

# Dermatology for the Primary Care Provider

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Candidate

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# Learning Objectives

- By the end of this didactic, the NP Resident will be able to:
  - Describe skin lesions and rashes
  - Identify and treat common skin conditions
  - Know when to refer to Dermatology

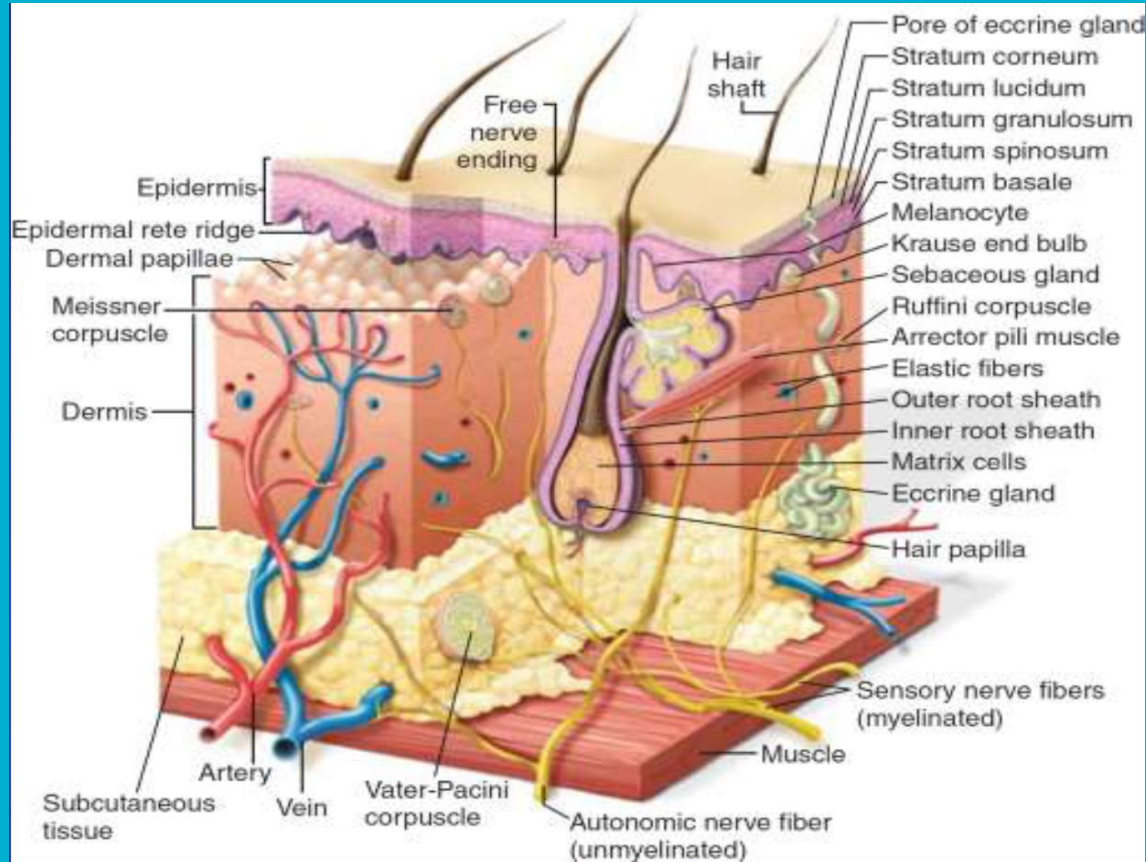




# Overview

1. Structure and function of the skin
2. Assessment of skin lesions (Morphology, characteristics, Distribution)
3. Benign pigmented lesions/Neoplasms/Benign tumors and proliferations
4. Neoplasms
5. Eczematous disorders
6. Topical corticosteroids
7. Papulosquamous
8. Adnexal diseases
9. Infections
  1. Fungal (Dermatophyte and Candida)
  2. Bacterial
  3. Viral
10. Infestations

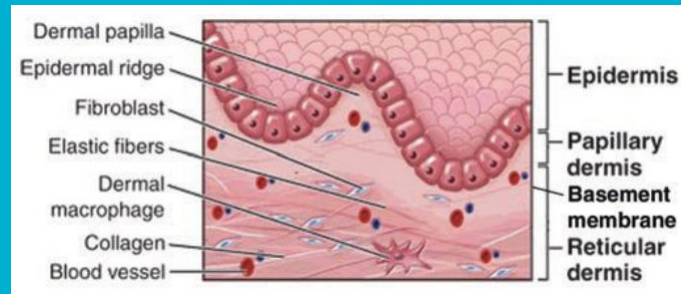
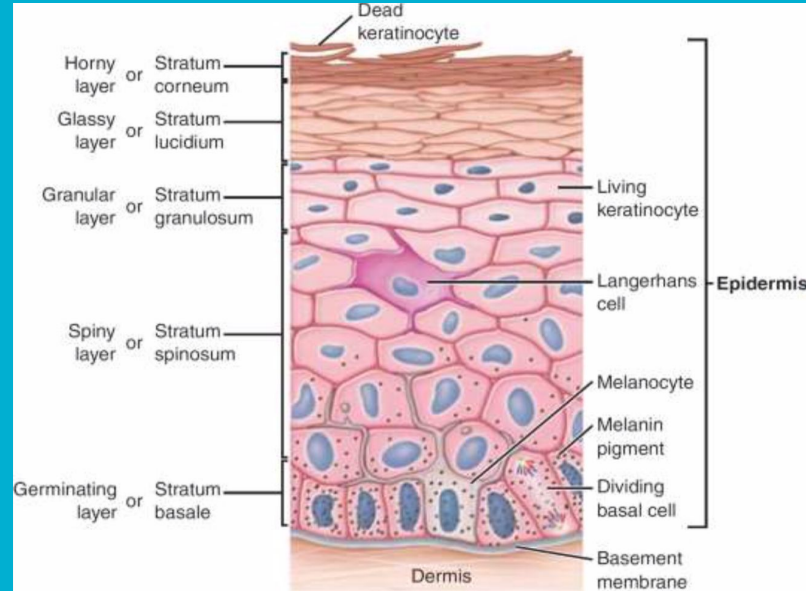
# Structure and Function of the Skin



