



## Protecting Your Skin After Transplant

Celebrating a Second Chance at Life  
Survivorship Symposium

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The University of Texas  
MD Anderson Cancer Center

# Your Skin after Transplant

2022 Celebrating a Second Chance at Life Survivorship Symposium

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# No relevant disclosures

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## Learning objectives

Learn to identify:

- Types of skin problems that may develop after hematopoietic stem cell transplant (HSCT)
- Benign, pre-malignant and malignant skin lesions
- Strategies that reduce the risk of developing skin cancer

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## Potential Skin Problems after HSCT

- Dry skin
- Hair loss
- Photosensitivity
- Rashes related to medications
- Rashes related to infections
- Graft versus Host Disease (after allogeneic stem cell transplants)

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## Dry skin

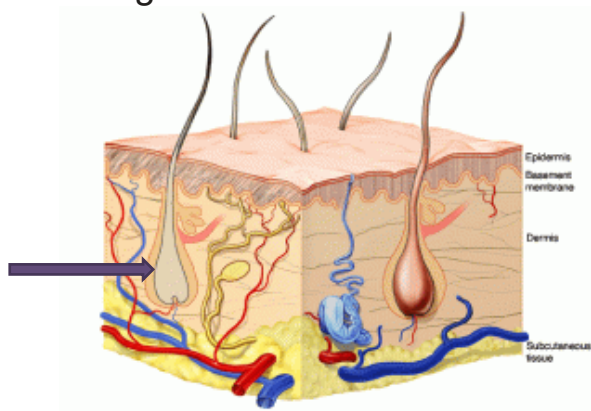
- May be related to medications, soaps, changes in bathing habits
- Symptoms: scaling, dryness, redness, itching
- **Treatment:**
  - Moisturizing creams (rather than lotions)
  - Non-scented creams
  - Apply with occlusion (under wraps) when necessary
  - Inflammation (red skin) may respond to topical steroids



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## Hair loss (Alopecia)

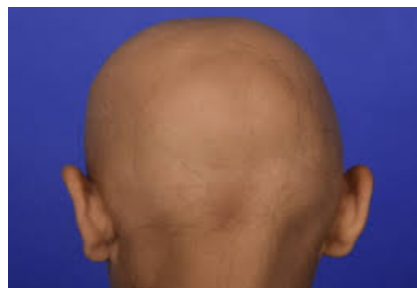
Non-scarring versus scarring



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## Non-Scarring Alopecia

- Chemotherapy and radiation may cause loss of hair (2-4 weeks post treatment)
- Stress and illness may cause temporary loss of hair
- **Prevention and treatment:**
  - Minimal hair and scalp trauma
  - Protect your scalp from the sun



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## Scarring alopecia

- Characterized by scale, loss of follicles and scar
- May be caused by infection or Graft-vs-Host (GVHD)
- Diagnose and treat early to prevent permanent hair loss



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## Sun Protection

- There may be increased sensitivity to sunlight manifested by exaggerated sunburn or rash in sun-exposed areas
- May be related to:
  - Skin pigment
  - Medications
  - Medical issues like GVHD or connective tissue disease

**Prevention is key = Photoprotection**



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## Rashes related to medications

- Any medication can cause a drug-related rash
- Stem cell patients are often on multiple new medications
- Drug rashes start days to weeks after a new medication
  - it's important to know the start dates of all medications
- Skin rashes are often red and itchy
- Rashes may become widespread even if the correct medication is identified and discontinued

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## Rashes related to medications

- Drug rashes may simply be a nuisance, but some become more serious
- Most rashes itch, but more serious rashes become painful, develop blisters and involve the mouth or eyes (mucosal surfaces)
- Drug rashes may be difficult to distinguish from rashes caused by viruses or GVHD



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## Rashes related to infections: Viral



- Viral rashes may look like drug rashes or like GVHD
- Both herpes simplex infections and herpes zoster (shingles) infections often present with grouped blisters

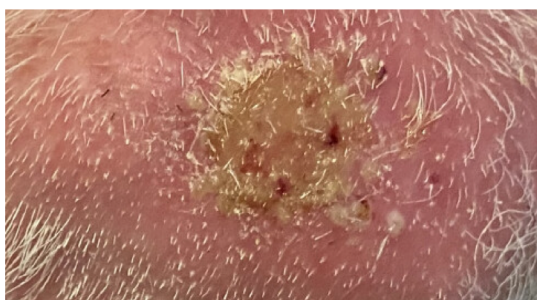


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## Rashes related to infection: Bacterial



