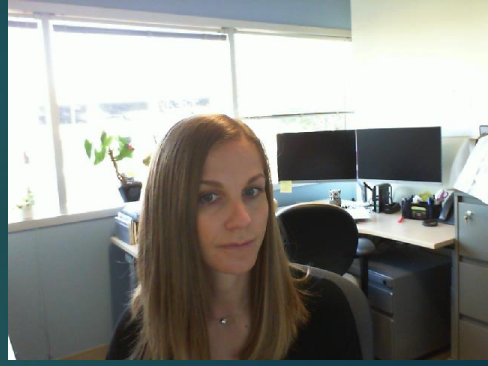
BENIGN & MALIGNANT NEOPLASMS

MEGAN FITZGERALD, PA-C

DISCLOSURES

No relevant commercial relationships to disclose.

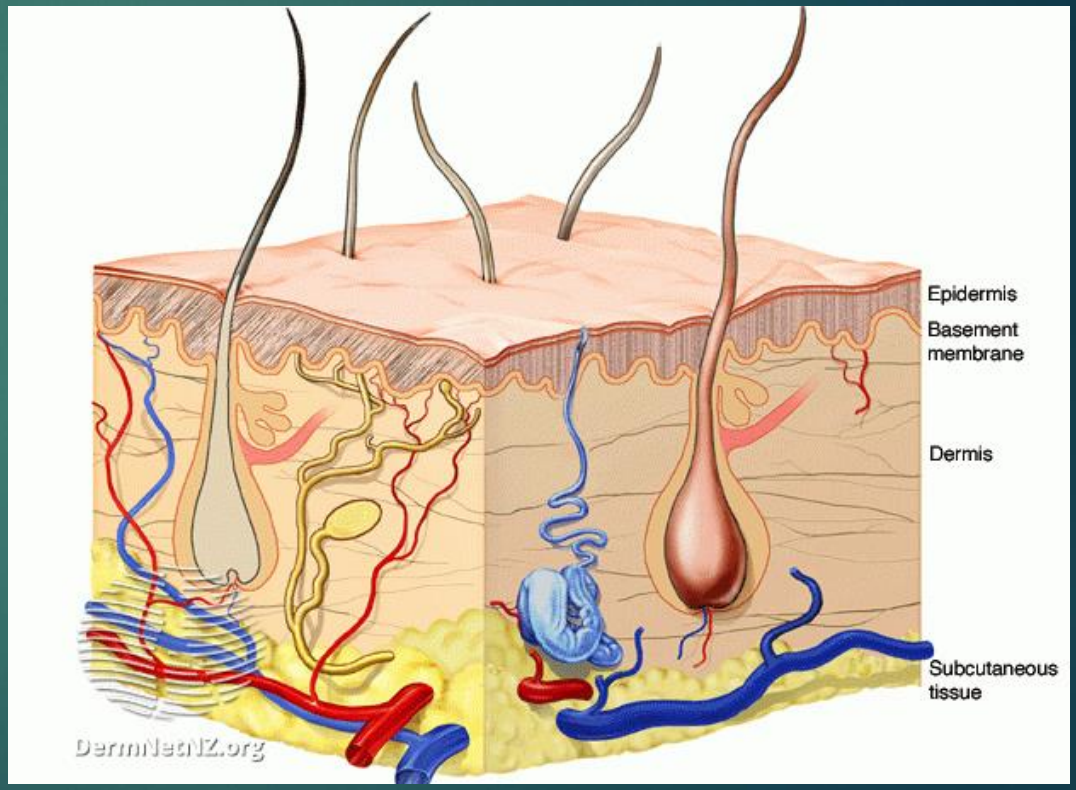
LEARNING OBJECTIVES



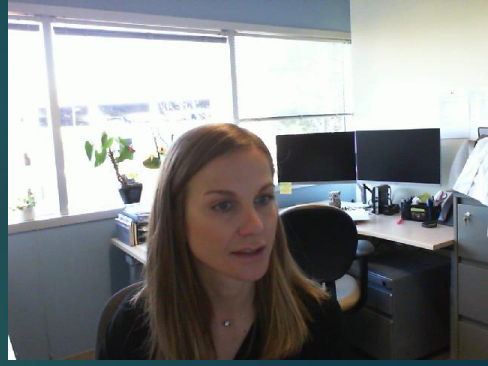
- Describe the morphology of skin neoplasms
- Recognize the clinical presentation of common benign and malignant skin neoplasms
- Evaluate, diagnose, and consider treatment vs referral to dermatology for common benign and malignant skin neoplasms
- Familiarize oneself with melanocytic neoplasms

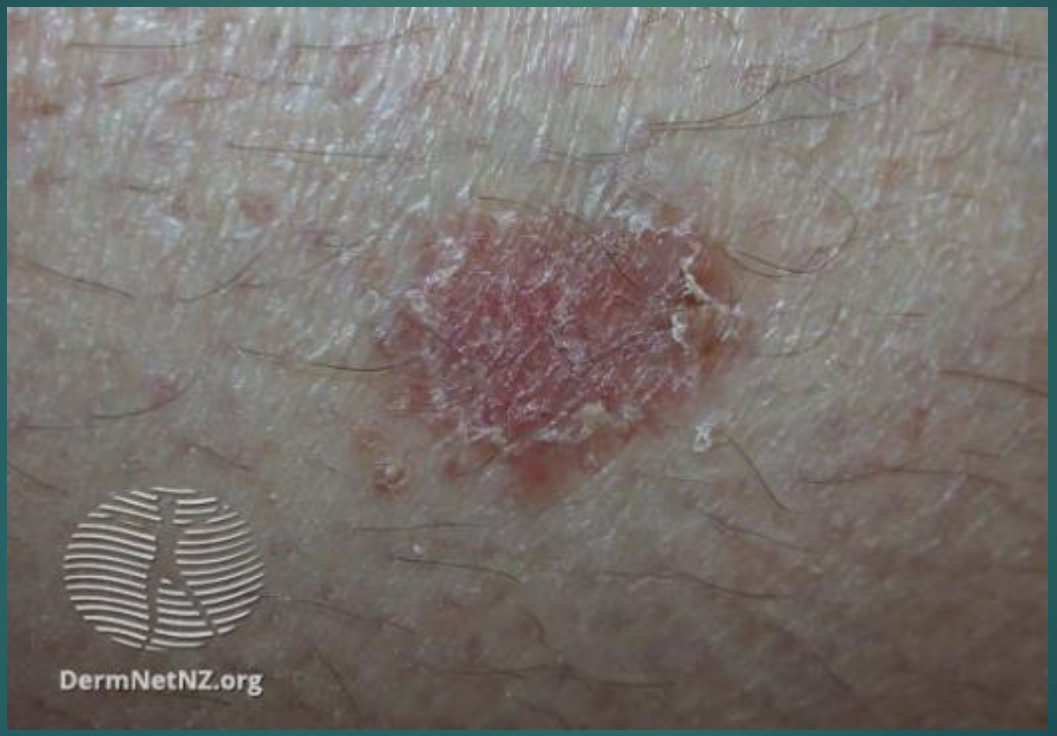
SKIN ANATOMY

- Epidermis
  - Consists of keratinocytes
  - 4 major layers
    - Stratum corneum
    - Stratum granulosum
    - Stratum spinosum
    - Stratum basale
- Dermis
  - Adnexal structures
  - Consists of fibroblast, collagen & elastic fibers
- Subcutis
  - Consists of fat

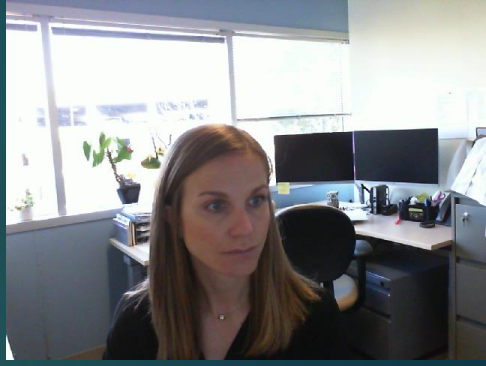


CASE STUDY



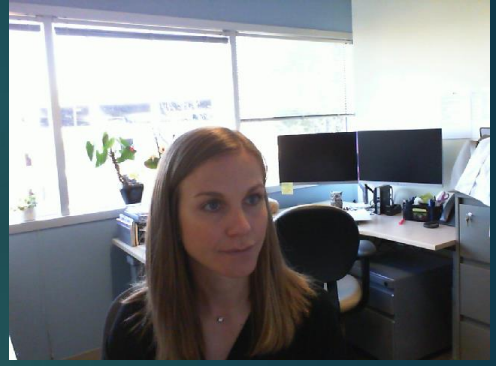


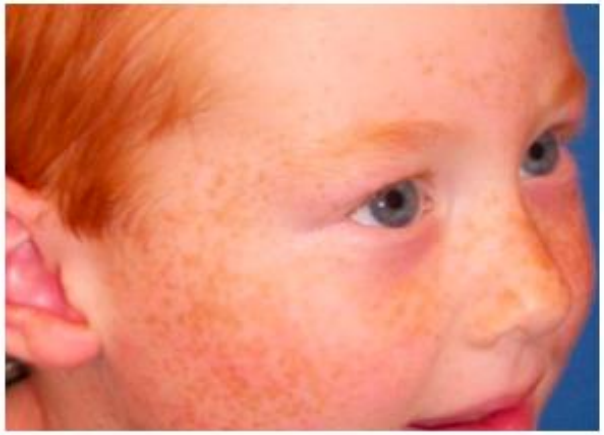
HPI SPECIFIC TO EVALUATING NEOPLASMS



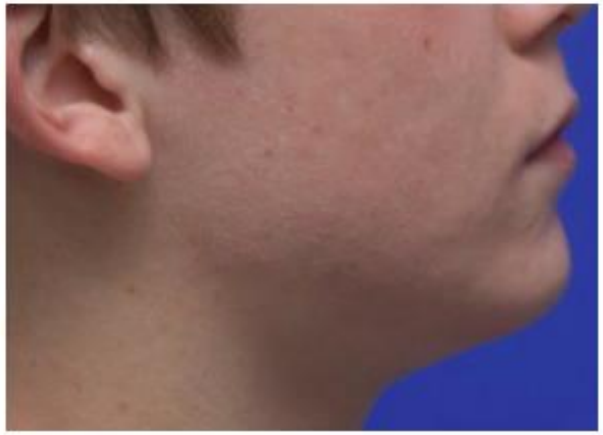
- Age of patient
- Skin type (Fitzpatrick Skin Type)
- Single or multiple similar lesions
- Location of lesion/s
- Duration of lesion/s
- Evolution of lesion: changes in color, size, shape
- Symptoms: Painful, itching, bleeding?
- Current or prior therapies? How often and for how long?
- Personal or family history of skin cancer

FITZPATRICK SKIN PHOTOTYPE





Type 1



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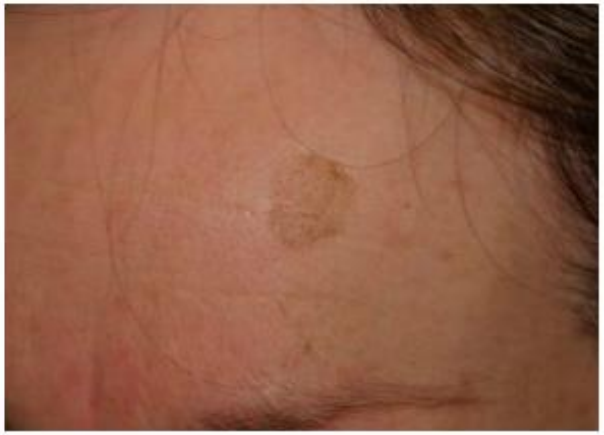

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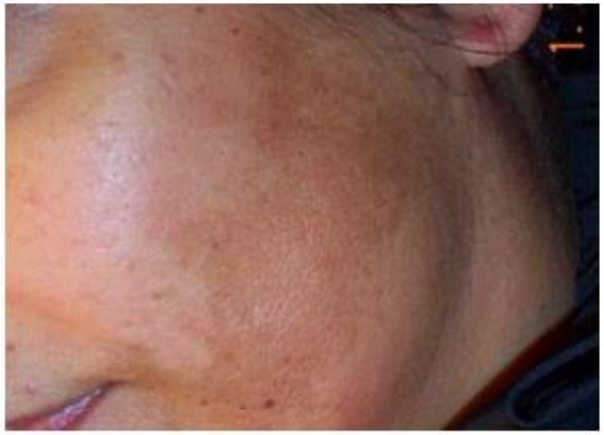

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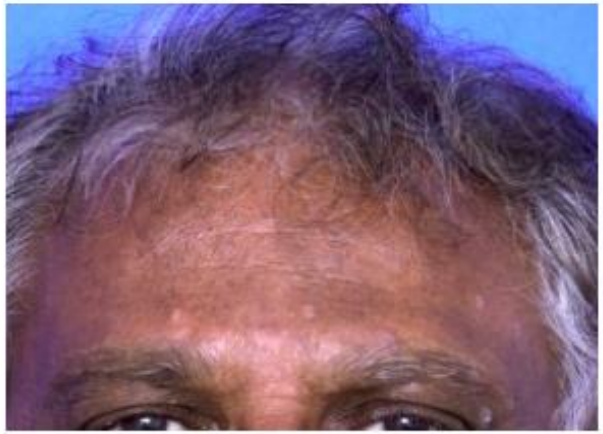

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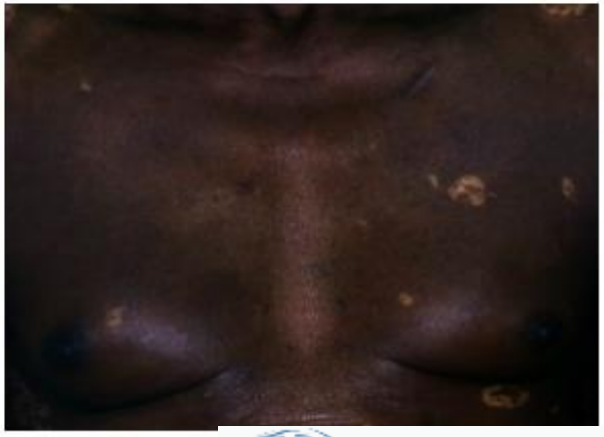
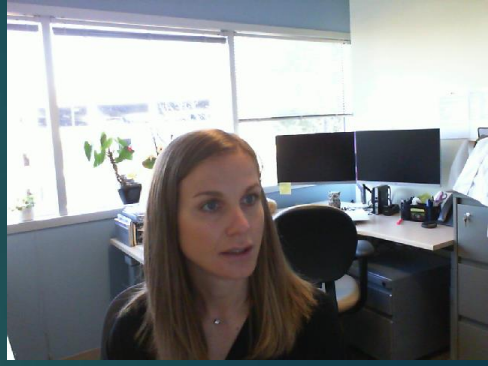
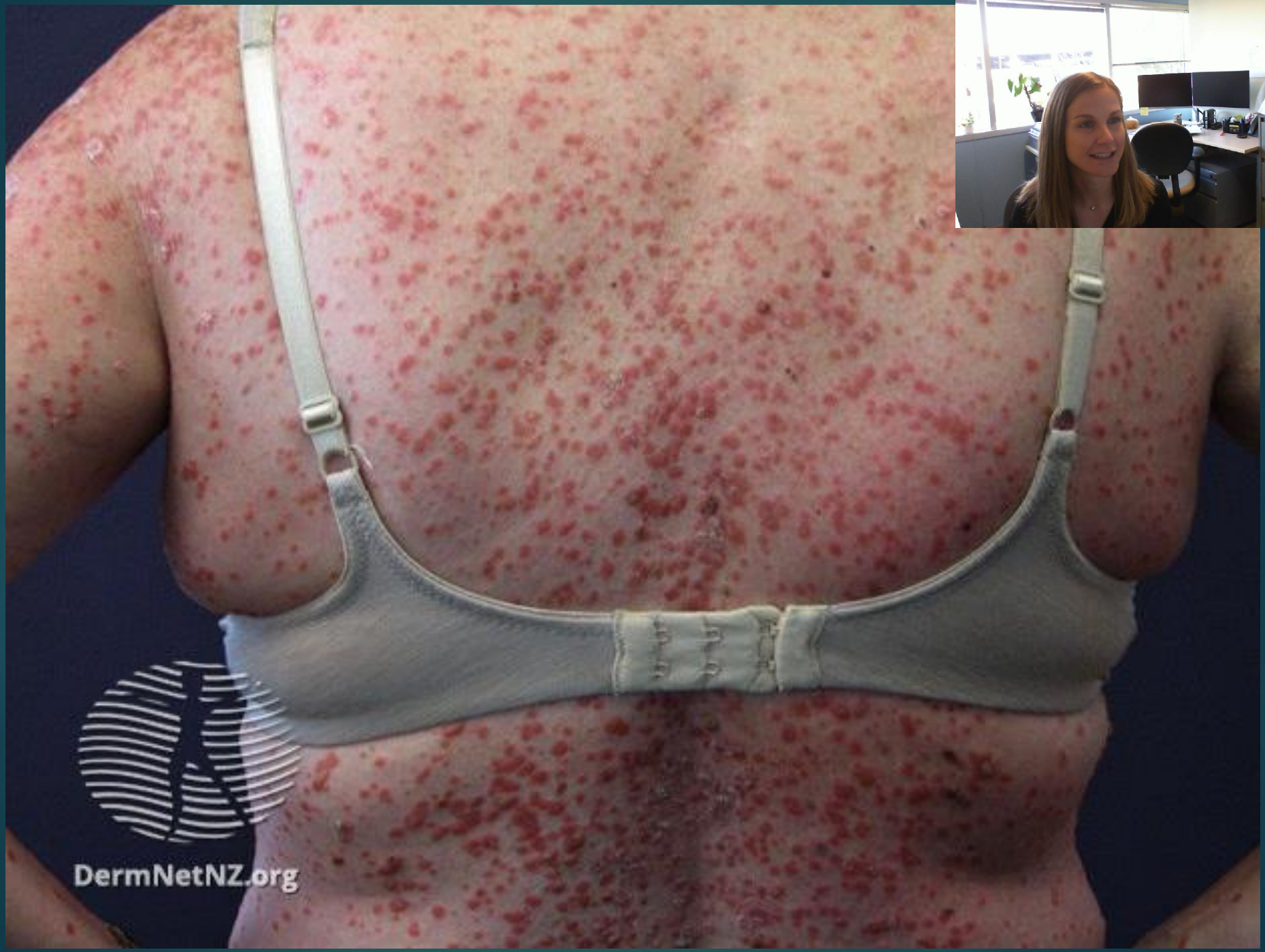


