Cutaneous Melanoma

Ultraviolet Rays (UV)

- **UVA** – longest wavelength, causes Aging (wrinkles), macular degeneration, possibly cancer (tanning beds)
- **UVB** – causes Burns, most skin cancers, cataracts
- **UVC** – doesn’t reach us due to ozone

http://www.tennis-warehouse.com/
Layers of Skin

Epidermis—dead layer; mostly squamous cells
  Basal layer contains melanocytes

Dermis—contains blood vessels, nerve endings, connective tissue, hair follicles, sebaceous glands
  Papillary dermis—upper
  Reticular dermis—deeper

Subcutaneous tissue

Hypodermis or subcutis—contains subcutaneous tissue, sweat glands, blood vessels, fat cells

Adapted from www.medars.tlgalleries/various_2.htm
Melanomas with **different laterality** are multiple primaries.

*Note:* A midline melanoma is a different laterality than right or left.

**Laterality**

- **Limbs are lateral**
  - Codes: Right 1, Left 2
- **Trunk**
  - Change for 2007 Code Midline 5
  - Lines drawn
    - mid-forehead to mid-pelvis
    - mid-skull to mid-buttocks

Source: Adapted from TNM-interactive. Wiley-Liss, 1998
Solid Tumor Rules

- Use the 2007 MP/H rules and General Instructions and Cutaneous melanoma rules for cases diagnosed 1/1/2007 to 12/31/2020
- Cutaneous melanoma rules will be revised for 2021 implementation to incorporate information from the 2018 WHO 4th Ed Tumors of Skin

Path Classifications
Skin Melanoma – Major Types

- Superficial spreading (8743) – most common (70%), horizontal spread
- Nodular (8721) – 15-30%, more aggressive, vertical growth pattern
- Lentigo maligna (8742) – least serious, may ulcerate, black-to-tan color
More Types

- Acral lentiginous (mucocutaneous) (8744) – palms, soles, or under nail beds, especially dark-skinned races

Path Classification
Other Types Melanoma (Rare)

- Desmoplastic melanoma (8745)
- Mucosal lentiginous melanoma (8746)
- Amelanotic melanoma (8730)
- Balloon cell melanoma (8722)
- Malignant blue nevus (8780)
2018 WHO 4th Edition - Skin

- WHO 2018 classification introduced multidimensional pathway classification of melanocytic tumors based on
  - Extent of ultraviolet (UV) radiation damage
    - Melanomas arising in sun-exposed skin
    - Melanomas arising at sun-shielded sites without known etiological association with UV radiation exposure
  - Cell of origin
  - Characteristic genomic findings

WHO Classification of Melanoma
4th Ed. 2018

<table>
<thead>
<tr>
<th>Extent of UV radiation damage</th>
<th>Subtypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanomas found in skin with low cumulative sun damage (low-CSD)</td>
<td>Superficial spreading melanoma (low cumulative sun damage (CSD) melanoma)</td>
</tr>
<tr>
<td>Melanomas found in skin with high cumulative sun damage (high-CSD)</td>
<td>Lentigo maligna melanoma</td>
</tr>
<tr>
<td>Melanomas on site with no sun exposure or without known etiological associations with sun exposure</td>
<td>Desmoplastic melanoma</td>
</tr>
<tr>
<td>Various sun exposure</td>
<td>Malignant Spitz tumor (Spitz melanoma)</td>
</tr>
<tr>
<td></td>
<td>Acral melanoma</td>
</tr>
<tr>
<td></td>
<td>Mucosal melanoma</td>
</tr>
<tr>
<td></td>
<td>Melanoma arising in congenital nevus</td>
</tr>
<tr>
<td></td>
<td>Melanoma arising in a blue nevus</td>
</tr>
<tr>
<td></td>
<td>Uveal melanoma</td>
</tr>
<tr>
<td></td>
<td>Nodular melanoma</td>
</tr>
<tr>
<td></td>
<td>Neviod melanoma</td>
</tr>
</tbody>
</table>
Melanoma Subtypes by Gene Mutation

- BRAF: most common; 50% of cutaneous melanomas
- NRAS: approx. 20% of people
- NF-1: approx. 10-15% of people
- KIT: more common in mucus membrane melanomas, cutaneous melanoma of hands or feet, or melanomas that occur in sun-damaged skin (i.e., lentigo maligna melanoma)

Source: cancer.net

Skin Levels (Clark’s)
What is Neurotropism?

