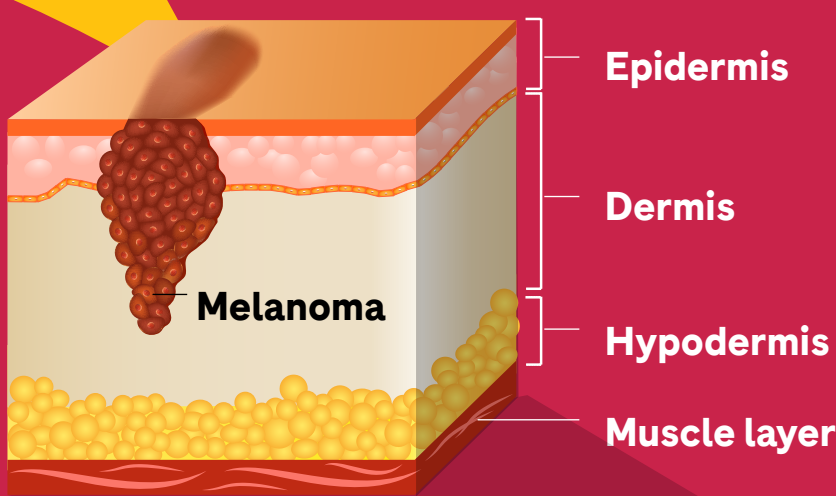


# Melanoma facts

## What is melanoma?



Melanoma is an **aggressive skin cancer** that originates from melanocytes,<sup>1</sup> which are cells in the skin and eyes that produce and contain melanin.<sup>2</sup>

Melanoma develops when **unrepaired DNA damage** to melanocytes triggers mutations that cause the melanocytes to grow rapidly and form malignant tumors.

**Metastatic melanoma** is melanoma that has spread to other parts of the body.

## What is the incidence and mortality of melanoma?

**5<sup>th</sup>** most common malignancy in the United States<sup>3</sup>

**57%** projected increase in annual cases by 2040 globally<sup>4</sup>

**Deadliest cutaneous cancer**

In 2024 there will be an estimated 100,640 new cases with 8,290 deaths in the U.S.<sup>5</sup>



**23** people in the U.S. die from melanoma<sup>5</sup>

*U.S. melanoma death rates have been decreasing since 2013.*

The World Health Organization predicts that from 2020 to 2040, the number of melanoma deaths globally

will increase by **68%** rising to **96,000** by 2040<sup>4</sup>

## What are the risk factors?

**Lifetime UV exposure is the most important environmental risk factor<sup>7</sup>**



### Age

Incidence rates increase after age 60

### Skin Damage

History of blistering sunburns

### Cancer

Family history of melanoma or other skin cancer

### Skin tone

Fair skin pigmentation at higher risk

### Moles

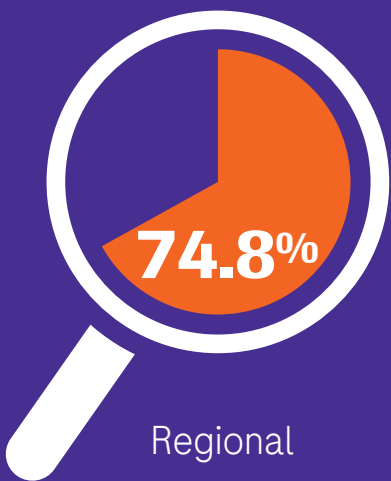
Presence of atypical moles

## Why is early diagnosis important?

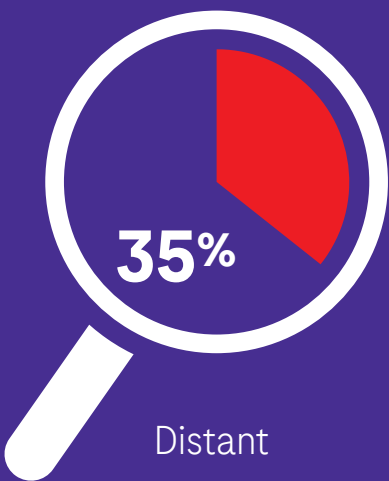
### Melanoma survival rates



Localized



Regional



Distant

**Localized melanoma is highly curable** with a simple surgical excision.

**Early stage** survival rates are 100% whereas late stage is quite poor at 35%.<sup>5</sup>

**Delaying treatment** of a Stage 1 (localized) melanoma by just one month **increases the risk of death** by 5%.<sup>6</sup>