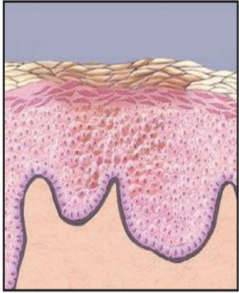
# Structure and Function of the Skin

## Skin layers and cells:

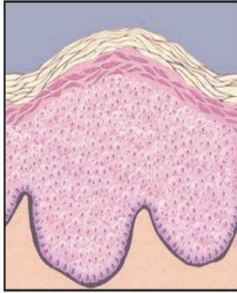
1. Epidermis
  - a. Keratinocytes
  - b. Langerhans Cells
  - c. Merkel Cells
  - d. Melanocytes
2. Dermis
  - a. Mast cells
  - b. Histiocytes
  - c. Fibroblasts
  - d. Collagen
3. Subcutaneous layer
  - a. Adipose cells
  - b. Connective tissue



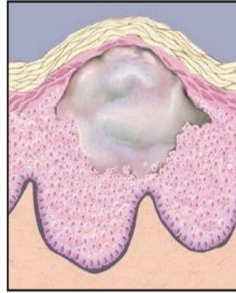
# Morphology: Primary lesions



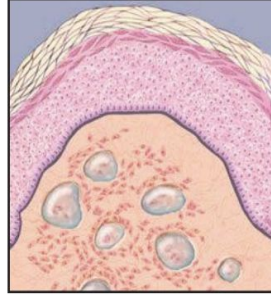
**Macule** < 1 cm  
**Patch** ≥ 1 cm  
Flat, discoloration



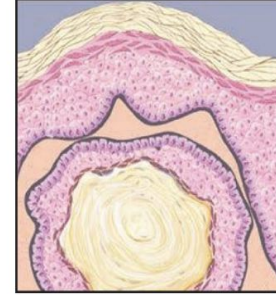
**Papule** < 1 cm  
**Plaque** ≥ 1 cm  
Raised, solid, well-defined



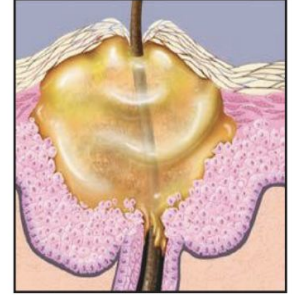
**Vesicle** < 1 cm  
**Bulla** ≥ 1 cm  
Fluid-filled, transparent



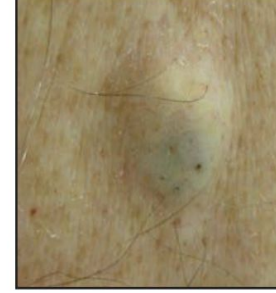
**Nodule** < 1 cm  
**Tumor** ≥ 1 cm  
Solid, circumscribed, dermal



