MELANOMA
WHAT IS MELANOMA?

- DEFINITION-Melanoma is a type of skin cancer. It begins in skin cells called melanocytes. Melanocytes produce the substance that gives your skin its color.
Three Types of Melanoma

1. Cutaneous

2. Mucosal

3. Ocular
WHAT IS OCULAR MELANOMA?

- Ocular Melanoma is melanoma of the eye
- Melanoma is a cancer that originates in melanocytes. Melanocytes are not only found in skin and hair but also in the eye.
- This is the most common type of cancer to affect the eye, yet it is still quite rare.
- Signs and symptoms can include a scratchiness under the eyelid or a dark spot on the eyeball.
WHAT IS MUCOSAL MELANOMA?

- Mucosal tissue includes tissue lining the nose, mouth, female genitals, anus, urinary tract, and esophagus.
- Mucosal melanoma is rare but usually well advanced when it is diagnosed.
- Surgery is the preferred initial treatment, sometimes followed by lymph node dissection and systemic therapy.
Four Major Types of Cutaneous Melanoma
Lentigo Maligna Type
Superficial Spreading Type

Superficial spreading melanoma
Nodular Type
Acral-Lentiginous Type
THE ABCD'S
OF MELANOMA
A = Asymmetry: melanoma lesions are typically asymmetrical, whereas *benign* moles are typically round and symmetrical.
**B = Border:** melanoma lesions frequently have uneven or irregular borders (ie, ragged or notched edges), whereas benign moles have smooth, even borders.

Melanoma

Mole
C = Color: melanoma lesions often contain multiple shades of brown or black whereas benign moles are usually a single shade of brown.
D = Diameter: early melanoma lesions are often more than 6 mm in diameter, whereas benign moles are usually less than 6 mm in diameter.
Melanoma Staging
Staging describes the extent or severity of an individual’s cancer based on the extent of the original (primary) tumor and the extent of spread in the body.

**Staging is important because:**

Staging helps the doctor plan a person’s treatment.

The stage can be used to estimate the person’s prognosis.
What are the common elements of Staging Systems?
The elements considered in most staging systems are:

Location of the primary tumor

Tumor size and number of tumors

Lymph node involvement (spread of cancer into lymph nodes)

Cell type and tumor grade* (how closely the cancer cells resemble normal tissue)

Presence or absence of metastasis.
What is the TNM system?
The TNM system is one of the most commonly used staging systems.
The TNM system is based on the extent of the tumor (T),

the extent of spread to the lymph nodes (N),

and the presence of metastasis (M).

A number is added to each letter to indicate the size or extent of the tumor and the extent of spread.
For many cancers, TNM combinations correspond to one of five stages.

Criteria for stages differ for different types of cancer.

For example, bladder cancer T3 N0 M0 is stage III; however, colon cancer T3 N0 M0 is stage II.
# TNM Classification for Clinical Staging of Malignant Melanoma

<table>
<thead>
<tr>
<th>T classification</th>
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<tbody>
<tr>
<td>T1</td>
<td>≤ 1.0 mm</td>
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<tr>
<td>T1</td>
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<tr>
<td>T2</td>
<td>1.01-2.0 mm</td>
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<td>T2</td>
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<td>T3</td>
<td>2.01-4.0 mm</td>
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<td>T4</td>
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<th>N classification</th>
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| N1               | One lymph node | A: micrometastasis*  
|                  |          | B: macrometastasisb |
| N2               | 2-3 lymph nodes | A: micrometastasis*  
|                  |          | B: macrometastasisb |
|                  |          | C: in-transit met(s)/satellite(s) without metastatic lymph nodes |
| N3               | 4 or more metastatic lymph nodes, matted lymph nodes, or combinations of in-transit met(s)/satellite(s); or ulcerated melanoma and metastatic lymph node(s) |

<table>
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<th>M classification</th>
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<tr>
<td>M1</td>
<td>Distant skin, sub-Q, or lymph node mets</td>
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<tr>
<td>M2</td>
<td>Lung mets</td>
</tr>
</tbody>
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| M3               | All other visceral or any distant mets | Normal LDH  
|                  |          | Elevated LDH with any M |
The following stages are used for melanoma
Stage 0

In stage 0, melanoma is found only in the epidermis (outer layer of the skin).

Stage 0 is also called melanoma in-situ.
Stage I is divided into stages IA and IB.

