

# How to Protect Your Skin After Transplant

## Celebrating a Second Chance at Life Survivorship Symposium

April 27 – May 3, 2024



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# Learning Objectives

1. Identify common skin conditions which may arise post-transplant, including dry skin and lips, itchy skin, skin bruising and acne.
2. Recognize skin wounds and skin infections, with emphasis on bacterial, fungal, and viral infections.
3. Review drug rashes, with a focus on life-threatening rashes.
4. Identify hair and nail changes.
5. Recognize skin cancer and understand the role of sunscreen in skin cancer prevention.

# Dry Skin

What causes dry skin?

- Genetics
- Skin conditions
- Medications
- Beauty products
- Environment
- Habits



DermNetNZ  
<https://dermnetnz.org/topics/asteatotic-eczema>



DermNetNZ  
<https://dermnetnz.org/topics/dry-skin>

# How To Treat Dry Skin

- Shower/wash hands with lukewarm water (not hot!)
- Keep showers/baths short
- Wear gloves when washing dishes
- Avoid harsh soaps
- Avoid fragrances
- Moisturize daily
- Use cream moisturizers
- Use moisturizers at night with white cotton gloves

# Dry Lips

What causes dry lips?

- Licking your lips
- Contact allergies
- Bacteria
- Yeast
- Chronic sun exposure
- Graft versus host disease



DermNetNZ

<https://dermnetnz.org/topics/lip-lickers-dermatitis>

# How To Treat Dry Lips

- Avoid licking your lips
- Moisturize with petroleum jelly
- Stop toothpaste, mouthwash with mint, cinnamon
- Use lip balm with SPF of at least 30
- Your doctor might prescribe topical antibiotics, topical antifungals, topical steroids



# Itchy Skin

What causes itchy skin?

- Dry skin
- Allergies
- Skin conditions (like eczema)
- Medications
- Medical conditions
- Disorders affecting the nerves



*DermNetNZ*

<https://dermnetnz.org/topics/pruritus><https://dermnetnz.org/topics/pruritus>

# How To Treat Itchy Skin

- Start with dry skin care
- Can use camphor menthol or pramoxine lotions
- Can try oral antihistamines (cetirizine, loratadine, fexofenadine, diphenhydramine)
- Your doctor may order labs to identify a possible underlying cause
- Additional treatments are available based on cause or if prescription medications are needed



# Skin Bruising

What causes skin bruising?

- Age (thinning skin)
- Sun exposure
- Medications (steroids, blood thinners)
- Disorders of platelets, blood clotting



DermNetNZ

<https://dermnetnz.org/topics/purpura>

# How To Reduce Bruising

- There are no easy treatments
- Skin protection is key
- Moisturizing helps
- There is some evidence for topical arnica creams
- Some patients try topical retinoids

# Acne

Myth: Only teenagers have acne.

- Acne can be caused by:
  - Skin type (oily skin)
  - Medications (topical steroids, oral steroids, chemotherapy)
  - Bacteria
  - Yeast
  - Demodex mites
  - Beauty products that clog pores



DermNetNZ

<https://dermnetnz.org/topics/steroid-acne>

Cynthia Chen. JAAD Case Rep. 2018 Nov  
14;4(10):1055-1058.

# How To Treat Acne

- Benzoyl peroxide, salicylic acid, glycolic acid washes
- Topical antibiotics
- Topical retinoids
- Oral antibiotics
- ...among many other treatment options
- Diet
  - can be triggered by “high glycemic index” foods, skim milk, chocolate
  - can be improved by probiotics

# Skin Wounds

Why do some wounds take longer to heal?

- Location (feet/legs)
- Medications
- Graft versus host disease
- Other skin disorders
- Swelling
- Nutritional deficiencies

*Wounds that do not heal should be checked for skin cancer*

# Skin Infections

## Common infections

- Superficial bacterial infection (impetigo)
- Superficial fungal infection (tinea corporis, “ringworm”)
- Cold sores (herpes simplex)
- Shingles (herpes zoster)



# Impetigo

- Contagious, bacterial skin infection of the surface of the skin
- Yellow, “honey-colored” crust
- Wound culture
- Topical or oral antibiotics



# Ringworm

- Fungal infection of the surface of the skin
- Round with bright red border
- Can be diagnosed with a scraping in clinic
- Topical or oral antifungals



DermNetNZ

<https://dermnetnz.org/topics/tinea-corporis>

# Nail fungus

- Fungal infection of the nail
- Can affect toenails and/or fingernails
- Hard to treat
- Clipping of the nail can help find fungus
- Topical or oral antifungals



