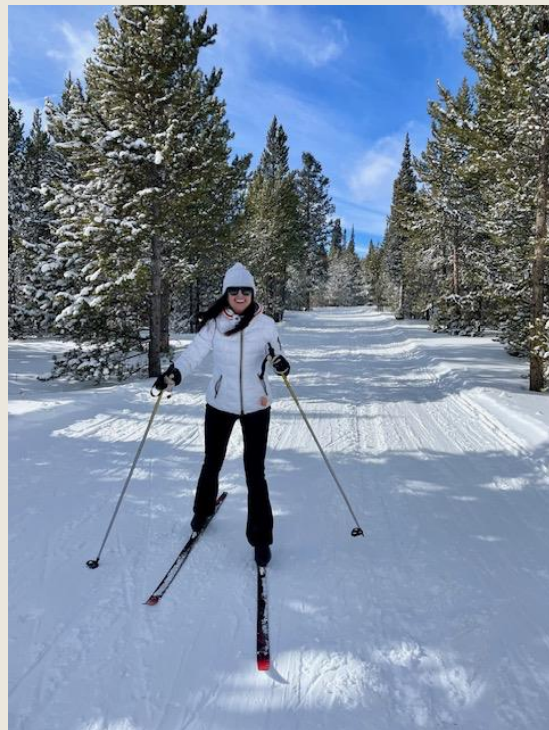





SKIN 101

Dr. Caroline Hagan
Board-certified Dermatologist
April 16, 2025





Topics of Conversation




Types of skin cancer



Treatment and prevention



Common benign growths



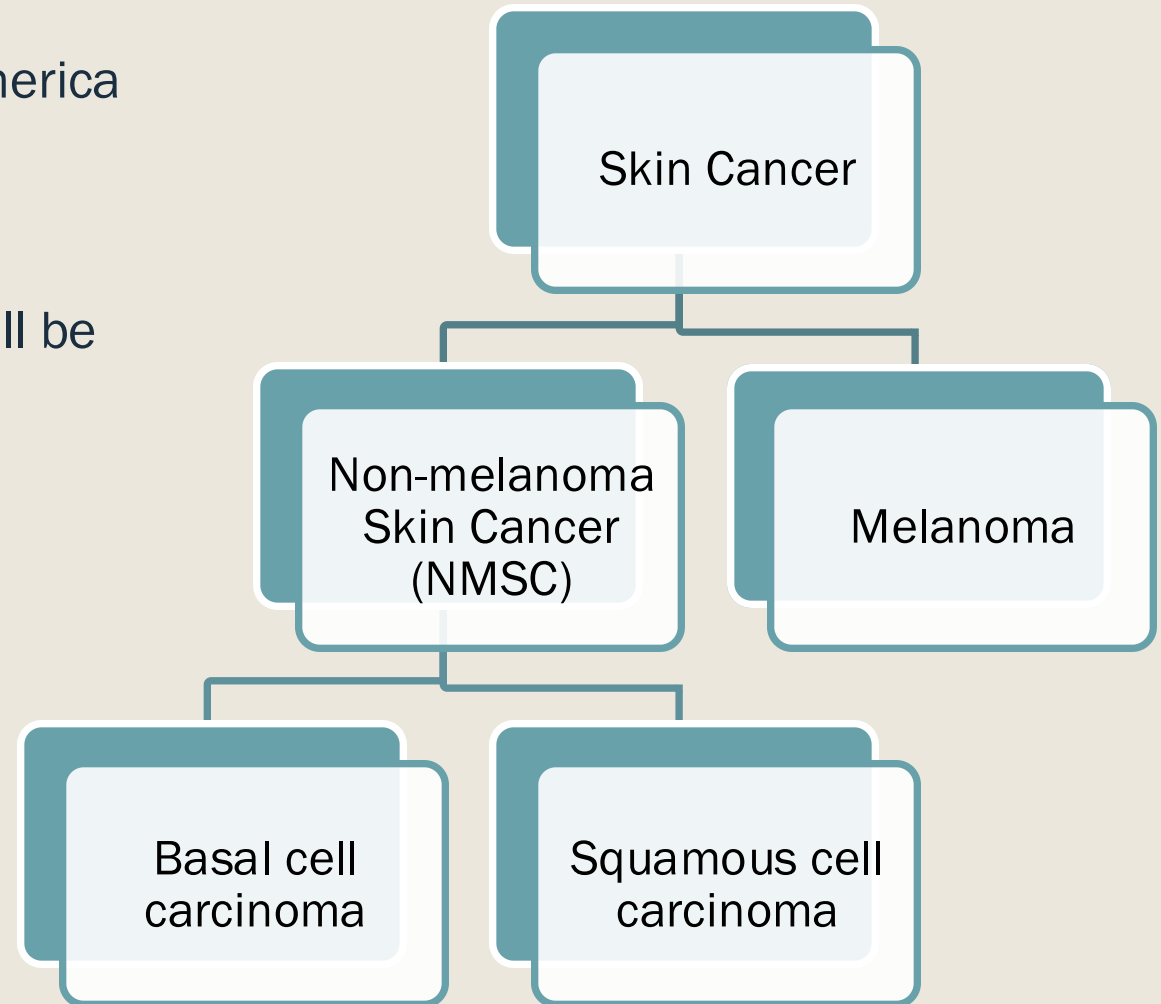
Common rashes

SKIN CANCER



Relevance of Skin Cancer in the US

- Most common type of cancer in America
 - 3.6 million BCC/year
 - 1.2 million SCC/year
- Estimated that 1 in 5 Americans will be diagnosed
- Women > Men
- More than 1 million living with melanoma
- Very treatable when caught early



Risk Factors

- Chronic low level of UVR over time
- Intense, periodic episodes of UVR
- Indoor tanning bed exposure
- Blistering sunburns in childhood
- Skin type
- Immunocompromised
- >50 moles

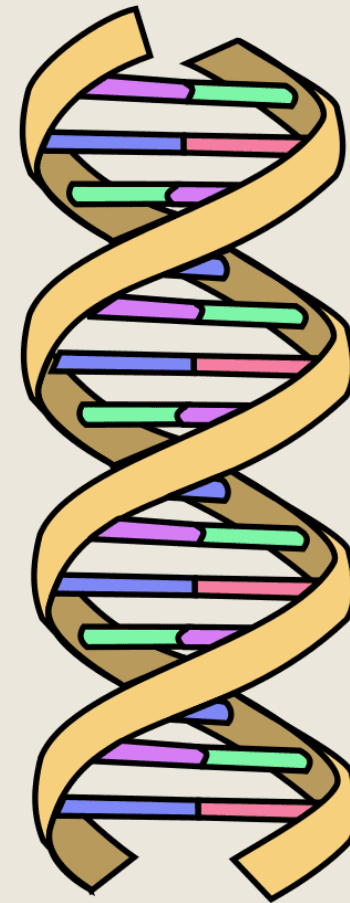


The Fitzpatrick Scale					
					
TYPE I Light, pale white	TYPE II White, fair	TYPE III Medium, white to olive	TYPE IV Olive.	TYPE V Brown, dark brown	TYPE VI Black, very dark brown to black
Always burns, never tans	Usually burns, tans with difficulty	Sometimes mild burn, gradually tans to olive	Rarely burns, tans with ease to a moderate brown	Very rarely burns, tans very easily	Never burns, tans very easily, deeply pigmented

