Sun Safety

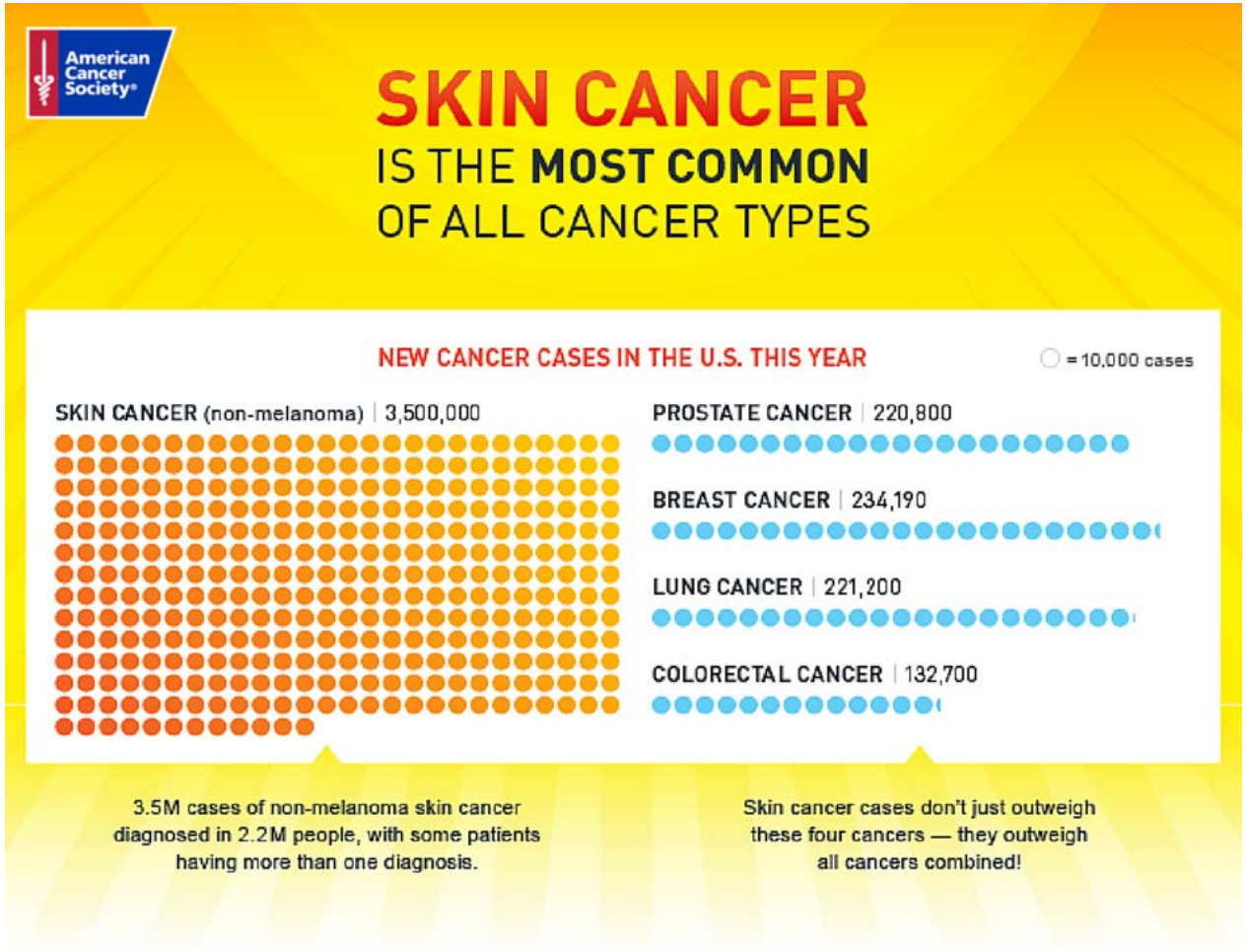
EHS
Oklahoma State University
Environmental Health and Safety
(405) 744-7241

Current as of June 2016

Objective

- The Skin Cancer Problem
- The Sun and Your Skin
- Assessing Your Personal Risk
- Practicing Sun Safety
- Spotting skin cancer early
- Sun Safety and Employees

The Skin Cancer Problem



Skin Cancer Prevention is Now!

