

# MELANOMA

## *What is melanoma?*

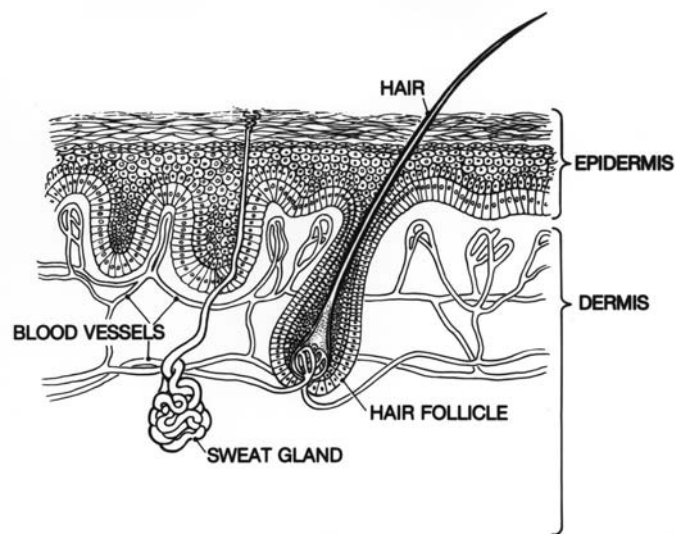
Melanoma is a type of skin cancer which occurs when the pigment cells in the skin, the melanocytes, lose the normal regulation mechanisms and start to grow uncontrolled.

## *How is melanoma diagnosed?*

Diagnosis of melanoma relies on a biopsy and microscopic evaluation. Often, melanoma diagnosis requires special tissue stains to confirm the diagnosis. This can take several days to get a definitive diagnosis and at times may require consultation with a specialized pathologist, a dermatopathologist. Dermatopathologists are pathologists who have special training in the diagnosis of skin lesions.

## *What is important in the diagnosis of melanoma?*

For melanoma, it is important to know how deep the tumor has invaded. This will affect the treatment plan and determines the prognosis of the disease. The melanocytes are generally in the epidermis. The epidermis is the outer layer of skin. If the tumor is confined to the epidermis, the tumor is termed a melanoma in-situ. There is a well defined border between the epidermis and the dermis. If the tumor invades below the epidermis into the dermis, it is considered an invasive melanoma. If left long enough, a melanoma in-situ will turn into an invasive melanoma. Blood vessels and lymphatics, the 'highways' that tumors use to spread to other parts of the body, are in the dermis and below, there are none in the epidermis. Therefore, if a tumor is confined to the epidermis, by definition, it cannot travel to other parts of the body.



### *How is melanoma staged?*

Melanoma is staged according to an internationally defined set of rules, termed the TNM staging system. (T)umor is defined as the depth of invasion and if the tumor is ulcerated or not. (N)ode defines if tumor is found in the lymph nodes. (M)etastasis defines if tumor is seen at distant sites in the body, such as the lungs or brain. Each TNM classification corresponds to a 'Stage' of disease.

### *What is the treatment for melanoma?*

The treatment for melanoma is based on the TNM stage and several other factors. The current National Comprehensive Cancer Network melanoma treatment guidelines can be found at [http://www.nccn.org/professionals/physician\\_gls/PDF/melanoma.pdf](http://www.nccn.org/professionals/physician_gls/PDF/melanoma.pdf). The mainstay of treatment is surgical excision of the melanoma after appropriate biopsy. Once the depth of invasion is determined, surgical margins can be determined and any additional treatment or testing can be decided.

### *What is the treatment for melanoma in situ?*

Treatment for melanoma in situ is surgical excision with a 0.5cm margin of normal tissue around the edge of the tumor. The specimen is then sent for pathologic evaluation. Depending on the type of biopsy which was used to diagnose the cancer, there may be the possibility of part of the cancer being more invasive. In these cases, the wound may be left open until the final pathologic diagnosis is available. This will require a short amount of wound care but will not effect the overall cosmetic outcome of the procedure. Closure of the wound will depend on the size and the location. At times, closure may require several steps separated over time to produce the best results possible. Because by definition, melanoma in situ does not exist in the layers of skin with blood vessels or lymphatic channels, there is no way for the tumor to spread to other areas of the body. This means that no further treatment or diagnostic testing is necessary.

### *What is the treatment for invasive melanoma?*

The treatment for invasive melanoma depends on the depth of invasion and whether there is evidence of distant spread of the tumor. All of the possible permutations are beyond the scope of this article but several things are considered. First, the mainstay of treatment is surgical excision of the tumor. The size of the margin of normal tissue removed is dependent on the depth of invasion of the tumor. Second, consideration must be made for the possibility of distant spread of the tumor. Again, depth of invasion and patient symptoms are two key components in determining if further testing is necessary. At times, lymph nodes may need to be removed to be examined as they are the first place of spread for tumors. Depending on the stage of the tumor, additional treatments may be necessary including chemotherapy and radiation therapy.

### *What is a sentinel lymph node biopsy?*

A sentinel lymph node is the first lymph node or group of lymph nodes to which a given area drains. Lymph nodes are natural parts of the body's immune system which trap foreign antigens. In this case, the sentinel lymph node is the first place that a melanoma would go to if it has spread away from the



tumor. To determine the sentinel lymph node, a radioactive dye is injected into the tumor. An image is then made to locate the sentinel lymph node. In the operating room, the surgeon will use a hand held Geiger counter to find the lymph node with the greatest amount of radiation in it. This is then removed and sent for pathologic study. Many studies have been done to indicate that in the case of melanoma, the sentinel lymph node is a good predictor of spread of disease. If the sentinel lymph node shows that the melanoma has spread to it, additional lymph nodes may need to be removed to determine the extent of disease and increase the chances for survival.

Older techniques relied on removing large amounts of lymph nodes in order to determine if the melanoma had spread. This can result in disfigurement and long term fluid drainage problems. The newer technique of sentinel lymph node biopsy provides the same answers with only about 10% of the patients requiring additional removal of lymph nodes.

*What is the follow up after treatment for melanoma?*

The follow up after treatment for melanoma will depend on the stage of the disease and treatment that was undertaken. At least, follow up with a dermatologist for a whole body mole check every 3-6 months is warranted. Additional testing and treatment is generally dependent on the stage of the disease treated.