Type 6

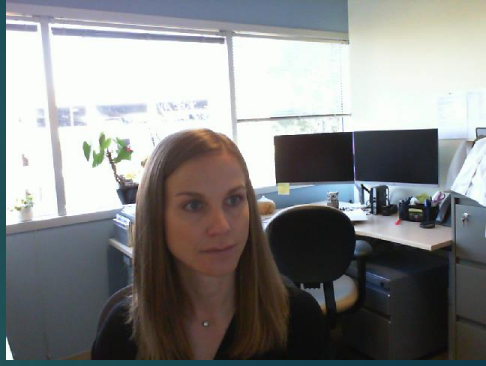
HOW TO PERFORM A SKIN EXAM



- Adequate lighting
- Magnifying lens (i.e. dermatoscope)
- Patient should be fully undressed, make up and nail polish removed, and offered chaperone.
- Inspection and palpation of hair, nails, oral mucosa and anogenital regions noting:
  - Single or multiple lesions?
  - Distribution (where are the lesion/s located?)
  - Shape/Configuration (linear, annular, gyrate, grouped, confluent, discrete)
  - Color
  - Size


DermNetNZ.org

CASE STUDY

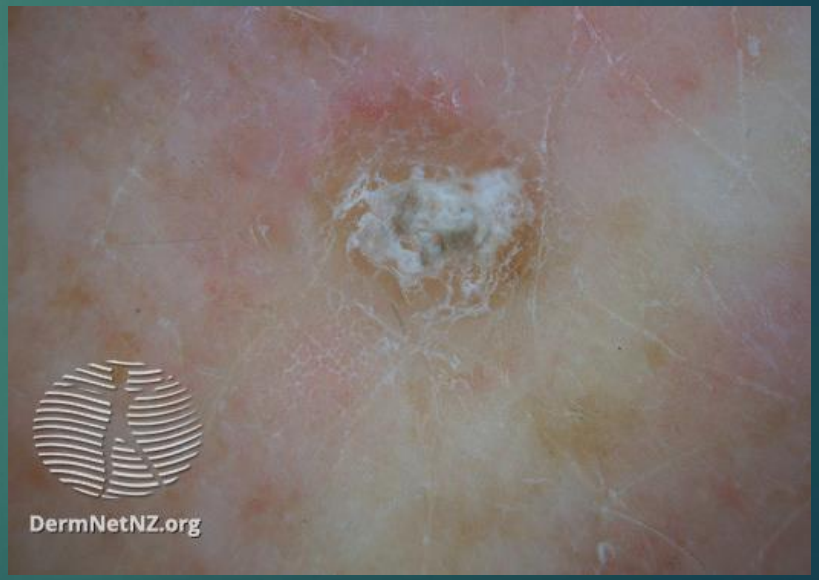


- HPI: 67 yo male with a history of skin cancer presents for concerns for rough, red spots on face. He denies growth, bleeding but notes tenderness in areas at times. No prior treatments. Patient is concerned for skin cancer

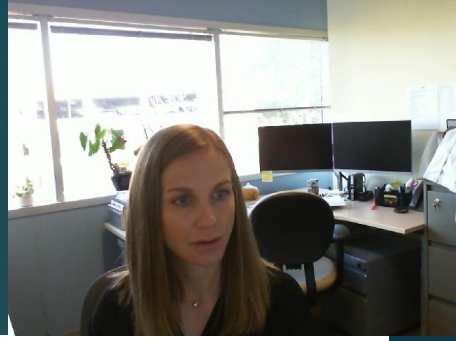
- EXAM: Multiple scattered skin colored to erythematous gritty papules with no thickness on a background of sun damaged skin.

ACTINIC KERATOSIS (AK)

- Located in sun exposed areas of skin i.e. head, neck, extensor forearms/hands, these are precancerous lesions of keratinocyte etiology.
- Often multiple and can be pruritic or tender
- Treatments:
  - Liquid Nitrogen (LN)
  - Efudex/Imiquimod
  - Photodynamic therapy



Red flag symptoms: bleeding and/or multiple prior LN treatments with no resolution



The natural history of actinic keratosis: a systematic review

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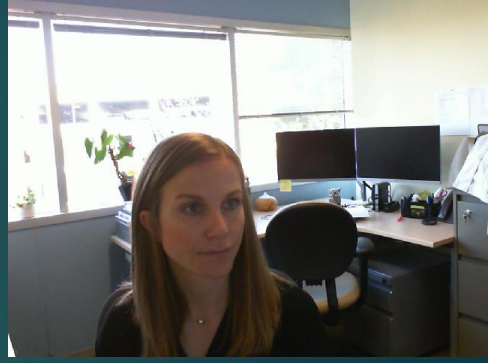
Affiliations + expand

PMID: 23647091 DOI: 10.1111/bjd.12420

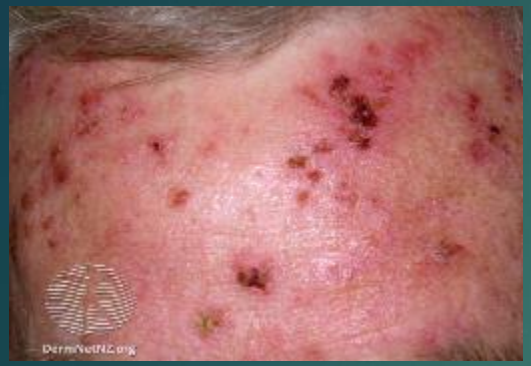
Abstract

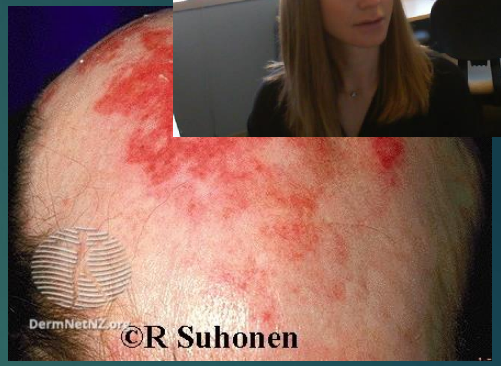
Knowledge about the development of untreated actinic keratosis (AK) and risk of progression into squamous cell carcinoma (SCC) is important. Therefore, we set out to synthesize primary data on the natural history of AK. We carried out a systematic literature search (Medline, Medline in Process, Embase, Cochrane) of studies on the natural course of AK, regarding (i) progression and regression rates per lesion-year, (ii) changes in total lesion counts over time, and (iii) spontaneous field regression and recurrence rates, taking into account studies on participants without immunosuppression and history of skin cancer, immunosuppressed patients and participants with a history of skin cancer and sunscreen use. Twenty-four eligible studies were identified providing data on at least one of the outcomes. Progression rates of AK to SCC ranged from 0% to 0·075% per lesion-year, with a risk of up to 0·53% per lesion in patients with prior history of nonmelanoma skin cancer. Rates of regression of single lesions ranged between 15% and 63% after 1 year. The data available on recurrence rates of single lesions 1 year after regression indicate a recurrence rate of 15-53%. Data on the relative change of total AK count over time are heterogeneous, and range from -53% to +99·1%. Spontaneous complete field regression rates range from 0% to 21%, with recurrences in 57%. In general, the available data are limited. Important methodological limitations apply. Currently, no reliable estimates concerning the frequency of AK developing into invasive carcinoma can be given, and further studies are needed.

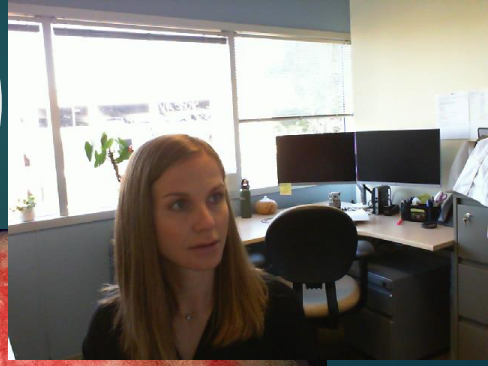
PHOTODYNAMIC THERAPY (PDT)

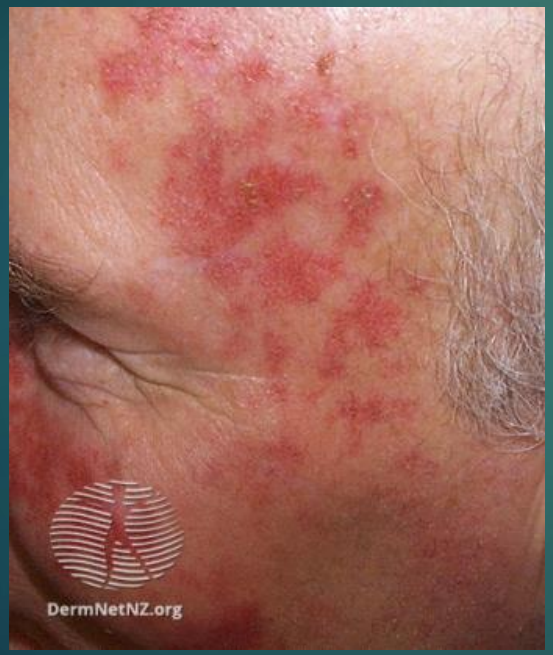


5-FLUOROURACIL (EFUDEX)

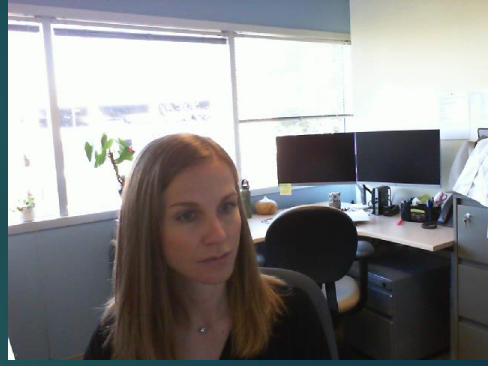






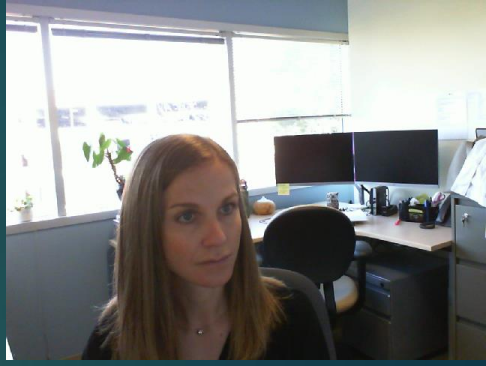


- Topical chemotherapy (cytotoxic) agent that is used for treatment of AK, and superficial skin cancers (SCC in-situ & BCC)
- Field therapy treatment with efudex ranges depending on type of lesions being treated:
  - AK (BID for 2-3 weeks)
  - SCC in-situ (BID for 4-8 weeks)
  - Superficial BCC (BID for 4-8 weeks)

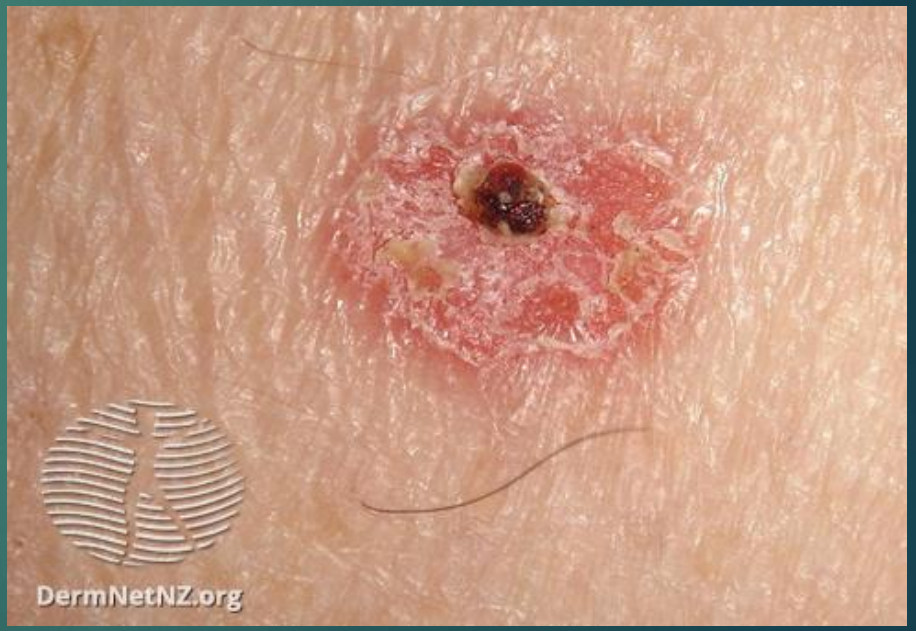


MALIGNANT NEOPLASMS

CASE STUDY



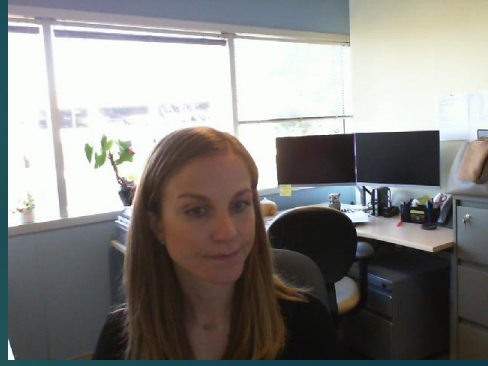
- 60 yo female presents for concerns of lesion on nose. Duration of 3 years with some growth and at times, itches and bleeds. Prior treatments with liquid nitrogen on 2 occasions with no improvement and patient was also given hydrocortisone in the past.

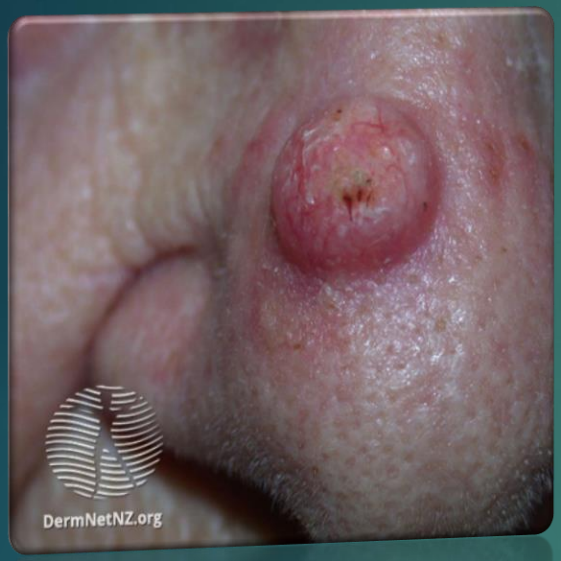


SQUAMOUS CELL CARCINOMA IN-SITU (SCC IN-SITU)

- Also known as Bowen's disease
- Skin cancer of keratinocyte origin that is confined to epidermis and does not invade the dermal-epidermal junction
- Presentation: well-circumscribed pink to erythematous scaly patch or thin plaque on a background of sun damaged skin
- Risk factors: Age, Skin types (I-III), UV exposure, tanning bed use, immunosuppression, HPV, smoking, injury/burns.
- Treatment: efudex/imiquimod, electrodessication and curettage (ED&C), excision, mohs, PDT, radiation

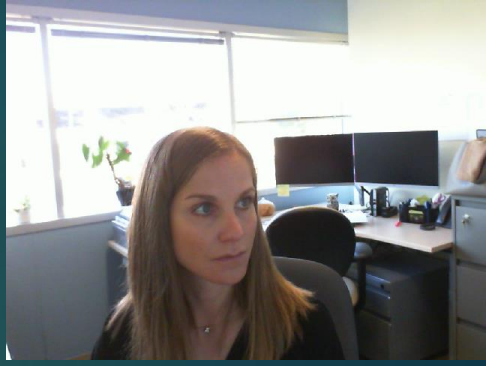
SQUAMOUS CELL CARCINOMA (SCC)



