

Actinic keratosis



# Actinic Keratosis (Cheilitis)

## ❖ Definition

- Actinic (or solar) keratosis is a premalignant epithelial lesion directly related to long-term sun exposure
- classically found on the vermilion border of the lower lip as well as on other sun-exposed areas of the skin.
- A small percentage of these lesions will transform into squamous cell carcinoma.

# What Is an Actinic Keratosis?

- UV light-induced epidermal lesion
- May progress to invasive squamous cell carcinoma
- Histologic and molecular features of SCC



# Actinic Keratosis

- Chronic sun exposure is the cause of almost all actinic keratoses.
- Sun damage to the skin is cumulative, so even a brief period in the sun adds to the lifetime total.
- The ultraviolet radiation given off by the lamps in a tanning salon can be even more dangerous than the sun, so dermatologists warn against indoor tanning.



# Actinic Keratosis (Solar Keratosis)

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- Sun related skin damage.
  - Most common sun related skin growth.
  - Usually seen in people who are fair skinned, burn easily, and tan poorly.
  - Rare in people of darker skin tone.
- Thought to be a precursor to skin cancer, such as squamous cell carcinoma.
- Development is directly proportional to sun exposure.



# Actinic Keratosis

- Also called solar keratosis.
- Squamous cell carcinoma confined to the epidermis.
- Commonly thought of as a “pre-cancerous” lesion.
- Induced by sun-exposure, years of cumulative exposure are required.
- Lesions increase with age.
- Can spontaneously regress if sun-exposure is removed.
- Lesions have increased vascularity (erythematous).
- Develops adherent white or yellowish scale.
- Can bleed if picked.
- Many lesions are more readily identified by rough texture than appearance.

# Actinic Keratosis (AK)

- AKs are premalignant lesions; they have the potential of transforming into a skin cancer. Virtually all AKs that transform into cancer will become squamous cell carcinoma (SCC).
- Most AKs do not progress to invasive SCC
  - Risk of malignant transformation of an AK to SCC within one year is about 1 in 1000
  - Risk factors for malignant progression of AK to SCC include: persistence of the AK, history of skin cancer, and immunosuppression
- The keratinocyte is the cell of origin

# Clinical Signs of Actinic Keratosis Lesions

- Visible/detectable lesions are reddish to reddish brown, rough, scaly patches less than 1 cm in diameter<sup>1</sup>
- Non-visible, non-palpable lesions occur up to 10 times more often than visible lesions, particularly in sun-damaged skin<sup>2</sup>
  - >80% of all AK lesions are found on sun-exposed areas of the body<sup>3</sup>



Courtesy of Dr. Kirk Barber .

**When one AK is seen,  
assume that other,  
perhaps non-visible,  
AK lesions exist<sup>4</sup>**

1. Ulich M, et al. *Dermatology*. 2010;220(1):15-24.  
2. Berman B, et al. *Expert Opin Pharmacother*. 2009;10(18):3015-31.  
3. Salasche SJ. *J Am Acad Dermatol*. 2000;42(1 Pt 2):4-7.  
4. Berman B, et al. *J Fam Pract*. 2006;55(5) suppl 1-8.



## Table 1. Actinic Keratosis: Signs, Symptoms, and Risk Factors

### **SIGNS AND SYMPTOMS INCLUDE:**

Color ranging from pink to red to brown, or flesh-colored; some are light gray

Poorly marginated, flat or slightly raised lesion

Rough, dry, and scaly on palpation (e.g., feels like sandpaper); some are hard with a wartlike surface; often, there is a white or yellow crusty scale on top

Appear on sun-exposed areas of the body (e.g., face, lips, ears, dorsal aspect of hands, forearms, scalp, neck)

Tender when finger drawn over them; itching, stinging, or burning may occur in affected area

### **RISK FACTORS INCLUDE:**

Pale-skinned, fair-haired, light-eyed people, or those who tend to freckle or burn when exposed to sunlight

Age over 40 years

Residence in a sunny climate

History of frequent or intense sun exposure or sunburn, especially early in life

History of an actinic keratosis or skin cancer

Immunocompromised status secondary to chemotherapy, chronic leukemia, AIDS, or organ transplant medications

*Source: References 1-3, 6, 11.*

•**Differential Diagnosis:**

- ❑ Squamous cell carcinoma, SK, superficial basal cell carcinoma

•**Management:**

- ❑ Depends on number of lesions and area of involvement
- ❑ For few localized lesions, cryotherapy with liquid nitrogen
- ❑ For multiple, widespread lesions treatment options include:
  - ❑ Photodynamic therapy
  - ❑ Chemical Peels
  - ❑ Topical antineoplastic agents
    - Examples include
      - 5-Fluorouracil (5-FU) Cream
      - Imiquimod Cream

**TABLE 1. Commonly used treatments for actinic keratosis<sup>22</sup>**

<b>DESTRUCTIVE METHODS</b>	<b>TOPICAL TREATMENTS</b>
Chemical peels	Imiquimod cream 3.75% and 5%
Cryotherapy	Diclofenac sodium gel 3%
Curettage ± electrocautery	5-fluorouracil (available in 0.5%, 1%, and 5% preparations)
Dermabrasion	Photodynamic therapy (5-aminolevulinic acid and methylaminolevulinic acid)
Laser therapy	
Shave excision	