

Skin Cancers: Preventing, Screening and Treating

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Learning Objectives

- Distinguish the most common types of skin cancer - basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and melanoma.
- Educate patients on the importance of skin cancer prevention, appropriate sun protection, and methods of early detection and diagnosis.
- Compare skin biopsy techniques for skin cancer diagnosis or treatment.

Sun-Reactive Skin Type Classification

Skin Type	Tanning Ability	Features
I	Burns easily/never tans	Blue eyes/red hair
II	Burns easily/tans minimally	Gray eyes/
III	Burns moderately/light brown tan	Light brown eyes/hair
IV	Burns minimally/moderate brown tan	Brown eyes/hair
V	Burns rarely/dark brown tan	Dark brown eyes/hair
VI	Never burns/deeply pigmented	Black*

Tanning ability based on skin condition after ~45 minutes of sun exposure after winter or prolonged period of no sun exposure.

* 2% of blacks will burn.

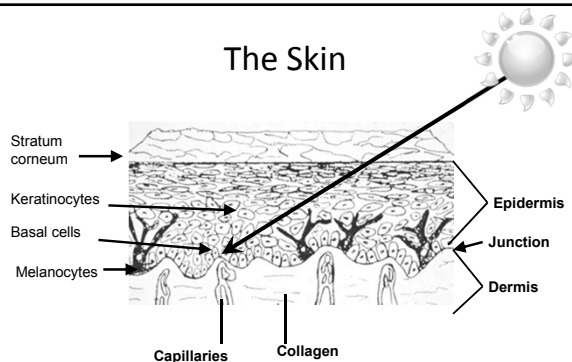
Tanning

A defensive response to UV light

- Chronic low-dose UV exposure appears to induce protection against DNA damage.
 - Intense, intermittent exposure damages DNA.

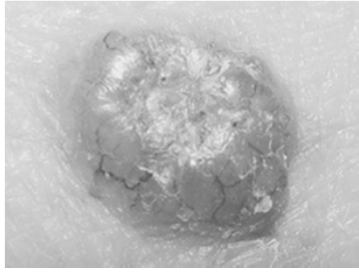


The Skin



Classic Features

- Areas of chronic sun exposure
Predilection for head (ears) and neck (80%)
- A persistent, non-healing sore



Nodular basal cell carcinoma (most common form)

Stulberg DL, Crandell B, Fawcett RS. Diagnosis and treatment of basal cell and squamous cell carcinomas. *Am Fam Physician*. 2004;70(8):1461-1468. Photo courtesy Daniel Stulberg, MD.

But not all lesions are classic

Squamous Cell Cancer

- >250,000 new cases annually
- Elderly (mean age 70 years)
- Common in sun-exposed areas
 - Rim of ear, lower lip, face, bald scalp, neck, hands
- Occurs on all areas
 - Mucous membranes, genitals, etc.

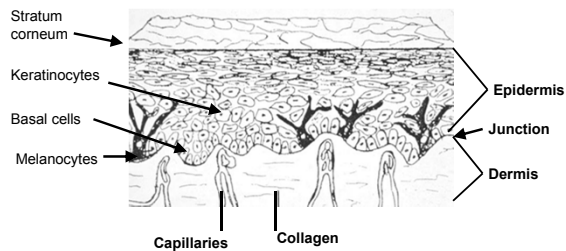


Sun Damage

- Skin with signs of sun damage
 - wrinkling, loss of elasticity
- Environmental exposure
 - arsenic, radiation, petroleum products
- Smoking
- Inflammatory dermatosis



Epidermal Keratinocytic Atypia



Actinic Keratosis

Sun-exposed areas...

- Pinpoint to plaque
- Variety of colors
- May form horns
- Blend to background skin

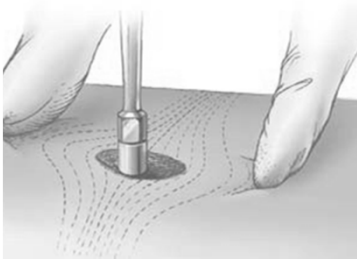
Bowen Disease

Not just sun exposed

- Erythematous plaque
- Sharp, irregular border
- Hyperkeratosis
- Erosions, ulcerations

BCC/SCC Treatment Goals

- Remove cancerous tissues
- Preserve normal tissue
- Preserve optimal cosmetic result



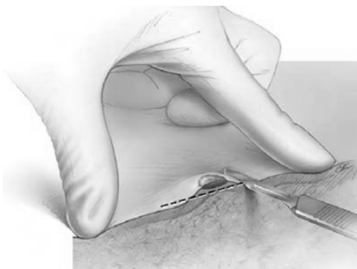
Punch biopsy
Stretch skin to allow for an elliptical closure

Am Fam Physician 2002;65:1155-8,1161-2,1164,1167-8



Removing the 'punch'

Am Fam Physician 2002;65:1155-8,1161-2,1164,1167-8



Shave biopsy

Am Fam Physician 2002;65:1883-6,1889-90,1895,1899-9000.

Office Treatment Modalities

- Electrodesiccation and curettage
- Cryotherapy
- Excision
- Topical agents



E & C/Cryotherapy

- Cure rates ~90%
- Not useful if in high-risk or difficult sites.
- Cryo not recommended for SCC
 - deeper portions of the tumor may be missed
 - scarring might obscure a recurrence.