Skin Cancer Facts

- Skin cancer is the most common cancer in the U.S.
- There are > 2 million new cases of skin cancer each year.
- One in five Americans will get skin cancer.
- Men get skin cancer about twice as often as women.

Source:
American Cancer Society

Melanoma Facts

- 75,000 cases of melanoma will be diagnosed this year.
- There will be about 9,000 melanoma deaths.
- Melanoma increased 45% in the U.S. from 1992 to 2004.
- THE MOST COMMON cancer for young adults (25-29).

Sources: American Cancer Society & National Cancer Institute

UV and Skin Cancer Facts

- Ultraviolet radiation is a carcinogen.
- UV causes 90% of all skin cancer.
- UV can be natural -- from the sun.
- UV can be artificial -- from tanning lamps.

UV is a Carcinogen

Asbestos
Vinyl chloride
Chromium compounds
Radon

Ultraviolet Radiation

Benzene
Arsenic

The Sun: Benefits and Harms

BENEFITS:

- Heat
- Light
- Photosynthesis
- Outdoor environment for physical activity
- Production of vitamin D
- Happy & positive feelings; good mood

HARMS:

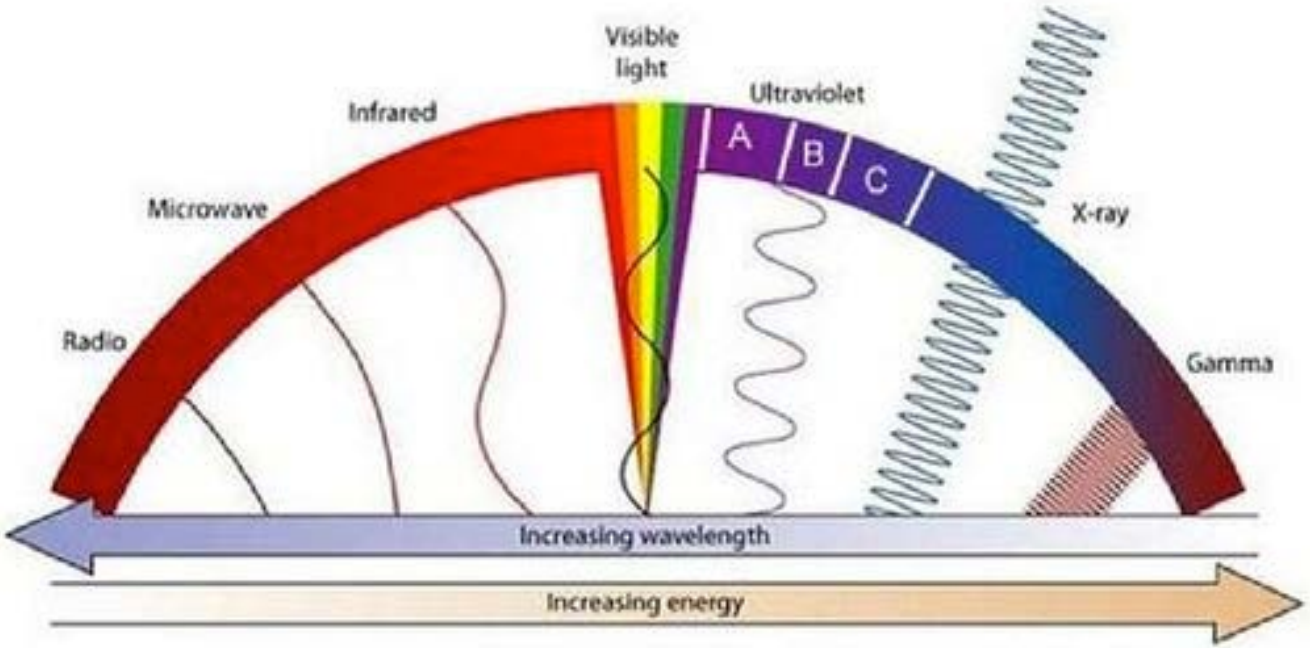
- Suntan
- Sunburn
- Premature aging
- Freckles
- Liver spots
- Wrinkles
- Loss of elasticity
- Cataracts
- Suppression of
- immune system
- Skin cancer

What Can You Do?