DermNetNZ

<https://dermnetnz.org/topics/fungal-nail-infections>



# Viral infections

## Herpes simplex

- Painful blisters in a group on lips, genitals, buttocks, other area of body



DermNetNZ

<https://dermnetnz.org/cme/viral-infections/herpes-simplex>

## Shingles

- Painful blisters in a line



DermNetNZ

<https://dermnetnz.org/topics/herpes-zoster>

# HPV

- Human papillomavirus
- Warts
- Very common
- Patients on immunosuppression can develop many warts



<https://dermnetnz.org/topics/viral-wart>

# Serious Skin Infections

- Chemotherapy and medications that suppress the immune system can increase the risk of serious and less common infections caused by bacteria, fungi, and viruses.
- Always alert your doctor if you have worsening skin bumps or rashes, fever, feel unwell, and/or have other symptoms of concern.



# Drug Rashes

- Morbilliform (“measles-like”) drug rash
- Itchy red bumps on body that join together
- Usually starts 1-2 weeks after new medication



DermNet NZ  
<https://dermnetnz.org/topics/morbilliform-drug-reaction>

# Serious Drug Rashes

- Some drug rashes can be life-threatening
- Hives with swelling of the lips and tongue and trouble breathing
- Redness and swelling of the face, fever
- Painful skin with blisters, skin peeling off, sores in mouth and genitals

# Hair Loss

- Alopecia is the medical term for hair loss
- Two main types:
  1. Scarring
  2. Non-scarring

# Non-scarring Hair Loss

1. Chemotherapy-related (“anagen effluvium”)
2. Stress-related (“telogen effluvium”)
3. Autoimmune-related (“alopecia areata”)
4. Hormonal (“androgenetic alopecia”)



DermNetNZ  
<https://dermnetnz.org/topics/anagen-effluvium>



DermNetNZ  
<https://dermnetnz.org/topics/alopecia-areata>



# Scarring Hair Loss

- There are many types
- Usually have symptoms of rash, itch, redness, or scale of the scalp
- The scalp may also appear shiny
- Radiation, graft versus host disease



DermNetNZ  
<https://dermnetnz.org/topics/central-centrifugal-cicatricial-alopecia>



DermNetNZ  
<https://dermnetnz.org/topics/frontal-fibrosing-alopecia>

# Hair Loss Interventions

- Your doctor may check labs
  - Thyroid conditions, low Vitamin D, low iron can all cause hair loss
- Your doctor may recommend a scalp sample (“biopsy”)
  - Different treatments for different types of hair loss
- Your doctor may recommend topical minoxidil or other medications depending on the type of hair loss



# Supplements For Hair Loss

- Biotin, the most popular hair loss supplement, has NOT been shown to help hair regrowth
- It is still present in many over-the-counter supplements
- It can interfere with certain lab tests
- I do not recommend supplements unless there is a true deficiency

# Weak Nails

- Caused by: external factors (hot water, dry skin, other irritants), medications, certain medical conditions
- Treated with: dry skin care, avoidance of irritants, biotin 2500mcg per day, nail hardeners



# Skin Cancer

- Patients who have undergone bone marrow transplants have an increased risk of skin cancer
  - Incidence varies by study
  - 20-year cumulative incidence: 6.5% for basal cell skin cancer, 3.4% for squamous cell skin cancer
  - 2-4x increased risk compared to non-transplant patients

*DePry JL et al. JAMA Dermatol. 2015 Jul;151(7):775-82.  
Wong P, et al. Bone Marrow Transplant. 2024 01;59(1):144-146.*

# Risk Factors

- UV exposure
  - Sun: intermittent sunburns AND chronic exposure
  - Indoor tanning
- Light skin
- Medications
- Radiation
- Scars
- Chronic wounds
- Outdoor employment
- Genetics
- Smoking

# Transplant-Specific Risk Factors

- Basal cell skin cancer
  - Primary diagnosis: **leukemia**, lymphoma, malignant marrow disease
  - **Younger age** at transplant
  - **Chronic graft versus host disease**
  - Medications that suppress the immune system >2 years
  - Use of azathioprine

*DePry JL et al. JAMA Dermatol. 2015 Jul;151(7):775-82.*



# Transplant-Specific Risk Factors

- Squamous cell skin cancer
  - Prior diagnosis: **leukemia**, severe aplastic anemia
  - **Younger age** at transplant
  - Total body irradiation
  - Chronic graft versus host disease