Excision biopsy

- Remove the entire growth along with a thin margin of normal skin
- Cure rates around 90%



JFP JUNE 2003 / VOL 52, NO 6 - page 458

Topical Rx - superficial BCC & AK

5-Fluorouracil 5% cream

- BID for 3-6 weeks

Imiquimod 5% cream

- 5 x a week for 6+ weeks for BCC
- 2-3 x a week for 8-16 weeks for AK

Diclofenac 3% gel

- BID x 2-3 months
- Less effective than 5-FU/Imiquimod



Referrals

- Radiation
 - Difficult surgical locations
 - Elderly in poor health
- Laser (Not FDA approved for BCC or SCC)
- Photodynamic therapy
 - for multiple BCC (not FDA approved)

Mohs Micrographic Surgery

For poorly demarcated & hard-to-treat tumors around the eyes, nose, lips, and ears

- High cure rate — up to 99%



"I have a suspicious looking mole on my shoulder."

Melanoma

- The incidence has increased 690% since 1950
- 69,000 new cases of melanoma annually
- 8,700 deaths
 - 99% 5-year survival for localized disease
 - 15% 5-year survival for metastatic disease
- Genetic predisposition

NEJM 7/6/06

Sites

- 83% arise de novo
- 80% trunk and extremities
 - Most common site in men is the upper back
 - Most common sites in women are the lower legs and upper back

Congenital Nevi

Moles present at birth

- Large nevi (>1.5 cm) associated with a 6% risk of developing into a melanoma
- Giant Nevi extend into underlying muscle

Management

- Examine entire skin - watch scalp
- Biopsy if suspicious for melanoma
- Patient education/sunscreens
- Follow up 3-12 months
 - Excise suspicious/changing lesions



AFP 9/15/2008 NEJM 12/4/2003

Seborrheic Keratosis

- Verrucal, warty, raised surface
- Brown to black
- Stuck on appearance, sharply demarcated
- Few mm to several cms
- Face, neck, trunk

Melanoma Evaluation

Asymmetry

Border

Color

Diameter

Color

- Variable shades of brown or black hues of pink, grey, or red, white and blue....



Diameter

- >6 mm (pencil eraser)



Malignant Melanoma - subtypes

- Superficial spreading melanoma (70%)
- Nodular melanoma (15%)
- Acrolentiginous melanoma (10%)
- Lentigo maligna melanoma (5%)

Superficial Spreading Melanoma (70%)

Most common type in light-skinned people

- Peak 40 to 60 years
- Commonly affects areas with the greatest nevus density—upper back & lower legs

Nodular Melanoma (15%)

- A uniform blue-black, blue-red, nodule
- Trunk, head, and neck.
- Usually begin in normal skin rather than in a preexisting lesion
- Rapid growth is a hallmark sign

Acral Lentiginous Melanoma (10%)

- Not associated with sun exposure
- Most common type among non-whites
- Median age 65 years; both genders
- Palms or soles; beneath the nail plate
 - Sole is most common site in all races
- Average size at diagnosis is 3 cm
 - ? delayed Dx

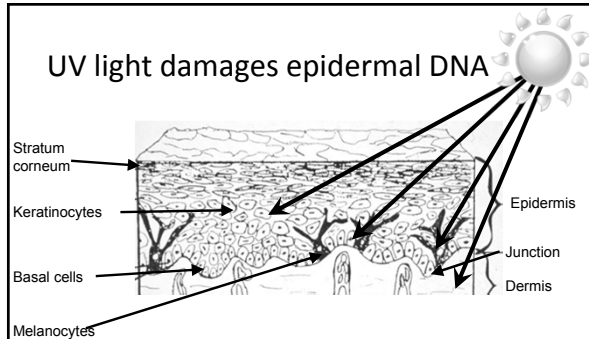
Lentigo Maligna (5%) (Melanoma in Situ)

- Occurs on sun-damaged atrophic skin
 - Nose & cheek most common
- Median age at diagnosis is 65 years
- A tan irregular macule that extends peripherally
- 1/3 progress to lentigo maligna melanoma
- Grow slowly for 5 to 15 years before invading

Melanoma Treatment—Excision

- <0.5 mm thick: 1-cm margin
- 0.5 to 1 mm thick: 1- to 2-cm margin
- 1 mm thick: 3-cm margin with underlying fat/fascia
- <0.76 mm thick: No mets—99.5% 10-year survival
- 1 to 3 mm thick: Sentinel node biopsy
- >3 mm thick: 48% 10-year survival

UV light damages epidermal DNA



20 - 30 years of exposure to develop tumor
Age-related decline in ability to repair DNA

Ultraviolet Spectrum

Type	Length	Effect	Sunscreens
UVA	320 to 400 nm penetrates deeply	No ozone absorption Most tanning booths Photoaging (wrinkling, leathery, sagging)	Benzophenones Parsol Zinc oxide
UVB	290 to 320 nm	Partial ozone absorbed Sunburns/skin cancer	Para-aminobenzoic acid (PABA)
UVC	<290 nm	Ozone absorbed	

UVA exacerbates UVB carcinogenic effects; likely plays a role on own.
Tanning booths: Why pay for cancer when you can get it for free?

Sun Protection Factor

- 10 minutes for unprotected skin to turn red
- SPF 15 sunscreen prevents reddening 15 times longer – 150 minutes
 - SPF 15 blocks 93% of UVB rays
 - SPF 30 blocks 97%
 - SPF 50 blocks 98%

And For How Long?

- No sunscreen is effective longer than 2 hours without reapplication
- So SPF-15 is good for 2.5 hours ...
- I recommend SPF-30 every 2 hours