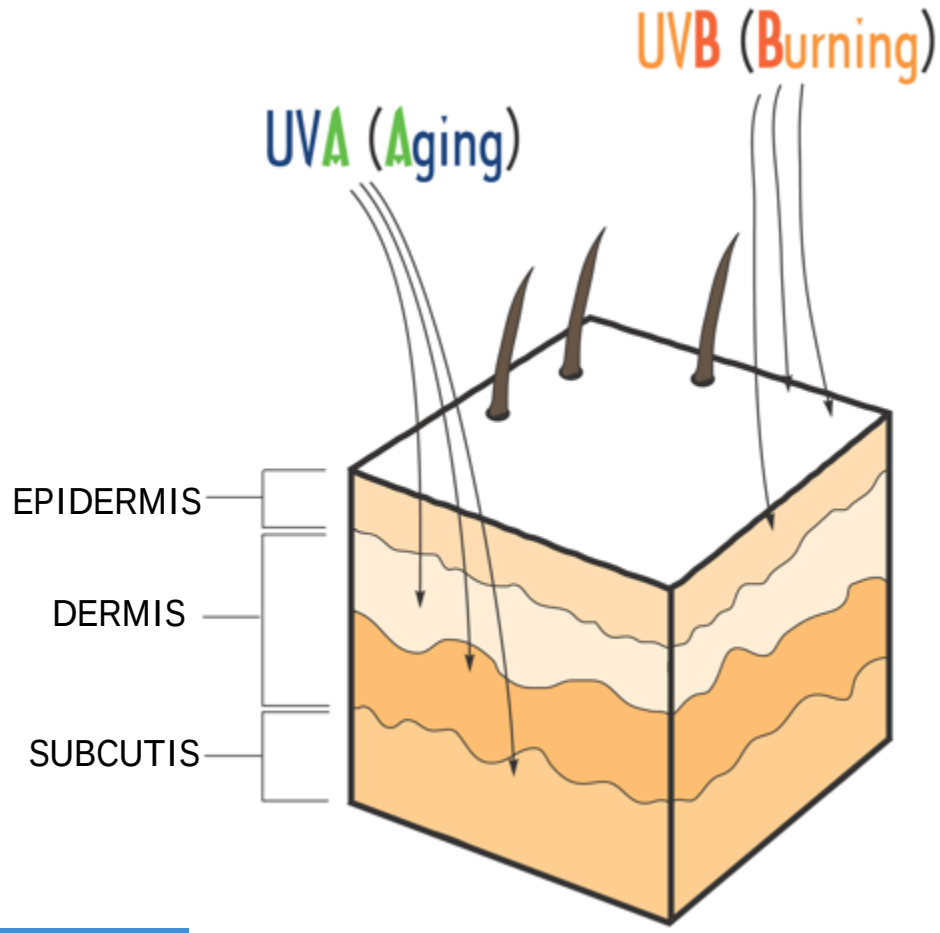
- Understand the connection between UV rays and skin cancer
- Know your personal risk
- Practice sun safety
- Be a role model for others

The Sun and Your Skin

UV and The Electromagnetic Spectrum



UVA and UVB Radiation



Solar UV radiation is 95% UVA & 5% UVB.

UVA causes tanning, aging & skin cancer.

UVB causes burning & skin cancer.

Tanning beds emit 12 times more UVA than the sun.