# Basal Cell Skin Cancer

- Pink or red shiny bump
- Can be scaly
- Darker skin: purple or blue bump



DermNetNZ  
<https://dermnetnz.org/topics/basal-cell-carcinoma>

# Squamous Cell Skin Cancer

- Pink, red, purple scaly bump
- Sore or wound that does not heal
- Scar with new symptoms
- Painful





# Melanoma Skin Cancer

- Irregular, brown/black growth
- Can be pink
- ABCDEs of melanoma
- “Ugly duckling” sign



DermNetNZ  
<https://dermnetnz.org/topics/melanoma>  
<https://dermnetnz.org/topics/melanoma-in-skin-of-colour>

# Skin Cancer Affects All Skin Types

- Skin cancers may be diagnosed later and may have more aggressive features in patients with skin of color
- UV exposure plays less of a role
  - Squamous cell skin cancer is 8.5x more likely to occur in **non sun-exposed areas** in skin of color patients
  - Melanomas are also more likely to occur in **non sun-exposed areas** in skin of color patients
- Risk factors: radiation, immunosuppression, burns, chronic scars, ulcers

*Jackson, B.A., Jackson, B.A. (2013). Skin Cancers in Skin of Color. In: Alexis, A., Barbosa, V. (eds) Skin of Color. Springer, New York, NY.*

*Munjal A, Ferguson N. Dermatologic Clinics, 2023-07-01, Volume 41, Issue 3, Pages 481-489,*



# Treatments for Skin Cancer

- Treatment depends on the biopsy results
- Some thin, skin cancer subtypes can be treated with creams (for example, chemotherapy cream)
- Some are treated with electrodesiccation and curettage or liquid nitrogen
- Most require some form of surgery: excision or Mohs micrographic surgery
- More advanced skin cancers may need radiation, systemic therapy (chemotherapy, immunotherapy)

# Skin Cancer Screenings

- Many benign (non-cancerous) spots can also arise after transplant
- Although a skin check is recommended after bone marrow transplant, there are no clear guidelines
- Once a year is generally a good rule of thumb
- You should be seen sooner if there are any spots of concern, you have had a prior history of skin cancer, or you have many risk factors for skin cancer

# What is a Skin Check?

- You will be asked to remove your clothing, in many cases including your undergarments
- You will be asked to wear a gown
- You will be checked from your head to your toes
- Your doctor may use a dermatoscope to zoom in on features
- A skin biopsy may be performed



# Sun Protection

- More than just sunscreen!
- Seek shade
- Avoid peak sun hours
- Wear a hat
- Wear ultraviolet protection factor (UPF) clothing

# SPF

- Sun protection factor
- A product with **SPF 30** should allow you to spend **30 times** as much time in the sun before turning red