- Immunosuppressed patients may develop bacterial and fungal infections that start in the blood and go to the skin



- Immunosuppressed patients may develop more extensive infections that start primarily in the skin

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## Non-cancerous skin lesions after transplantation



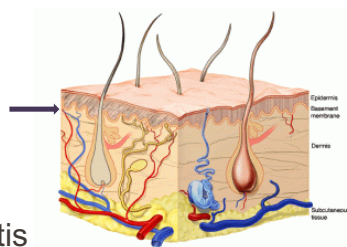
### Warts:

- Caused by human papilloma virus (HPV)
- May be more frequent in the immuno-suppressed patient
- Sometimes spontaneously resolve as the immune system reconstitutes
- Occur anywhere on the skin, including genitalia
- Are often multiple
- Occasionally are biopsied to ensure there is no malignant potential (especially on the genitalia)
- Are treated with destructive modalities (freezing, burning, surgery)
- May recur

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## Pre-malignant lesions: Actinic (Solar) Keratoses

- Proliferation of atypical keratinocytes
- Scaly, red spots on the skin
- Scaly spots on the lip are called actinic cheilitis
- May progress to squamous cell carcinoma
- Risk factors: sun damage, outdoor occupations, radiation, older age and individuals with freckles, light colored skin and hair



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## Actinic Keratoses: Treatment

Treat individual skin lesions: destruction

When confluent actinic keratoses are present:

- Treat a larger “field” of skin
- Topical chemotherapy (5 Fluorouracil cream)
- Topical chemical peels
- Photodynamic therapy

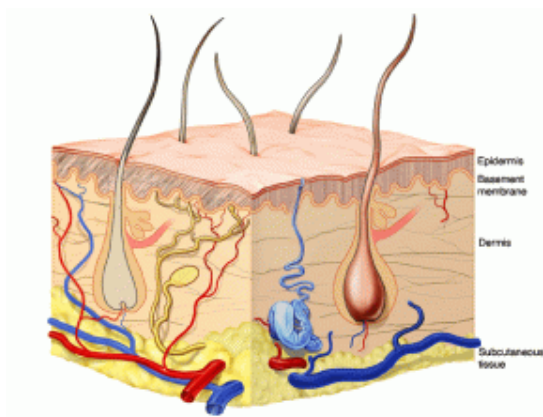
**Goal=Try to prevent progression to skin cancer**



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## Skin Cancer

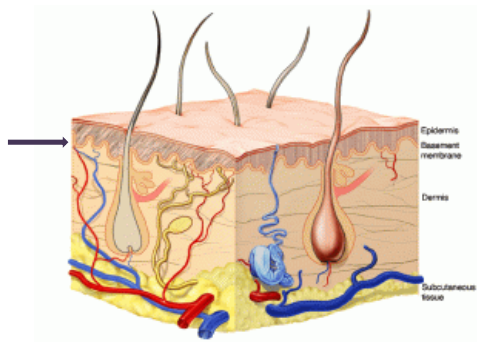
- Basal Cell Carcinoma
- Squamous Cell Carcinoma
- Melanoma



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## Basal Cell Carcinoma

- Most common skin cancer
- Usually don't metastasize
- Aggressive behavior somewhat dependent on the pathology and the patient



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## Basal Cell Carcinoma

### Risk Factors:

- Skin color
- Ultraviolet Radiation (UVR) sun exposure
- Ionizing radiation exposure
- Chemical exposure
- Genetic syndromes (rare)
- Immunosuppression

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## Basal Cell Carcinoma

- Pearly, shiny papule with telangiectasia
- Persistent red scaly area
- Scaly or bleeding spot
- Persistent scar-like spot



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## Basal Cell Carcinoma

- Usually, slow growing
- May become large and very destructive deep to the skin
- Try to diagnose and treat early



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## Diagnosis and Treatment

Skin biopsy for diagnosis

Treatment:

- Depends on size, location and pathology
- Destruction (freezing, burning, laser, chemical, 5Fluorouracil cream) versus surgery



## Squamous Cell Carcinoma – Risk Factors

- Skin pigmentation
- Sun damage
- Radiation exposure
- Actinic keratoses
- Human papillomavirus
- Certain medications
- Genetic (rare)
- Chemical exposure
- Chronic ulcers
- Immunosuppression
- Cigarette smoking