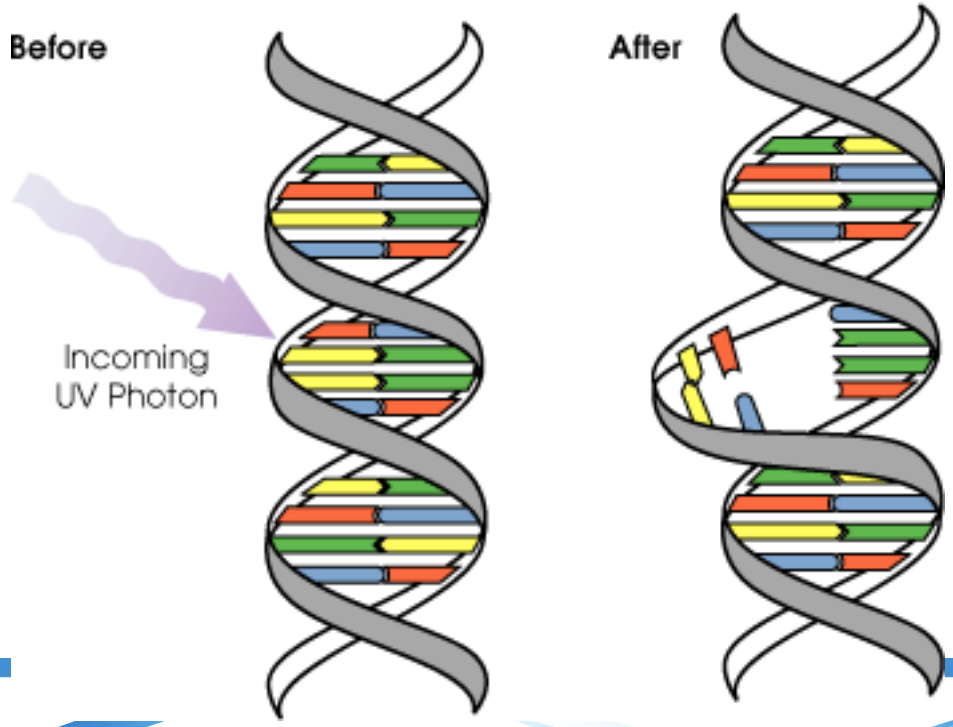
Skin cancers occur in the epidermis.

How Skin Cancer Starts

- All cancers develop because of abnormal cell growth.
- Skin cancer develops because of abnormal growth of our basal, squamous or melanocyte cells.

