

Topic Page: [Melanoma](#)

Definition: **melanoma** from *Philip's Encyclopedia*

Type of skin cancer. Highly malignant tumour formed by melanocytes, cells that make melanin. They can occur in mucous membranes and the eyes. Untreated, they may spread to the liver and lymph nodes. Excessive exposure to sunlight is a causative factor. Treatment is usually surgical.

Summary Article: **Melanoma**

From *Encyclopedia of Cancer and Society*

Melanoma, also known as malignant melanoma and cutaneous melanoma, is a skin cancer originating from melanocytes, the melanin pigment-producing cells in the basal layer of the epidermis. Melanoma is the most lethal form of skin cancer because it has a higher potential for metastasis (i.e., spreading to other tissues). The primary cause of melanomas is overexposure to ultraviolet (UV) light either from direct exposure to sunlight (UVA and UVB) or from tanning beds (UVA), which is absorbed by the skin and results in DNA damage. This DNA damage causes aberrant gene expression in multiple genes and can lead to malignant tumor formation. Minimizing one's exposure to these harmful UV rays by avoiding tanning beds and applying sunblock cream to any potentially exposed skin prior to outdoor activity as well as wearing protective clothing (such as wide-brimmed hats and long-sleeved shirts and pants) can greatly reduce susceptibility to melanoma. Melanomas usually develop from existing moles (nevi). The first signs of melanoma are changes in the color, size, shape, or surface texture of an area of skin or existing mole. The majority of melanomas are usually either black or brown; however, other colors have been observed such as red, blue, flesh-colored, pink, and white. Melanomas may develop anywhere on the body, but are more likely to be found on the torso, head, or neck in men and on the arms or legs of women. Less-common melanomas have been found under nails and on the palms of hands, soles of feet, eyes, mouth, genitals, and the anal area.

Due to the fact that melanomas occur on the skin, the changes in shape and coloration of existing moles as well as abnormal growth of melanomas usually can be readily seen by the patient. In fact, patients are frequently the first to notice early-stage melanomas. If diagnosed early enough, most melanomas can be cured and excised with minor surgery. Early detection and treatment are key because, once the cancer has metastasized to other parts of the body, no reliably effective therapy is available and the chances of the patient succumbing to the disease are therefore high.

Melanoma progression can be characterized by five stages (stages 0-IV) where stage 0 indicates the melanoma to be in situ, meaning that abnormal melanocytes are located only in the epidermis, while stage IV is the most advanced, where the melanoma has metastasized to other parts of the body. Surgery is the first treatment of all stages of melanoma. After stage 0, other therapies besides surgery may be necessary to cure or remove the skin cancer.

Types of Melanoma

There are four main types of melanoma. Three of these—superficial spreading melanoma, lentigo maligna melanoma, and nodular melanoma— comprise 90 percent of malignant melanoma, while acral lentiginous melanoma and some other rare types make up the remaining 10 percent.

Superficial spreading melanoma is the most common type of melanoma, accounting for approximately

70 percent of all diagnosed melanoma. True to its name, this melanoma spreads along the surface layer of the skin for an extended period of time before penetrating more deeply. This type of melanoma can form from preexisting, benign moles. The first signs are darkened, flat, barely-raised lesions with irregular borders and color variations (black, brown, red, tan, or white). This melanoma can be found anywhere on the body. It is found most commonly on the backs of men, the legs of women, and the upper backs of both sexes.

Lentigo maligna melanoma arises from lentigos, which are flat, brown spots that are associated with aging or sun-damaged skin rather than moles. For this reason, this type of melanoma is found commonly among the elderly in chronically sun-exposed areas, such as the face, ears, arms, and upper torso. Because this melanoma arises from lentigos, it closely resembles lentigos but may contain different shades of brown and other color variations of black, blue, red, gray, or white.

Nodular melanoma is the most aggressive of the four main melanoma types because it grows more deeply and more quickly compared to the other three types. The melanoma appears as a blue-black, dome-shaped nodule, but as with most melanomas, color variations of blue, gray, white, brown, tan, red, or even flesh tones can be possible. This type of melanoma is invasive when it is first diagnosed, and malignancy is recognized when the damaged area becomes a bump or a highly raised area on the skin. This type of melanoma may not necessarily form from an existing mole and often occurs in areas of the body that only receive intermittent sun exposure (e.g., the chest).

Acral lentiginous melanoma is the most-common melanoma among African Americans and Asians and the least common among light-skinned individuals. This melanoma appears as tan, black, or brown discoloration with irregular borders on the palms of hands, soles of the feet, or under nails, particularly the big toenail. The specific causes for this type of melanoma are unknown and unrelated to sun exposure, so the cancer cannot be attributed to UV radiation.

Treatment

Treatment strategies for malignant melanoma depend on several parameters, including histological classification and stage of the disease. Standard treatment for primary melanoma is wide excision of the primary tumor through surgery. Excision margins are based on the thickness of primary melanoma; wider excision margins are needed for the removal of a melanoma as its thickness increases. Due to the potential of metastases of melanomas to the lymph nodes, excision of the draining lymph node (or sentinel lymph nodes) is considered critical because this is most likely to be the first lymph node to which a melanoma will metastasize. Currently, sentinel lymph node biopsies (SLNB) are sensitive enough to evaluate metastasis to the first draining lymph node. If lymph node metastasis is detected in the sentinel lymph node, then other lymph nodes in the area of the primary melanoma may also be removed surgically. When surgery of the tumor or metastatic lymph nodes is impossible or unreasonable, radiation therapy of the primary tumor or the regional lymph nodes is a viable option. Both types of therapy are appropriate for solitary or localized lesions but are not sufficient for patients diagnosed with metastatic disease. Adjuvant therapy (i.e., additional treatment provided after surgery or radiation) is recommended to patients with potential for recurrence (stages II and III) and may include immunotherapy, radiotherapy, or even the testing of a new treatment in a clinical trial. However, adjuvant therapies may reduce the quality of life for the patient without extending survival. Because there is no effective treatment for the most advanced form of melanoma (stage IV), many treatment options may be offered to the patient, which include participation in a clinical trial, chemotherapy, or

immunotherapy.

Follow-Up

People who have been treated for, or with a family history of, melanoma should be monitored frequently to ensure an early diagnosis. For patients with melanoma thickness of less than one millimeter, less-intensive follow-ups are necessary. However, patients with high melanoma thickness (greater than one millimeter) will need more intensive checkups, that is, every three months for the first five years followed by every six months for a 10-year period.

See Also: Skin Cancer, Childhood; Skin Cancer, Melanoma; Skin Cancer, Non-Melanoma; Skin Carcinoma, Merkel Cell.

Further Readings

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