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## Invasive squamous cell carcinoma

- Usually in sun exposed areas
- Scaly red papule or plaque
- Ulcerated nodule



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## Diagnosis and Treatment

- Skin biopsy for diagnosis
- Treatment:
  - Depends on size, location, pathology
  - Surgery, destruction



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## Melanoma

**A**symmetry

**B**order

**C**olor

**D**iameter

**E**volution/enlargement



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## Evolution

- New spot
- Changing spot
- Symptomatic (itching, burning, bleeding)



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## Melanoma screening

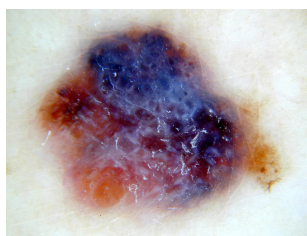
- Disrobe at routine MD visit
- Consider routine skin screening
- The American Academy of Dermatology offers a free annual screening event
- Community events with skin screening
- Self examination



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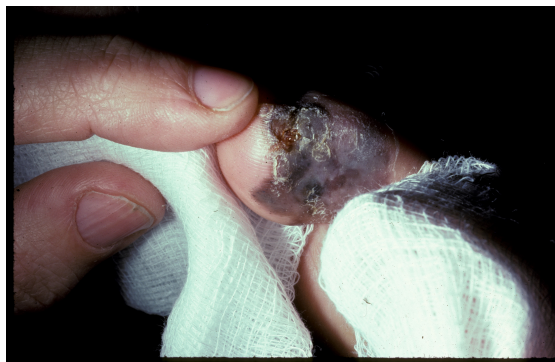
## At risk populations

- Family history of melanoma
- Many moles
- Personal history of melanoma
- Light skin and eyes
- Excessive UVR/tanning beds
- Atypical appearing moles
- Radiation therapy
- Immunosuppression
- Older age



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## Melanoma does not just occur in sun exposed skin areas



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## When in doubt...



**See your MD!**

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## Photoprotection



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## Sun protection

- At least 1 in 5 people will be diagnosed with skin cancer
- Annual incidence of skin cancer in US is over 3 million
- Ultraviolet radiation (including indoor tanning) is an initiator and promoter of non-melanoma skin cancer and melanoma

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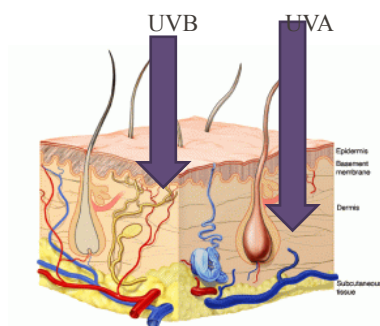
## Ultraviolet radiation: UVA and UVB

### UVB (290-320 nm):

- Sunburn, hyperpigmentation, photocarcinogenesis, photoaging
- Partially absorbed by ozone layer
- 5% of UV lighting reaching the earth's surface

### UVA (320-400 nm):

- Hyperpigmentation, photocarcinogenesis, photoaging
- Less sunburn
- 95% of UV reaching the earth's surface



**Photoprotection = Fewer Skin Cancers**

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## Photoprotection - Who needs it?

- Light skinned individuals who easily sunburn
- History of pre-cancerous/cancers lesions
- Children
- Immunosuppressed/chemotherapy
- Radiation Therapy
- GVHD
- Connective tissue disease
- Genetic photosensitivity
- Certain Medications

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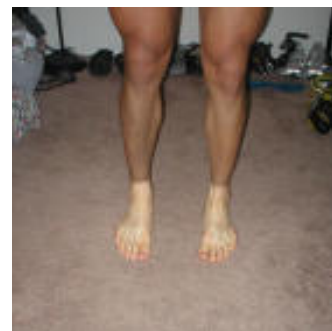
## Photoprotection

Avoid mid-day sun

Protect even on cloudy days

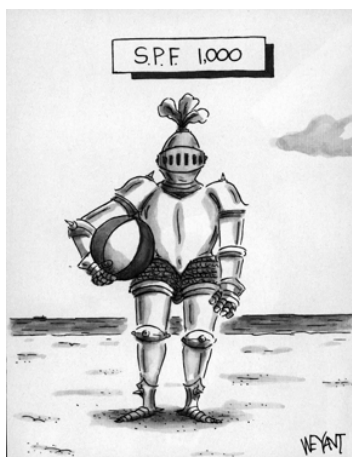
Protective clothing, sunglasses and hats (3-inch brim)

- Tighter clothing weave
- Darker clothing colors
- UV absorbing chemicals
- Wash cycle additives



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## Sunblocks and Sunscreen



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## Sunblocks and Sunscreens

SPF (sun protective factor) compares the time to erythema with sunscreen applied versus without the sunscreen.

