

# Sun Safety & Skin Cancer Prevention

An Educational Program for University Students

Adopted from the Sun Safe Colorado- Preventing Skin Cancer at Work Training PPT Slides

# Introduction

- The following four modules will help you understand
  - 1) your personal risk for skin cancer
  - 2) how sun damages the skin
  - 3) how to reduce sun exposure
  - 4) how to spot skin cancer early

# MODULE 1:

*Know Your Personal Risk*

# Personal Risk Factors

## GENETICS (Who you are)

Lighter skin, hair and eyes  
Family history of skin cancer

## ENVIRONMENT (Where you live)

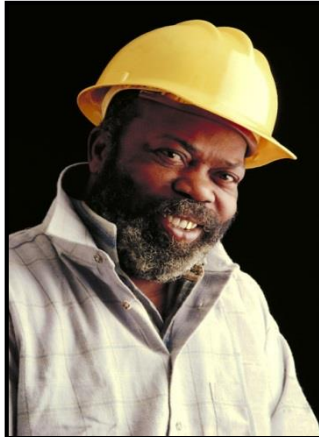
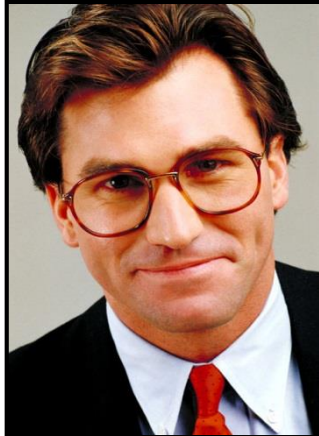
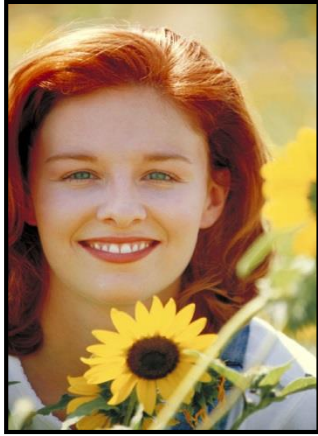
High Altitude  
Low Latitude  
Sunny Climate  
Ground Reflection

**GREATER RISK!**

## BEHAVIOR (What you do)

Unprotected time outdoors  
Especially in midday peak sun intensity hours

# What's your skin type?



- I** Always burns, never tans, sensitive to sun exposure
- II** Burns easily, tans minimally
- III** Burns moderately, tans gradually to light brown
- IV** Burns minimally, always tans well to moderately brown
- V** Rarely burns, tans profusely to dark
- VI** Never burns, deeply pigmented, least sensitive

# Genetic High Risk Factors

- Blond or red hair
- Blue, green or gray eyes
- Fair skin
- Skin that freckles and burns easily
- Many moles; large moles
- Family members with melanoma

# Environmental High Risk Factors

## ▶ Altitude

- In places with higher elevation the atmosphere becomes thinner and you are exposed to more UV rays.

## ▶ Latitude

- Due to the angle of the sun, the closer you are to the equator, the more intense the sun's UV rays.

## ▶ Climate

- Locations that have a lot of clear sunny days throughout the year are exposed to more intense UV rays than places with varying seasons.

# Behavioral High Risk Factors

- Do you stay out all day in the sun without protection?
- Do you sunbathe to get a tan?
- Do you sunburn?
- Do you go to a tanning salon?