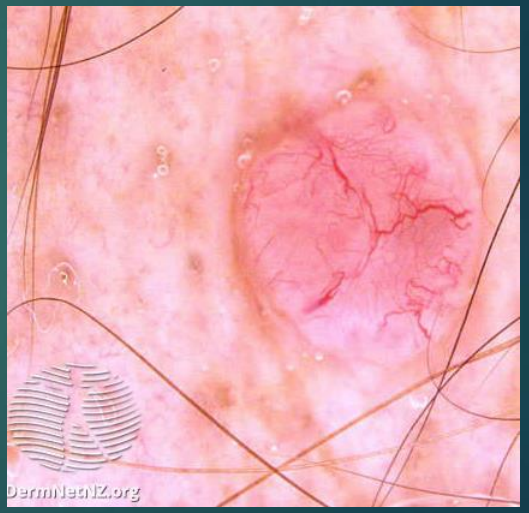


- Invasive skin cancer of keratinocyte origin that has spread beyond the epidermis
- Rarely can metastasize & be fatal (1-5%)
  - High risk: greater than 1cm and on head, neck, anogenital region, oral mucosa, and poorly differentiated, immunosuppression
- Presentation: Dome-shaped, firm papule with central hyperkeratosis. Can be pruritic or tender.
- Risk factors: Age, Skin types (I-III), UV exposure, tanning bed use, immunosuppression, HPV, smoking, injury/burns.
- Treatment: Excision, MOHS, ED&C, radiation

BASAL CELL CARCINOMA (BCC)

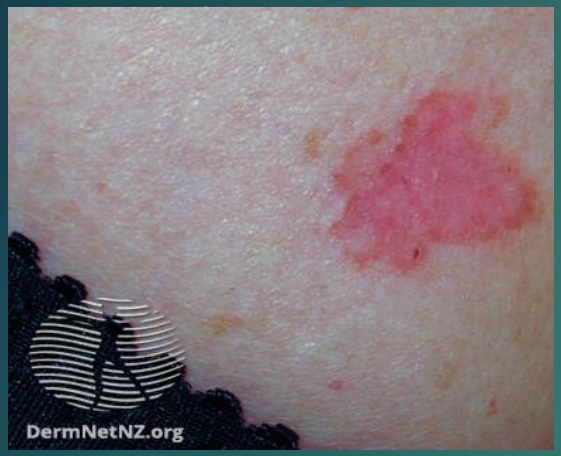


- Most common form of skin cancer (90% of all skin cancers)
- Locally invasive keratinocytic tumor
- Presentation:
  - Slow-growing skin colored, pearly, pink, and/or pigmented macules/papules/plaques/nodules with pearly appearance
  - Arborizing telangiectasias
  - Ulcerated
  - Atrophic (Scar-like)
- Risk factors: age, UV exposure, Skin types 1-3, immunosuppression, prior cutaneous injury, genetics (Gorlin syndrome)
- Treatment: Efudex/Imiquimod (if superficial), excision, Mohs, ED&C, PDT, radiation

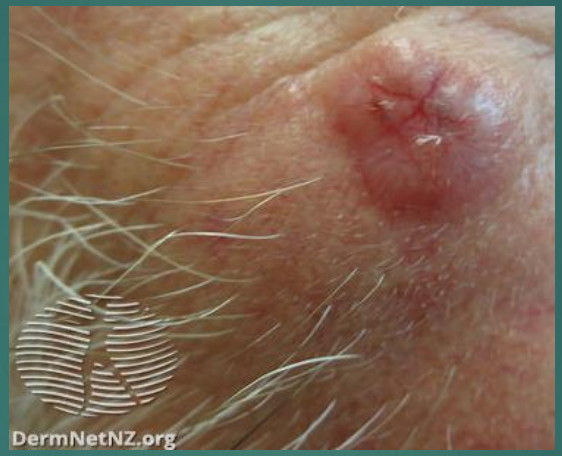


TYPES OF BCC

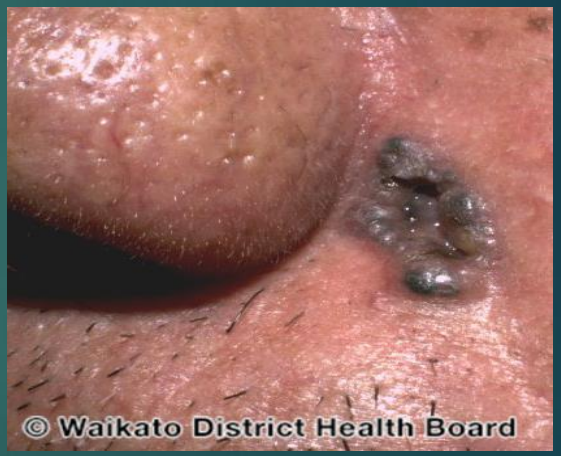
Superfici



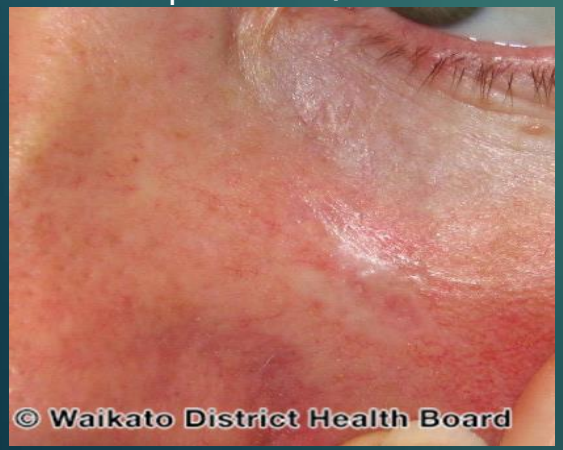
Nodul



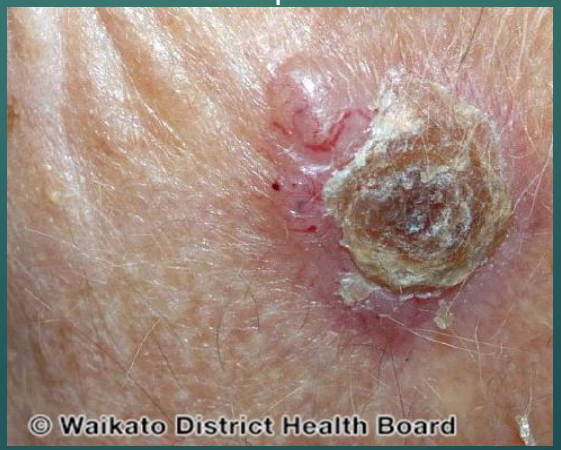
Pigment



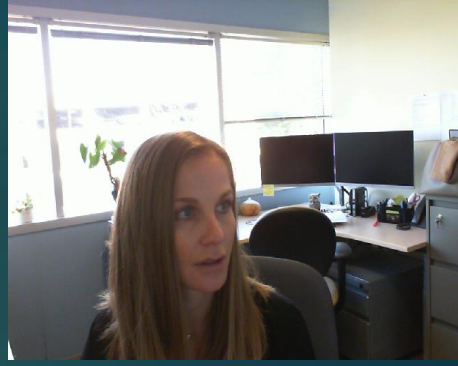
Morphoeic/Sclerotic

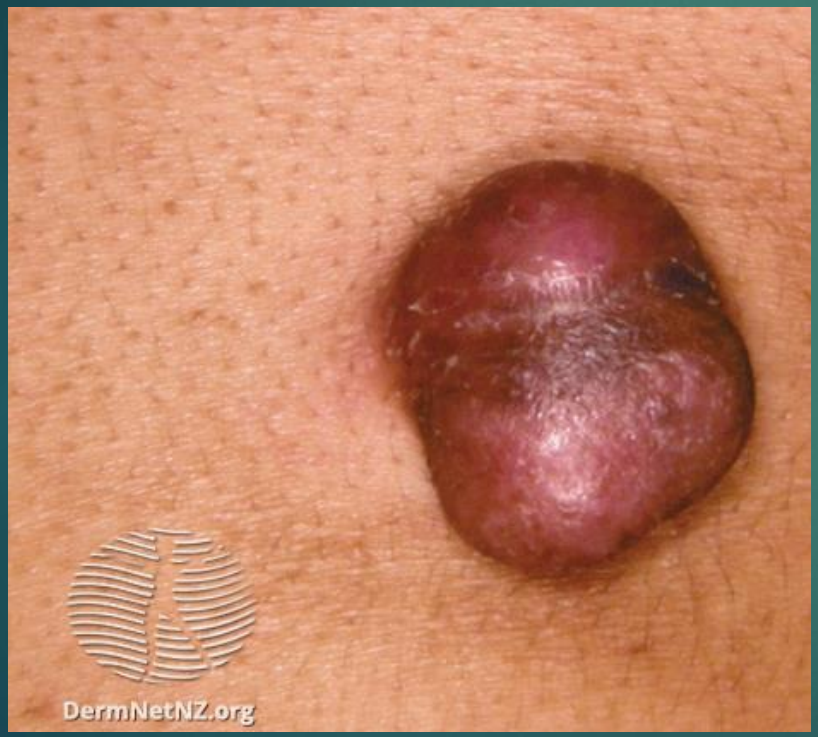


Basosquamous



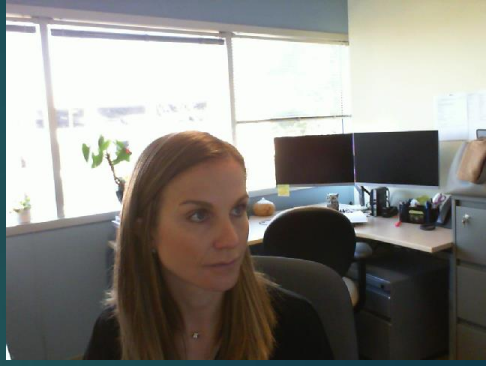
DERMATOFIBROMASARCOMA PROTUBERANS (DFSP)

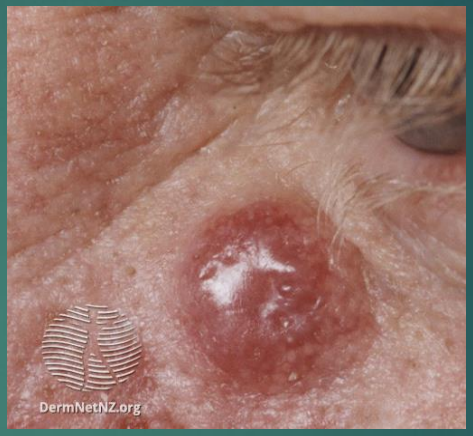


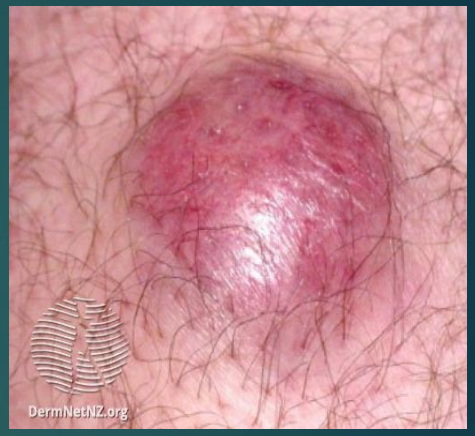


* Rare aggressive skin tumor that arises within the dermis of the skin (Mets 5%)
* Presentation: Asymptomatic atrophic (scar-like) nodule or plaque
* Cause is unknown. Recent studies show possible abnormal chromosome formation within tumor
* Treatment: Mohs (high recurrence rates even with mohs so periodic skin checks are recommended)
* Ddx: Keloid, scar

MERKEL CELL CARCINOMA



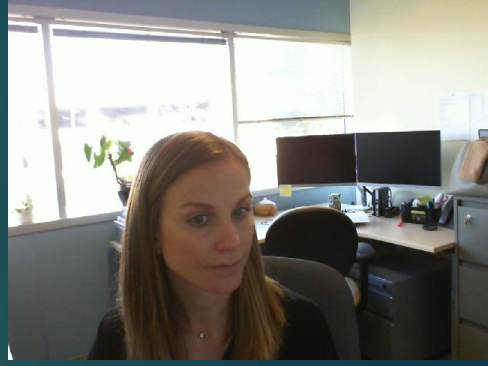




- Highly aggressive skin cancer with mortality rate of 33%
- Presentation: Rapidly growing pink to red papules/nodules
- Ddx: cyst (56% of lesions were presumed benign)
- Treatment: surgical excision + sentinel lymph node (LN) biopsy followed by radiation
- Prognosis: localized disease carries survival rate of over 90% but with LN involvement falls to 52%

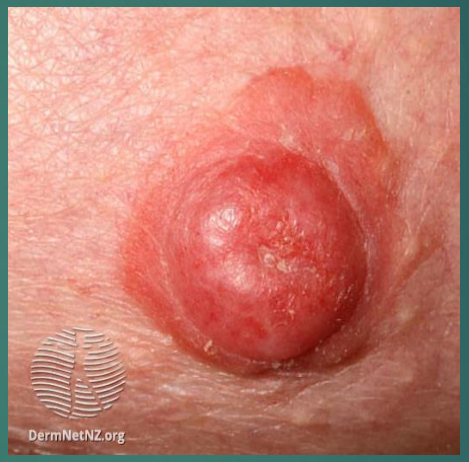
Asymptomatic
Expanding rapidly
Immunosuppression
Older than 50yo
UV exposed sites

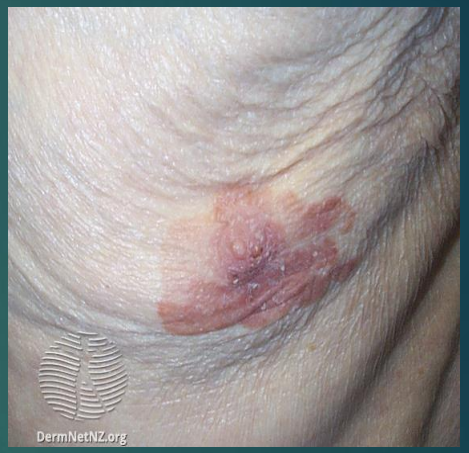
MAMMARY PAGETS & EXTRAMAMMARY PAGETS

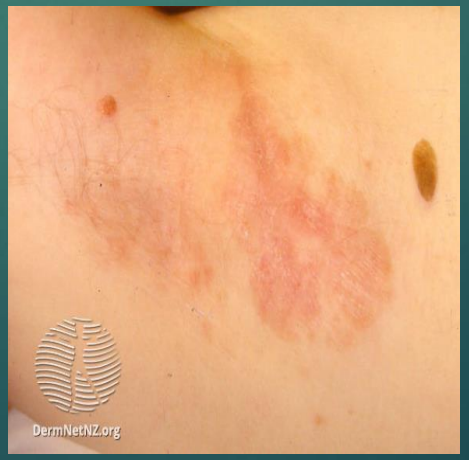


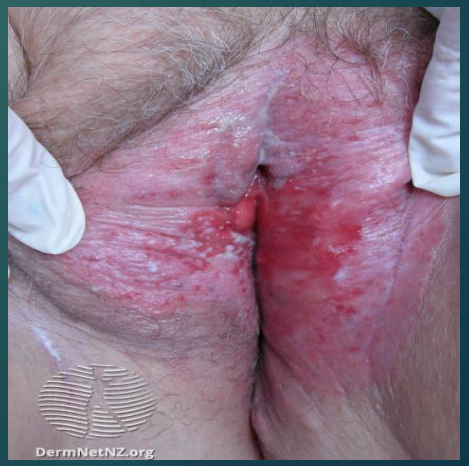
- Uncommon skin cancer characterized by chronic pruritic eczema-like dermatitis.
- **Mammary Pagets:** involves skin tissue of areola and breast. Associated with breast CA
- **Extramammary Pagets:** involves skin of axillae or anogenital region. Associated with colorectal CA

Ddx: atopy, lichen sclerosis, lichen planus, inverse psoriasis, contact, tinea

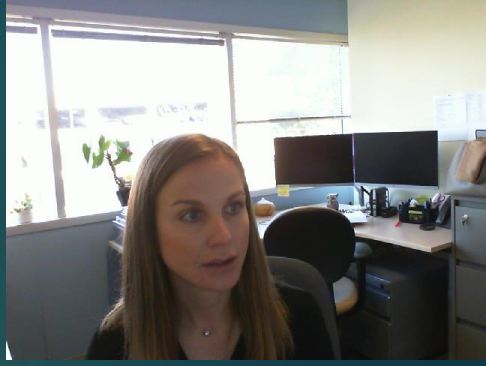








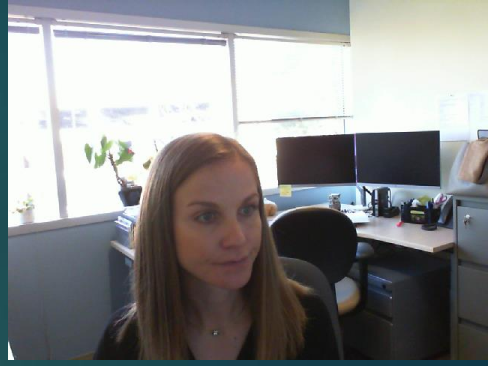
ELECTRODESSICATION & CURRETAGE (ED&C)



- Curetting and cauterizing certain benign & superficial skin cancers
  - superficial and nodular BCC
  - SCC in-situ
  - well-differentiated SCC
  - Seborrheic Keratosis
  - Pyogenic Granuloma
  - Warts
- Inappropriate for infiltrating or dermal tumors, melanocytic lesions, poorly differentiated SCC.