Causes of Skin Cancer



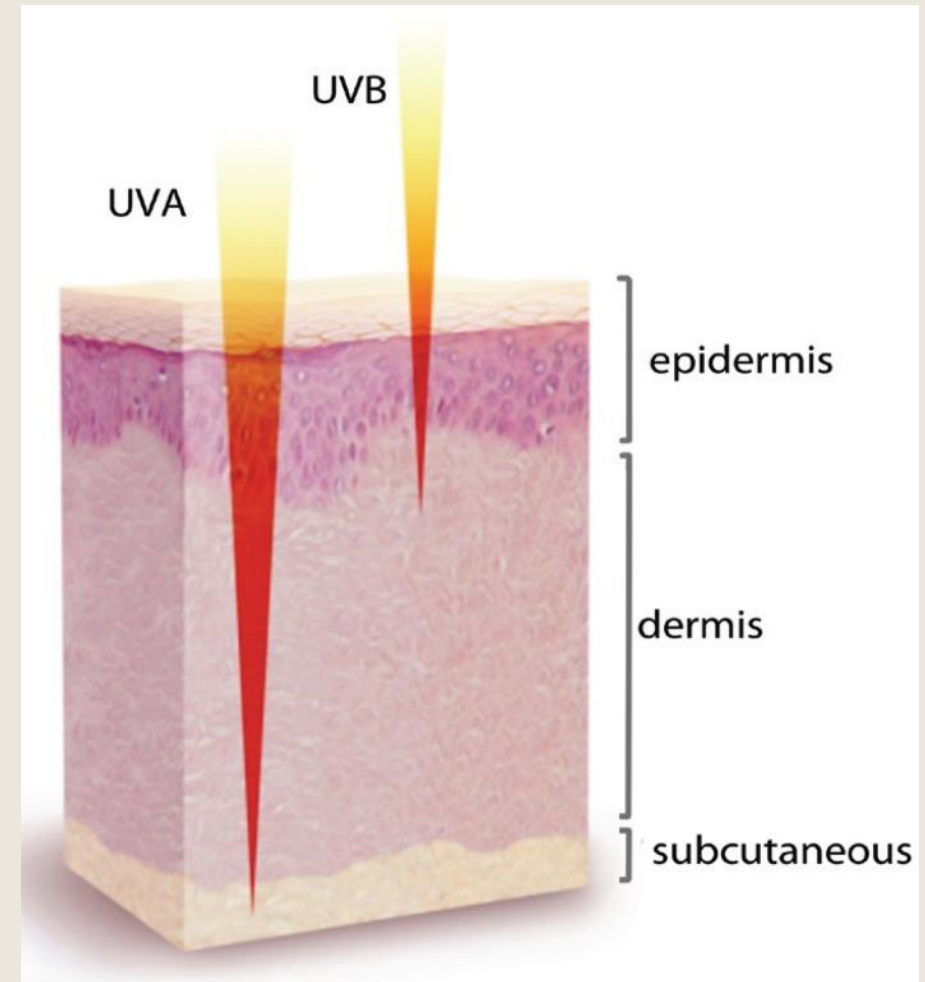
+



DNA

Ultraviolet Radiation

- UVR
 - UVA (320-400nm)
 - UVB (290-320nm)
- Exposure leads to cell injury and death → sunburn
- Cellular mutations accumulate over time → skin malignancy





Actinic Damage

- Actinic keratosis
 - Precancerous lesion most common in the areas exposed to chronic UVR
 - Precursors to skin cancer formation
- Risk of transformation into a skin cancer
- Easily identified on routine skin exams
- Treatment:
 - Liquid nitrogen
 - Field treatment



DO YOU KNOW THE DIFFERENT TYPES OF SKIN CANCER?



Basal Cell

Most common form
of skin cancer



Squamous Cell

Second most common form
of skin cancer



Melanoma

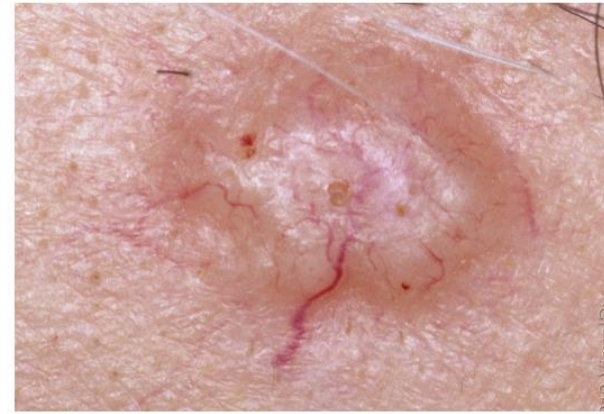
Most serious form
of skin cancer



BASIL

Basal Cell Carcinoma

- Very low risk and slow growing
- “Pearly” bump with rolled borders
- May exhibit:
 - Crisp vessels
 - Pigment globules
 - Rash-like
- Subtypes:
 - Nodular
 - Superficial
 - Infiltrative



DO YOU KNOW THE DIFFERENT TYPES OF SKIN CANCER?



Basal Cell

Most common form
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Squamous Cell

Second most common form
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Melanoma

Most serious form
of skin cancer

Squamous Cell Carcinoma

- Second most common type
- Can be pink, red, brown
- Variety of subtypes that appear different clinically
- Firm, dome shaped bump
- Non-healing scaly lesion
 - Tenderness!
- Non-healing sore or wound
- Cutaneous horn



DO YOU KNOW THE DIFFERENT TYPES OF SKIN CANCER?



Basal Cell

Most common form
of skin cancer



Squamous Cell

Second most common form
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Melanoma

Most serious form
of skin cancer

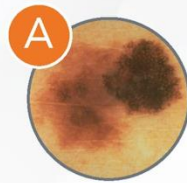
Melanoma

- Higher risk due to potential of spread to lymphatics and other organs
- 5th most common diagnosed
- M>W
- 31% increase between 2011-2019
- Subtypes
 - In-situ
 - Superficial spreading
 - Nodular
 - Acral lentiginous
 - Amelanotic
- Any new brown lesion on your body should be evaluated by a dermatologist



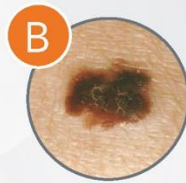
Know the ABCDEs of Melanoma

Melanoma is the deadliest form of skin cancer. However, when detected early, it can be effectively treated. Look for the following warning signs of melanoma when performing skin exams:



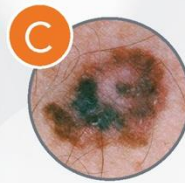
ASYMMETRY

One half is unlike the other half.



BORDER

Irregular, scalloped or poorly defined border.



COLOR

Varied from one area to another; has shades of tan, brown or black; sometimes white, red, or blue.



DIAMETER

While melanomas are typically greater than 6mm (the size of a pencil eraser) when diagnosed, they can be smaller.



EVOLVING

A mole or skin lesion that looks different from the rest or is changing in size, shape or color.

