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LEADING THE WAY 

# Actinic Keratoses and Squamous Cell Carcinoma

1/16/24

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*Growing the Ability to Deliver Quality Healthcare to American Indian and Alaska Native People.*

# Disclosures

- I. Financial – None
- II. Personal – Dermatology Resident and Aspiring Mohs Surgeon



# Objectives

- 
- I. Learn to recognize:
    - I. Actinic keratoses (AKs)
    - II. Squamous cell carcinomas (SCCs)
  - II. Learn standard treatment options for:
    - I. AKs
    - II. SCCs
  - III. Understand basics of AJCC/NCCN guidelines for cutaneous SCC

# Helpful Resources

## DermNetNZ.org

### Actinic keratosis

Author: Dr Amanda Oakley, Dermatologist, Hamilton, New Zealand, 1997. Updated December 2015.

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[Introduction](#) | [Demographics](#) | [Causes](#) | [Clinical features](#) | [Complications](#) | [Diagnosis](#) | [Treatment](#) | [Prevention](#) | [Outlook](#)

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#### What is an actinic keratosis?

Actinic keratosis is a precancerous scaly spot found on sun-damaged skin, also known as solar keratosis. It may be considered an early form of cutaneous squamous cell carcinoma (a keratinocyte cancer).

#### Actinic keratoses



#### Who gets actinic keratoses?

Actinic keratoses affect people that have often lived in the tropics or subtropics and have predisposing factors such as:

- Other signs of [photoageing skin](#)
- Fair skin with a history of [sunburn](#)
- History of long hours spent outdoors for work or recreation
- Defective immune system.

#### What causes actinic keratoses?

# Helpful Resources

## VisualDx.com

### Actinic keratosis

See also in: [External and Internal Eye](#), [Hair and Scalp](#)

[Print](#) [Patient Handout](#) [Images \(114\)](#)

*Contributors: Rajini Murthy MD, Vivian Wong MD, PhD, Elyse M. Love MD, Sarah Hocker DO, Susan Burgin MD*

#### Synopsis [Copy](#)

Actinic keratoses (AKs) are considered precancerous lesions and present as rough, scaly macules or patches arising on chronically sun-exposed skin. This is a very common condition in individuals with lighter skin colors and is virtually unseen in people with darker skin colors. AKs are commonly seen on sun-exposed skin of the face, ears, scalp (areas of hair loss), neck, upper chest, forearms, dorsal hands, shins, and, less commonly, the eyelids and periocular region. These flat, scaly papules are of varying sizes and usually begin as "rough" localized skin lesions that the patient feels but are difficult to see. They are usually asymptomatic but may be tender.

The frequency of AKs increases with age and cumulative lifetime sun exposure. They are also more common in individuals who are immunosuppressed (especially after solid organ transplantation) and in males. They may resolve with protection from ultraviolet (UV) light. Some medications (ie, capecitabine, sorafenib) may induce inflammation of existing AKs.

Patients with AKs are at higher risk for developing nonmelanoma skin cancer. AKs have the potential to evolve into [squamous cell carcinoma](#) (SCC). It is estimated that the likelihood that a given AK will evolve into an invasive SCC is approximately 0.075%-0.096% per lesion.

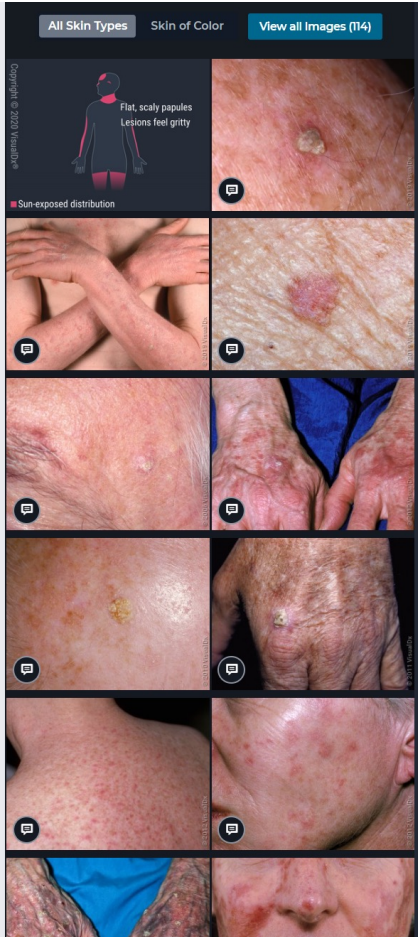
The term "[field cancerization](#)" is used to describe areas of skin at risk for both AK and SCC. Clinically, this manifests as numerous AKs and [squamous cell carcinoma in situ](#) (SCCis) with or without invasive SCCs in a field of chronically sun-damaged skin. Risk factors include male sex, lighter skin color, older age, underlying immunosuppression, and the degree of prior exposure to UV light.