**Cyst**  
Fluid/semisolid-filled  
nodule, maybe fluctuant



**Pustule**  
Fluid-filled, purulent





# Morphology: Secondary lesions

## Desquamation

Shedding or peeling of epidermis



## Crust

Dried serum, often honey-color exudate



## Morbilloform

Small macules, measles-like appearance, usually red



## Ulceration

Focal loss of epidermis and dermis



## Excoriation

Neurotic type, irregular shape



## Excoriation

Linear wounds from scratching



## Wheal or Hives

Circumscribed, flat-topped plaques lasting < 24 hr



## Angioedema

Edema in the dermis and cutis, not well circumscribed



## Fissure

Deep tears through the epidermis and into dermis



## Purpura

Palpable and nonpalpable extravasation of blood into tissues



## Petechiae

Nonpalpable, extravasation of blood into tissues, <3 mm



## Lichenification

Thickened, exaggerated lines



# Configuration

## Annular

Round plaque with raised border and central clearing



## Umbilicated

Central depression or dell



## Targetoid

"Iris" shape, concentric rings with central bull's-eye



## Perifollicular

Arising from hair follicles, papules



## Guttate

Small, red, separate tear drop



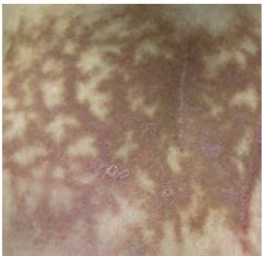
## Collarette

Ring of scale around border



## Reticular

Lacy or network-like pattern



## Linear

Straight lines, like scratching



## Nummular

"Discoid" or coin-shaped plaque



## Pedunculate

On a stalk or stem



## Filiform

Finger-like projections



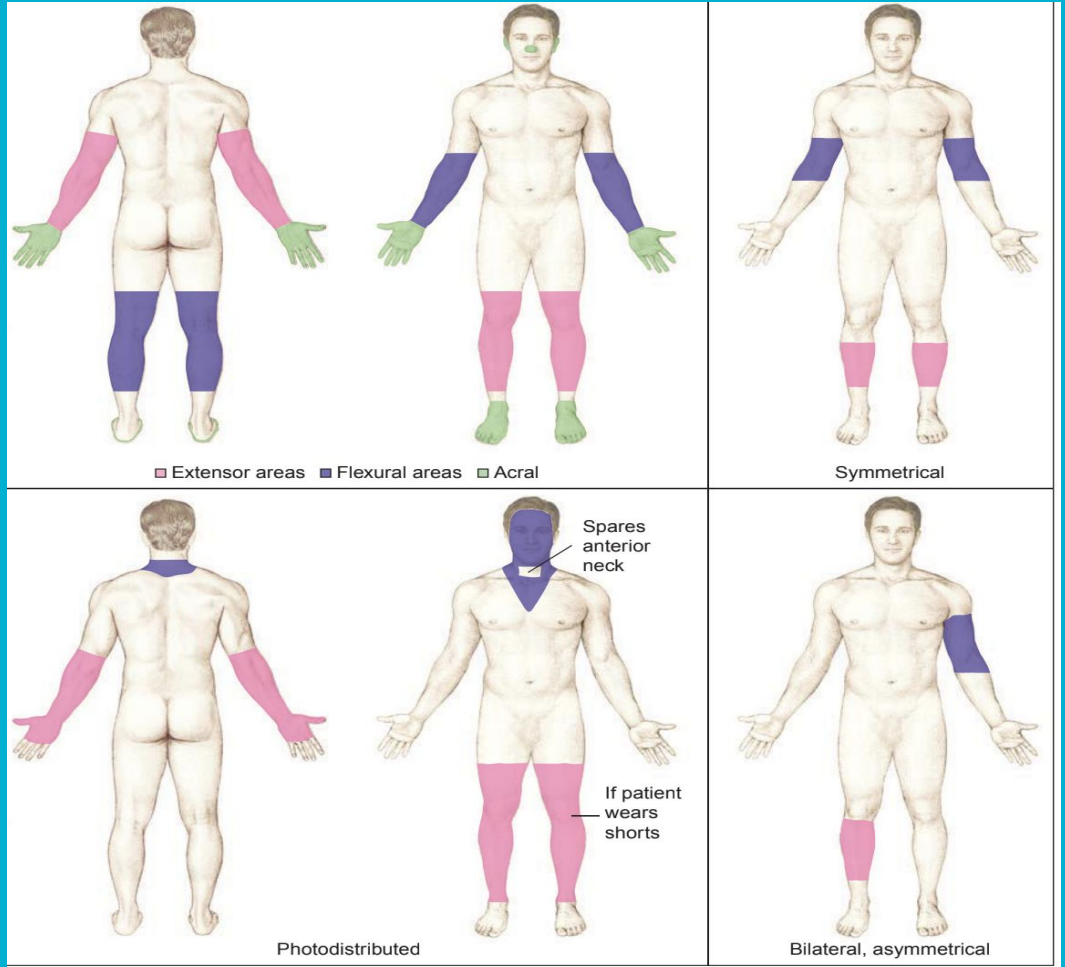
## Serpiginous

Wavy or creeping



# Distribution

<https://www.visualdx.com/learnderm/>



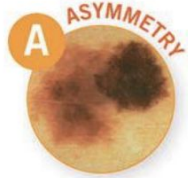
# Benign pigmented lesions, neoplasms, and tumors/proliferations

1. Nevi (Congenital Nevi and acquired melanocytic nevi)
2. Lentigines (Ephelides, Lentigo simplex, Solar lentigo)
3. Seborrheic keratoses (SK), stucco keratoses, and dermatosis papulosa nigra (DPN)
4. Acanthosis nigricans
5. Confluent and Reticulated Papillomatosis (CARP)
6. Cherry angiomas
7. Dermatofibromas
8. Acrochordons (Skin tags)



# Nevi

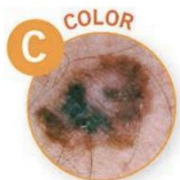
## BOX 7-4 ABCDE Checklist for Lesion Characteristics of Melanoma



*Asymmetry :*  
The lesion lacks a mirror image on any plane.



*Border :*  
The margins of the lesion are irregular.



*Color :*  
Multiple colors are present in the lesion.



*Diameter :*  
Lesions larger than 6 mm are suspect.



e.g.