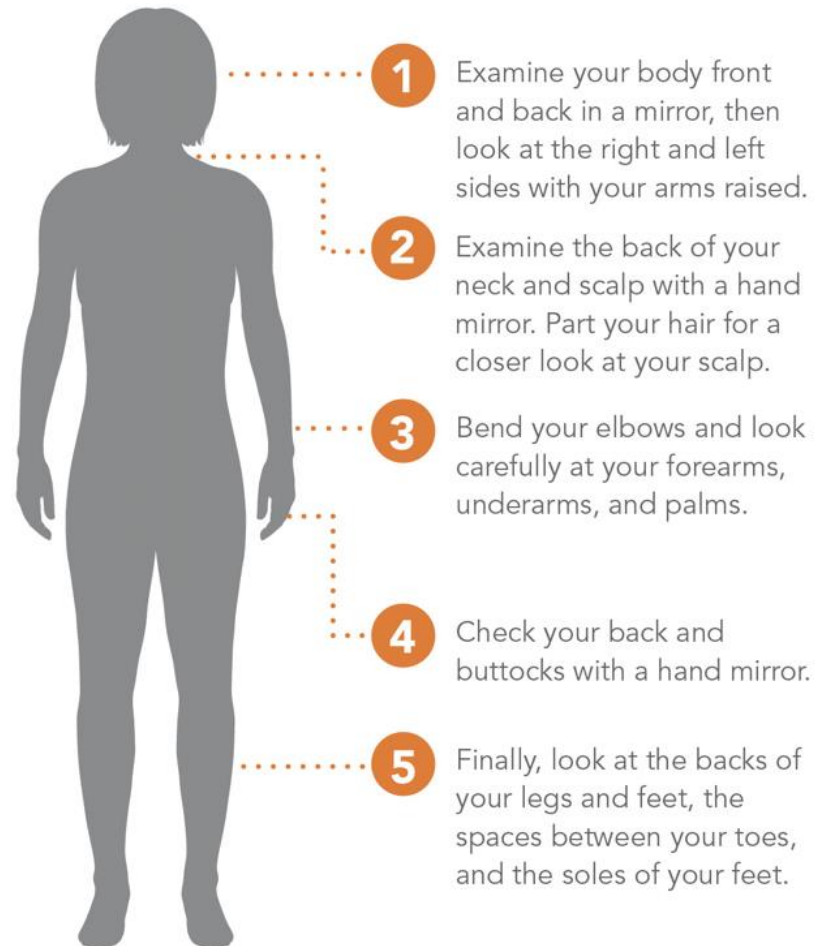
Example:



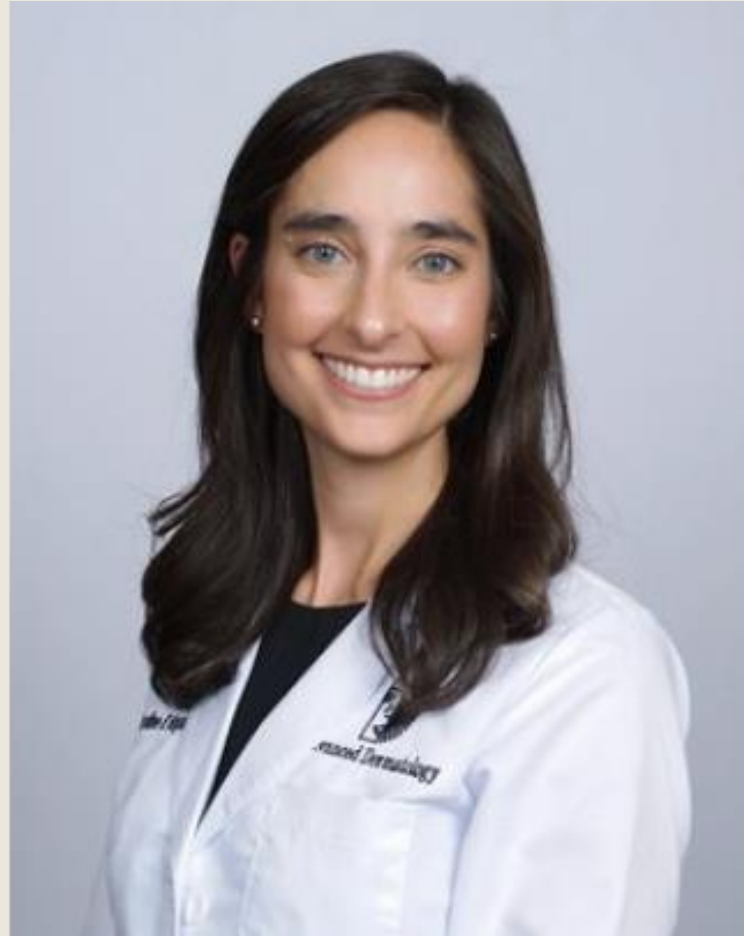
Skin Cancer Self-Examination

How to Check Your Spots:

Performing a skin self-exam means taking note of all the spots on your body, from moles to freckles to age spots. Skin cancer can develop anywhere on the skin and is one of the few cancers you can usually see on your body. Ask someone for help when checking your skin, especially in hard-to-see places like the scalp and back. Follow these steps:



But then go
see your
dermatologist!

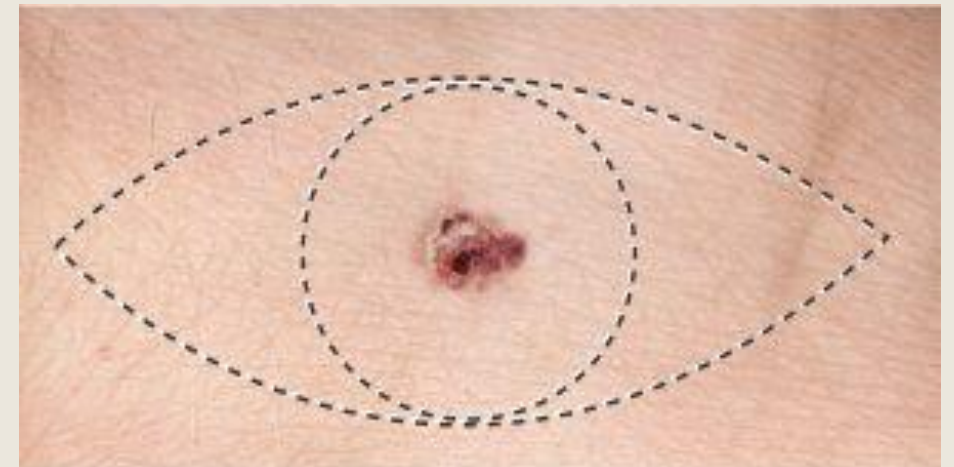
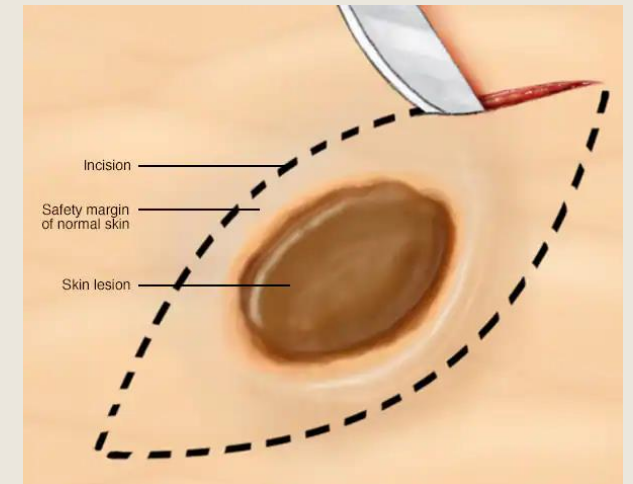