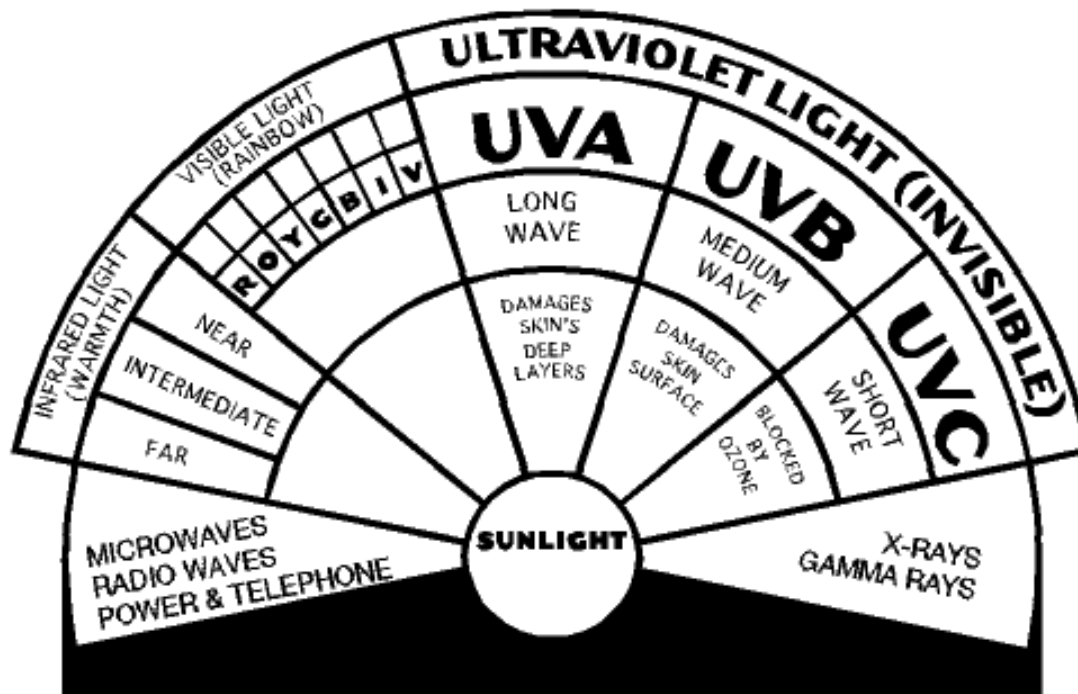


# MODULE 2:

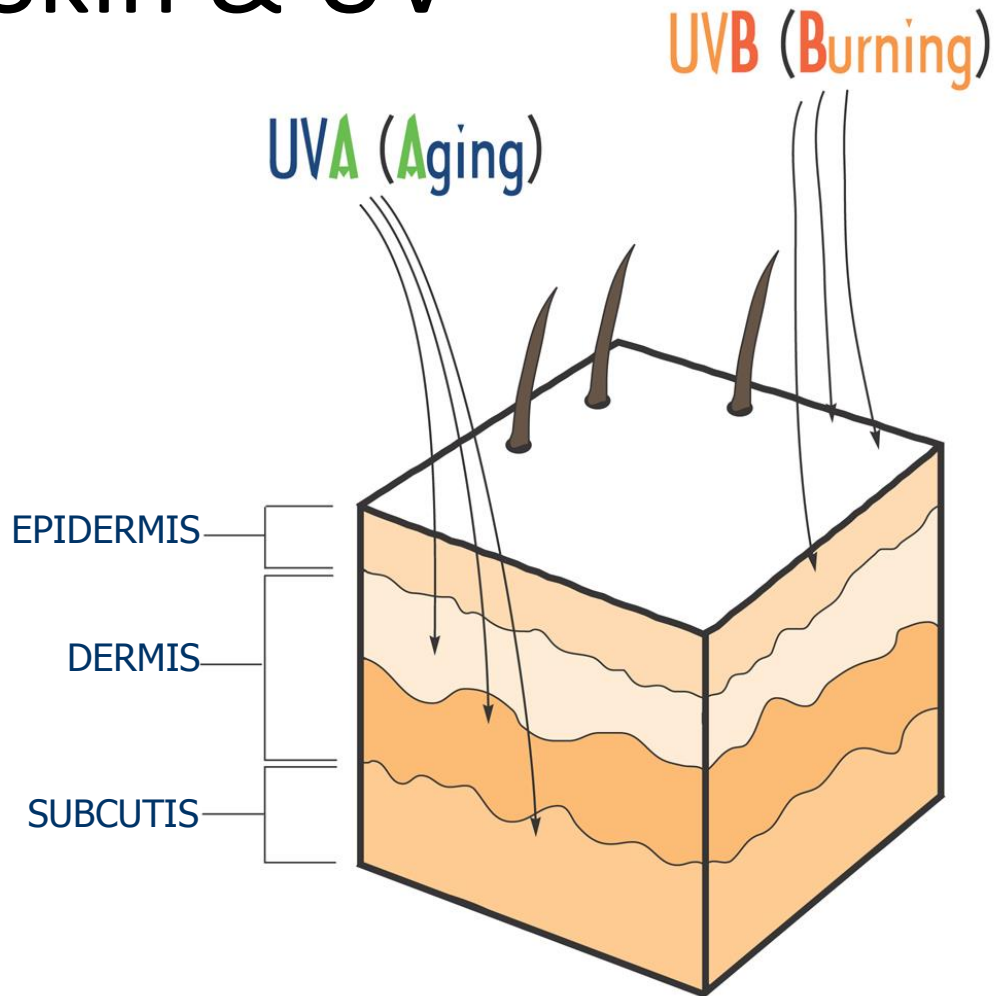
## *How Sun Damages The Skin*

*At least 90% of skin cancer is caused by ultraviolet radiation.*

# Electromagnetic Spectrum



# Skin & UV



UV Radiation is 95% UVA & 5% UVB.

UVA causes tanning, aging & skin cancer.

UVB causes burning & skin cancer.

Tanning beds emit 2-3 times more UVA than the sun.

# Suntans & Sunburns

- A suntan tells you that your skin is trying to protect itself from damaging UV rays.
- Suntans give a very small amount of protection from sunburn, but the skin gets damage while getting the tan, including aging from UVA rays and lifetime sun exposure.
- Sunburns cause wrinkles, premature skin aging and skin cancer.
- Avoid severe sunburns from intense, intermittent exposure to UV rays.
- Avoid continual exposure to UV rays over your lifetime.