Related topic: [actinic cheilitis](#)

#### Codes [Copy](#)

ICD10CM:  
L57.0 - Actinic keratosis

SNOMEDCT:  
201101007 - Actinic keratosis



### Differential Diagnosis & Pitfalls [Copy](#)

- [Superficial basal cell carcinoma](#)
- [SCCs](#) (Bowen disease)
- [Psoriasis](#)
- [Flat wart](#)
- [Common wart](#)
- [Seborrheic dermatitis](#) – Patients with significant seborrheic dermatitis will benefit from initial treatment of dermatitis before beginning treatment for AK.
- [SCC](#)
- [Seborrheic keratosis](#)
- [Discoid lupus erythematosus](#)
- [Disseminated superficial actinic porokeratosis](#)
- Severe [xerosis](#) – Wiping the skin with water or an alcohol pad will minimize background xerosis. In addition, xerosis lacks the classic gritty sensation on light palpation.
- [Lentigo](#) (pigmented variant)
- [Lentigo maligna](#) (pigmented variant)

### Diagnostic Pearls

### Best Tests

### Management Pearls

### Therapy



# Actinic Keratoses - Background

- Super common
- Pre-Cancer
- Rate of transformation 1% per year
- Often detected by their “gritty” texture
- Cumulative and prolonged UV exposure



# Actinic Keratoses





# Actinic Keratoses – Treatment(s)

## Liquid Nitrogen (LN)

- ~7 second freeze time, 2 cycles
- LN can cause dyspigmentation (#1 cause for litigation)

## 5-Fluorouracil (5-FU)

- Topical chemo cream
- Apply twice daily for 2-4 weeks
- Don't prescribe in summer\*
- Can add calcipotriene, treatment duration drops to 4-7d