TREATMENT



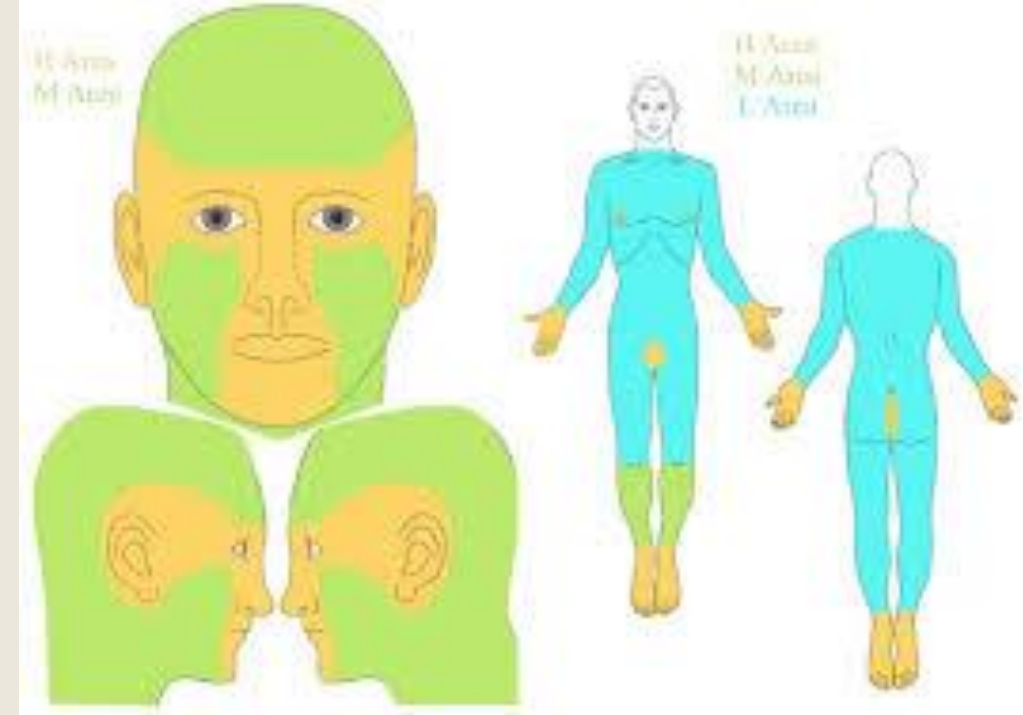
Common Treatments

- Very treatable if detected early
- Multiple treatment options exist
- Can be discussed with your dermatologist
- Common treatment options:
 - Electrodesiccation and curettage (ED&C)
 - Excision
 - Mohs
- Melanoma
 - Excision
 - Additional treatments depending on stage
 - Sentinel lymph node biopsy, immunotherapy, radiation
- Increased frequency of skin checks



Mohs Surgery

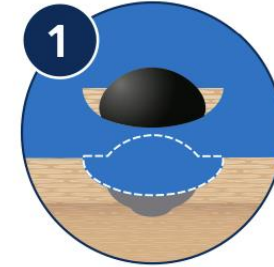
- Mohs micrographic surgery
- Gold standard for many lesions in high risk areas
- Appropriate use criteria (AUC)
- High risk areas include:
 - Mask distribution on face
 - Hands and feet
 - Genitalia
- Also based on tumor characteristics and individual patient risk factors



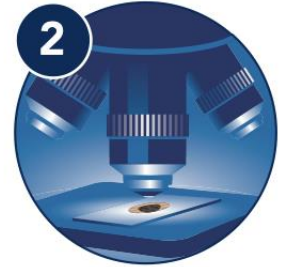
Overall Concept

1. Disc-shape or layer removed based on the visible lesion
2. The surgeon then visualizes the tumor under the microscope
 - Margins (lateral and deep) are visualized in real time
3. If involved, another layer is taken only in the area with skin cancer cells
4. Repeat layers are performed until all margins clear
5. Wound defect is repaired
 - Simple repair
 - Flap
 - Graft

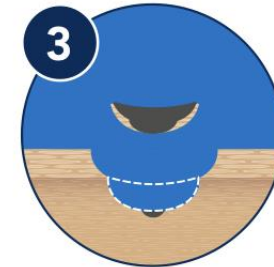
What to Expect During MOHS SURGERY?



The visible tumor and a thin layer of surrounding skin are removed.



The tissue is examined under a microscope to see if any cancer cells remain at any of the edges.



If any cancer cells remain, additional skin is removed and examined under the microscope.





This process continues until no more cancer cells are found at the edges.

If you have questions about how to care for your skin, talk to a board-certified dermatologist. Learn more at aad.org/public.