# Skin Cancer Formation

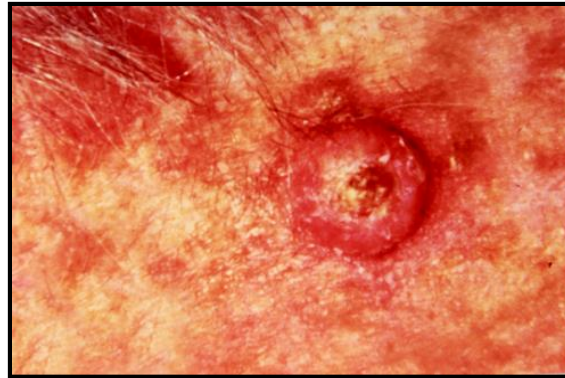
- UVA and UVB rays hit the epidermis, reaching cellular DNA
- DNA in skin cells is damaged
- To prevent more damage, skin produces melanin (tanning)
- The immune system tries to repair damaged cells, but sometimes mistakes (mutations) are made
- Mutations can result in skin cancer within 5 years

# Skin Cancer

Basal Cell



Squamous Cell



Melanoma



# MODULE 3:

## *Reduce Your Sun Exposure*

*Regular UV protection can reduce skin cancer risk by 80%.*

# Limit Your Time In The Sun

- Schedule outdoor activities to avoid intense midday hours (10 am to 4 pm).
- Seek shade or go inside when you can.
- Shade can reduce UV by 75%.
- Eat lunch inside or in the shade.
- Use portable shade cover.
- Car window glass blocks UVB but not all UVA.
- Clouds block only 20-40% of UV.