- Listed on CAP protocol
- Presence of melanoma around nerve sheaths (perineural invasion) OR within nerves (intraneural invasion)
- May be prognostic factor, especially in desmoplastic histo

**CAP Protocol choices:**
Not identified, Present, Cannot be determined
Exercise

HPI: 55 y.o. female w/ bx-proven melanoma, Lt lower back; measurements ~2 cm x 1 cm per original path report; wide excision w/ SLN bx recommended.

4/24/19 Shave bx, skin, back: malignant melanoma, nevoid type, extending to deep and lateral margins; Breslow at least 2.7 mm, transected at base; Clark’s level IV; ulceration absent; not identified – regression, LVI, neurotropism, satellite lesions; lymphocytic response non-brisk; mitotic index 2/mm²; AJCC stage at least pT3a pNX; appropriate re-excision to ensure complete removal is recommended.

Exercise cont.

5/15/19 Lymphoscintigraphy: 3 areas of activity

5/15/19 Op Note: 2 SLNs in Lt ax; 1 SLN in Lt chest wall inferior to ax; 2 SLNs in Lt chest wall @ jxn of breast and fatty tissue. 2.2 cm circumferential margin measured; elliptical incision made which incorporated the melanoma site; area excised down to chest wall sparing muscle tissue

5/15/19 PATH: 1+/5 SLNs (ITCs only); focal residual melanoma in situ, completely excised
Melanoma Staging

**SS2018 EOD AJCC 8th Ed.**

**Notes EOD Primary Tumor & SS18**

- Discrepancy between Clark’s level and path description of extent of invasion, use more extensive code
- Code greatest extent for ANY procedure (punch bx Clarks IV, re-exc Clarks II, choose IV)
- Breslow’s depth per path report and no documentation of Clark’s level, code as follows:

<table>
<thead>
<tr>
<th>SS18</th>
<th>EOD T</th>
<th>Clark’s</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>000</td>
<td>Level I</td>
<td>In situ</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>Level II</td>
<td>&lt; 0.75 mm Breslow’s Depth</td>
</tr>
<tr>
<td>1</td>
<td>200</td>
<td>Level III</td>
<td>0.76 mm to 1.50 mm Breslow’s Depth</td>
</tr>
<tr>
<td>1</td>
<td>300</td>
<td>Level IV</td>
<td>&gt; 1.50 mm Breslow’s Depth</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Level V</td>
<td>Through entire dermis</td>
</tr>
</tbody>
</table>
**AJCC Rules for Classification**

Complete excision of primary melanoma required for both c & p staging

**Clinical**
- Clinical, radiographic, ± lab evaluation of LN & mets
- Biopsy of primary
- Clinical or SLN

**Pathological**
- Wide excision or re-excision required
- Sentinel LN and/or lymphadenectomy
- Clinical evaluation of mets

---

**Changes in 8th ed.**

- Mitoses excluded from T category definitions
- Rounding now to nearest 0.1mm (NOT 0.01mm)
- Subcategory 0 (LDH not elevated), 1 (LDH elevated) for M mets
- New M1d
### EOD, SS2018, EOD "T"

<table>
<thead>
<tr>
<th>EOD SS18</th>
<th>EOD &quot;T&quot;</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>0</td>
<td>IS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In situ, intraepidermal, intraepithelial, noninvasive (Basement membrane of the epidermis is intact)</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>Need Breslow mm and ulceration status</td>
</tr>
<tr>
<td>200</td>
<td>1</td>
<td>Need Breslow mm and ulceration status</td>
</tr>
<tr>
<td>300</td>
<td>1</td>
<td>Need Breslow mm and ulceration status</td>
</tr>
<tr>
<td>400</td>
<td>1</td>
<td>Need Breslow mm and ulceration status</td>
</tr>
<tr>
<td>500</td>
<td>2</td>
<td>Need Breslow mm and ulceration status</td>
</tr>
<tr>
<td>700</td>
<td>7</td>
<td>Bone; Skeletal muscle; Underlying cartilage; Further contiguous extension</td>
</tr>
<tr>
<td>800</td>
<td>9</td>
<td>T0</td>
</tr>
<tr>
<td>999</td>
<td>9</td>
<td>TX</td>
</tr>
</tbody>
</table>