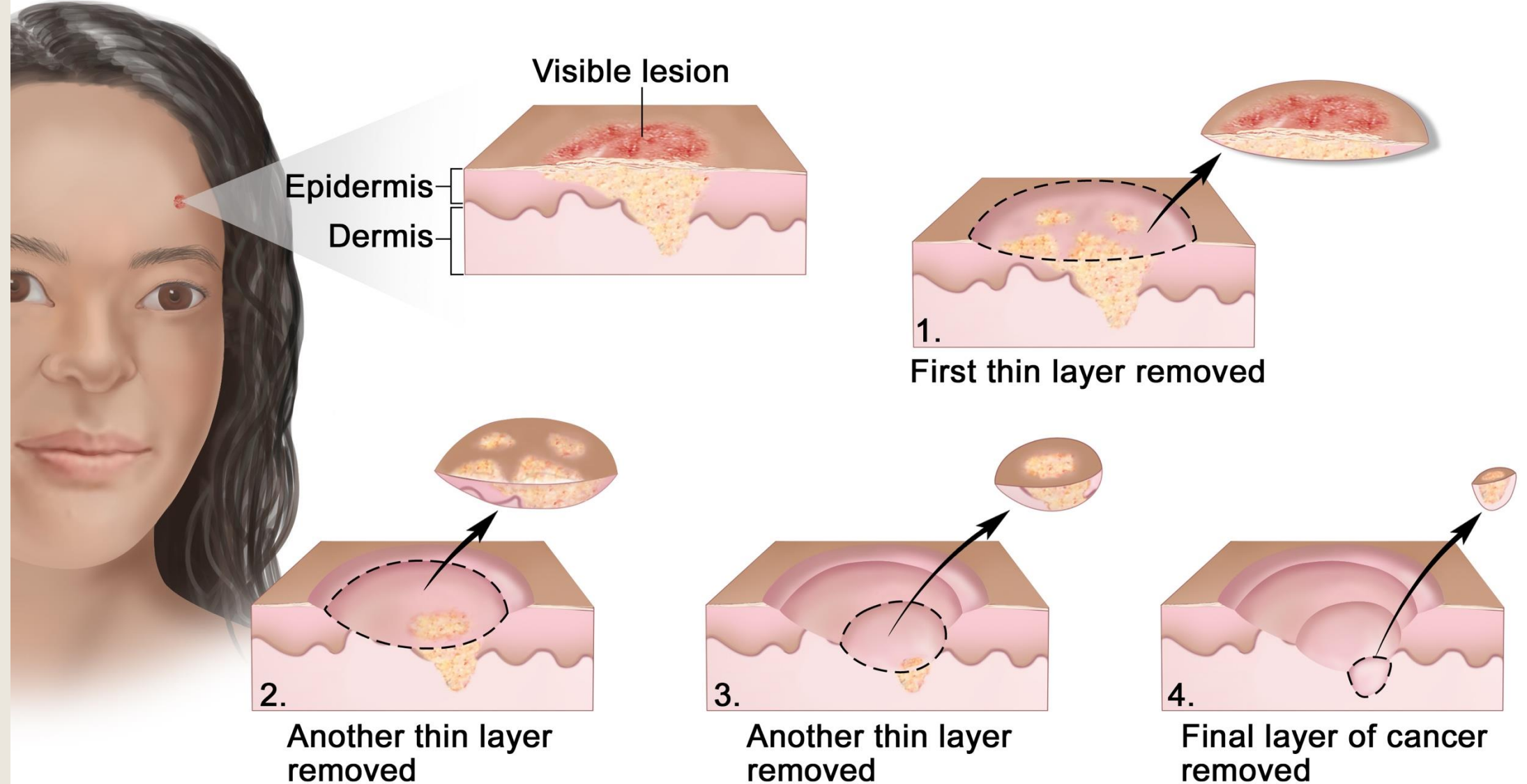
Key Benefits of Mohs

- Highest cure rate
 - Around 99% for BCC and SCC treated
- Tissue sparing
 - Least amount of tissue affected
 - Guided by microscopic analysis
- Cosmetic outcome

Stage I	MA: <u>AP</u>	Stage II	MA: <u>MM</u>
Size: <u>3.4x2</u>	Local: <u>2</u> cc	Size: <u>3.5x2.8</u>	Local: <u>2</u> cc
			
Time in: <u>2:00</u> Time Out: <u>2:30</u> Notes:		Time in: <u>3:15</u> Time Out: <u>3:30</u> Notes:	
Tumor Debulk: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Tumor Type/Pattern/Morphology: <u>SCC</u>		If Positive c/w prior histo: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Tumor Type/Pattern/Morphology:	
Depth of invasion: <u>epi dermis</u> Dense Inflammation: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Perineural Invasion: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Scar Tissue: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Depth of invasion: _____ Dense Inflammation: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Perineural Invasion: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Scar Tissue: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	



Mohs Surgery



PREVENTION



Sun Protective Behaviors

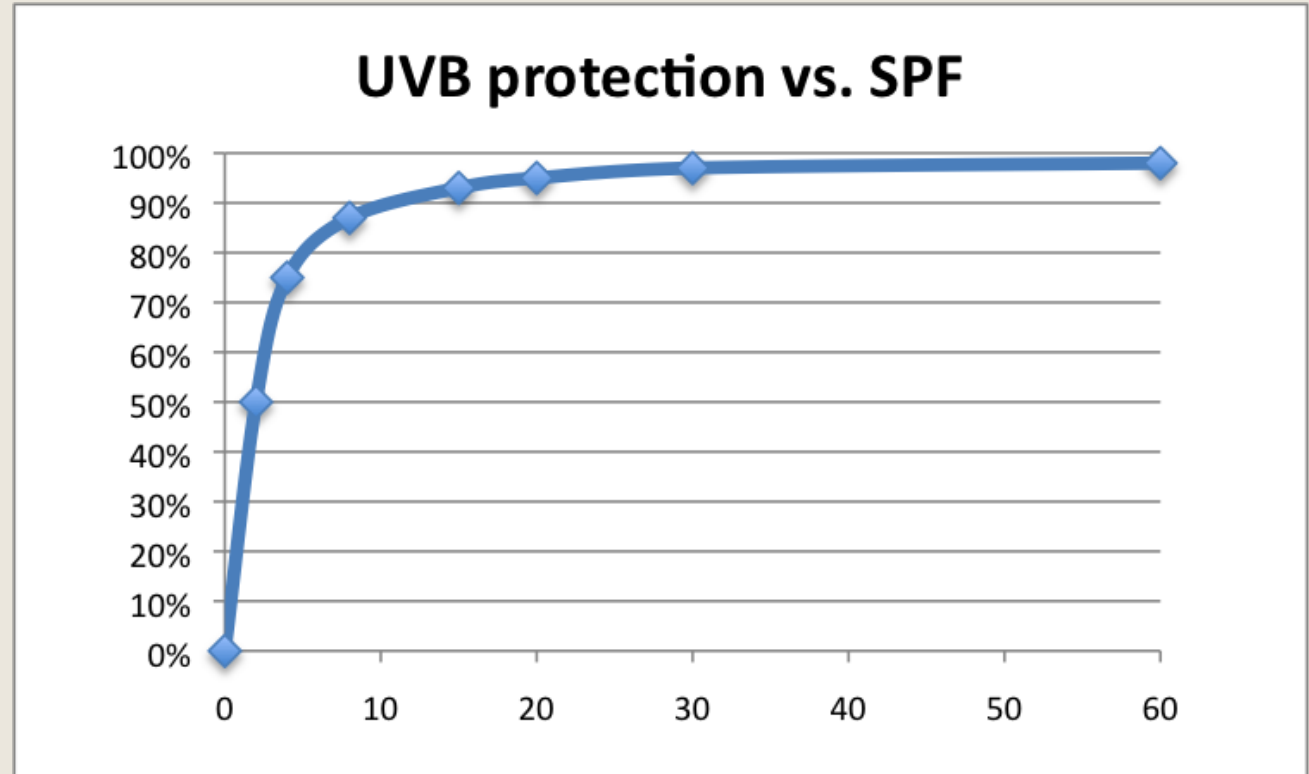
- Sunscreen! (to be continued...)
- Seek shade
- Avoid peak hours of sun exposure (10am-2pm)
- Sun protective clothing
 - Broad-brimmed hats
 - UPF shirts, sleeves, gloves
 - UPF 50 or greater is recommended
- Avoid indoor tanning beds
- Instill good habits in children and grandchildren



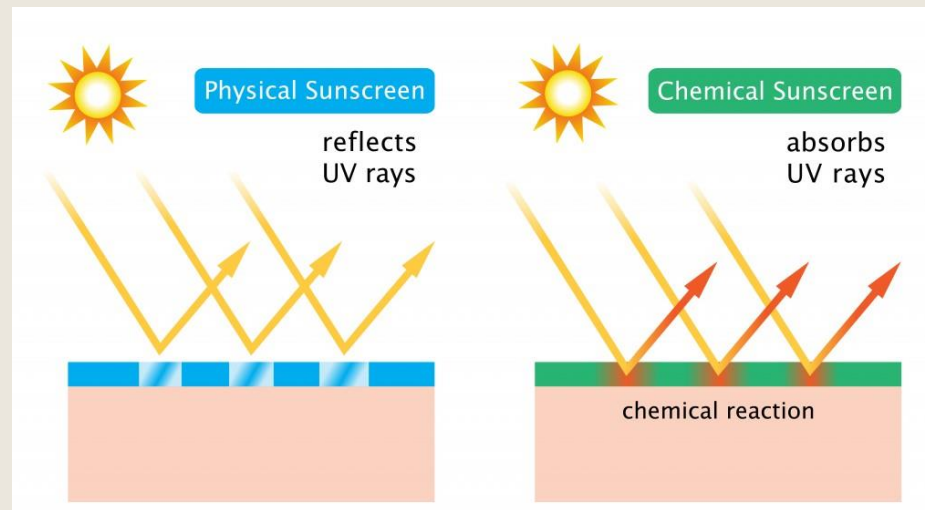


Sunscreen

- SPF or sun protection factor
 - A measure of how much solar energy is required to burn protected skin versus unprotected skin
- No relevance to amount of time exposed
- Daily application of SPF 30 or greater