# Check the UV Index daily

- Sun protection is needed when the UV Index is 3 (moderate) or higher.
- Use sun protection at high altitude in the winter months.
- UV increases about 4-5% with every 1000 feet gained in elevation.
- <https://www.epa.gov/enviro/uv-index-search>

# Sun Safe Clothing

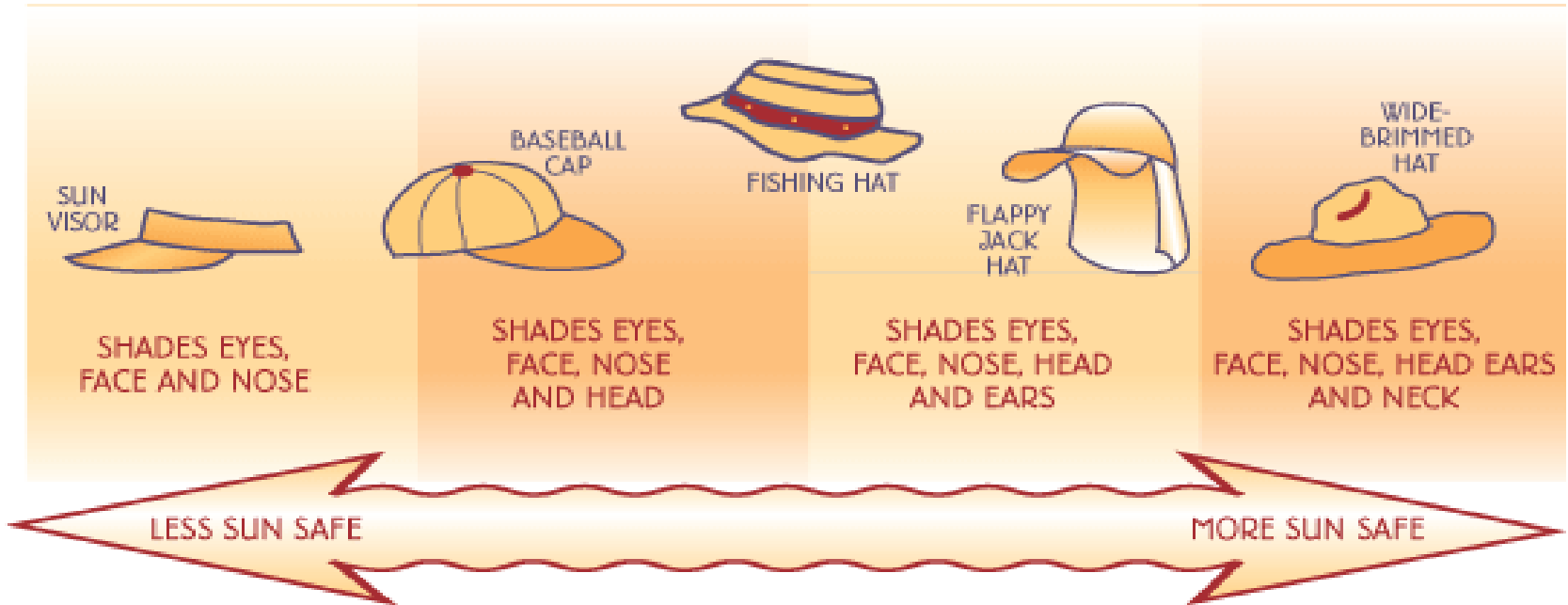
- Clothing can block 100% of UV.
- Wear clothing that covers a large amount of your skin.
- Long-sleeve shirts and long pants are best.
- Choose clothing that is made from fabric with a tight weave that allows little or no light to pass through.
- Wear gloves to protect your hands.
- Choose wide-brimmed hats.