### EOD Codes 100-500, & 700 and EOD "T"

<table>
<thead>
<tr>
<th>EOD Codes 100-500</th>
<th>Breslow’s Depth</th>
<th>Ulceration</th>
<th>EOD &quot;T&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤ 0.8mm</td>
<td>No</td>
<td>T1a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>T1b</td>
</tr>
<tr>
<td>0.8-1.0mm</td>
<td>No</td>
<td>T1b</td>
<td></td>
</tr>
<tr>
<td>0.8-1.0mm</td>
<td>Yes</td>
<td>T1b</td>
<td></td>
</tr>
<tr>
<td>&gt;1 – 2.0mm</td>
<td>No</td>
<td>T2a</td>
<td></td>
</tr>
<tr>
<td>&gt;1 – 2.0mm</td>
<td>Yes</td>
<td>T2b</td>
<td></td>
</tr>
<tr>
<td>&gt;2 – 4.0mm</td>
<td>No</td>
<td>T3a</td>
<td></td>
</tr>
<tr>
<td>&gt;2 – 4.0mm</td>
<td>Yes</td>
<td>T3b</td>
<td></td>
</tr>
<tr>
<td>&gt; 4.0mm</td>
<td>No</td>
<td>T4a</td>
<td></td>
</tr>
<tr>
<td>&gt; 4.0mm</td>
<td>Yes</td>
<td>T4b</td>
<td></td>
</tr>
</tbody>
</table>
**Exercise: cT, pT and ypT; EOD T**

- Clinical T
- Pathological T
- Post Therapy T
- EOD Primary Tumor

**Notes EOD Regional Nodes & SS18**

- LNs with ITC (single cells/small clusters not > 0.2mm) are positive LNs
- Satellite/microsatellite lesions (tumor nests in dermis or subcutaneous tissue) and in-transit mets (in lymphatic channels between tumor and RLNs) included as regional LN
- Bilateral or contralateral LNs are RLNs for head, neck, and truncal tumors w/ bidirectional drainage per lymphoscintigraphy or clinical assessment
- Contiguous or secondary nodal basins are RLNs
**AJCC N Categories**

- **Micro**scopic LN defined as clinically occult
- **Macro**scopic LN defined as clinically detected

---

**Satellite nodule**
Regional LN by Primary Site

RLNs Include
- ITCs
- Satellite lesions or in-transit mets

All sites
- Regional LN NOS
- LN NOS (SS2018 and EOD)

RLNs for Head/Neck
Includes Single, Multiple, Ipsi/Bi/Contra-lateral LNs
- Levels I – VII
- Axillary *(Neck only)*
- Cervical NOS
- Deep cervical NOS
- Facial
- Internal jugular NOS
- Parapharyngeal
- Parotid
- Retroauricular
- Retropharyngeal
- Suboccipital

Primary Sites:
- C000-C002
- C006
- C440, C442-C444
**RLNs Skin of Trunk**

**Skin of trunk (C445)  Added to v1.7 (9/5/2019)**

- Upper trunk:
  - Axillary
  - Cervical
  - Internal mammary
  - Supraclavicular (transverse cervical)
- Lower trunk:
  - Superficial inguinal (femoral)

**RLNS for Limbs, Shoulder, & Hip**

**Upper limb & shoulder (C446)**

- Axillary
- Cervical
- Epitrochlear (hand/forearm)
- Internal mammary/parasternal
- Spinal accessory (shoulder)
- Supraclavicular/transverse cervical

**Lower limb & hip (C447)**

- Femoral
- Popliteal (heel & calf)
- Inguinal
### RLNs for Vulva, Penis, & Scrotum

<table>
<thead>
<tr>
<th>Vulva C51</th>
<th>Penis C60</th>
<th>Scrotum C632</th>
<th>Regional LNs</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td></td>
<td>Iliac</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
<td>External</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
<td>Internal (Hypogastric, Obturator)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
<td>Pelvic, NOS</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Inguinal, NOS</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Deep inguinal, NOS</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Node of Cloquet or Rosenmuller</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Superficial inguinal (Femoral)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Inguinofemoral (groin)</td>
</tr>
</tbody>
</table>