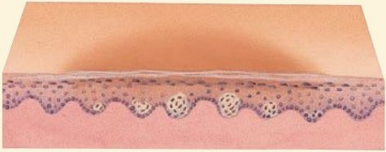
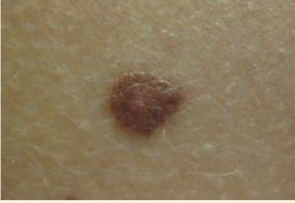
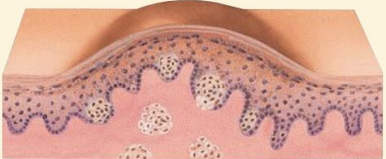

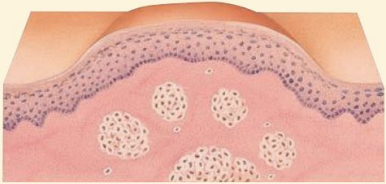
*Evolving :*  
The lesion is changing over time.

# Acquired melanocytic Nevi

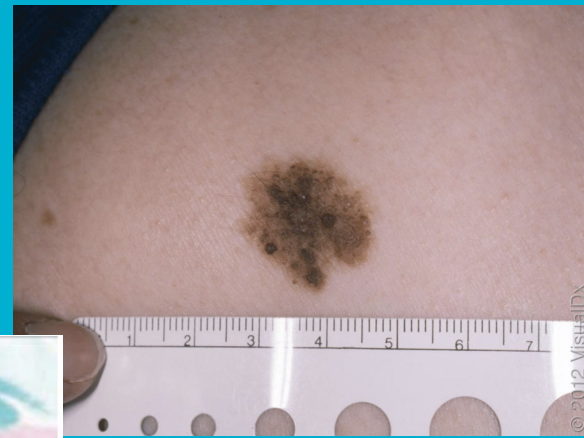
TABLE

7-2

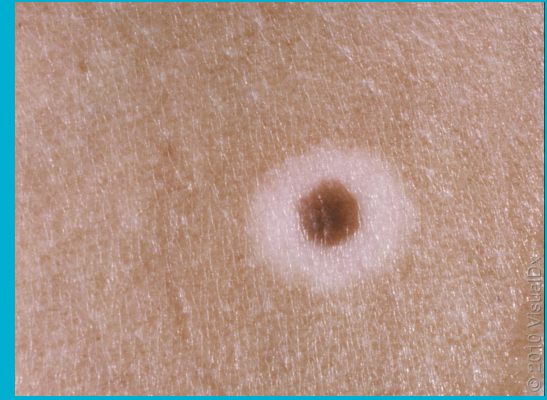
Characteristics of Acquired Melanocytic Nevi (Common Moles)

TYPE OF MOLE	FEATURES	EXAMPLES	LOCATION OF NEVUS CELLS
<b>Junctional nevus</b>	<p>Childhood</p> <p>Flat or slightly elevated</p> <p>Uniform, flesh, brown</p> <p>Well defined</p> <p>&lt; 6 mm diameter</p> <p>Scalp-brown halo</p>		 <p>Dermal-epidermal junction.</p>
<b>Compound nevus</b>	<p>Adolescents &amp; adults</p> <p>Macule with papule/nodule</p> <p>Large variation</p> <p>Fried-egg or halo look</p> <p>Brown or flesh</p> <p>Course hair sometimes</p> <p>Increasing elevation with age</p>		 <p>Dermal-epidermal junction with some nevus cells in dermis.</p>
<b>Dermal nevus</b>	<p>Adulthood</p> <p>Dome, verrucal, polypoid, or stalk base</p> <p>Flesh to brown shades</p> <p>Can be translucent</p> <p>Anywhere but frequent on head and neck</p> <p>Larger up to 1 cm</p>		 <p>Nevus cells migrated into dermis.</p>