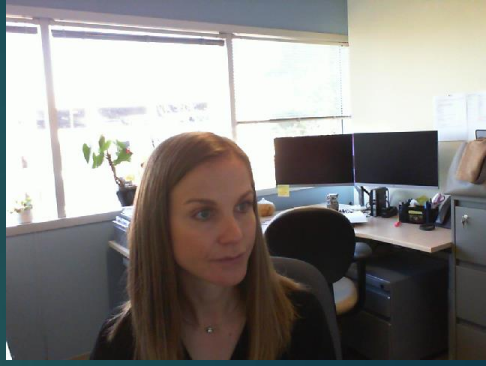
MOHS

- Micrographically controlled surgery that examines carefully marked excised tissue under the microscope layer by layer until clearance of skin cancer
- Benefits: highest cure rates, minimizes defect to maximize cosmetic outcome
- Appropriate for:
  - High risk areas of head and neck (ears, nose, lips, eyelid)
  - Poorly differentiated skin cancers
  - Recurrent skin cancers
  - Skin cancers > 2cm

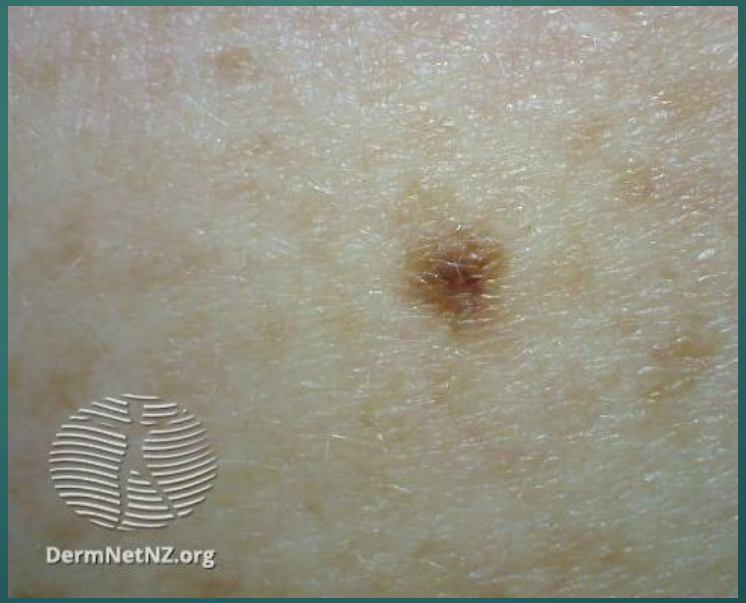


MELANOCYTIC NEOPLASMS

CASE STUDY



33yo female with no personal or family history of melanoma that presents to clinic for mole check. Patient notes she has a mole on her abdomen that has been present since for 3 years and she just wanted to be safe and have it checked. Denies bleeding, pain, itching.



MELANOCYTIC NEVI

Congenital

- Congenital nevi <10cm in size have < 1% risk of developing melanoma (Bolognia et al.,2012)
- 70% of melanomas arising in congenital nevi are diagnosed by age 10 (Oakley, A., 2001)

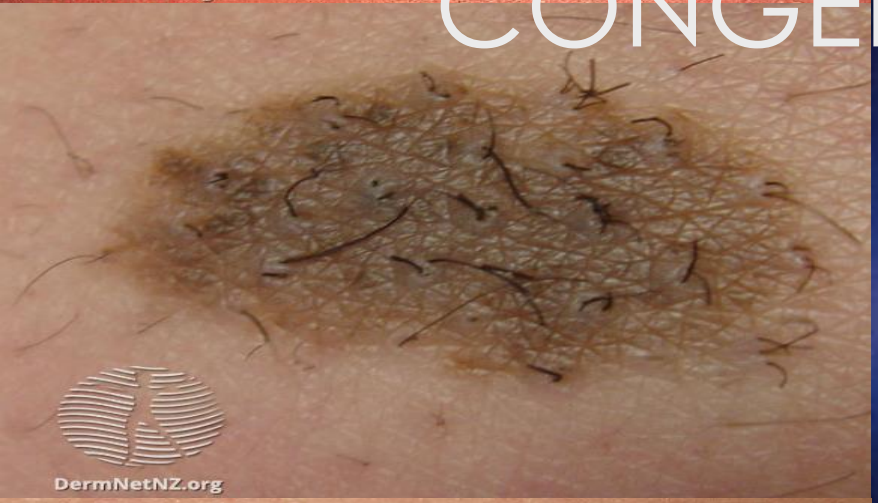
Acquired

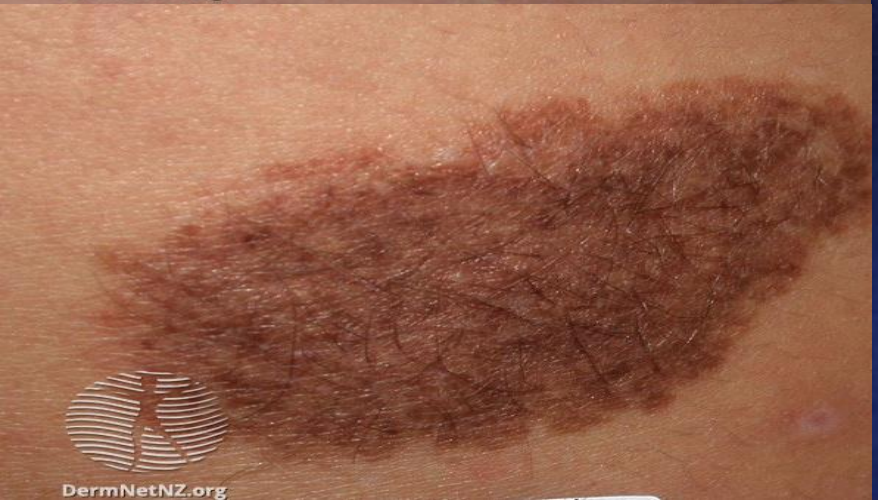
- Moles that arise in adolescence and throughout early adulthood
- These nevi have higher risk for development of melanoma.

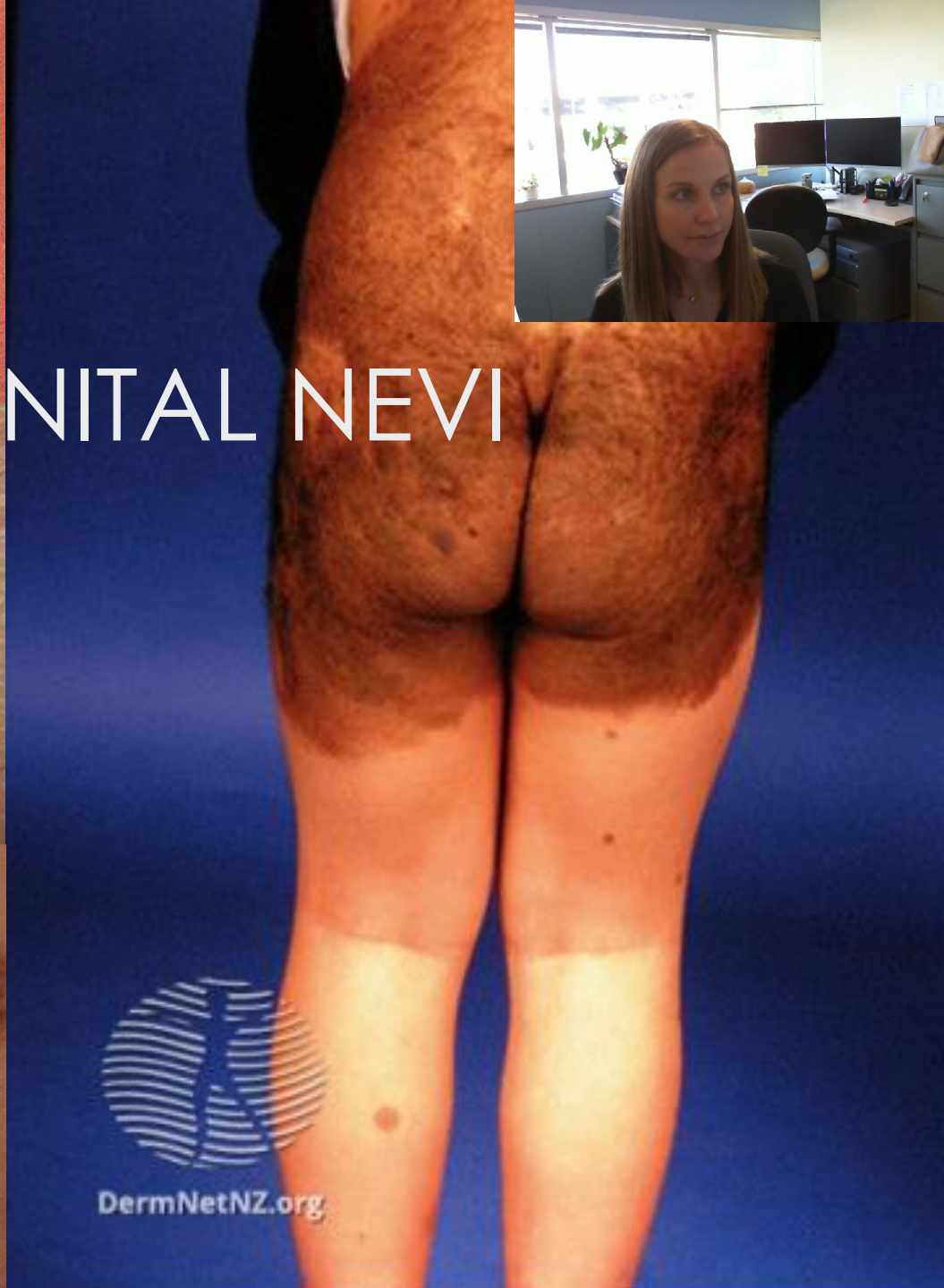
Atypical

- Also called dysplastic or clarks nevi
- Range from mild, moderate to severe atypia
- Increased risk for developing melanoma
- Presentation:
  - Asymmetric
  - Variegated color
  - Irregular shape