SS2018 and EOD: See chapter/schema for C210 Anus C500 breast

### EOD Regional Nodes and EOD “N”

<table>
<thead>
<tr>
<th>EOD</th>
<th>EOD “N”</th>
<th># RLN (+)</th>
<th>Detected</th>
<th>ISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>N1a</td>
<td>1</td>
<td>SLNbx</td>
<td>No</td>
</tr>
<tr>
<td>200</td>
<td>N1b</td>
<td>1</td>
<td>Clin (+)</td>
<td>No</td>
</tr>
<tr>
<td>300</td>
<td>N1c</td>
<td>0</td>
<td>(?) unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>350</td>
<td>N1</td>
<td>1</td>
<td>(?) unknown</td>
<td>No*</td>
</tr>
<tr>
<td>400</td>
<td>N2a</td>
<td>2 or 3</td>
<td>SLNbx</td>
<td>No</td>
</tr>
<tr>
<td>450</td>
<td>N2b</td>
<td>2 or 3</td>
<td>≥ 1 Clin (+)</td>
<td>No</td>
</tr>
<tr>
<td>500</td>
<td>N2c</td>
<td>1</td>
<td>Either</td>
<td>Yes</td>
</tr>
<tr>
<td>550</td>
<td>N2</td>
<td>2 or 3</td>
<td>(?) unknown</td>
<td>No*</td>
</tr>
<tr>
<td>600</td>
<td>N3a</td>
<td>≥ 4</td>
<td>SLNbx</td>
<td>No</td>
</tr>
<tr>
<td>650</td>
<td>N3b</td>
<td>≥ 4</td>
<td>≥ 1 Clin (+) -or- Matted</td>
<td>No</td>
</tr>
<tr>
<td>700</td>
<td>N3c</td>
<td>≥ 2</td>
<td>(+/-) Matted</td>
<td>Yes</td>
</tr>
<tr>
<td>750</td>
<td>N3</td>
<td>≥ 4</td>
<td>(?) Matted</td>
<td>No*</td>
</tr>
</tbody>
</table>

*ISM included in AJCC N1/2/3 NOS categories, but not in EOD codes 350, 550, or 750.
Other LN Codes

- **EOD N0 (000)**: no RLNs/ISM
- **EOD N1 (800)**: RLNs NOS
- **EOD NX (999)**: RLN cannot be assessed - e.g. SLN bx not performed, RLN previously removed for another reason; No ISM
  - EXCEPTION: pN category not required for T1 melanomas - use cN0 when no LNs examined microscopically

Exercise: cN, pN, and ypN; EOD N

- Clinical N _____
- Pathological N _____
- Post Therapy N _____
- EOD Regional Nodes _____
AJCC M Updates

- Subcategories for M1a–d
  - 0 LDH not elevated
  - 1 LDH elevated
- New M1d (CNS mets)

EOD Mets, SS17 Distant, EOD “M”

<table>
<thead>
<tr>
<th>EOD</th>
<th>SS18</th>
<th>EOD &quot;M&quot;</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>-</td>
<td>M0</td>
<td>No distant mets; Unknown if distant mets</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>M1a</td>
<td>Distant lymph node(s), NOS</td>
</tr>
<tr>
<td>20</td>
<td>7</td>
<td>M1b</td>
<td>Bone, skeletal muscle, or underlying cartilage (all excluding contiguous extension)</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>M1b</td>
<td>Lung</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>M1c</td>
<td>Distant mets to non-CNS visceral sites</td>
</tr>
<tr>
<td>60</td>
<td></td>
<td>M1d</td>
<td>CNS Metastasis</td>
</tr>
<tr>
<td>70</td>
<td></td>
<td>M1</td>
<td>Distant metastasis, NOS</td>
</tr>
<tr>
<td>99</td>
<td>-</td>
<td>M0</td>
<td>Death Certificate Only</td>
</tr>
</tbody>
</table>
**Exercise: cM, pM, and ypM; EOD M**

- Clinical M _______
- Pathological M _______
- Post Therapy M _______
- EOD Mets _______

**Clinical Prognostic Stage Groups**

Based on:
- Biopsy of primary (micro staging)
- Clinical findings or bx of regional LN
- Clinical mets

Stages 0-II: no LN/ISM
Stage III: Any T with LN/ISM
- Tis included in any T

Stage IV: Any T with distant mets
- Tis excluded from any T
Pathological Prognostic Stage Groups

- pT requires wide excision or re-excision
- pTis and pT1: pathological eval of LNs not required when no clinically detected regional or distant mets; use cN0
- pN1/2/3a not possible when T0 ("a" categories are clinically occult LNs found on SLNB)
- Stages 0-II: no LN/ISM
- Stage III: T0-T4b with LN/ISM
  - Tis excluded
  - Stage IV: Any T with distant mets
  - Tis included in any T

Exercise: Prognostic Stage Groups and SS2018

- **Clinical** Stage Group: ______
  - cT3a cN0 cM0
- **Pathological** Stage Group: ______
  - pT3b pN2c(sn) cM0
- **Post therapy** stage group: ______
- **SS2018**: ______
Melanoma 5-Year Survival Rates

Localized melanoma: Stage 0, Stage I, and Stage II: 98.4%
Regional melanoma: Stage III: 63.6%
Metastatic melanoma: Stage IV: 22.5%

Note: Melanoma treatments have improved significantly with the addition of immunotherapy and targeted therapy. These survival rates are only beginning to reflect these advancements.