# Congenital Nevi



# Halo Nevi

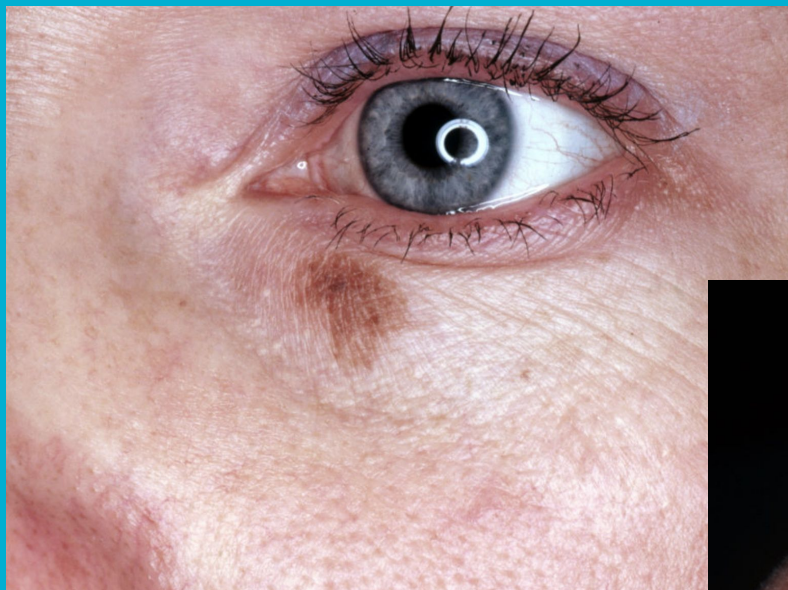




# Ephelides (freckles)

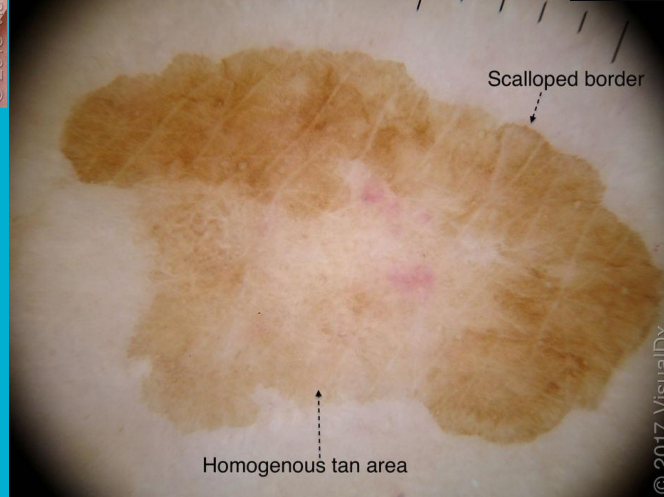


# Lentigo Simplex

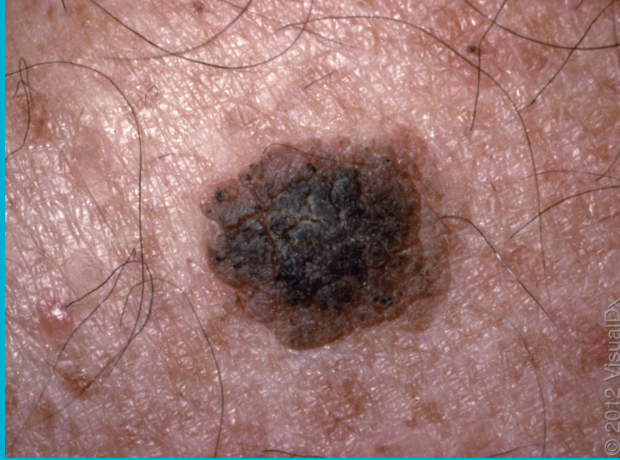




# Solar Lentigines



# Seborrheic Keratosis





# Stucco Keratosis

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# Dermatosis Papulosa Nigra



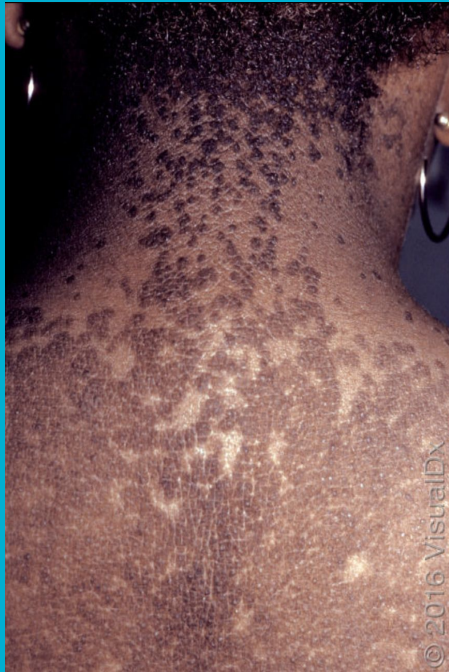


# Acanthosis Nigricans

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# Confluent and Reticulated Papillomatosis (CARP)





# Cherry Angiomas

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# Dermatofibromas

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# Acrochordons

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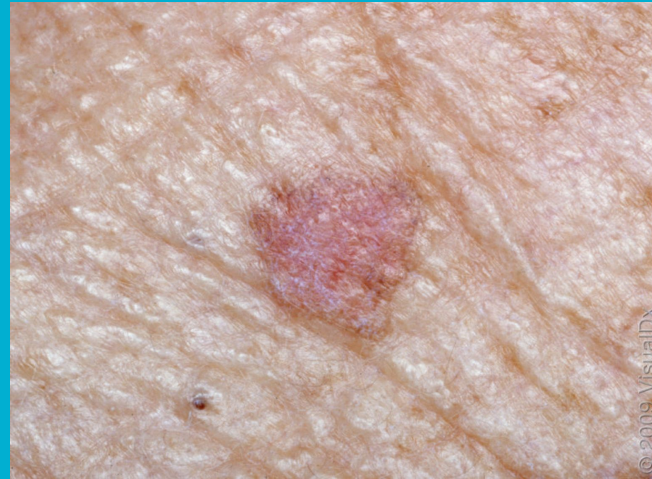
# Neoplasms