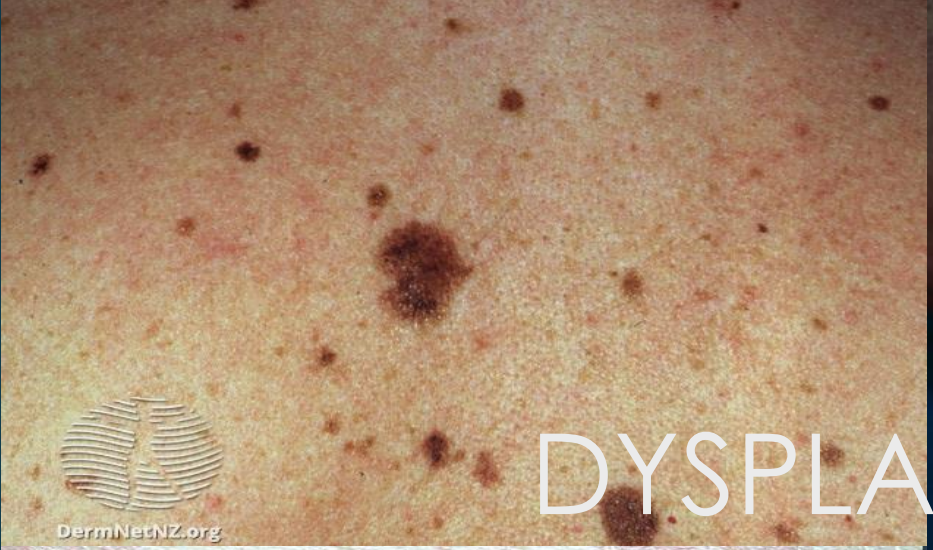
CONGENITAL NEVI

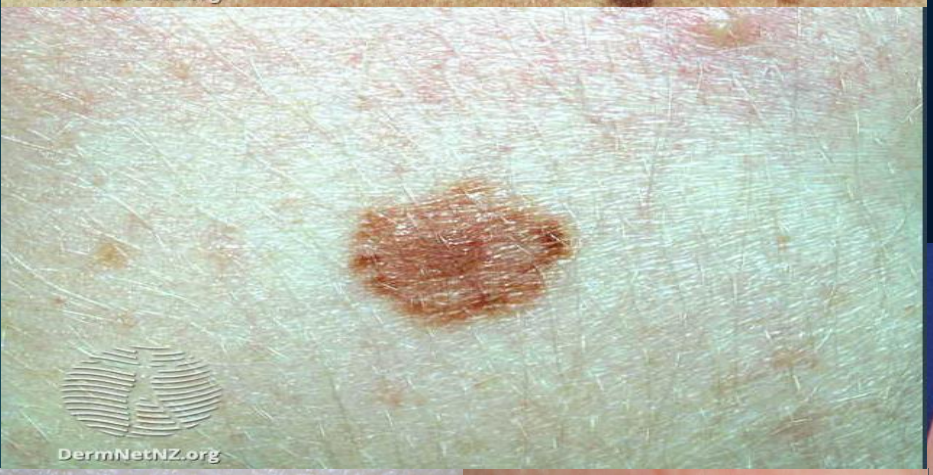


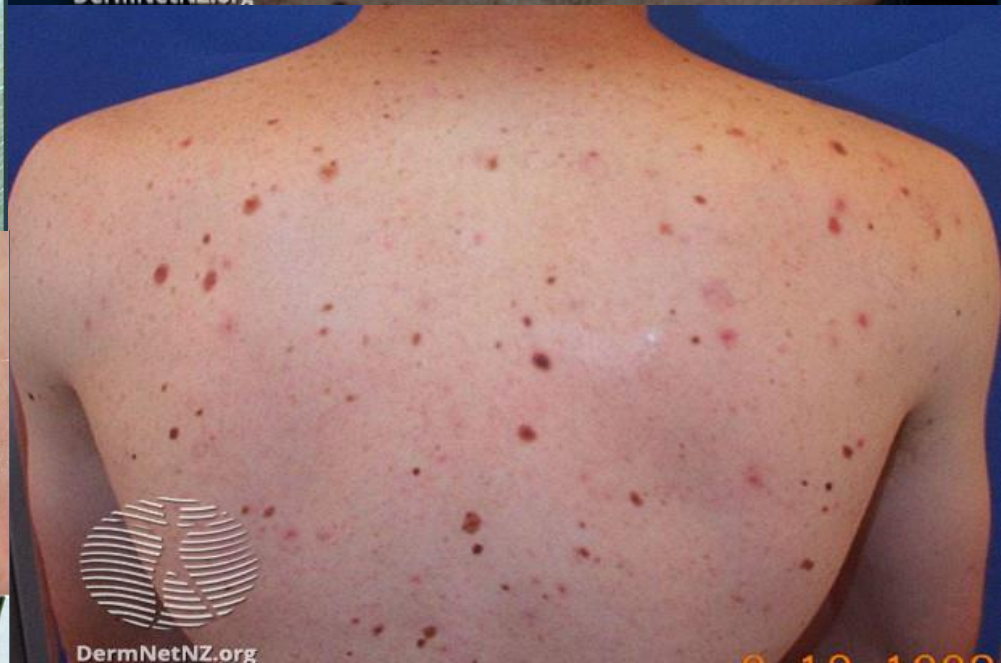


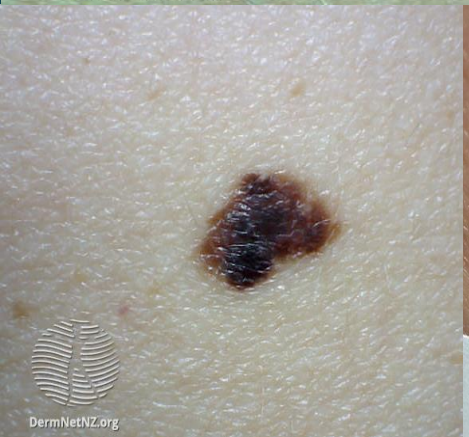


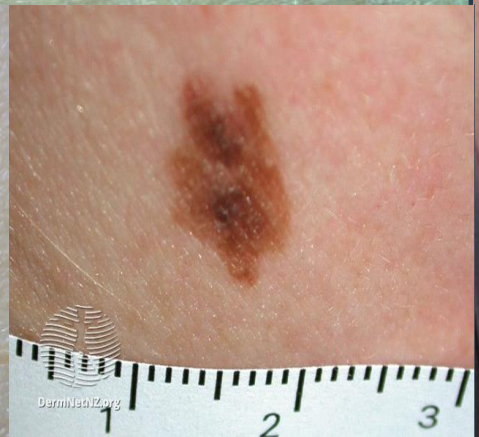
DYSPLASTIC NEVI



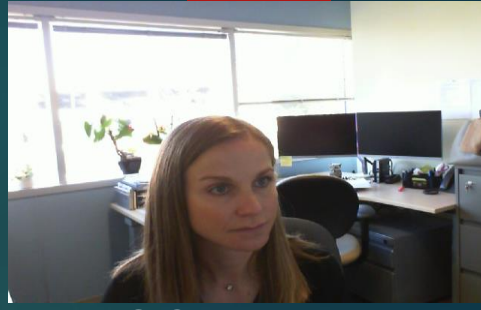




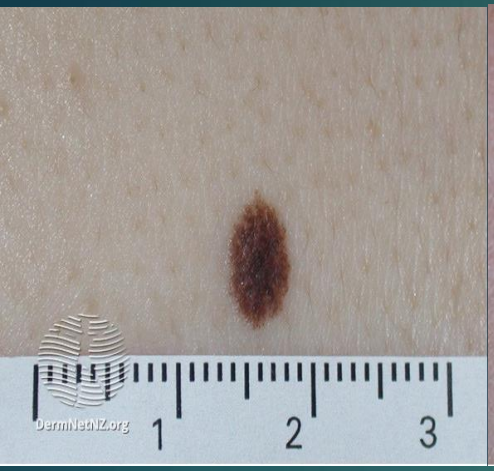




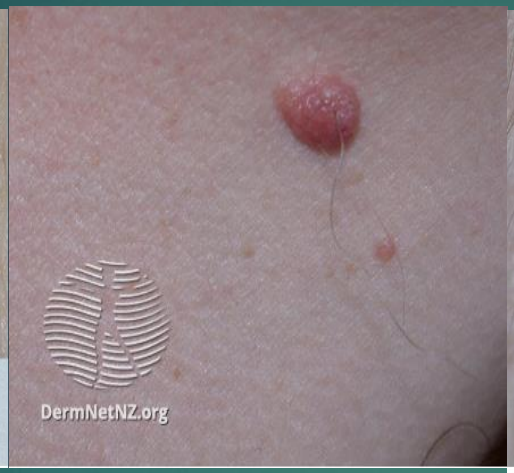
COMMON TYPES OF MELANOCYTIC NEVI



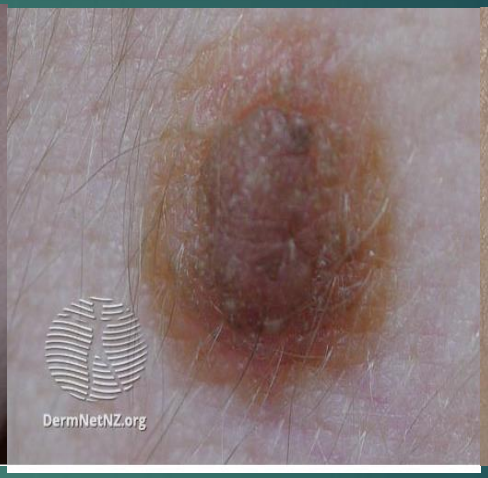
JUNCTIONA



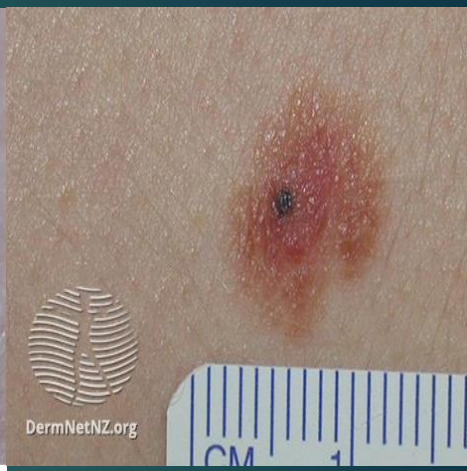
DERMAL



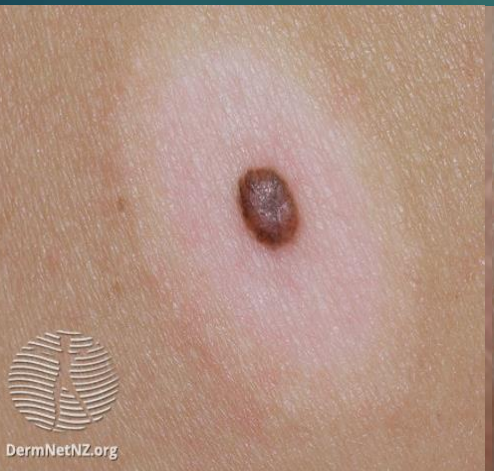
COMPOUND



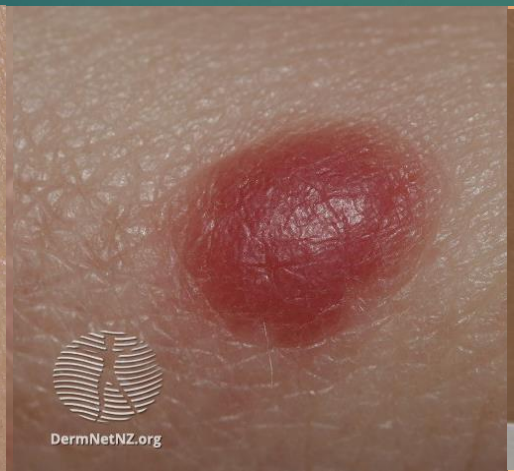
COMBINED



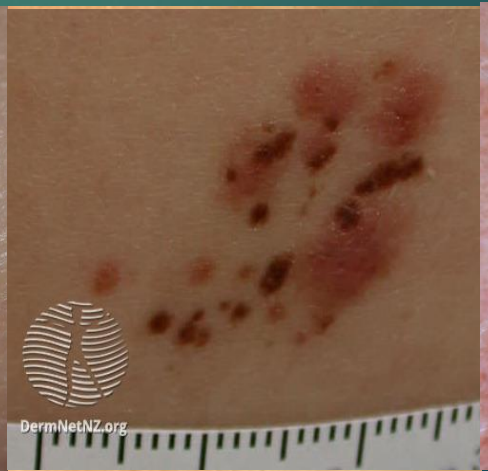
HALO



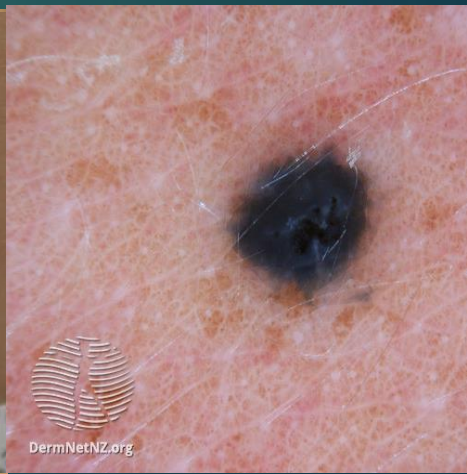
SPITZ NEVUS



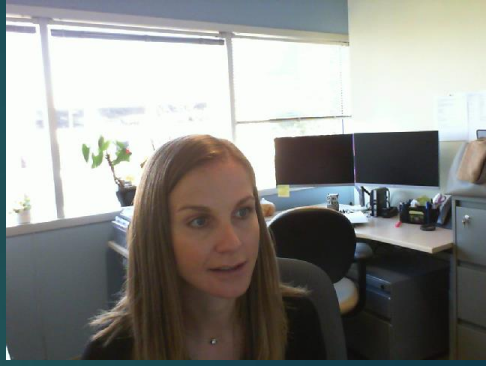
NEVUS SPILUS



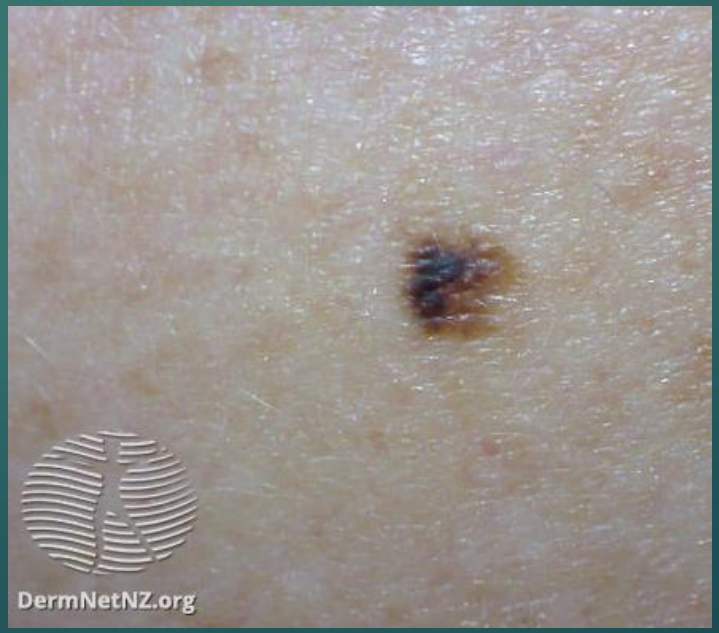
BLUE NEVUS



CASE STUDY

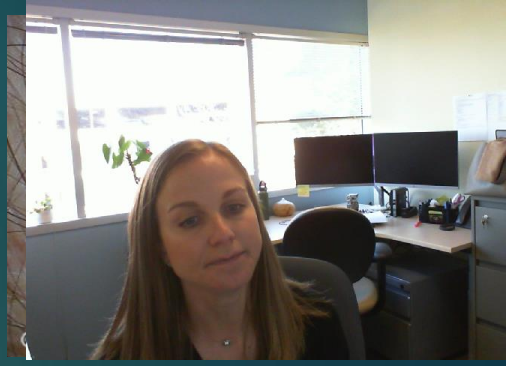


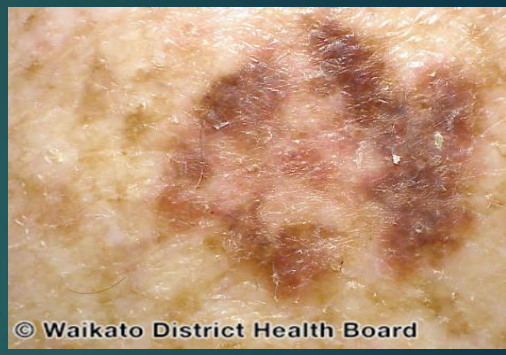
9 years later, the same patient presents to clinic for mole check. Patient reports that the mole on her abdomen that you previous checked and said was “normal” has grown in size, gotten darker, and itches at times.

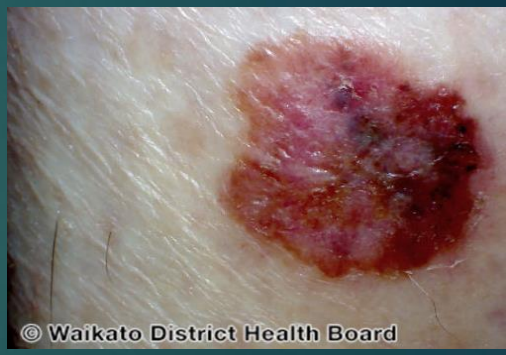


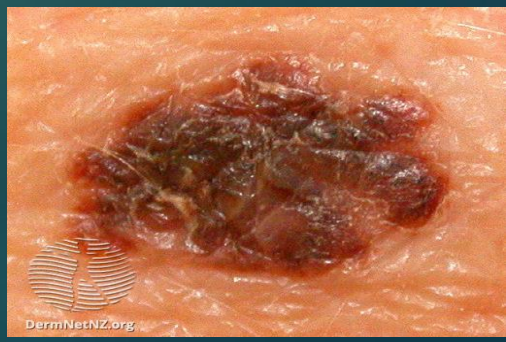
MELANOMA

- Malignant tumor of melanocytic origin.
- Can involve:
  - Skin
  - nail matrix
  - uveal tract and retina of eye
  - Oral and GI mucosa
  - Leptomeninges
- Most melanoma arise de novo Some within existing nevi
- Risk Factors (genetic, environmental)
  - Personal or immediate family history of melanoma
  - Skin types 1-2
  - UV exposure
  - Tanning bed use
  - Residence in equatorial latitudes
  - Immunosuppression
  - Increased number of nevi, history of atypical nevi
  - Genetic conditions (i.e Familial Atypical Multiple Mole and Melanoma Syndrome)
  - Low vitamin D, Parkinson's disease, sildenafil users?

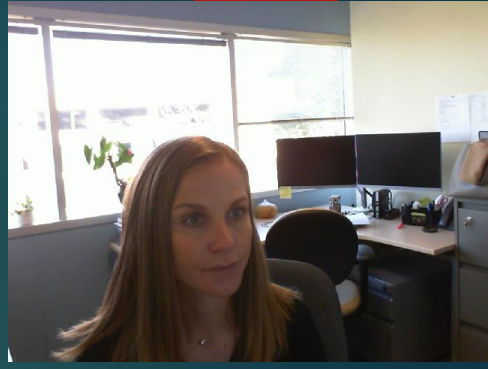








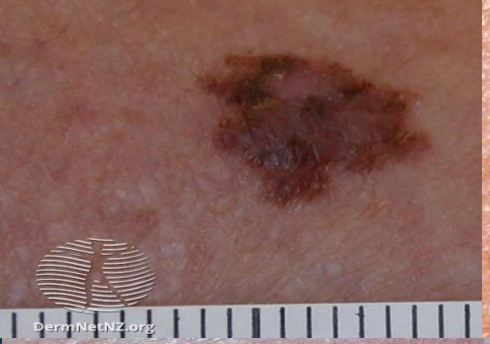
MELANOMA

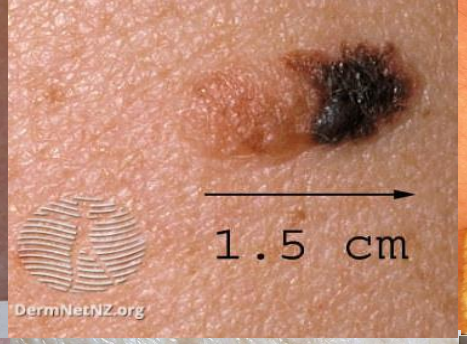


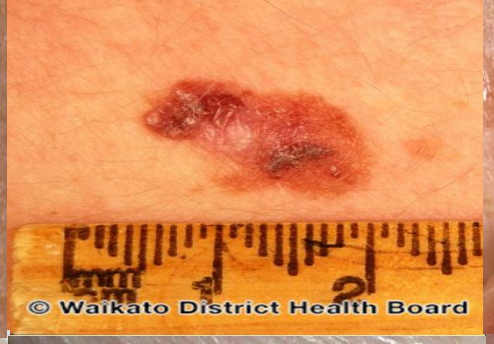
When to consider biopsy of a pigmented lesion:

- A pigmented lesion that changes in size, shape, structure, color
- A new pigmented lesion in patients >40yo
- Appears different than remainder of pigmented lesions "ugly duckling"
- ABCDE
- Symptomatic: bleeding or itching
- Melanoma is a VISUAL DIAGNOSIS; the use of dermoscopy has improved early detection but should not reassure you if your clinical gestalt is to biopsy!

Do not monitor clinically atypical or concerning lesions


DermNetNZ.org


1.5 cm
DermNetNZ.org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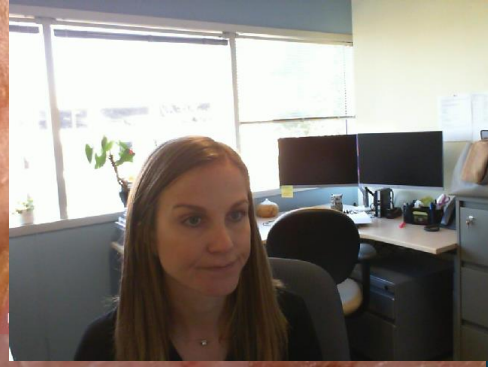