*As it grows by just a few millimeters, the melanoma's lethality increases markedly.*

## How is melanoma diagnosed?

### Abnormal skin lesion\*

"ABCDE" criteria<sup>7</sup>

- A= Asymmetry of a mole or birthmark
- B= Border irregularity
- C= Color variation
- D= Diameter is >6mm
- E= Evolving size, shape, color, bleeding or scabbing

### Diagnostic biopsy

Standard of care for suspicious pigmented skin lesions

### Clinical correlation

High percentage of melanomas diagnosed histologically which were not identified on clinical examination<sup>8</sup>

**H&E is the primary tool for melanoma diagnostic evaluation and IHC the main complementary tool**

#### Melanocytic versus non-melanocytic

IHC: HMB45, MART 1/ MelanA, S-100, SOX-10<sup>9</sup>

#### Benign versus Malignant

PRAME, p16 IHC,<sup>10</sup> HMB-45, Ki-67, cytogenetic tools, FISH<sup>11</sup>, Gene Expression Profile<sup>12</sup>

#### In-situ versus Invasive

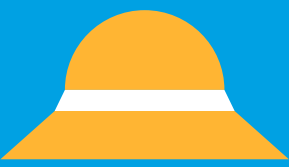
Deeper levels, MART 1/MelanA, SOX-10

Complementary tools

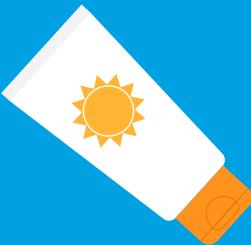
HMB45, MART1/MelanA, p16, are considered supportive to the morphologic diagnosis but not diagnostic per se.<sup>11</sup>

\*Cutaneous melanoma is the most frequent subtype; for other less common subtypes, diagnostic pathways may be different. \*\*There are no p16 IHC tests labeled for use in evaluation of melanomas.

## What should I do to reduce my potential for developing melanoma?<sup>12</sup>



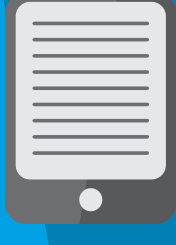
**Wear sun protective clothing, a hat and sunglasses**



**Apply sunscreen and re-apply often especially after swimming**



**Make evaluation of your skin a routine and discuss any changes with your physician/dermatologist**



**Educate yourself and others**

1. Chopra A. et al. Surg Clin N Am. 2020; Feb;100(1):43-59. 2. <https://www.sciencedirect.com/topics/neuroscience/melanocyte>. Accessed on September, 11 2024. 3. <https://gco.iarc.who.int/media/globocan/factsheets/populations/840-united-states-of-america-fact-sheet.pdf>. 4. <https://www.aimatmelanoma.org/world-health-organization-predicts-half-a-million-with-melanoma-in-2040/#~:text=The%20number%20of%20worldwide%20cases,%25%20within%20that%20same%20time>. Accessed on September, 11 2024. 5. <https://seer.cancer.gov/statfacts/html/melan.html>. Accessed on September, 11 2024. 6. <https://consultqd.clevelandclinic.org/timing-of-melanoma-diagnosis-treatment-critical-to-survival>. Accessed on September, 11 2024. 7. <https://www.aad.org/public/diseases/skin-cancer/find/at-risk/abcde>. Accessed on September, 11 2024. 8. Melanoma CAP Protocol. Version 4.3.1.0. 9. Harvey N., Wood B. Arch Pathol Lab Med. 2019;143:789-810. 10. Andea A. Histopathology. 2022;80(1):150-165. 11. Santandrea G., et al. Am J Surg Pathol. 2022;46:579-590. 12. <https://www.cancer.org/cancer/types/melanoma-skin-cancer/causes-risks-prevention/prevention.html>. Accessed on September, 11 2024.

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