



MELANOMA IN SITU

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Melanoma in situ (MIS), or stage 0 **melanoma**, is a tumor comprised of mutated melanocytes. It is confined to the top layer of the skin, the epidermis, but has a high rate of transformation into melanoma. This transformation occurs when the MIS penetrates past the epidermis into the second layer of skin, the dermis. It is generally believed that almost all melanoma begins as melanoma in situ. It can start as a primary lesion, or it can arise from within other skin lesions such as a nevus (mole) or lentigo (liver spot). Ultraviolet radiation from the sun is the primary causative factor for developing MIS, but an individual's risk is highly dependent on genetic predisposition and skin type.

MIS rates are on the rise. Every year the incidence increases by 5 to 15%, which makes it the fastest growing incidence of any tumor. The exact cause of the increase is unknown but may be due in part to an increased rate of identification by dermatologists. Incidence in men accounts for 55% of cases. Incidence in the Caucasian population accounts for over 90% of cases. It is also common in the elderly. Interestingly, MIS arises in a different distribution than melanoma, with the most common location being the head and neck. It is important to note that while this is the most common area, MIS can arise on any part of your body.

Clinically, MIS generally presents as an asymmetric, flat, brown or black skin lesion with a diameter that is larger than 6 mm. In almost all cases, it has multiple colors. The ABCDE rule that is used to screen for melanoma can also be useful to screen for MIS. The criteria are:

- Asymmetrical shape
- Border irregularity
- Color variation (brown and black being the most common)
- Diameter greater than 6 mm (approximately the size of a pencil eraser)
- Evolution or changes in the lesion over time

While these generalizations can help identify the majority of MIS, they are not foolproof. MIS can present in a multitude of ways that do not resemble the criteria. Full body skin examinations by a board-certified dermatologist are still highly recommended.

Preventing MIS is similar to preventing other common skin cancers such as **squamous** and **basal cell carcinoma** and is primarily focused on avoiding exposure to ultraviolet radiation. Avoiding being out in the sun, especially between 10 am and 4 pm, avoiding tanning beds, wearing sunblock (at least SPF 30) or covering up with sun protective clothing and hats are all adequate methods of prevention. In addition, having a full body skin examination completed by a dermatologist can help catch MIS early, before it transforms into melanoma.

Treatment begins with an excisional **biopsy** of highly suspicious lesions. If the lesion is histologically confirmed, then re-excision with 5-10 mm margins is performed to ensure proper removal. The excised tissue will then be examined by a pathologist in order to confirm that the lesion was completely removed. In cosmetically sensitive areas such as the face, Mohs micrographic surgery may be used in order to spare as much tissue as possible while also reducing scar burden. If surgery is contraindicated, second line options such as topical **imiquimod** (not FDA approved), intralesional interferon-alfa, radiation therapy or **laser** therapy may be used. While these second line options are often effective, recurrence rates are increased as compared to surgical treatments.

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