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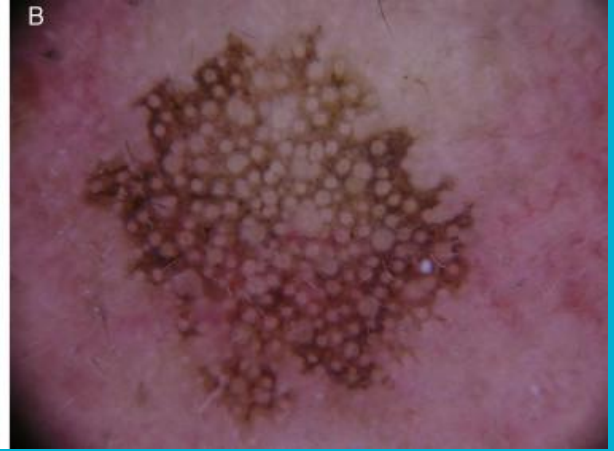
1. Precancerous Lesions: Actinic Keratoses (AK)
2. Non melanoma skin cancers (NMSC)
  - a. Squamous cell Carcinoma (SCC)
  - b. Basal Cell Carcinoma (BCC)
3. Melanoma



# Actinic Keratoses



# Variants of AKs



# Squamous Cell Carcinoma

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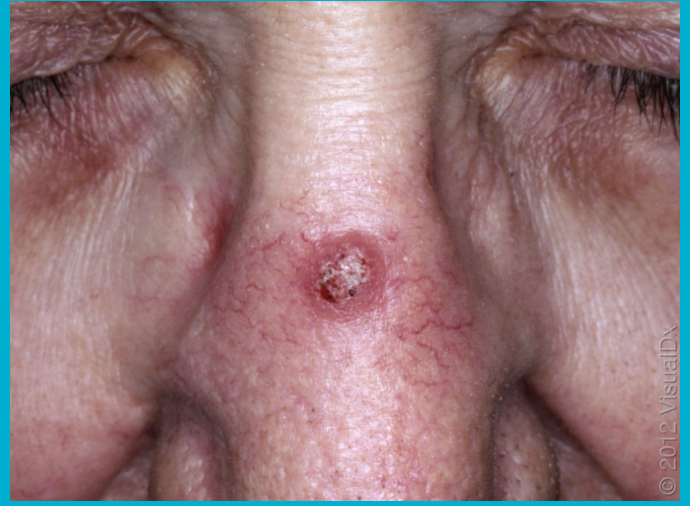
- Malignant epithelial tumor due to proliferating keratinocytes
- Second most common skin cancer worldwide w/ increasing incidence
- Associated with SUN DAMAGE
- Damage to keratinocytes -> DNA mutation
- M>F and more common in older patients
- High Risk Populations: HIV patients and Organ transplant patients



# Squamous Cell Carcinoma

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- 70% of SCCs develop at the head and neck and 15% at the upper extremities
- High risk locations: ears, lips, tongue, genitalia, and distal extremities have a much higher rate of recurrence
- The scalp is also a high-risk location as SCC
- SCCs > 2 cm have up to three times the metastatic rate of smaller tumors.
- SCCs which develop in scars, sinus tracts, chronic ulcers, and areas of previous radiation also present higher rates of recurrence.





# Subtypes of SCC

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1. Squamous Cell Carcinoma in Situ (SCCIS)

or Bowen Disease

2. Bowenoid Papulosis

3. Erythroplasia of Queyrat

4. Keratoacanthoma

5. Verrucous Carcinoma



# SCC in Skin of Color



## Squamous cell cancer features in Caucasians and People of Color

	<b>Caucasians</b>	<b>People of color</b>
<b>Frequency of disease</b>	2 <sup>nd</sup> most common skin cancer	Most common skin cancer in Blacks; 2 <sup>nd</sup> most common in Hispanics, Asians
<b>Risk factors</b>	Sun exposure, fair skin, immunosuppression, human papillomavirus infections, scarring	Chronic scarring/inflammation from burns, leg ulcers, radiation, lupus, immunosuppression, human papillomavirus
<b>Typical clinical presentation</b>	Superficial lesion arising from indurated, rounded, elevated base	Sore that will not heal(bleeding or developing a crust)
<b>Anatomic distribution</b>	Sun exposed areas (head and neck, hands)	Skin infrequently exposed to the sun (legs)



# Squamous Cell Carcinoma

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Diagnosis: shave biopsy

Management:

1. Standard surgical excision- GOLD STANDARD
2. Immunotherapy- imiquimod or 5-fluorouracil for the treatment of SCCIS
3. Mohs Micrographic Surgery- standard of care for all high risk skin cancers, cancers, high-risk patients, low-risk tumors in cosmetically sensitive areas or those close to vital organs
4. Radiation therapy (XRT)

# Squamous Cell Carcinoma

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If untreated has the potential for metastasis

Risk factors for metastasis:

- Large (>2cm) tumors
- Tumors located on or near the ears and lips, are
- Poorly differentiated SCC
- SCC invading nerves.

After first SCC there's up to a 50% risk of a second SCC within 5 years. Also twice as likely to develop other malignancies, such as lung, colon, and breast cancers.