Test Your Knowledge

Which melanoma has the worst prognosis?
A. Depth 1.1 mm, nonulcerated, 3 occult SLN mets
B. Depth 1.9 mm, nonulcerated, 1 occult SLN mets, 1 nonregional LN mets
C. Depth 2.4 mm, nonulcerated, SLN (-), 1 satellite mets
D. Depth 4.5 mm, ulcerated, SLN (-)

https://www.mdedge.com/dermatology/quiz/4334/melanoma/melanoma-high-risk-clinical-features?channel=244
**Extra Stuff**

SLNs Positive and Examined Grade Fields
SSDIs

---

**Sentinel LN Examined Positive**

**Breast & Cutaneous Melanoma**

**SLN**
- If non-SLN in specimen, document total nodes removed / (+) during SLN procedure
- Subsequent RLN dissection, record removed / (+) SLN ONLY in this field
- Aspiration RLN and SLN biopsy, record results from SLN biopsy only

**BREAST ONLY**
- SLN during same procedure as RLND, use 97 for SLN (+)
- If ITC in SLN, those LN are negative

**MELANOMA ONLY**
- SLN during same procedure as RLND, record # SLN (+)
- If ITC in SLN, those LN are positive

**LNs must be microscopically examined!**
**Sentinel LN Examined Positive Breast & Cutaneous Melanoma**

<table>
<thead>
<tr>
<th>Code</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>No SLN examined / All SLN examined are (-)</td>
</tr>
<tr>
<td>01 – 90</td>
<td>SLN are examined / positive (EXACT # of SLN)</td>
</tr>
<tr>
<td>95</td>
<td>Aspiration SLN performed / positive</td>
</tr>
<tr>
<td>97</td>
<td>Positive SLN documented but number unk; for BREAST ONLY, SLN &amp; RLND occurred during same procedure</td>
</tr>
<tr>
<td>98</td>
<td>SLN biopsied, # unknown / No SLN biopsied</td>
</tr>
<tr>
<td>99</td>
<td>Unknown if SLN examined / positive; N/A or negative; not stated in patient record</td>
</tr>
</tbody>
</table>

**Date Sentinel LN Biopsy**

- Breast and cutaneous melanoma cases ONLY
- Only SLN – do NOT code FNA, core needle bx, or core bx LN
- “SLN” suffix (sn) added to N in AJCC fields (unless RLN procedure performed during same staging timeframe)
### Exercise SLNs Positive/ Examined

| SLNs Examined | _____ |
| SLNs Positive | _____ |
| Date SLN Biopsy | ________ |
| Date RLN Dissection | ________ |

### NCCN Recommendations for SLNB

<table>
<thead>
<tr>
<th>Stage</th>
<th>Breslow</th>
<th>Ulceration</th>
<th>Probability of (+) SLN</th>
<th>SLNB?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>&lt;0.8</td>
<td>No</td>
<td>&lt;5%</td>
<td>No</td>
<td>Unless uncertainty about microstaging</td>
</tr>
<tr>
<td>IA</td>
<td>&lt;0.8</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>Unless mitotic index ≥ 2/mm² [particularly in younger patients], LVI, or combo</td>
</tr>
<tr>
<td>IB</td>
<td>&lt;0.8</td>
<td>Yes</td>
<td>5-10%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>IB</td>
<td>0.8-1.0</td>
<td>ANY</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IB</td>
<td>&gt;1-2mm</td>
<td>No</td>
<td>&gt;10%</td>
<td>Yes</td>
<td>Non mitogenic and older patients have lower probability of (+) SLN</td>
</tr>
</tbody>
</table>


**Tumor Grade**

- Highest grade from primary tumor during appropriate staging time [c), p), y)]
- If only one grade noted, unk if c), p) or y), code as c) grade, but 9 for p), blank for y)

CAP Protocol: Grade is not a data item in the protocol.
Grade Clinical = 9
Grade Pathological = 9
Grade Post-therapy = blank or 9 (if neoadjuvant treatment done)

<table>
<thead>
<tr>
<th>Exercise Grade Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Clinical</td>
</tr>
<tr>
<td>Grade Pathological</td>
</tr>
<tr>
<td>Grade Post-Therapy</td>
</tr>
</tbody>
</table>
**Melanoma SSDI**