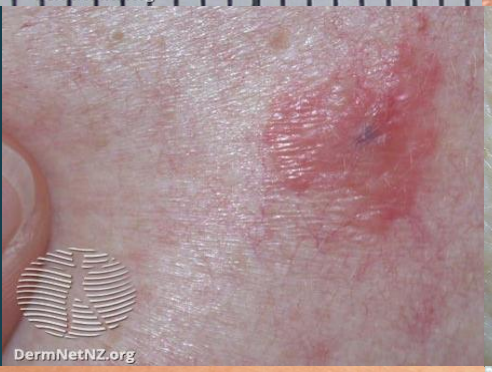
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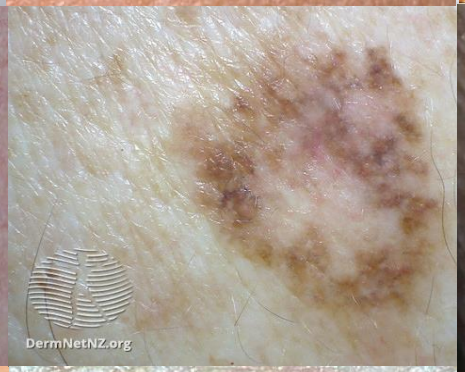
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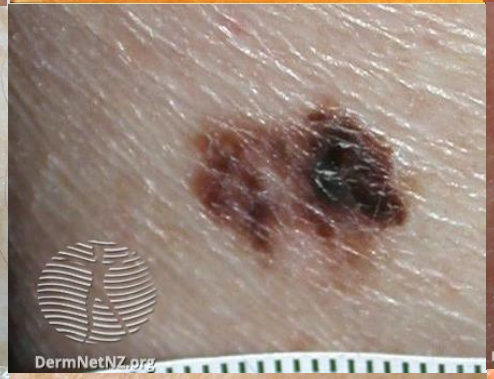
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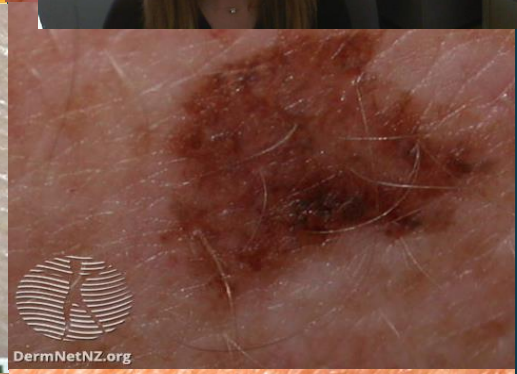
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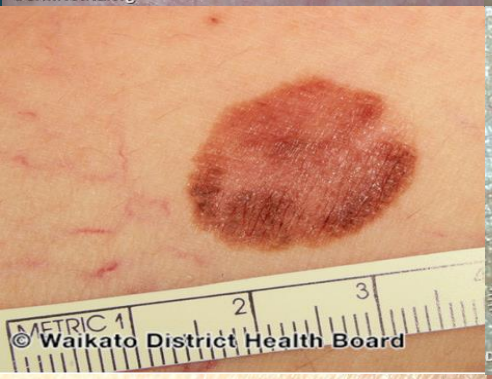
METRIC 1 2 3
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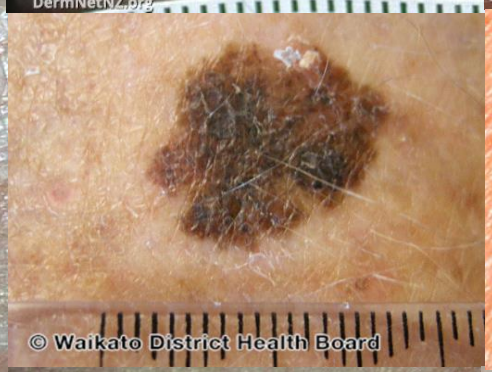
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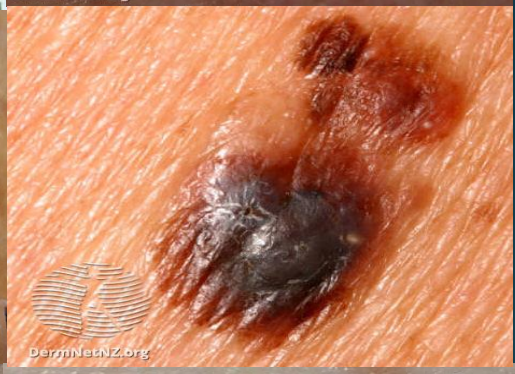
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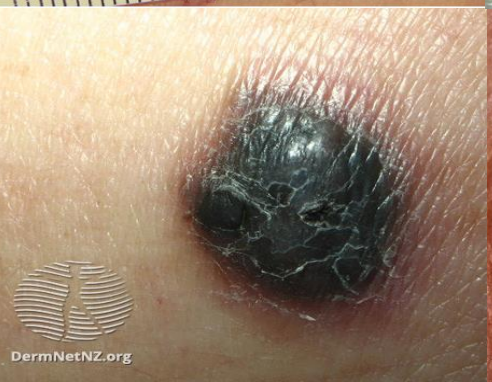
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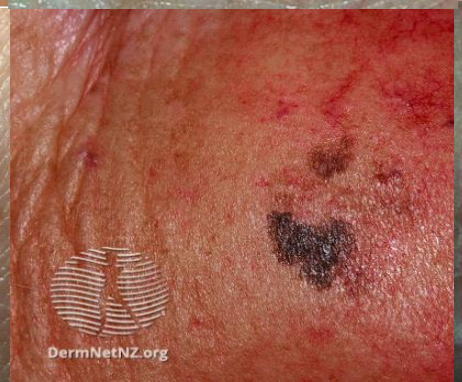
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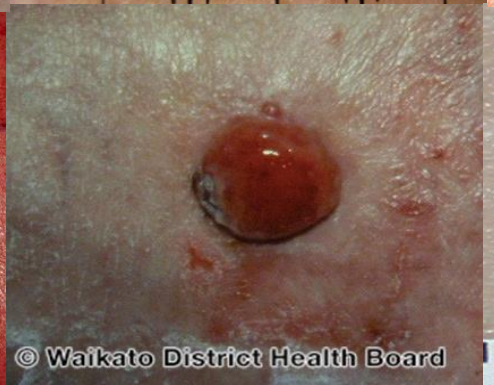
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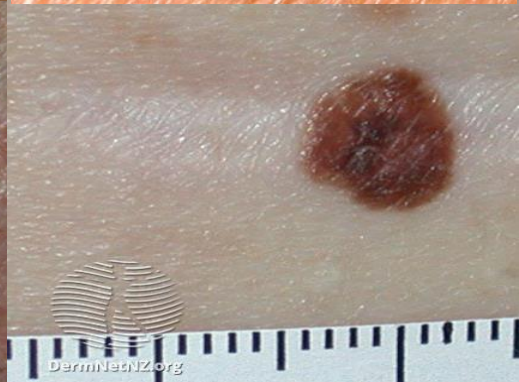
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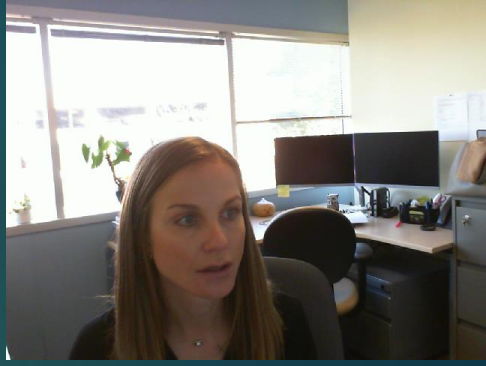
MELANOMA

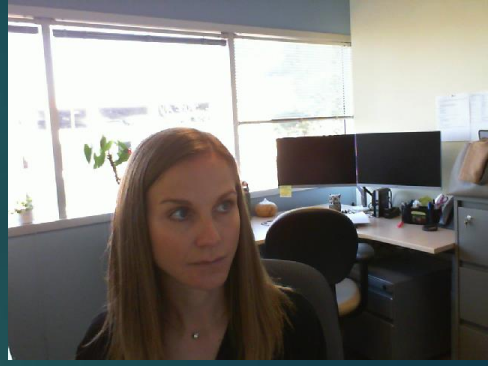


Treatment

- Treatment depends on breslow depth and lymph node involvement clinically or on SLN biopsy
- Wide local excision +/- lymph node biosy +/- adjunctive chemotherapy agents
- Lifelong follow up with dermatology is recommended with annual dental and ophthalmic exams

Prognosis

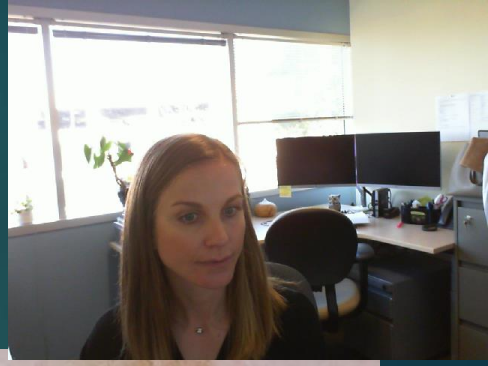
- Depends on number of factors:
  - Breslow depth
  - Clinical features (ulceration, nodular, regression)
  - Mitotic rate
  - Age
  - Sex
  - Anatomical location
  - Lymph node involvement
  - Mets

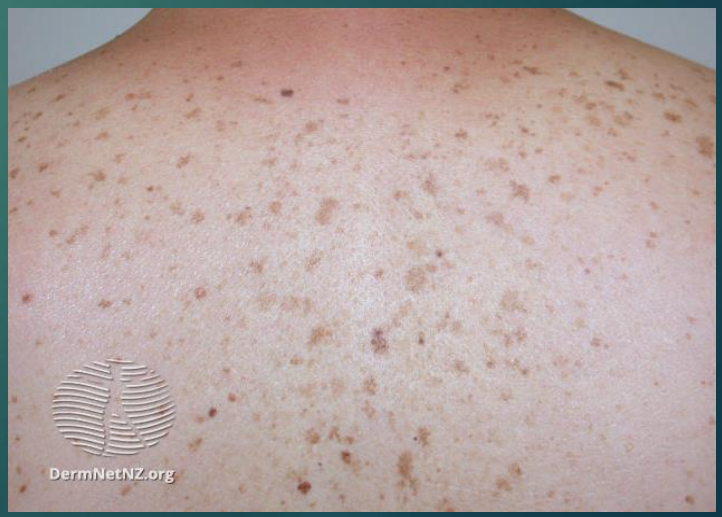


BENIGN NEOPLASMS

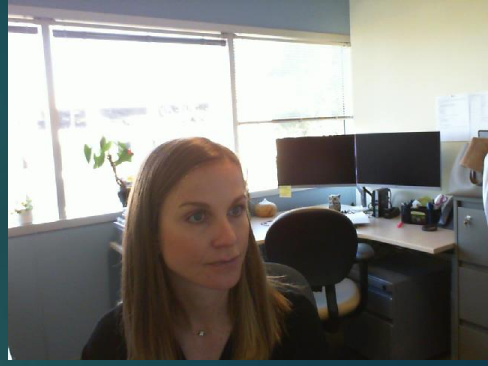
SOLAR LENTIGINES

- Result of sun exposure
- Presentation: uniformly tan, brown, dark brown, or black macules/patches with moth-eaten borders on sun exposed areas of skin
- Increased melanin in keratinocytes (epidermis)
- Some may evolve into seborrheic keratoses.
- Treatments
  - Sun protection
  - Reassurance
  - Hydroquinone
  - Laser therapies
  - Liquid Nitrogen
- Ddx: lentigo maligna

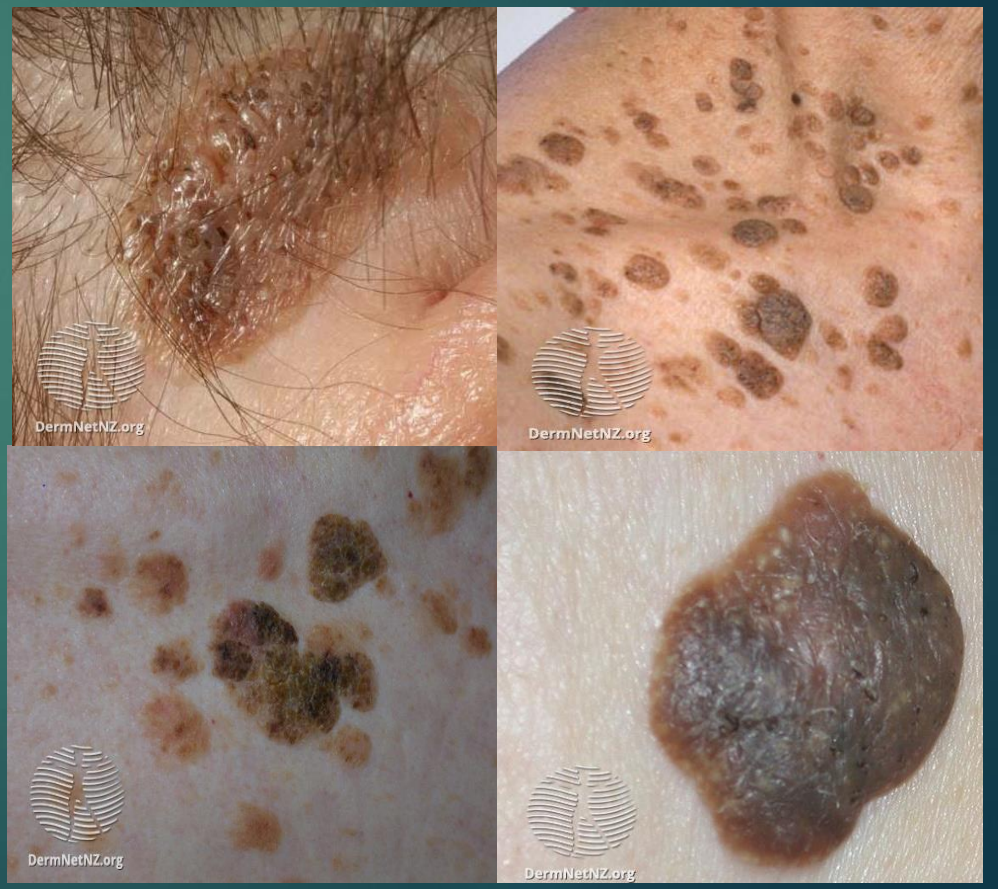




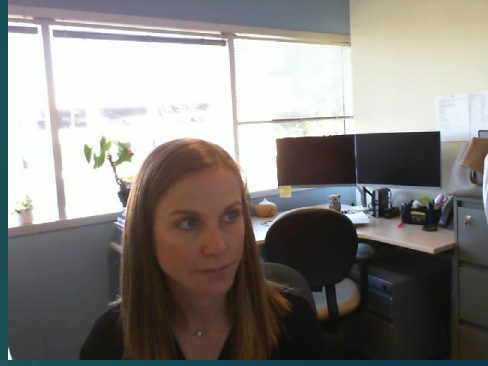
SEBORRHEIC KERATOSES (SK)

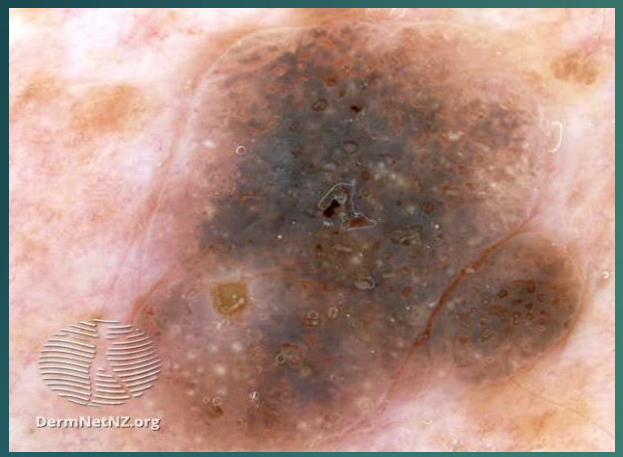


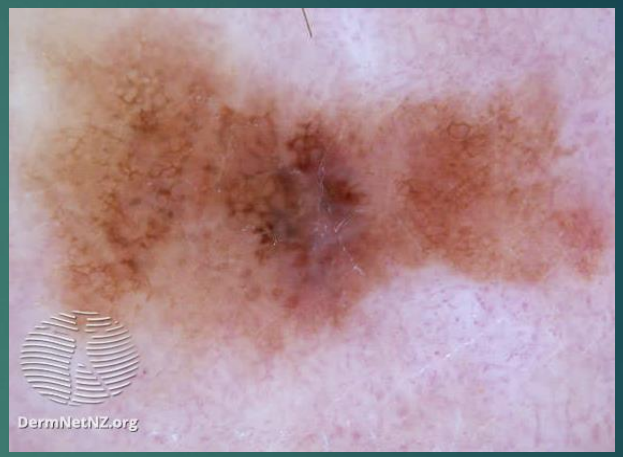
- Common, often **multiple**, growths that begin to appear in 4th decade and continue to arise throughout life
- **Stuck on, wax or warty** in their appearance and typically located on scalp, face, trunk, extremities.
- Treatment: Reassurance, liquid nitrogen, shave biopsy removal, electrodessication and curretage
- DDX: Melanoma

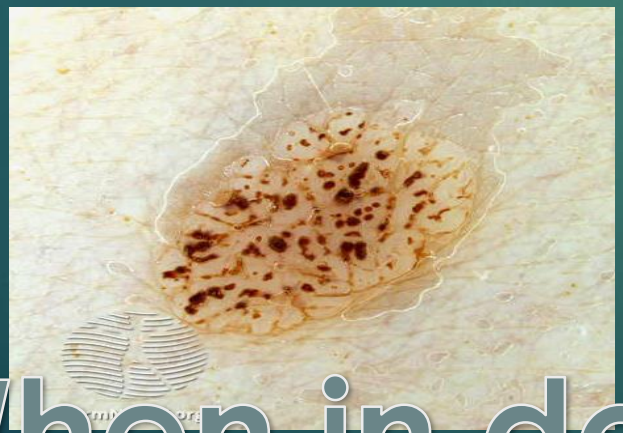


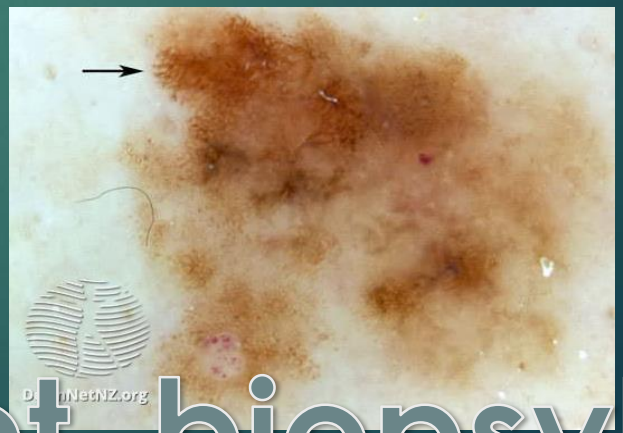
SEBORRHEIC KERATOSIS VS MELANOMA







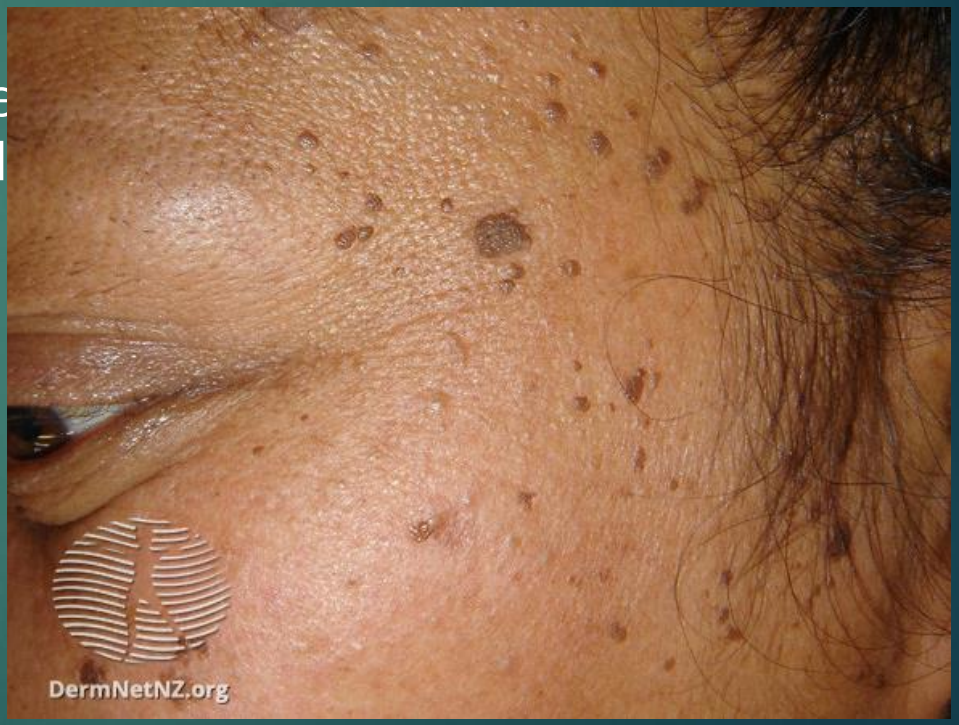




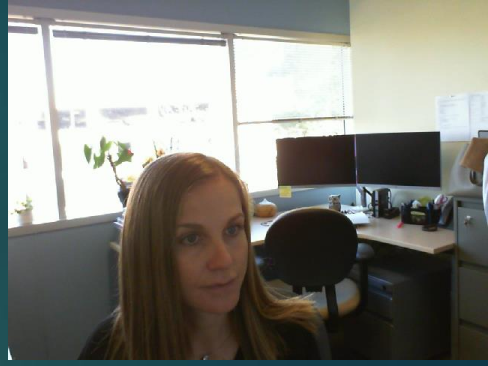
When in doubt, biopsy!