# What is UPF?

- UPF = Ultraviolet Protection Factor
- Like SPF for fabric
- Fabrics are not tested on humans like sunscreen
- The higher the UPF the more UV that's blocked
- Sun protective = UPF 15 to 50+
- White t-shirt = about UPF 5

# The Sun Safety of Hats



Choose wide-brimmed hats.  
But, any hat is better than NO hat!

# Sunglasses

- The eye absorbs >99% of UV.
- UV rays can:
  - harm your eyes
  - cause cataracts, macular degeneration & blindness
- Select and wear large sunglasses that block 99-100% of UV rays.
- Look for lenses that meet ANSI Z80.3
- Darker lenses are not necessarily better.
- Expensive lenses are not necessarily better.

# Sunscreen

- Choose SPF 15 or more.
- Use “broad-spectrum” sunscreen UVA and UVB.
- Apply 15-30 minutes prior to sun exposure.
- Apply all over exposed skin, including your ears, neck and hands.
- Slop it on! – on average, you should use an amount the size of a large grape to cover your face, ears and neck.
- Reapply every two hours or more often after swimming or sweating.
- Choose water-resistant sunscreen.
- Make using sunscreen a habit.

# What is SPF?

- SPF = Sun Protection Factor
- SPF is a number that tells you how long a sunscreen will protect your skin from sunburn.
- SPF also tells you the amount of protection.
  - SPF 15 blocks 93% of UVB
  - SPF 30 blocks 97% of UVB
  - SPF 50 blocks 98% of UVB
- SPF is not a measure of UVA protection.
- However, most sunscreens do block UVB and UVA.

# Calculating SPF

$$\begin{array}{r} \text{Your Time To Burn Without Protection} \\ \times \text{ SPF of your sunscreen} \\ \hline = \text{ \_\_\_\_\_\_ MINUTES UNTIL SKIN BURNS} \end{array}$$

*Example:*

*12 minutes x SPF 30 = 360 minutes (6 hours) until sunburn*



# Vitamin D

- Vitamin D sufficiency is important for overall good health. Most people can satisfy the body's requirement for vitamin D from casual exposure to sunlight.
  - 10-15 minutes of sun exposure twice a week to the face, arms, hands, or back without sunscreen is usually sufficient to provide adequate Vitamin D.
- Obese, darker skinned and older people can be at risk for Vitamin D deficiency, but consumption of fortified milk or orange juice will provide the necessary amount of Vitamin D.

# MODULE 4:

## *Early Detection*

***At least 95% of skin cancer can be cured if detected early.***

# Check Your Skin

- Look for changes in spots, moles or sores that do not heal.
- Use the ABCDE\* rule for moles:
  - **A** is for **Asymmetry**: One half of the mole or birthmark does not match the other.
  - **B** is for **Border**: The edges are ragged, irregular, or poorly defined.
  - **C** is for **Color**: The color varies from one area to another; may have differing shades of brown or black, sometimes white, red or blue.
  - **D** is for **Diameter**: The area is larger than 6 mm (as a general rule, the size of a pencil eraser) and is growing larger.
  - **E** is for **Evolving**: If there are any changes in the size, color, shape or texture of a mole, the development of a new mole, or any other unusual changes in the skin, see your dermatologist immediately.



\*Source: American Academy of Dermatology, Skin Cancer Foundation

# How to perform a monthly skin check:

- Examine your body front and back in the mirror, then right and left sides arms raised.
- Bend elbows and look carefully at forearms and upper underarms and palms.
- Look at the backs of the legs and feet; spaces between toes, and sole.
- Examine back of neck and scalp with a hand mirror. Part hair for a closer look.
- Finally, check back and buttocks with a hand mirror.
- Consult a physician immediately if you have any doubt about a mole or changing spot on your skin.

# Summary

- EVERYONE needs to be sun safe.
- Avoid sunburning and suntanning.
- Wear sunscreen & lip balm with SPF 15 or higher
- Wear sun safe clothing, hats and eyewear.
- Limit your time in the sun
- Practice early detection.