Types of Sunscreen



Physical/Mineral

- Reflect UVR
- Broader spectrum of coverage
- Ingredients:
 - Zinc oxide
 - Titanium dioxide

Chemical

- Absorb UVR and dissipate heat
- More cosmetically appealing
- Ingredients:
 - Avobenzone
 - Oxybenzone
 - Homosalate
 - Octisalate
 - Octinoxate
 - Octocrylene
 - Aminobenzoic acid

Key Features of Sunscreen

- Broad spectrum
 - UVA and UVB protection
- SPF 30 or greater
- Water resistant
- Adequate amount
 - 1 oz. daily for exposed upper body
- Reapplication every 2 hours
- Check the expiration date!

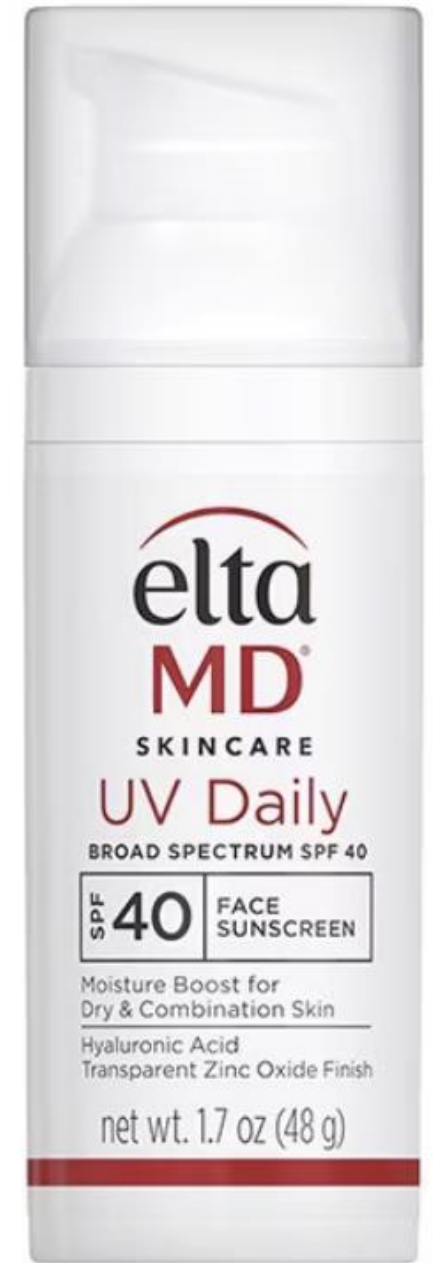


Vehicle of Application

- Creams
 - Even spread and good coverage of BSA
 - Tinted SPF protects from visible light
- Gels
 - Good for oily skin, beard areas
- Sticks
 - Mess free, great for reapplication, on-the-go, athletes
- Sprays
 - Convenient, easy to use
 - Drawback of uneven and inadequate application







#1 PICK:

THE ONE YOU
WILL
USE...DAILY!



Impact on Vitamin D Levels

- Heightened concern for suboptimal Vitamin D levels with strict sun protection
- Widely bioavailable in foods
- Evidence reviewed and discussed from 13 experts
 - Dermatologist, endocrinologist, photobiologist, epidemiologist, biological anthropologist
- Results
 - Vitamin D status was not significantly affected in healthy population applying daily application to sun exposed areas
 - Increased concern for people with photosensitizing disorders
 - More adherent to strict sun protective behaviors
 - Routine screening recommended
- 5 minutes of midday sun may provide adequate levels

Heliocare

- Dietary supplement taken orally to limit damaging effects of UV
- Antioxidant + Nicotinamide (Vitamin B3)
 - Decreased number of new non-melanoma skin cancers and actinic keratoses
- Extract from *Polypodium leucotomos* fern
- Additive to daily sunscreen application
- Strongly recommended for patients with photosensitizing disorders
- Great for all of Colorado's outdoor activities



\$30.99!

BENIGN GROWTHS



Seborrheic Keratosis

- Genetic
- Can break all of the rules of normal!
- Can be flat or raised, wart-like
- All shades of brown, pink, or flesh colored
- This is a benign growth that has no cancerous potential
- Will always be benign
- Treatment for itchy, painful, or traumatized lesions
- Cosmetic removal is optional



Seborrheic keratoses vary widely in appearance

© H Lui, UBCDerm



Cherry Angiomas

- Genetic
- Benign vascular lesions
- Small, smooth red bumps
- No risk of transformation
- Treatment:
 - Cautery
 - Laser



Normal Benign Nevi

- Cluster of pigment producing cells, called melanocytes
- Pink, brown, flesh colored
- Congenital vs acquired
- Occasionally, can become irritated from minor trauma
- Subtypes
 - Junctional
 - Compound
 - Intradermal