### SSDI: Breslow Tumor Thickness

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>No mass/tumor found</td>
</tr>
<tr>
<td>0.1</td>
<td>&gt; 0.0 and ≤ 0.1</td>
</tr>
<tr>
<td>0.2 – 99.9</td>
<td>0.2 – 99.9 mm</td>
</tr>
<tr>
<td>XX.1</td>
<td>&gt; 100 mm</td>
</tr>
<tr>
<td>A0.1 – A9.9</td>
<td>Stated as “at least” some measured value of 0.1 to 9.9</td>
</tr>
<tr>
<td>AX.0</td>
<td>Stated as &gt; 9.9mm</td>
</tr>
<tr>
<td>XX.8</td>
<td>N/A; info not collected</td>
</tr>
<tr>
<td>XX.9</td>
<td>Not documented in med record; microinvasion; micro focus only w/o depth; in situ; can’t be measured by path; unk if done or assessed</td>
</tr>
</tbody>
</table>
### SSDI: Ulceration

Ulceration can only be confirmed by **microscopic** exam – do not use PE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Ulceration not present</td>
</tr>
<tr>
<td>1</td>
<td>Ulceration present</td>
</tr>
<tr>
<td>8</td>
<td>N/A; info not collected</td>
</tr>
<tr>
<td>9</td>
<td>Not documented in med record; can’t be determined by path; path doesn’t mention if ulceration; unk if done or assessed</td>
</tr>
</tbody>
</table>

### SSDI: Mitotic Rate Melanoma

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 mitoses per sq mm; mitoses absent; no mitoses</td>
</tr>
<tr>
<td>01 – 99</td>
<td>1 – 99 mitoses/sq mm (code exact measure)</td>
</tr>
<tr>
<td>X1</td>
<td>≥ 100 mitoses/sq mm</td>
</tr>
<tr>
<td>X2</td>
<td>Stated as &lt; 1 mitosis/sq mm; nonmitogenic</td>
</tr>
<tr>
<td>X3</td>
<td>Stated as at least 1 mitosis/sq mm; mitogenic</td>
</tr>
<tr>
<td>X4</td>
<td>Mitotic rate described w/denominator other than sq mm</td>
</tr>
<tr>
<td>X7</td>
<td>Test ordered, results not in chart</td>
</tr>
<tr>
<td>X8</td>
<td>N/A; info not collected</td>
</tr>
<tr>
<td>X9</td>
<td>Not documented in med record; unk if done or assessed</td>
</tr>
</tbody>
</table>
Exercise SSDIs Associated with EOD Primary Tumor

- Breslow Tumor Thickness: _____
- Ulceration: _____
- Mitotic rate: _____

SSDI: LDH Pretreatment Lab Value

Record lab value highest serum LDH prior to treatment or within 6 weeks of dx; use same test for all three LDH items

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>0.0 (U/L)</td>
</tr>
<tr>
<td>0.1 – 99999.9</td>
<td>0.1 – 99,999.9 U/L</td>
</tr>
<tr>
<td>XXXXX.1</td>
<td>≥ 100,000 U/L</td>
</tr>
<tr>
<td>XXXXX.7</td>
<td>Test ordered, results not in chart</td>
</tr>
<tr>
<td>XXXXX.8</td>
<td>N/A; info not collected</td>
</tr>
<tr>
<td>XXXXX.9</td>
<td>Not documented in med record; unk if done or assessed</td>
</tr>
</tbody>
</table>
**SSDI: LDH Upper Limits of Normal**

Use same lab test as LDH Pretreatment

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>001 – 999</td>
<td>01 – 99 upper limit of normal (Exact upper limit)</td>
</tr>
<tr>
<td>XX8</td>
<td>N/A; info not collected</td>
</tr>
<tr>
<td>XX9</td>
<td>Not documented in med record; unk if done or assessed</td>
</tr>
</tbody>
</table>

**SSDI: LDH Pretreatment Level**

Use same lab test as LDH Pretreatment

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Normal LDH level; low, below normal</td>
</tr>
<tr>
<td>1</td>
<td>Above normal LDH level; high</td>
</tr>
<tr>
<td>7</td>
<td>Test ordered, results not in chart</td>
</tr>
<tr>
<td>9</td>
<td>Not documented in med record; unk if done or assessed</td>
</tr>
</tbody>
</table>
Exercise *SSDI Associated with EOD Mets (LDH fields)*

- Pretreatment lab value: _______
- Upper limits of normal: ______
- Pretreatment level: ______