# Basal Cell Carcinoma (BCC)

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- Most common human malignancy
- Sun exposed areas of fair skinned individuals (head, neck, and upper back)
- About 20% can be seen in relatively sun protected sites
- Higher incidence in middle aged and older adults
- M>F
- 40% of patients who have had a primary BCC will develop a new BCC within 5 years of their first occurrence.
- 10 fold increase risk of BCC in organ transplant patient previously diagnosed with BCC



# Basal Cell Carcinoma (BCC)

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Pathophysiology: Damage to the basal keratinocytes within the epidermis and adnexal structures.

- Radiation treatments,
  - Unprotected exposure to UVR over many years
  - Intense exposure to UVR from tanning beds or phototherapy.
- Very slow growing, locally destructive, rarely metastasizes



# Subtypes of BCC

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1. Nodular BCC (most common)
2. Pigmented BCC
3. Superficial BCC (17% of all BCCs)
4. Micronodular BCC
5. Infiltrative BCC
6. Morpheaform or sclerosing BCC (1% of all BCC)
7. Nevoid basal cell syndrome





# BCC in skin of color





## Basal cell cancer features in Caucasians and People of Color

	<b>Caucasians</b>	<b>People of color</b>
<b>Frequency of disease</b>	Most common skin cancer	Most common skin cancer in Hispanics and Asians
<b>Risk factors</b>	Sun exposure, fair skin, previous radiation therapy, and genetic disorders (albinism, nevoid basal cell carcinoma syndrome, Xeroderma pigmentosum)	Sun exposure, scars, ulcers, previous radiation therapy, and genetic disorders(albinism, nevoid basal cell carcinoma syndrome, Xeroderma pigmentosum)
<b>Typical clinical presentation</b>	Translucent, solitary nodule with central ulceration and telangiectasias	Pigmented BCC, with“black, pearly appearance” common
<b>Anatomic distribution</b>	Head and neck regions	Head and neck regions

# Basal Cell Carcinoma (BCC)

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Diagnostics: Biopsy

Management:

## 1. Low risk BCC:

- a. Topical Immunotherapy (5FU 5% BID x 6 weeks or Imiquimod 5% 5 days a week x 5-12 weeks)
- b. Cryosurgery (risk for tumor recurrence)
- c. ED&C (Recurrence rates are low at 3% to 6% for primary BCC < 1 cm)
- d. Surgical excision (treatment of choice. 5-year cure rate of 95%)

## 2. High risk BCC:

- a. Mohs micrographic surgery (GOLD STANDARD)

# Melanoma

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- Deadliest skin cancer causing 75% of deaths associated with skin cancer
- Most common cancer in 25-29 year olds
- Leading cause of cancer deaths in females 25-30 and second leading in 15-29 year olds
- Can occur anywhere on the body. Most common locations:
  - White males: Back, chest, and arms
  - White females: back, arms, and legs
  - Dark skin tones: palmar, plantar, mucosal, and subungal



# Melanoma

- Cancer originating from melanocytes
- Skin exams for early detection
- ABCDEs, but a melanoma can look like anything
- Can arise within previously benign lesions
- Subtypes:
  - a. Superficial spreading (70%)
  - b. nodular melanomas (10%–15%),
  - c. lentigo maligna melanomas (LMM) (5%–10%),
  - d. Acral lentiginous (7%).

## BOX 7-5 Risk Factors for Melanoma

Unprotected UVR exposure, especially chronic, severe intermittent, or blistering sunburns

Fair complexion, blue or green eyes, blond or red hair with the tendency to freckle or burn