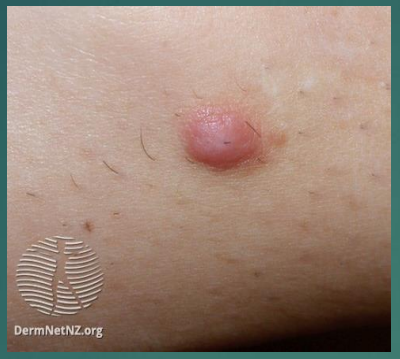
DERMATOSIS PAPULOSIS NIGRA

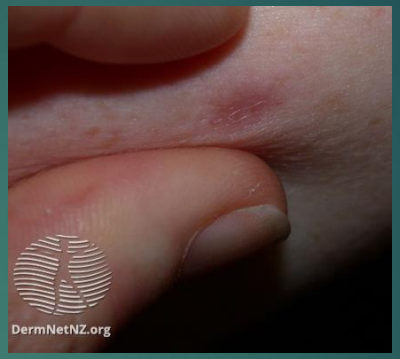
- Multiple asymptomatic hyperpigmented and verrucous papules of variable size scattered on cheeks and temples
- Variant of SK that arises in darker skin types
- Treatment: Reassurance.
- Pearl: Recommend against liquid nitrogen in darker skin types due to risk of hyper/hypopigmentation



DERMATOFIBROMA

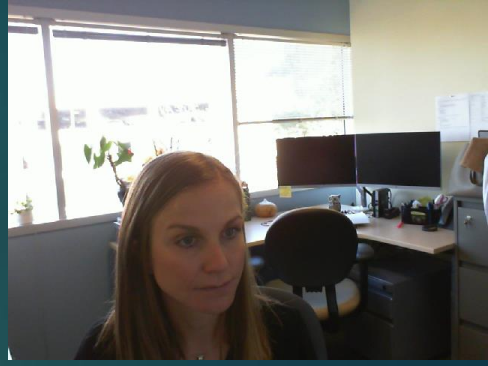


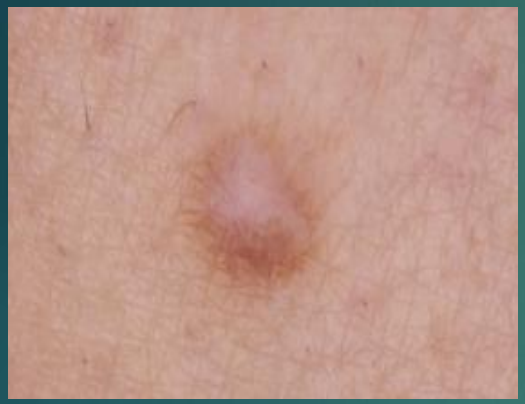


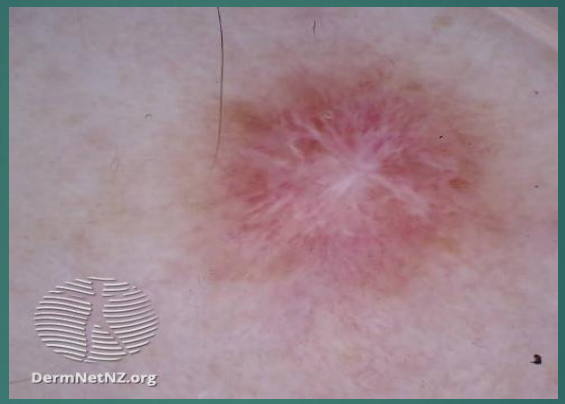


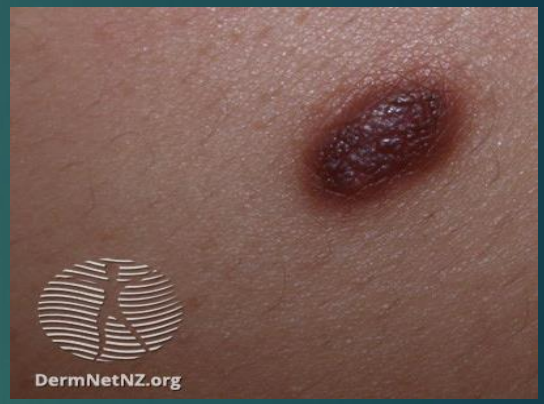
- Reactive fibrous papule or nodules usually incited by trauma
- Presentation:
  - Firm, scar-like
  - Can be pink, brown, hyperpigmented with darker peripheral rim and central starburst pattern often on upper and lower extremities
  - +/- pruritis
  - Often multiple
- Dimple sign: using your index and thumb, pinch sides of lesion which will result in dimpling of skin.
- DDX: Melanoma (if isolated and/or not on extremities, consider biopsy)
- Treatment: Reassurance. DO NOT BIOPSY/EXCISE unless you are concerned for melanoma.

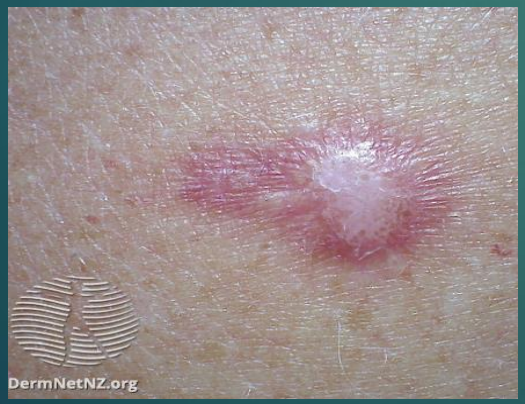
DERMATOFIBROMA

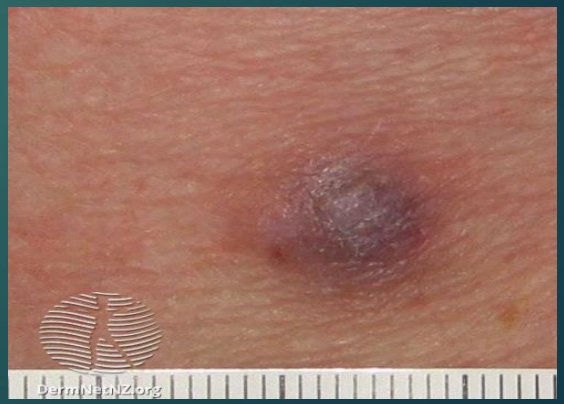




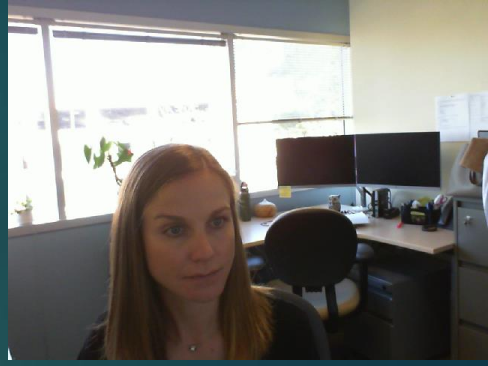


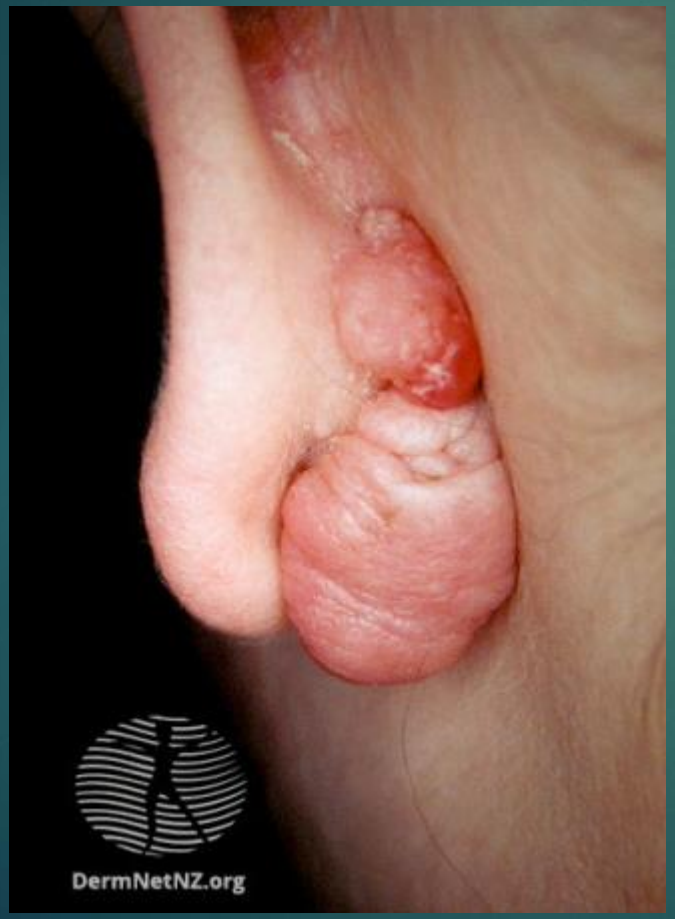






Case Study

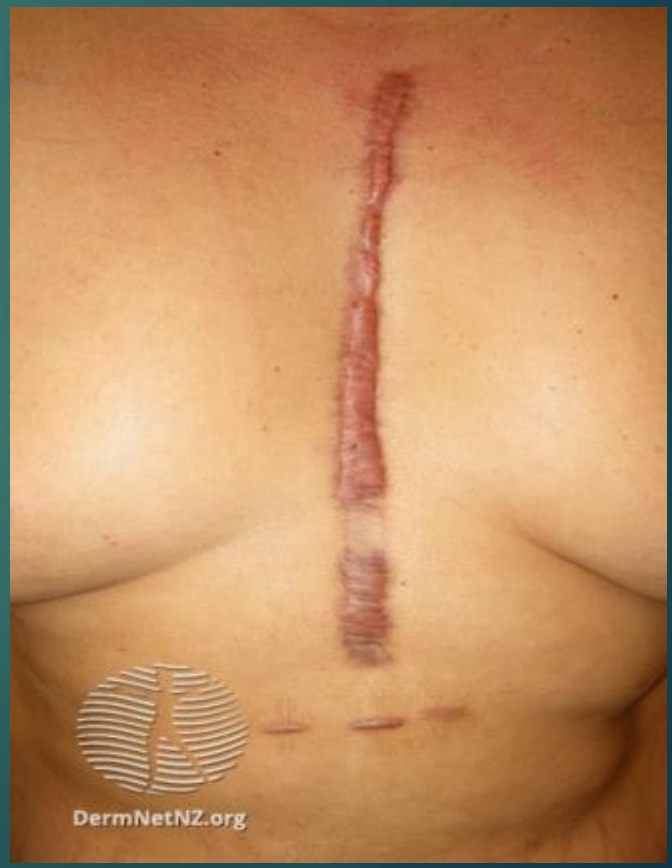




- Healthy 24yo female with pruritic, firm, pink to erythematous plaque on earlobe that is increasing in size
- History of ear piercing in area prior to onset.

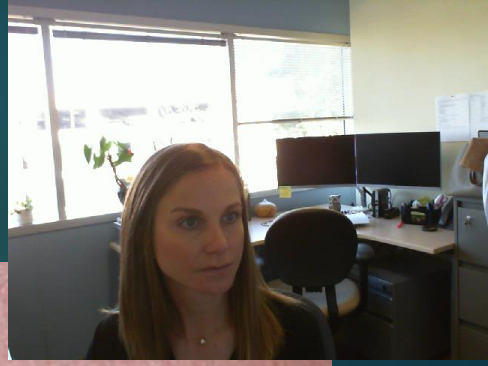
KELOID & HYPERTROPHIC SCAR

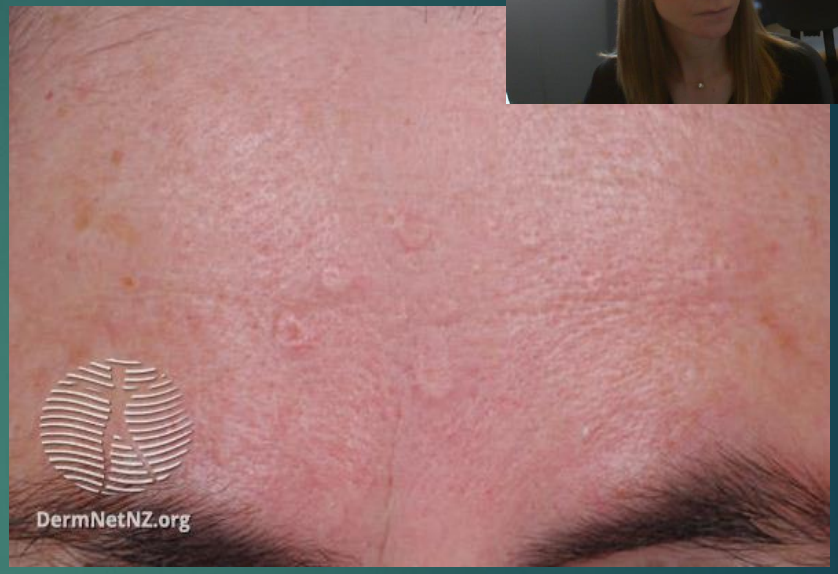
- Keloids and hypertrophic scars are forms of scar tissue that arise from an insult to the skin (i.e. laceration, burn, acne, piercing, surgery)
- Most common locations are ears, neck, trunk, extremities.
- Predisposing factors:
  - Personal/Family history of keloid/hypertrophic scar
  - African American and/or Asian population
- Intralesional corticosteroid injections has been the mainstay of treatment for keloids

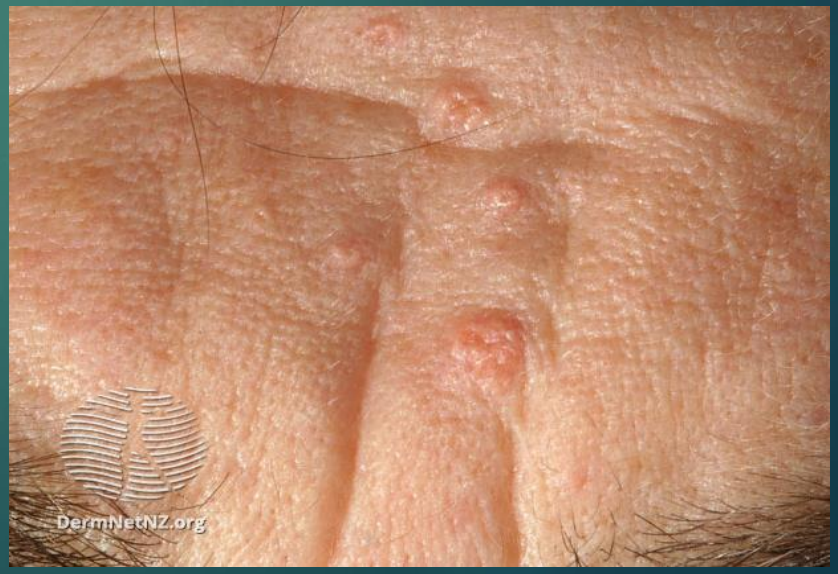


SEBACEOUS HYPERPLASIA

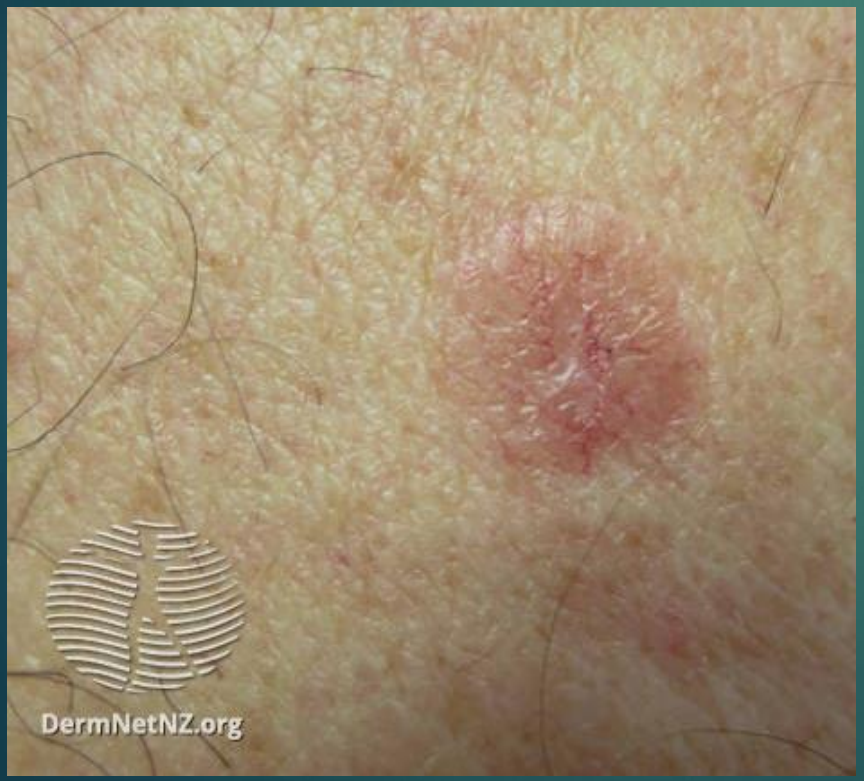
- Enlargement of sebaceous glands
- Presentation: Multiple skin colored to yellowish umbilicated papules located on face.
- If an isolated lesion or hx of bleeding, consider biopsy to r/o basal cell carcinoma
- Treatment: Reassurance. Can cauterize at low setting for aesthetic purposes.