# Cryotherapy

## Treatment Stages of Cryotherapy Liquid Nitrogen



Application



Blister stage



Crusting stage

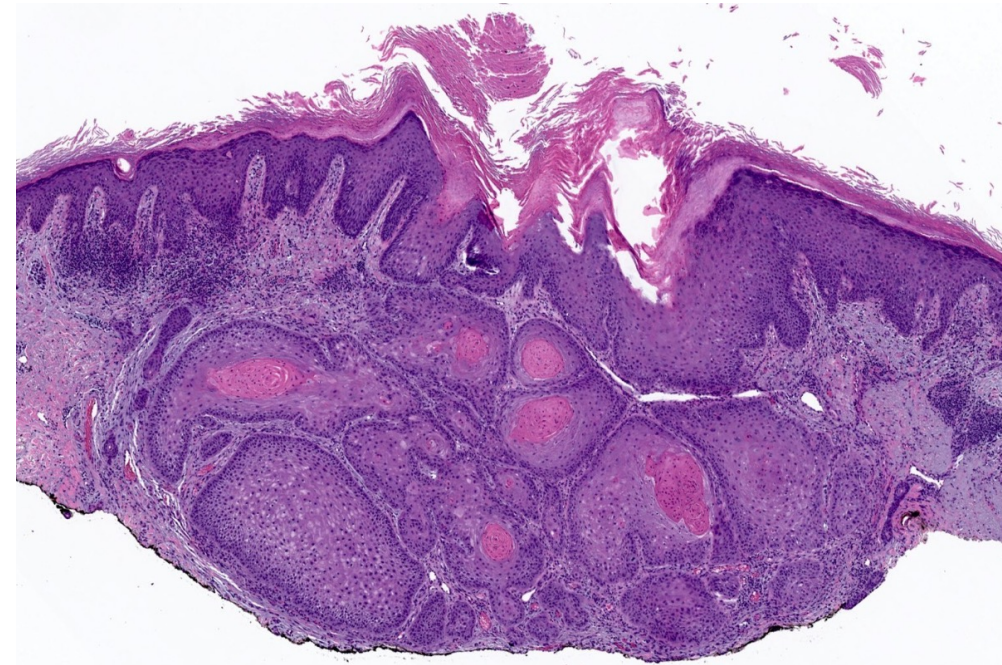
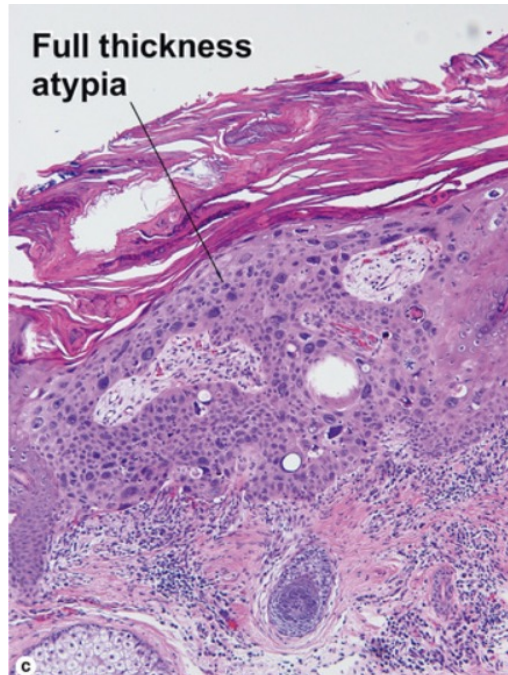
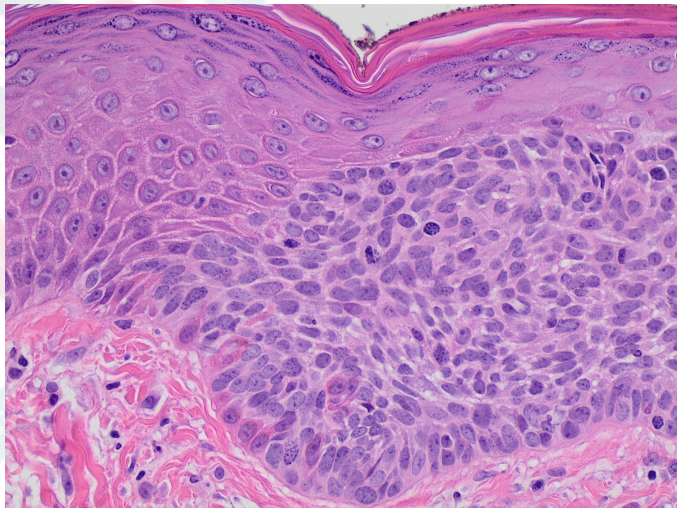
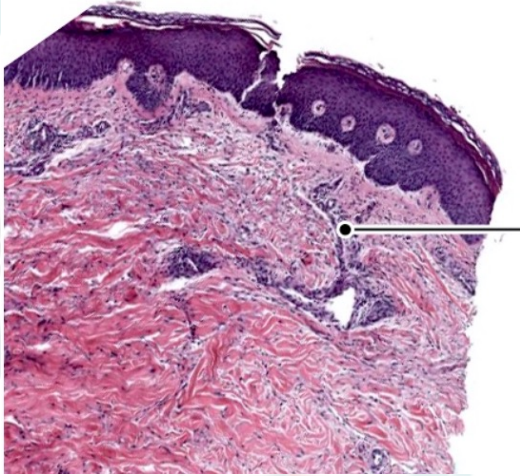


Clearance



# Squamous Cell Carcinoma - Background

- Atypia of lower epidermis -> AK
- Full thickness atypia -> SCCis
- Breach of atypical cells into dermis -> SCC



# Squamous Cell Carcinoma - Background

- Lifetime risk 10-15%
- Induration, pain, and ulceration can be clues for SCC > AK
- Up to 2% of all SCC will metastasize
- In older patients (>80), more skin cancer deaths due to SCC than melanoma



# Squamous Cell Carcinoma - Background

- Risk factors :
  - Sun exposure
  - Immunosuppressants (particularly oral calcineurin inhibitors in SOTRs)
  - HIV
  - CLL
  - HPV
  - Non-healing ulcers
  - Lichen planus (hypertrophic\*)
  - Lichen sclerosis

