



## Diagnosis and Treatment for Melanoma Cancer

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### DESCRIPTION

Melanoma, which means "black tumor," is the most dangerous type of skin cancer. It grows rapidly and can spread to any organ. Melanoma arises from skin cells called melanocytes. These cells produce melanin, the black pigment that gives skin its color. Most melanomas are black or brown, but some are pink, red, purple, or flesh-colored. About 30% of melanomas start in existing moles, while the rest start in normal skin. Therefore, it's especially important to be aware of skin changes because most melanomas don't start out as bruises. However, the number of moles can help to predict skin's risk of developing melanoma. Melanoma grows so quickly that a delay in treatment can mean the difference between life and death. Melanoma has a 99% cure rate if found in its early stages. Early detection is important because treatment success is directly related to the depth of the cancerous growth.

Melanoma accounts for only about 1% of all skin cancers, but causes the great majority of skin cancer-related deaths. It's one of the most common cancers in young people under 30, especially in young women. Melanoma incidence has dramatically increased over the past 30 years. It's widely accepted that increasing levels of Ultraviolet (UV) exposure are one of the main reasons for this rapid rise in the number of melanoma cases. Melanoma treatment recommendations are based on the thickness of the primary melanoma, whether the cancer has metastasized, the stage of the melanoma, the presence of certain genetic alterations in the melanoma cells, the growth rate of the melanoma, and other medical information of the patient and depending on many factors. Other factors considered in treatment decisions include potential side effects, patient preferences, general health status, treatment goals, and quality of life. Surgery is the removal of a tumor and some of the healthy tissue around it during surgery. This procedure is usually performed by an oncologist. Surgery is the main treatment for people with local melanoma and most people with regional melanoma. For some people with metastatic melanoma, surgery may also be an option. If surgery is not an option, the melanoma

may be called "unresectable." In recommending a specific treatment plan, doctors will consider the stage of the disease and the person's individual risk of recurrence. Three types of surgery used to treat local and regional melanoma are wide excision, lymphatic mapping and sentinel lymph node biopsy, and lymph node dissection. Most skin cancers are detected and cured before they spread. Melanoma that has spread to other organs presents the greatest treatment challenge. Standard treatments for localized basal cell and squamous cell carcinomas are safe and effective and cause few side effects. Small tumors can be surgically excised, removed with skin scraping and electric current cauterization, frozen with liquid nitrogen, or killed with low-dose radiation.

In rare cases where basal cell carcinoma or squamous cell carcinoma has spread beyond a local area of skin, the primary tumor is surgically removed first. The patient is then treated with radiation, immunotherapy in the form of interferon, and rarely chemotherapy. However, responses to this therapy are rare and short-lived. A rare patient with advanced squamous cell carcinoma responds well to a combination of retinoic acid (a derivative of vitamin A) and interferon (a type of disease-fighting protein made in cancer immunotherapy laboratories). Retinoic acid can suppress cancer recurrence in patients who have had their tumors removed, but there is no evidence to support either of these treatments. Melanoma has two stages of growth: Radial and vertical. Most melanomas arise as superficial tumors confined to the epidermis (i.e. have a horizontal growth stage). They are generally slow-growing, but further genetic alterations can cause the tumor to enter a vertical growth phase at any time, allowing malignant cells to break through the basement membrane and invade deeper tissues, causing invasive melanoma. Once melanoma cells reach the dermis, they can spread through the lymphatic system to regional lymph nodes or through the bloodstream to other organs such as the lungs and brain. This is called metastatic disease or secondary spread. This possibility depends mainly on the depth to which the cells have penetrated the skin.

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