For example, if you usually burn in 10 minutes, then an SPF of 10 will theoretically keep you from burning for 100 minutes **IF**:

- You apply the correct amount (at least 1 ounce), 15-30 minutes before sun exposure, re-apply every 2 hours
- You do not swim or sweat
- It is not outdated
- It is applied correctly

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## Sunscreens and Sunblocks

Keep in mind:

- SPF = UVB protection, NOT UVA protection

Look for:

- Label “broad spectrum” SPF as it is more protective against UVB and UVA
- Use an SPF of AT LEAST 30
- Look at the expiration date
- Do not store in the sun
- No sunscreen is “waterproof” only “water resistant” or “very water resistant”

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## What kind of sunscreens are on the market?

### Chemical sunscreens (organic filters)

- Absorb the sun's rays and contain one or more of the following ingredients: oxybenzone (UVA), avobenzone (UVA), octisalate, octocrylene or octinoxate (UVB).

### Physical sunscreens (mineral sunscreens or inorganic sunscreens)

- Act like a shield and deflect the sun's rays as well as absorb them.
- They contain either titanium dioxide, zinc oxide or both.
- They tend to be hypoallergenic and not irritating.
- Older formulations were cosmetically inferior.

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## Are sunscreens safe?

- Mineral (inorganic) filters –excellent safety profile in micronized form. Nanoparticle technology appears to be safe.
- Chemical (organic) filters
  - Randomized trials show some absorption, but recommendations remain the same for now.
  - Some UV filters (octinoxate, oxybenzone) were found to have estrogenic effects in vitro or animal models but may not be applicable in humans.
  - Some may cause coral reef bleaching.
- Inorganic and organic sunscreens are often combined.
- Do not use combination products with sunscreen + insect repellent.

Mohammed et al. J Invest Dermatol. 2019;139 PMID 30448212  
Matta et al. JAMA. 2020;323:256 PMID 31961417  
Serpone. Photochem Photobiol Sci. 2021;20:189 PMID 33721254

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## Sunless Tanning

“Bronzers” (caramel, walnut oil, jojoba)

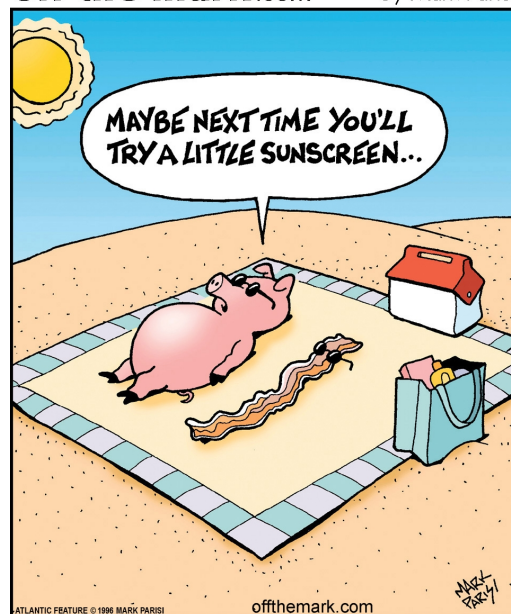
Dihydroxyacetone (DHA):

- sugar molecule reacts with amino acids in stratum corneum - reaction lasts for days
- Does not protect against sunburn
- Small amount may be absorbed



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## Learning objectives

- **Types of skin problems that may develop after stem cell transplant (HSCT)**
  - Dry skin
  - Hair loss
  - Photosensitivity
  - Rashes related to medications
  - Rashes related to infections
  - Graft versus Host Disease (after allogeneic stem cell transplants)
- **Benign, pre-malignant and malignant skin lesions**
  - Warts and actinic keratoses
  - Squamous cell carcinoma, basal cell carcinoma and melanoma
- **Strategies that reduce the risk of developing skin cancer**
  - Photoprotection

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# Thank you!

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# Questions?



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