*Treatment*
**Biopsies**

**Diagnostic Bx**
- Partial Sampling
  - Punch
  - Shave
  - Elliptical
  - Incisional
- Useful for:
  - Large clinical lesions
  - Challenging anatomy (i.e. face)
- May misrepresent Breslow

**Excisional Bx**
- Excise entire lesion
  - 1-3mm clinically negative margins
  - Saucerization or “scoop” technique
- MOHS

Source: J Am Acad Dermatol 2019;80:208-50

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**MOHS Surgery**

1. **STEP 1**
2. **STEP 2**
3. **STEP 3**
4. **STEP 4**
5. **STEP 5**
6. **STEP 6**

http://asarchcenter.com
**Indications for Mohs**

- **BCC or SCC**
  - That is aggressive or large
  - In area w/ little tissue beneath
  - Was treated and returned
- **Early melanoma** (lentigo maligna)
  - Slow Mohs

**What is Slow Mohs?**

- AKA Staged excision, Modified Mohs
- “Slow” because the patient must wait longer for the results
- Uses permanent sections
- Achieves 100% margin control
  - Traditional sectioning allows examination of <0.1% of the margin
- Minimizes wound defect
**Local Excision Codes**

- 20 – Includes shave, punch, or bx NOS with MICROscopically clear margins and **no** further procedure
- 30 Biopsy followed by GROSS excision
  - Includes wide excision
- 45 Wide excision/re-excision
- 60 Major amputation

**Slow-Mohs**

**Advantages**
- 100% margin control
- Accurate staging of tumor (T)
- IHC staining

**Disadvantages**
- 24-48 hours required for path may delay closure
- Labor intensive
- Requires experienced dermatopath and lab techs to accurately interpret

### Melanoma Surgery Codes

30. Biopsy of primary tumor followed by a gross excision of the lesion (does not have to be done under the same anesthesia)
31. Shave biopsy followed by a gross excision of the lesion
32. Punch biopsy followed by a gross excision of the lesion
33. Incisional biopsy followed by a gross excision of the lesion
34. Mohs surgery, NOS
   **SEER Note:** Assign code 34 for shave biopsy followed by MOHS surgery for melanoma of the skin.
35. Mohs with 1-cm margin or less
36. Mohs with more than 1-cm margin

**SEER Note:** Codes 30 to 35 include less than a wide excision, less than or equal to 1-cm margin, or status of margin is unknown. If it is stated to be a wide excision or reexcision, but the margins are unknown, code to 30.
   **Example:** Melanoma: with surgical margins greater than 1 cm for length and width but less than 1 cm for depth. Assign a surgery code in the 30-35 range. Since tumor thickness is an important prognostic factor for cutaneous melanoma, the deep margin is of particular importance. Use code 45 when there is a wide excision AND it is known that the margins of excision are greater than 1 cm.

### Melanoma Surgery Codes

45. Wide excision or reexcision of lesion or minor (local) amputation with margins more than 1 cm.
   **SEER Note:** Margins MUST be microscopically negative.
46. WITH margins more than 1 cm and less than or equal to 2 cm
47. WITH margins greater than 2 cm
   **SEER Note:** If the excision or reexcision has microscopically negative margins less than 1 cm OR the margins are more than 1 cm but are not microscopically confirmed; use the appropriate code, 20-36.
   **Example:** Amputation of finger for subungual melanoma.

60. Major amputation
   **Major amputation:** amputation of the lower limb above the ankle or upper limb above the wrist – MediLexicon website
   OR
   amputation above the elbow, below the elbow, above the knee, below the knee, or the foot - International Encyclopedia of Rehabilitation
### Margins

<table>
<thead>
<tr>
<th>Tumor Thickness</th>
<th>Margins</th>
</tr>
</thead>
<tbody>
<tr>
<td>In situ</td>
<td>0.5 cm</td>
</tr>
<tr>
<td>≤ 1.0 mm</td>
<td>1.0 cm</td>
</tr>
<tr>
<td>1.01 – 2 mm</td>
<td>1 – 2 cm</td>
</tr>
<tr>
<td>2.01 – 4 mm</td>
<td>2.0 cm</td>
</tr>
<tr>
<td>&gt; 4 mm</td>
<td>2.0 cm</td>
</tr>
</tbody>
</table>

### Exercise: Surgery Coding

- **4/24/19** Shave bx (PCP)
- **5/15/19** Completely excised, 2.2 circumferential margin per op note, no margin distance stated on path

- **4/24/19** code:
- **5/15/19** code:
**Coding Treatment Practice?**

- Central registry receives e-path: 9/1/19 punch biopsy
  PCP office sent to path lab + for malignant melanoma
  - No mention of margins

- Hosp A submits same patient to central registry in 12/2019
  - 9/15/2019 Wide excision melanoma
  - Path: no residual melanoma cells

**Exercise Adjuvant Tx**

- Referral: Due to the patient’s insurance, he was referred to Dr. XXX at XYZ for immunotherapy.