Stage IA: In stage IA, the tumor is not more than 1 millimeter thick, with no ulceration. The tumor is in the epidermis and upper layer of the dermis.

Stage IB: In stage IB, the tumor is either: not more than 1 millimeter thick, with ulceration, and may have spread into the dermis or the tissues below the skin; or 1 to 2 millimeters thick, with no ulceration.
Stage II

Stage II is divided into stages IIA, IIB, and IIC.

Stage IIA: In stage IIA, the tumor is either:
1 to 2 millimeters thick, with ulceration; or
2 to 4 millimeters thick, with no ulceration.

Stage IIB: In stage IIB, the tumor is either:
2 to 4 millimeters thick, with ulceration; or
more than 4 millimeters thick, with no ulceration.

Stage IIC: In stage IIC, the tumor is more than 4 millimeters thick, with ulceration.
Stage III

In stage III, the tumor may be any thickness, with or without ulceration, and: has spread to 1 or more lymph nodes; or has spread into the nearby lymph system but not into nearby lymph nodes; or has spread to lymph nodes that are matted (not moveable); or satellite tumors (additional tumor growths within 2 centimeters of the original tumor) are present and nearby lymph nodes are involved.
Stage IV

In stage IV, the tumor may be any thickness, with or without ulceration, may have spread to 1 or more nearby lymph nodes, and has spread to other places in the body.
The following survival rates are based on the initial clinical stage of the disease.

**Stage 0:** The 5-year relative survival rate is 97%.

**Stage I:** The 5-year survival rate is between 90 and 95%. The 10-year survival is around 80%.

**Stage IIA:** The 5-year survival rate is around 78%. The 10-year survival is around 64%.

**Stage IIB:** The 5-year survival rate is around 63 to 67%. The 10-year survival rate is between 51 and 54%.

**Stage IIC:** The 5-year survival rate is around 45%. The 10-year survival is 32%.

**Stage IIIA:** The 5-year survival rate is around 63%-70%. The 10-year survival is 57%-63%.

**Stage IIIB:** The 5-year survival rate is around 46%-53%. The 10-year survival is around 38%.

**Stage IIIC:** The 5-year survival rate is around 28%. The 10-year survival is 15%-25%.

**Stage IV:** The 5-year survival rate for stage IV melanoma is about 10%. It is higher if the spread were to skin or distant lymph nodes.
Treatment for Melanoma

- Stage 1: WLE of the lesion+-SNB
- Stage II-III: WLE and lymph node dissection and possible adjuvant therapy (usually IFN)
- Stage IV: possible surgical removal of the lesion and systemic therapy with immunotherapy, vaccine therapy and chemotherapy or a combination thereof.
Current Melanoma Treatments at Yale

- Surgery for St I and II
- Adjuvant therapy with Interferon for St III
- High Dose IL-2 for patients with St IV disease

and protocol treatments including:
  - ECOG 2603-carbo/taxol+/-sorafenib
  - 5 Azacitidine + Interferon
  - Everolimus+Gleevec
  - BMS-anti CD137
  - Medarex Anti-CTLA4
  - Sutent+Rapamycin (opening soon)
Final Review
How to Recognize a MELANOMA*

RULE #1

LOTS OF SKIN LESIONS HAVE PIGMENT, BUT.....

Beware of Irregular Color and Contour!
How to Recognize a MELANOMA*

RULE #2

LOTS OF PIGMENTED LESIONS GROW, BUT.....

Beware of Irregular Growth!
• How to Recognize a MELANOMA*

• RULE #3

JUST ABOUT EVERYONE GETS MOLES, BUT.....

• Beware of Moles that Grow Late in Life!
How to Recognize a MELANOMA*

RULE #4

THERE ARE LOTS OF MOLES, BUT.....

Beware of Moles that are Large!
A Test!
Is this Melanoma?
Stay Out Of The Sun - especially during the hours of 11am-3pm
Even filtered sun can burn you!
Use Sunscreen, Eye Protection, Protective Clothing and Stay in the Shade!!
Do NOT use tanning beds or booths.
Be Aware of the Sun’s Reflective Glare off Snow and Water.
Website References

- http://annonc.oxfordjournals.org/cgi/content/full/13/1/175
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- http://www.skincarephysicians.com/skincancernet/hidden_melanomas.html#Mucosal%20Tissue
- http://www.melanomacenter.org/staging/sentinal.html