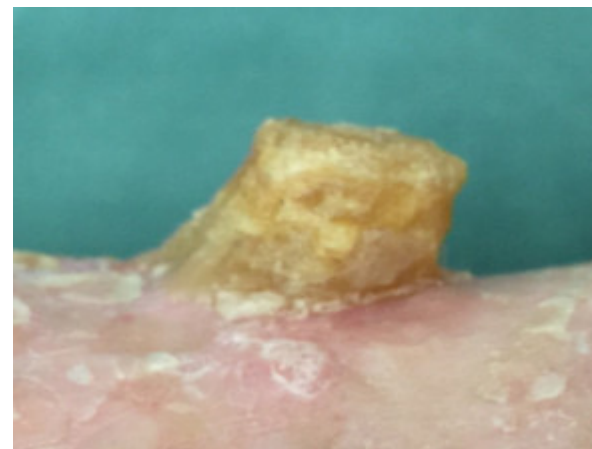


# Squamous Cell Carcinoma - Background

- Increased risk of metastasis with:
  - Immunocompromised state
  - Location on lip/ear (special site)
  - Diameter >2cm
  - Breslow depth >2mm
  - Arising in a burn or scar
  - Poorly differentiated (on pathology)



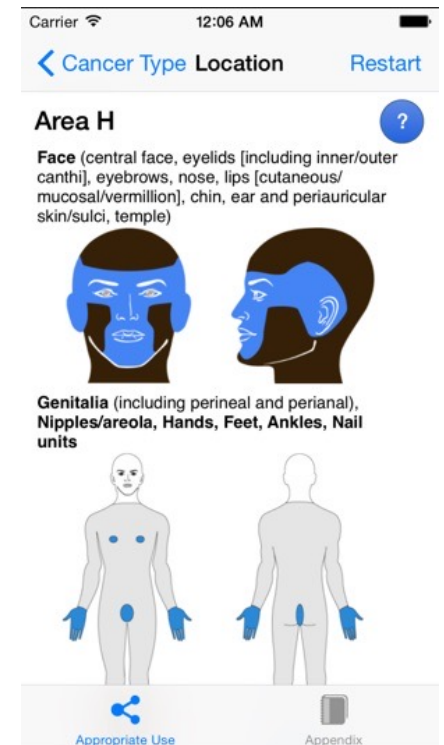
# Squamous Cell Carcinoma





# Squamous Cell Carcinoma - Treatment

- Standard of care - surgical excision
  - Electrodesiccation and curettage (SCCis)
  - Standard excision with appropriate margins (4mm-6mm)
  - Mohs if indicated
- Non-surgical treatment options:
  - PDT, 5-FU, imiquimod
    - Less effective
  - Intralesional methotrexate, 5-FU
  - Radiation
  - Cemiplimab
    - Adjuvant PD-1 inhibitor



# Squamous Cell Carcinoma - Prevention

- Oral retinoids
  - PO acitretin
  - PO isotretinoin
- Nicotinamide 500mg BID
- Early screening
  - Follow up q6 months for the first 2 years
  - Annually thereafter



# Squamous Cell Carcinoma - Prognosis

- Five-year cure rate
  - > 90%
- Recurrence timing
  - Within 2 years (75%)
  - Within 5 years (95%)
- Risk of additional NMSC
  - 50% at 5 years
- Metastases
  - Regional lymph nodes most common



