illustrated Guide to Its Structure, Function and Disorders*](#)

Every year, nearly 60,000 people worldwide die from skin cancer caused by exposure to too much sun, according to the World Health Organization (WHO). The first-ever estimate of the global health burden caused by the sun's ultraviolet (UV) radiation shows about 48,000 deaths each year are caused by malignant melanoma, while another 12,000 deaths are caused by other types of skin cancer.

Melanoma is most common among whites, but it is also a threat to people of other races. Whites make up the vast majority of the cases (almost 70 percent). Hispanics account for nearly 29 percent and blacks represent almost 2 percent. However, blacks and Hispanics are more likely than whites to be diagnosed with melanoma that has spread beyond the skin. Most scientific studies and public health efforts about melanoma have focused on whites. Boosting melanoma awareness in nonwhite racial and ethnic groups is encouraged to initiate early melanoma detection.

Like many other cancers and diseases, the odds of survival are best when melanoma is detected in its early stages. Melanoma survival rose from 68 percent in the early 1970s to 92 percent in recent years for whites. Such advances, however, have not occurred in other segments of the population. Researchers note that access to medical care may have been an issue.

Skin color can vary widely within races. In general, lighter complexion skin that burns easily harbors less melanocytes and is at highest risk of both melanoma and nonmelanoma skin cancer. While everyone should check their skin for suspicious changes such as irregularly shaped moles, it can be difficult to spot such changes, especially on darker skin. Doctors can do skin exams as part of a routine checkup.

The skin is the largest human organ. More specifically, the stratum corneum of the epidermis is the outermost human tissue. The skin's visibility to the naked eye makes symptoms easily recognizable to the average patient, increasing the probability of detecting new or changing lesions. On the other hand, while visceral pathology can present with varying systemic symptoms, the skin provides an easily accessible area for biopsy. The overt visibility of the skin can account for the fact that dermatology-related issues comprise 20 percent of primary care doctor visits. Furthermore, because of the size and vulnerability of the skin, the Centers for Disease Control and Prevention reports that skin neoplasia (cancer) is the leading form of cancer in the United States.

Similar to other medical specialties, one must first understand the vernacular of dermatology before delving further into skin cancer. Primary skin lesions are the macule, patch, papule, plaque, nodule,

vesicle, bulla, and pustule. A macule is a primary lesion that is characterized by change in color without any elevation and measuring less than 1 centimeter; a patch is a larger flat area of color change. Unlike a macule or patch, a papule is palpable; a plaque is a larger palpable coalition of papules. A nodule is an elevated skin lesion larger than 1 centimeter. A vesicle is a small blister and a bulla is a larger blister. A pustule is a collection of white blood cells, mostly neutrophils, greatly exemplified in acne vulgaris, androgenically stimulated pimples arising from sebhorreic glands. Other examples of important dermatologic vocabulary important in the differential diagnosis of skin cancer are scaling and include nevi and nonmalignant birthmarks.

Skin neoplasia (cancer) can arise in the epidermis or dermis and is separated into two categories: benign and premalignant lesions, and malignant lesions. Carcinoma refers to cancer arising from epithelial tissue and sarcoma is neoplasia arising from connective tissue.

Benign dermal cancer can arise from dermal structures such as connective tissue, vasculature, fat, muscle, and nerves. Dermatofibroma and keloids are the most commonly seen benign connective tissue tumors. Dermatofibroma presents as compressible papules that are dark in color. Keloids present with an upper chest and back distribution and with higher incidence in African Americans. Neurofibromas, lipomas, and hemangiomas are benign dermal tumors that arise in the nerves, fat, and blood vessels, respectively. Each type of benign dermal neoplasm has the potential to progress to their respective malignant form.

Benign epidermal cancer can stem from epidermal structures such as the keratinocyte, basal cell, or melanocyte. Uncontrollable keratinocyte growth presents in its benign form as sebhorreic keratosis, which can be mistaken for melanomas because of their similar color. In its malignant form, keratinocytes present as actinic (sun-related) keratosis. Uncontrollable melanocyte growth presents in its benign form as a nevus during childhood and continues into adulthood.

There are three major forms of malignant epidermal tumors, all of which have great correlation with sun exposure and appear to occur twice as likely in men as in women. Therefore, greater incidence is evident in higher temperate states such as California and Arizona where individuals spend more time outdoors for business, travel, and leisure. Because of the abundance of their catalyst, namely sun exposure, malignant epidermal tumors are found in much higher numbers than malignant dermal tumors. Basal cell carcinoma (BCC) is the most common (it is estimated that nearly 1 million incidences occur annually) while being the least invasive form of malignant epidermal cancer and having the lowest potential for metastasis. Clinically, the presentation of BCC is best known as a pearly papule. The basal cell is the stem cell of the epidermis and is the origin of BCC. Upon further examination of a BCC on a patient's skin, one will notice that these basal cells that usually reside in the outer layer of the skin, the epidermis, are found in much greater numbers invading into the dermis.

Squamous cell carcinoma (SCC) is intermediate in incidence and also in neoplastic potential. There is an estimated 200,000 to 300,000 cases of SCC per year in the United States. Similar to BCC, SCC is also dependent on sun exposure; however, unlike BCC, SCC does have the potential to metastasize. In addition, SCC can present in immunosuppressed patients infected with the human papillomavirus (HPV).

The most pathologically invasive form of skin cancer is the melanoma. As mentioned before, melanoma represents the malignant overgrowth of melanocytes in comparison to a melanocyte nevus, the benign form. Like both SCC and BCC, melanoma is highly dependent upon sun exposure. Clinicians refer to its early form as a malignant freckle; however, it progresses into a black lesion on the skin. Melanoma,

which has the highest incidence to metastasize, presents itself in other organs in a similar fashion as in the skin—as black lesions, and represents a less favorable outcome. Nevertheless, death from nonmetastatic cancer is very unlikely and is seen most in the elderly and immunosuppressed.

Treatment for skin tumors vary depending on the invasiveness of the neoplasm. The earlier the patient recognizes the neoplasm, the less invasive and the easier the cancer will likely be to remove. Simple melanoma, BCC, and SCC excision can be conducted in an outpatient setting under local anesthesia delivered by the physician. Mohs micrographic surgery is a more innovative method for BCC and SCC removal where the epidermis is sequentially cut into horizontal slices layer by layer until the cancer is totally removed. This procedure requires finer attention and care because each horizontally cut layer must be read under the microscope by the dermatologist until the cancer is fully eliminated. Mohs micrographic surgery provides much better results with lower recurrence rates of BCC and SCC. This procedure is typically reserved for skin cancers that present in more cosmetic areas such as the face due to the fact that Mohs microsurgery produces less scarring.

SEE ALSO:

Psoriasis; Skin Diseases (General).

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