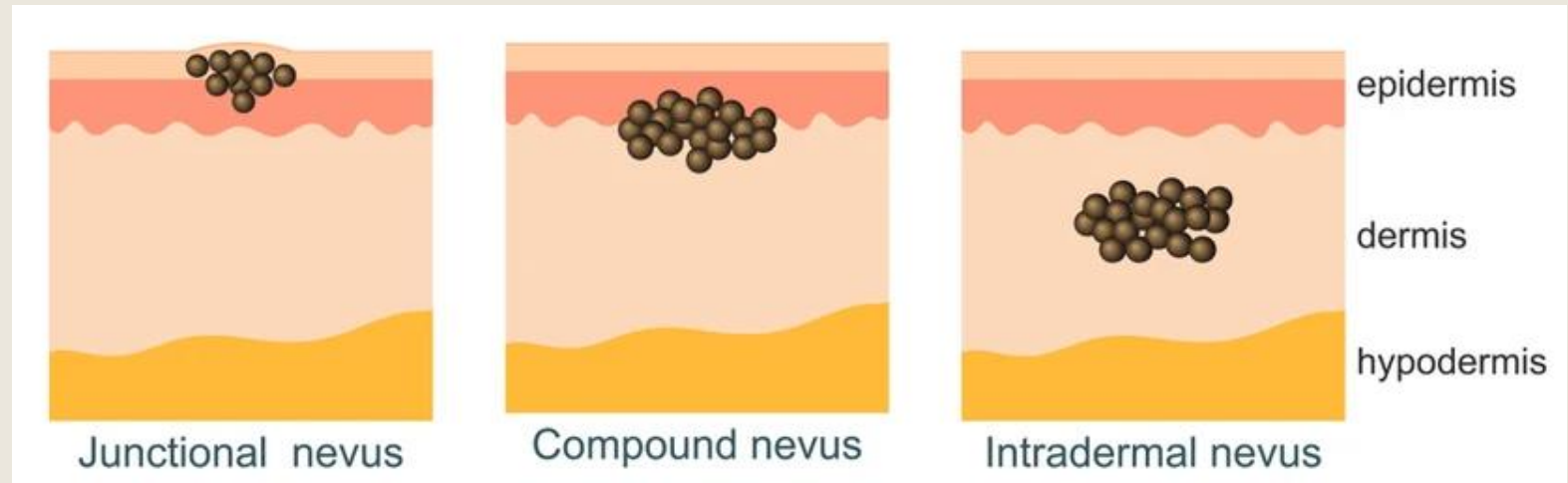
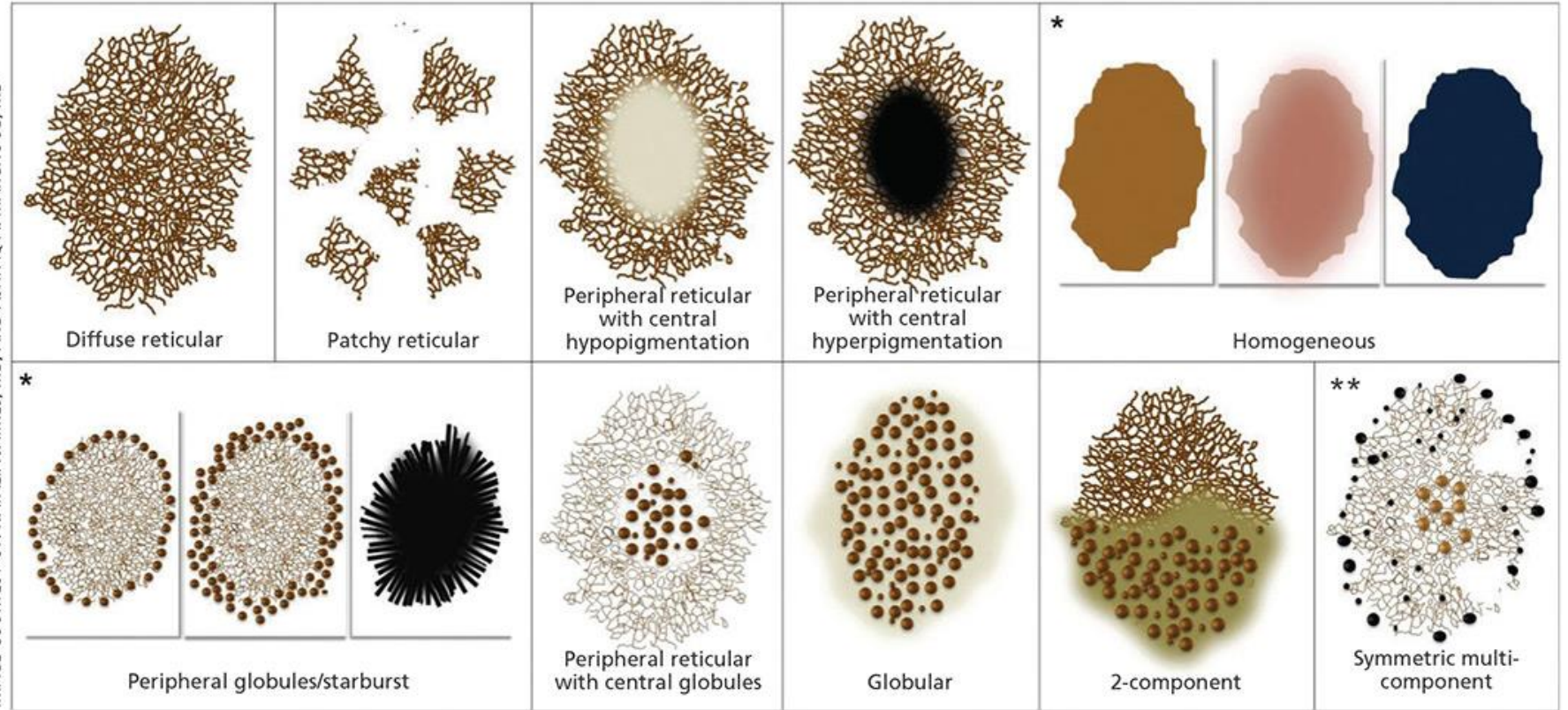