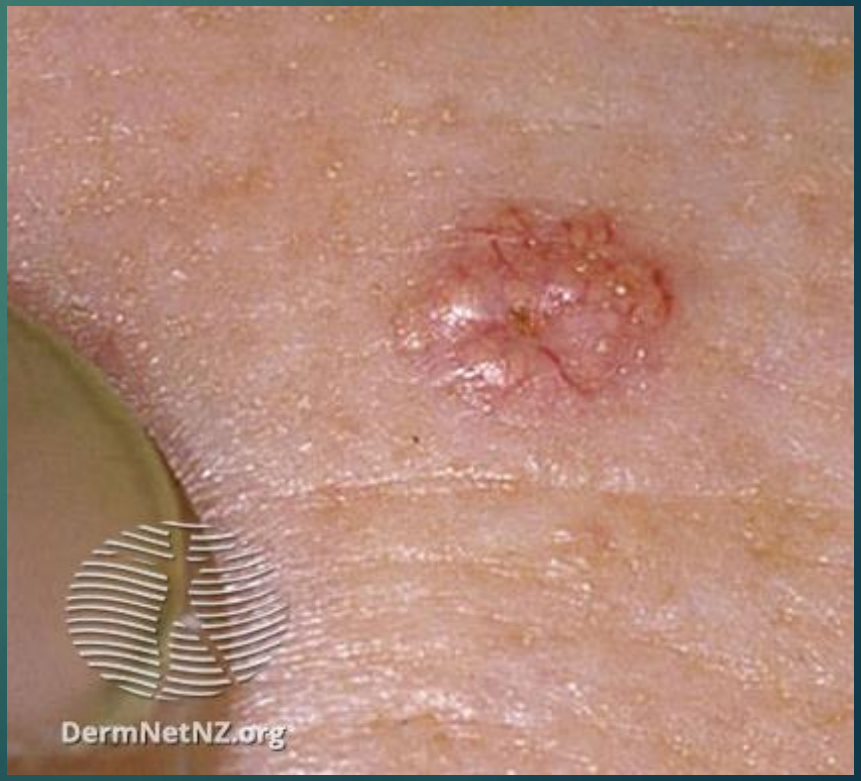




Basal Cell Carcinoma

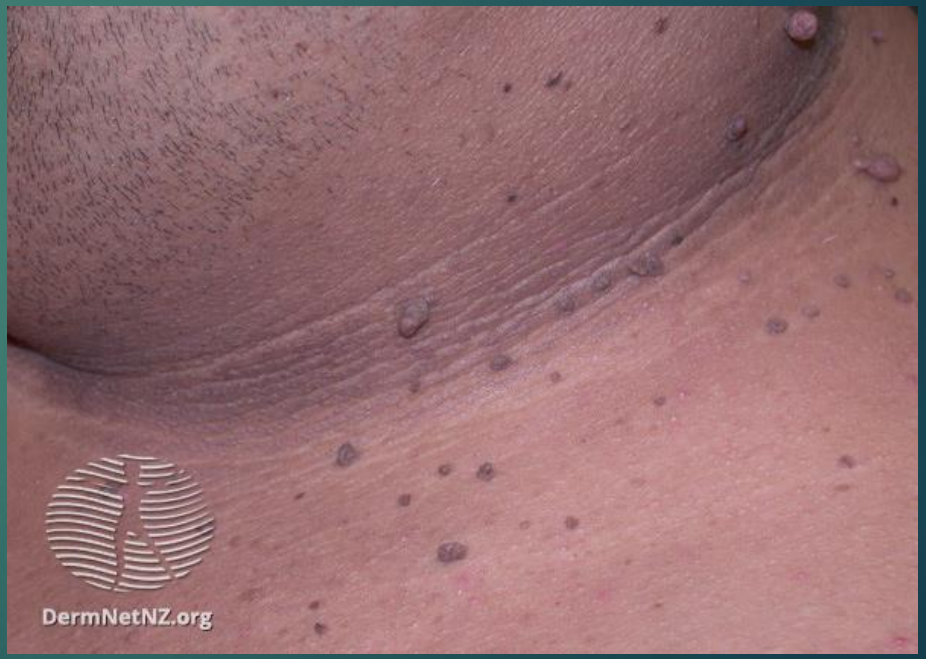


Sebaceous Hyperplasia



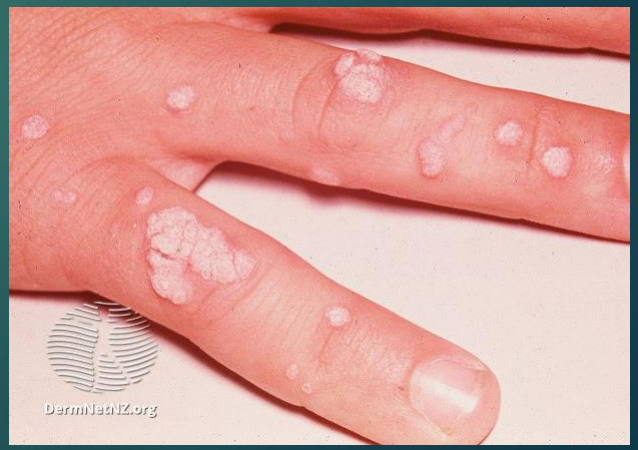
SKIN TAG (ACROCHORDON)

- Skin colored to brown pedunculated, fleshy, soft papules that arise on axillae, neck, groin, and upper eyelids.
- Causes: friction, obesity, genetics, pregnancy
- Treatment:
  - Liquid nitrogen
  - Snipping followed by aluminum chloride
  - electrodessication

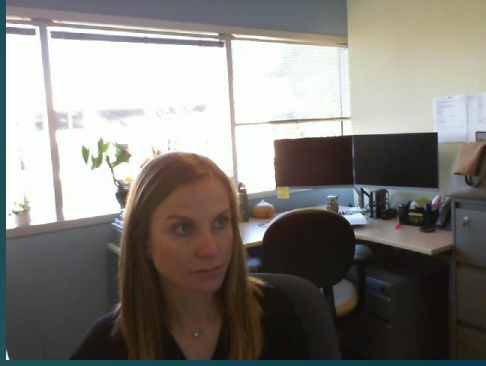


WARTS (VERRUCA)

- Viral warts are benign proliferations of the skin & mucosa caused by HPV.
- Spread by direct contact or autoinoculation
- More common in children and immunosuppressed patients
- Various types: verruca vulgaris, verruca plana, condyloma acuminatum, plantar warts
- Treatment:
  - Liquid Nitrogen
  - Cantharidin
  - Topical Retinoid (verruca plana)
  - OTC wart therapies (salicylic acid)
  - Candida antigen
  - Imiquimod/Efudex (condyloma acuminatum)

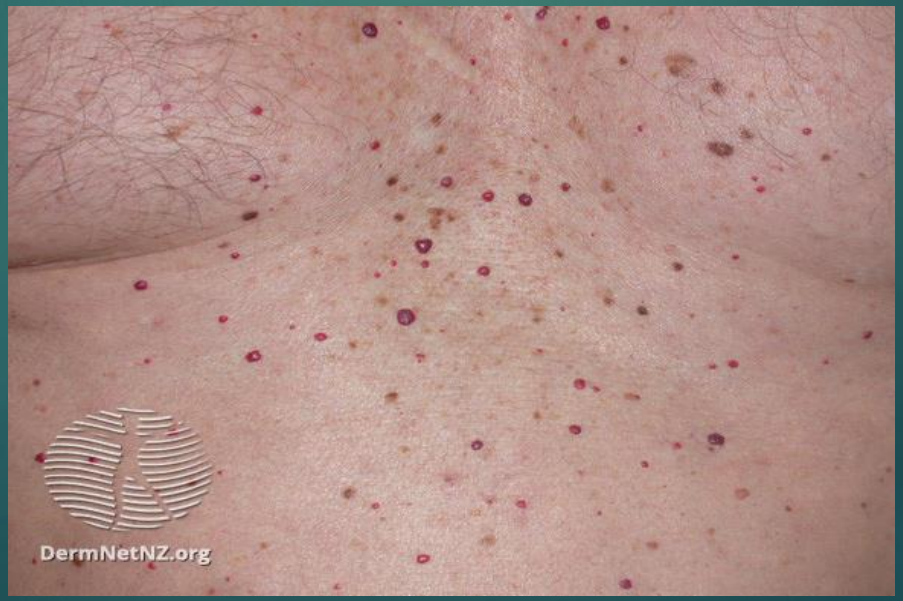


COMMON VASCULAR NEOPLASMS

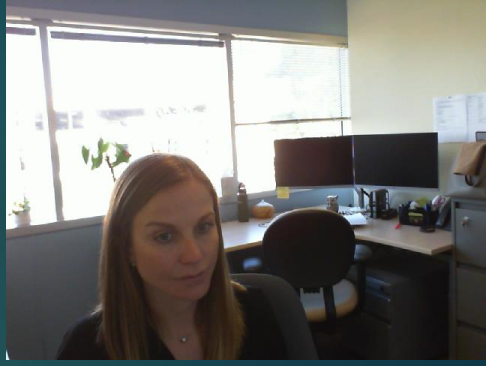


Cherry Angioma

- Common acquired vascular proliferations common on trunk, extremities
- Occur in 4th decade and increase over time
- Treatment: Reassurance. Can cauterize if they become symptomatic

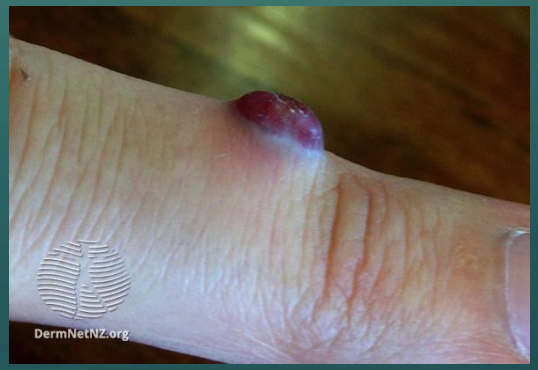


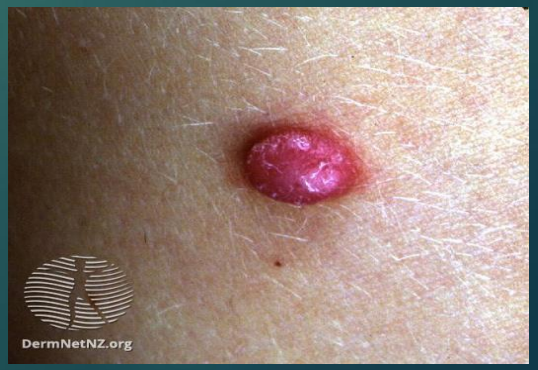
COMMON VASCULAR NEOPLASMS



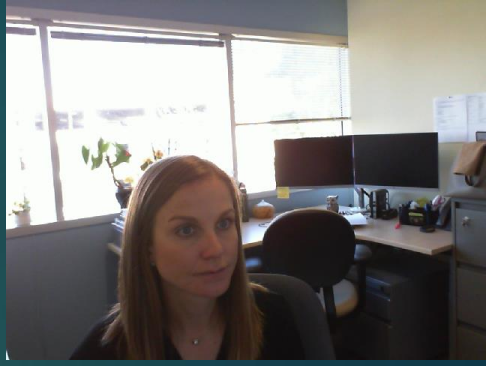
Pyogenic Granuloma

- Rapidly growing, friable, pedunculated papulonodule that ulcerates and bleeds.
- Patients note history of trauma in area.
- Locations: gingiva > fingers > lips > face > tongue
- Multiple can be associated with certain meds (oral retinoid, EGFR inhibitors, anti-retroviral protease inhibitors)
- Treatment: Shave biopsy removal and ED&C

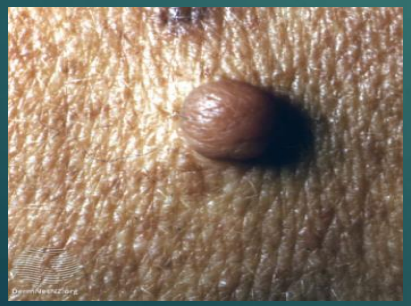




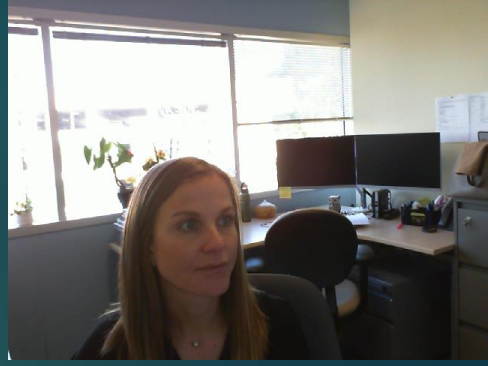
NEUROFIBROMA

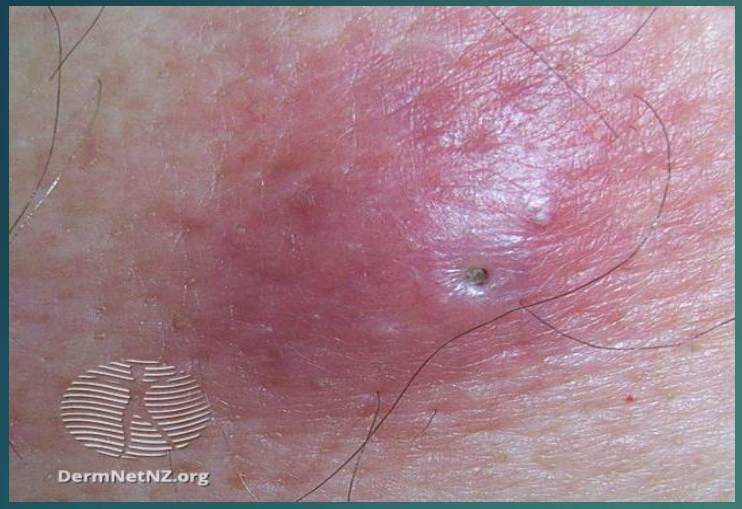


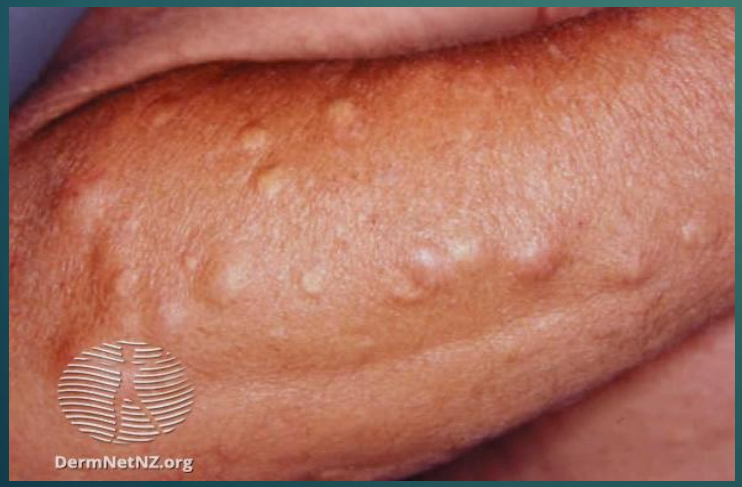
- Benign neural tumor
- Presentation: skin-colored to pink exophytic papule/nodule.
- "Button hole sign": compression of lesion herniates inward.
- Can be single or multiple
  - When multiple, consider neurofibromatosis type I



EPIDERMAL INCLUSION CYST







- Most common cyst and originates from follicular infundibulum
- Presentation: Well-circumscribed asymptomatic nodules under the skin. Often with central punctum. Can have malodorous keratin discharge
- When inflamed, can become erythematous, painful, swollen.
- Treatment:
  - Excision
  - When inflamed, oral antibiotics for 5-7 days
  - I&D when fluctuant +/- draining

DERMATOLOGY PEARLS

- Recommend against neosporin, bacitracin, or other antibiotic ointments aside from MUPIROCIN
- For cuts, abrasions, open wounds, use VASELINE.
- Clinically if you are concerned at the presentation of a pigmented lesion, DO NOT OBSERVE, BIOPSY!
- SPF Recommendations: SPF 30-50 with ZINC and must reapply every 2 hours to sun exposed areas.

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- Werner RN, Sammain A, Erdmann R, Hartmann V, Stockfleth E, Nast A. The natural history of actinic keratosis: a systematic review. Br J Dermatol. 2013 Sep;169(3):502-18. doi: 10.1111/bjd.12420. PMID: 23647091.
- [All photographs] (n.d). https://dermnetnz.org