  Date/Date Flag Immunotherapy
  Immunotherapy
**Drainage Pattern**

Left Shoulder Melanoma

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**Sentinel Lymph Node Biopsy**

www.rcsed.ac.uk
Treatment--Melanoma--Other Modalities

- Not chemosensitive (20% response)
  - DTIC (Dacarbazine) most active agent, Temodar
  - New chemo in 2018:
    - Tafinlar (dabrafenib)
    - Mekinist (trametinib)
- Not radiosensitive
- Not hormone-responsive

FDA-Approved Immuno for Melanoma

<table>
<thead>
<tr>
<th>CLASS OF TX</th>
<th>PURPOSE</th>
<th>TYPE OF TX</th>
<th>DRUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checkpoint inhibitors</td>
<td>Prevent immune system from shutting down in the body &amp; restore immune response against melanoma cells</td>
<td>CTLA-4 inhibitor</td>
<td>ipilimumab (Yervoy)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PD-1 inhibitor</td>
<td>nivolumab (Opdivo) pembrolizumab (Keytruda) Combo of both</td>
</tr>
<tr>
<td>Cytokines</td>
<td>Boost the immune system overall</td>
<td></td>
<td>interferons, interleukins, heme growth factors aldesleukin (IL-2; Proleukin); peginterferon alfa-2b (Sylatron)</td>
</tr>
</tbody>
</table>
## FDA-Approved Immuno for Melanoma

Society for Immunotherapy of Cancer

<table>
<thead>
<tr>
<th>CLASS OF TX</th>
<th>PURPOSE</th>
<th>TYPE OF TX</th>
<th>DRUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncolytic viruses</td>
<td>Kill tumors, primarily those that can't be surgically removed</td>
<td>Oncolytic virus therapy</td>
<td>talimogene laherparepvec (Imlygic/T-VEC)</td>
</tr>
<tr>
<td>Vaccines</td>
<td>Activate immune system</td>
<td>Vaccine</td>
<td>bacillus Calmette-Guerin (BCG) vaccine</td>
</tr>
<tr>
<td>Non-specific immune stimulators</td>
<td>Boost immune system overall</td>
<td>Toll-like receptor agonists</td>
<td>imiquimod (Aldara)</td>
</tr>
</tbody>
</table>

### More Immuno for Melanoma

- BRAF + (wild type or mutant type)
  - Pembrolizumab (Keytruda)
  - Nivolumab (Opdivo)
  - Ipilimumab (Yervoy)

- All above coded as Immuno
- Drugs turn OFF melanoma pathway but turn ON squamous cell pathway with sunburns
2014 MO Law: Any minor ≤ 16 must be accompanied by parent or guardian who has to sign consent form giving permission for child to tan yearly.

2011 CA/2013 TX Law: NO tanning beds < 18 y.o. even with parent permission

What’s Your Law?
Questions?

- For questions related to this presentation, contact:
  - denisecharrisonllc@gmail.com
  - Louanne.Currence@nkch.org

8/24/19 The Brief and 8/21/19 Ask SEER CTR #21342

TAG consensus decision on priority for assigning melanoma surgery codes is the pathology report(s).

- **If** margin information is not available on the pathology report
  - Operative report may be used *when* margins are specified
  - Exception: code 47 where specific instructions about microscopic confirmation are included *(per #21342)*
  - Applies to surgery codes only
    - Does not apply to the margins data item
- Do not compute margins from path or op report.
  - If margins are not stated on either report, use unknown
**SEER Sinq 20190080**
12/03/2019

- You may take margin information from the operative report if it is missing from the pathology report when assigning the surgery codes for skin.

  - **Exception:** Do not apply this to surgery codes 45-47 where specific instructions about microscopic confirmation are included.

- The rule applies to any skin malignancy for which the skin surgery codes apply.

- SEER, CoC, NPCR, NCRA, NAACCR, and the Canadian registries participated in this decision. SEER is publishing this SINQ question for reference.

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**CAP Protocol August 2019**

- Distance from margin (peripheral or deep) is **not** a required element on the CAP Protocol for excision/re-excision.

- “These optional elements may be clinically important but are not yet validated or regularly used in patient management.”