FIGURE 12

Benign nevi patterns

IMAGE COURTESY OF: NATALIA JAIMES, MD, AND ASHAQ A. MARGHOUB, MD

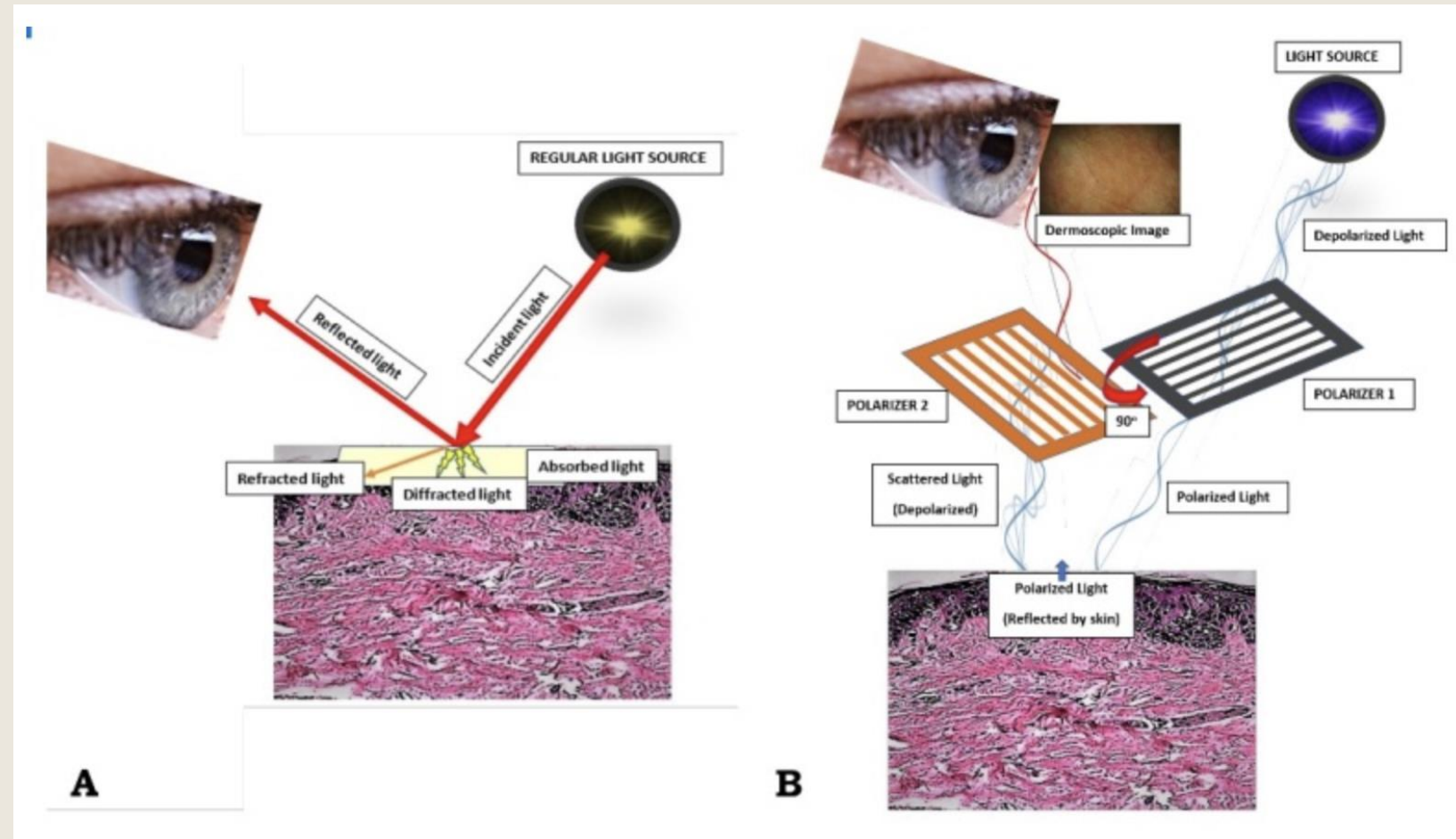


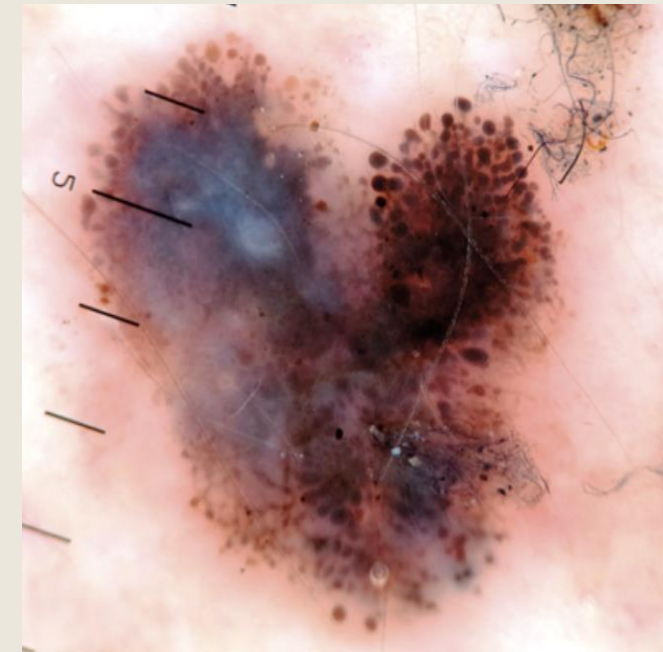
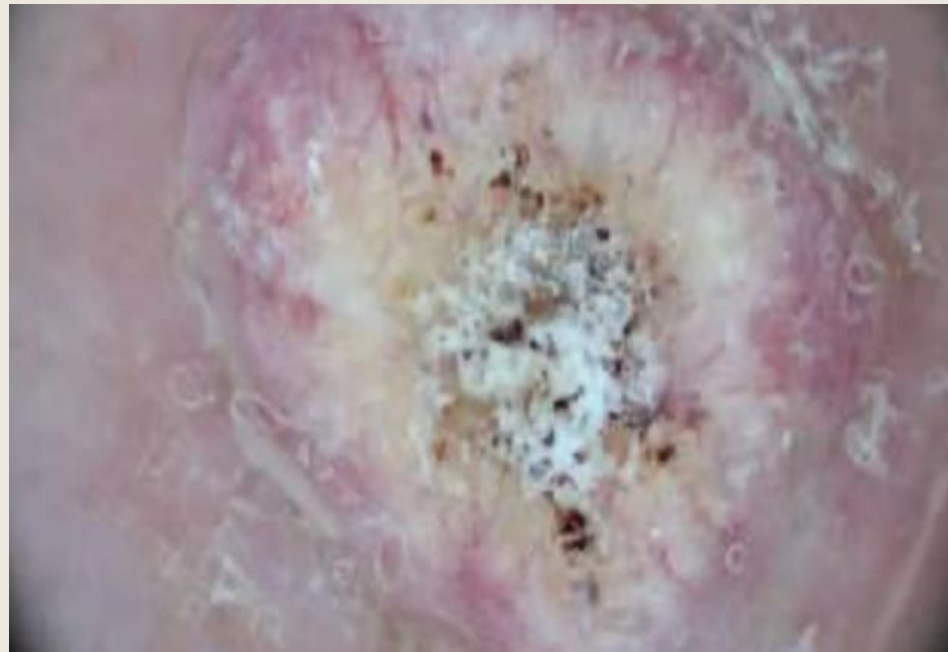
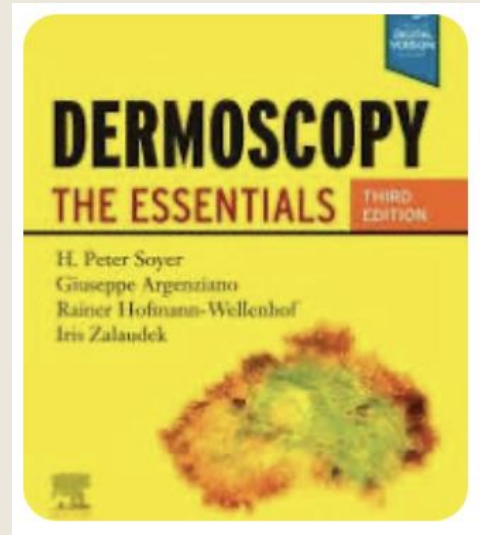
*Benign patterns encountered in many acquired nevi and dysplastic nevi. Blue nevi, some Spitz nevi, and congenital melanocytic nevi can also manifest some of these patterns.

**Nevi with this pattern should be interpreted with caution.

Dermoscopy

- Evaluation of lesions with 10x magnification
- Polarization
- Non-invasive tool for diagnosing lesions
- Analysis of pigment networks
- Optimizes close clinical monitoring





COMMON RASHES



Atopic Dermatitis

- Medical term for “eczema”
- Mild activity appears like dry, scaly skin
- Exacerbated by dry, cold air
 - “Winter’s itch”
- Genetic predisposition
- Excessive transepidermal water loss
- Dry skin becomes inflamed
- Treatment: thick daily moisturizing creams and topical steroid creams prescribed by your dermatologist



Gentle Skin Care Tips

- Tub > pump bottle
- Bland, simple products
- Avoid fragrance
- Thicker product provides optimal hydration
- Apply within five minutes of completing your shower
- Short, lukewarm showers
- Avoid soap on extremities



Seborrheic Dermatitis

- Medical term for dandruff
- Inflammatory reaction of the skin to excess oil
- Common sites:
 - Scalp and posterior ears
 - Eyebrows
 - Nasolabial folds
- “Greasy” scales with redness
- Treatment:
 - Anti-dandruff shampoo
 - Wash more frequently
 - **Avoid** excessive lotion or cream to the area
 - Potentially need prescription topicals



Summary

- Skin cancer is the leading cause of cancer in the US
- Early detection of non-melanoma and melanoma skin cancers can be life saving
 - Annual full body skin exams
 - Know your ABCDEs of moles
- It is never too late for prevention
- Strive for daily sunscreen application of 30 or greater
- Do not hesitate to seek lesion evaluation by your dermatologist





THANK YOU!

Hope it was SKINteresting!

Caroline Hagan, MD

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Denver