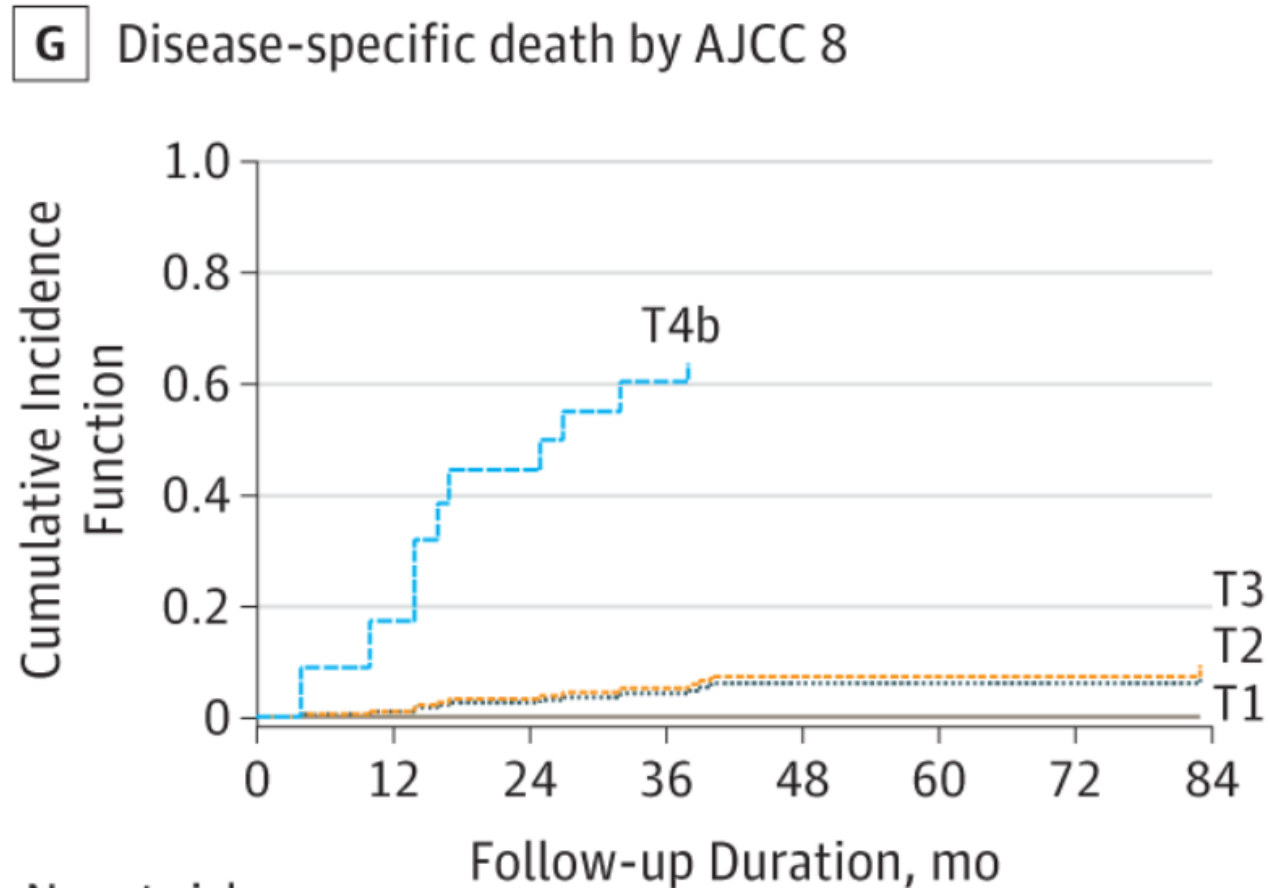


# Squamous Cell Carcinoma – Staging/Workup

- AJCC 8th Edition (TNM)
  - T
    - **T1  $\leq$  2 cm in diameter**
    - T2  $>2$  but  $< 4$  cm
    - T3  $\geq 4$  cm (or perineural invasion, invasion into subcutaneous fat)
    - **T4 bony involvement**
  - N
    - N0: No clinical or radiologically apparent nodes
    - N1: Isolated ipsilateral node  $\leq 3$ cm
    - N2-3: Multiple nodes, contralateral nodes, large nodes
  - M
    - M0: No distant mets
    - M1: Distant mets



# Squamous Cell Carcinoma – Staging/Workup



# NCCN Practice Guidelines



National Comprehensive  
Cancer Network®

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)

## Squamous Cell Skin Cancer


Version 1.2023 — March 10, 2023

NCCN.org

NCCN Guidelines for Patients® available at [www.nccn.org/patients](http://www.nccn.org/patients)

Continue

# Squamous Cell Carcinoma – NCCN Workup

- 
- A decorative graphic on the left side of the slide, featuring a light blue circular border. Inside the circle, there are several stylized arrows or feathers radiating from a central point, each with a red tip and a white star. The background of the slide is a dark teal color.
- **Imaging** recommended if:
    - Clinically **palpable nodes** on exam
    - “**Suspicion** of extensive disease”
      - Deep involvement to bone (CT w/ contrast)
      - Named nerves (MRI w/ contrast)
      - Deep soft tissues (Either)
  - **Nodal biopsy** if:
    - **Palpable** on exam
    - **Imaging positive**





# Mimickers and Discussion





# Seborrheic Keratosis





# Wart





# Prurigo Nodules







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# Psoriasis



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# Seborrheic Dermatitis





# SCCis





# Thank You!



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**Visit: [IndianCountryECHO.org](https://IndianCountryECHO.org)**

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