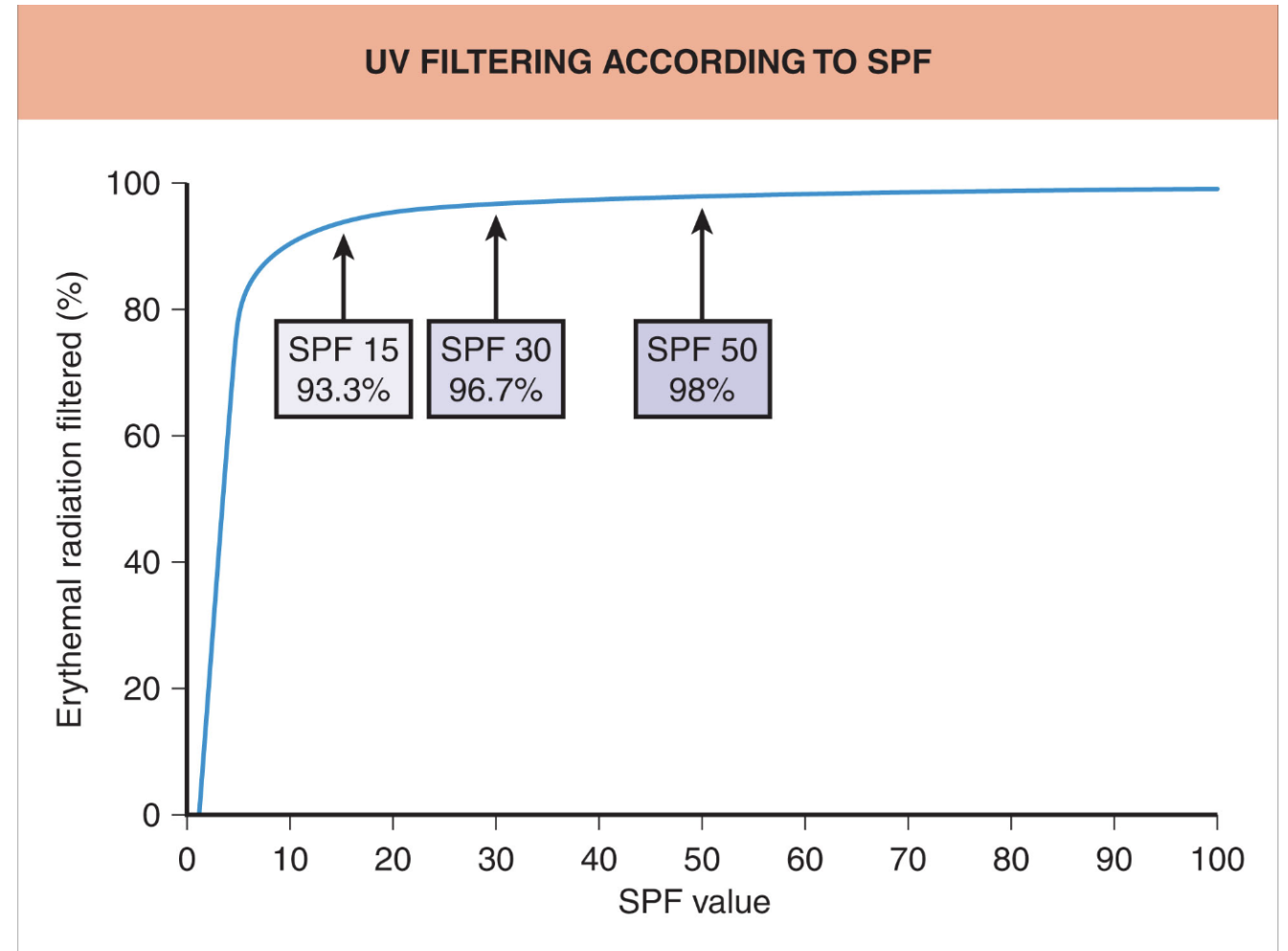


Fig. 132.2

Relationship between sun protection factor (SPF) and the amount of UV radiation that is filtered by a sunscreen .



## But...

- You have to put enough sunscreen on to reach that SPF
  - **1.5 oz**
- You have to reapply (does not last >2 hours)

# Sunscreen

Physical Blockers	Chemical Blockers
Zinc oxide, titanium dioxide	Avobenzone, oxybenzone, octocrylene, among many others
Scatter UV	Absorb UV
	Oxybenzone and octinoxate may promote bleaching of coral reefs
Can leave a white residue on skin	Absorbs well into skin

# How Do I Choose a Sunscreen?

- The best sunscreen is the one you will wear
- Broad-spectrum (blocks UVA + UVB)
- At least SPF 30 (choose a bit higher to account for imperfect application)
- Consider water-resistant depending on your activities

# Benefits Of Sunscreen

- Prevents skin cancer
- Prevents aging
- Reduces sensitivity to the sun (for patients on medications that cause sensitivity or who have skin conditions that cause sensitivity)
- Prevention of sunburns can help curtail flares of graft versus host disease

# Is Sunscreen Safe?

- It can cause minor skin irritation
- Allergies to sunscreen are rare, but can occur
- Can sunscreen cause cancer or have hormonal effects?
  - **Chemical** blockers **can** be absorbed into the body
  - BUT, we lack data linking this absorption to cancer or hormonal disruption
  - If you are concerned, you can:
    - Avoid chemical blockers and use only physical blockers
    - Wear UPF clothing to reduce how much sunscreen you need to apply
  - Remember: we have **clear** data that UV exposure causes skin cancer



# What About Vitamin D?

- Most people can obtain adequate Vitamin D levels via diet and supplements
- Dietary sources: oily fish (salmon, mackerel, and blue fish), fortified milk, fortified dairy products
- Supplements: Vitamin D2 or D3

# Take Home Points

1. Dry skin, dry lips, itchy skin, skin bruising, and acne are common skin conditions which may arise post-transplant.
2. Notify your doctor if you have concerns about bacterial, fungal, or viral skin infections, or if you notice new skin wounds.
3. While many drug rashes are easily treated, keep an eye out for hives, swelling, fever, trouble breathing, painful or peeling skin, and sores in the mouth and genitals.
4. Hair loss and weak nails can occur post-transplant.
5. Skin cancer is more common post-transplant and can present in different ways.
6. Sun avoidance and protection are important to prevent skin cancer.



# Questions?



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# Let Us Know How We Can Help You

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