The presence of large number of nevi or history of DN and DNS

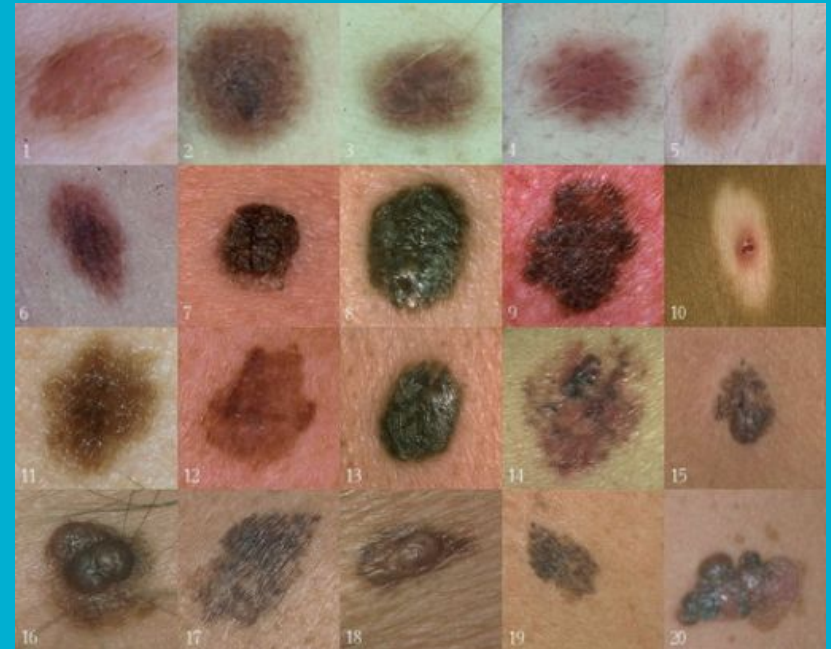
Large or garment CMN

Family and/or personal history of melanoma

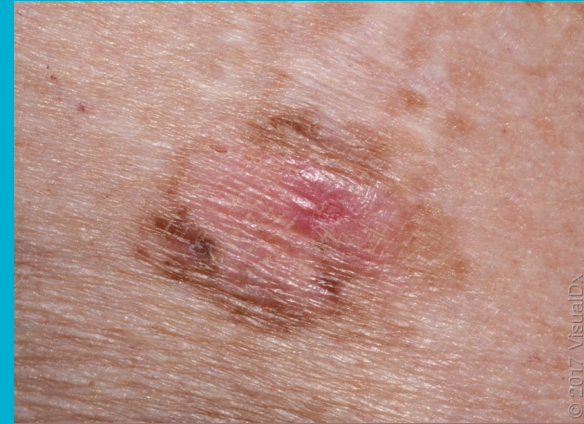
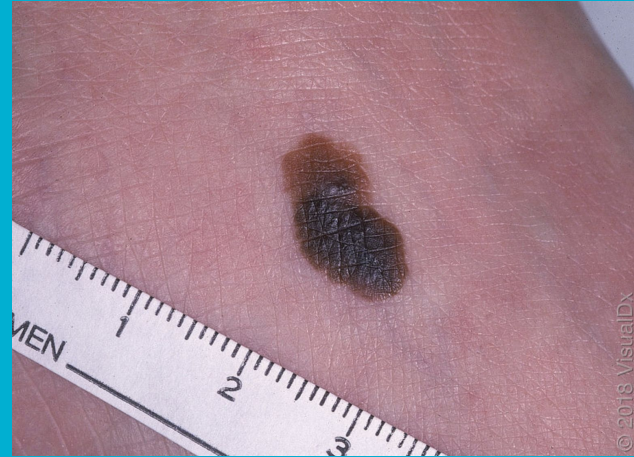
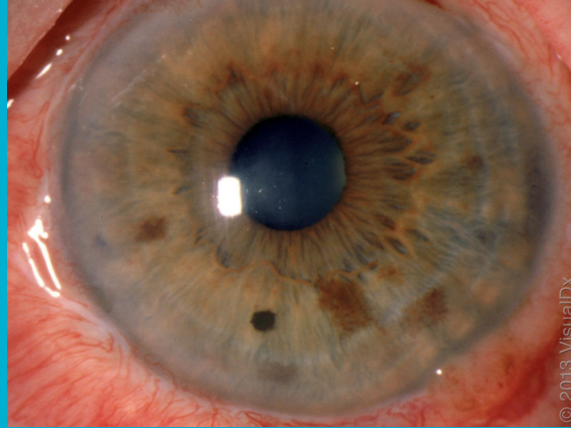
*CDKN2K*, *BRAF*, *NRAS*, *MC1R* and *BRCA2* mutations

Xeroderma pigmentosum

Immunosuppressed patients



# Melanoma Subtypes





# Melanoma in skin of color





## Melanoma features in Caucasians and People of Color

	<b>Caucasians</b>	<b>People of color</b>
<b>Frequency of disease</b>	3 <sup>rd</sup> most common skin cancer; incidence increasing	3 <sup>rd</sup> most common skin cancer; incidence increasing in Hispanics
<b>Risk factors</b>	Sun exposure, fair skin, family history, increased number of nevi, dysplastic nevi	Sun exposure; unknown for acral melanoma
<b>Clinical presentation</b>	Dark, rapidly spreading macules or patches arising from pigmented nevi	Dark, rapidly spreading macules or patches arising from pigmented nevi; Rapidly changing pigmented band on the nail(Hutchinson's sign)
<b>Anatomic distribution</b>	Often on trunk or lower legs	Often on palmar, plantar and subungual areas (acral melanoma)

# Melanoma

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## Diagnostics:

- Emergent referral to Dermatologist for excisional biopsy, punch biopsy, deep shave, or incisional biopsy.
- Histopathology is critical in determining diagnosis and type of melanoma, depth of melanoma, and melanoma staging. All of which guide treatment
- Sentinel lymph node biopsy (1 to 4 mm in thickness or if the lesion is less than 1 mm and has noted ulceration)

# Melanoma

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## Management

- Surgical excision with histologically clear margins (GOLD STANDARD)
  - Recommended surgical margins:
    - MIS: 0.5 cm-margin
    - Melanomas <1 mm depth: 1.0 cm-margin
    - Melanomas 1 to 4 mm in depth: 2.0 cm-margin
    - Melanomas >4 mm in depth: ≥ 2.0 cm-margin
- Radiation, cryotherapy, and topical immunomodulators in certain cases (controversial)
- Chemotherapy



# Melanoma

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## Prognosis:

- Surgical treatment of early melanoma (stage I) has a 97% 5-year survival rate
- Metastatic melanoma or advanced stages (III and IV) where the 5-year survival rate plummets to 78% and 15%, respectively.

## Prevention:

- Monthly self exams,
- frequent skin exams (q4-6 months first 2 yrs post dx then 1-2 yrs)
- SUN PROTECTION

# Dysplastic Nevi

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