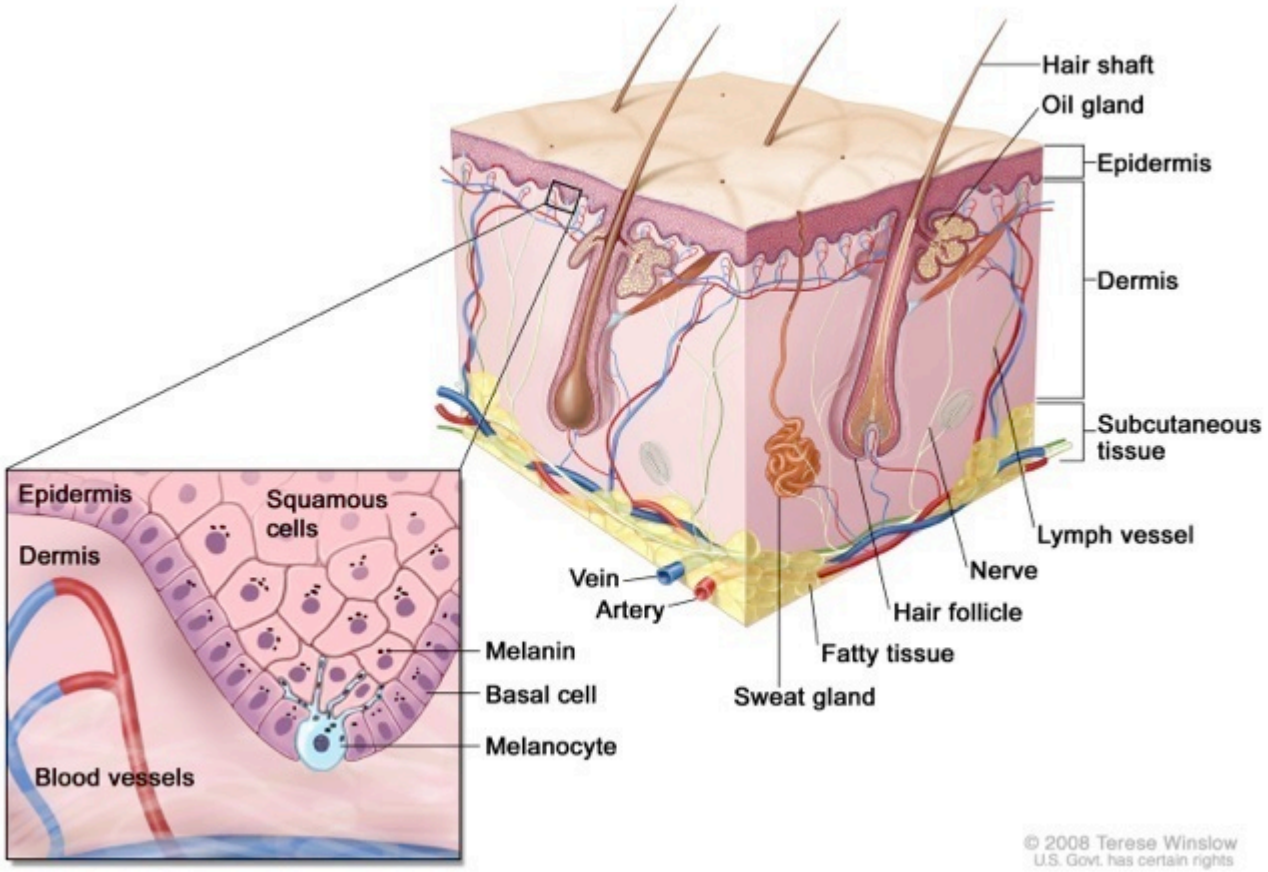
How Skin Cancer Starts

- UVA and UVB rays hit the epidermis.
- DNA in skin cells begins to break down.



How Skin Cancer Starts

- The breakdown causes the cells to grow out of control and form a mass of cancer cells.
- The immune system tries to repair the damage.
- More sun exposure hampers repair.
- Damaged cells can mutate into skin cancer within 5 years.


Hair shaft
Oil gland
Epidermis
Dermis
Subcutaneous tissue
Lymph vessel
Nerve
Hair follicle
Fatty tissue
Sweat gland
Vein
Artery
Epidermis
Squamous cells
Dermis
Melanin
Basal cell
Melanocyte
Blood vessels
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Types of Skin Cancer

- Non-melanoma Skin Cancer
  - Basal Cell Carcinoma
  - Squamous Cell Carcinoma
- Malignant Melanoma

Basal Cell Carcinoma

Squamous Cell Carcinoma

Malignant Melanoma

Larger

Odd Shape

Varied Color

Lessons Learned:
Ban the Burn!

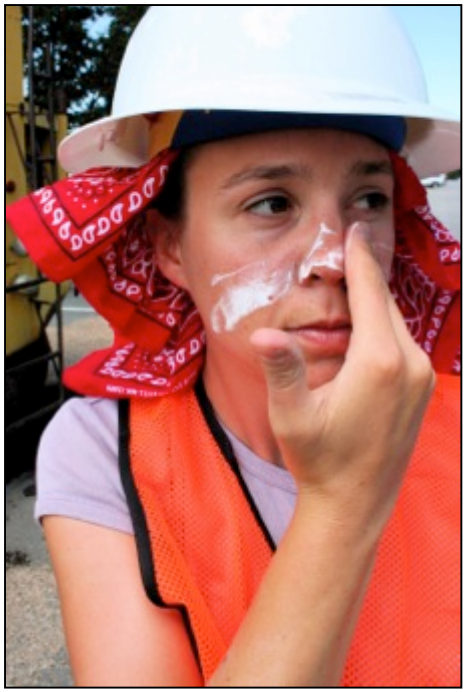
- Studies have shown that FIVE severe sunburns early in life may DOUBLE the risk for developing melanoma later in life.
- Avoid getting burned!

Lessons Learned:
There's No Such Things as a Healthy Tan

- A suntan is your skin's way of trying to protect itself from damaging UV rays.
- Suntans give very little protection - about an SPF 3.
- Skin gets damaged while getting a tan, including aging from UVA rays and cumulative lifetime exposure.

Most Skin Cancer is Preventable

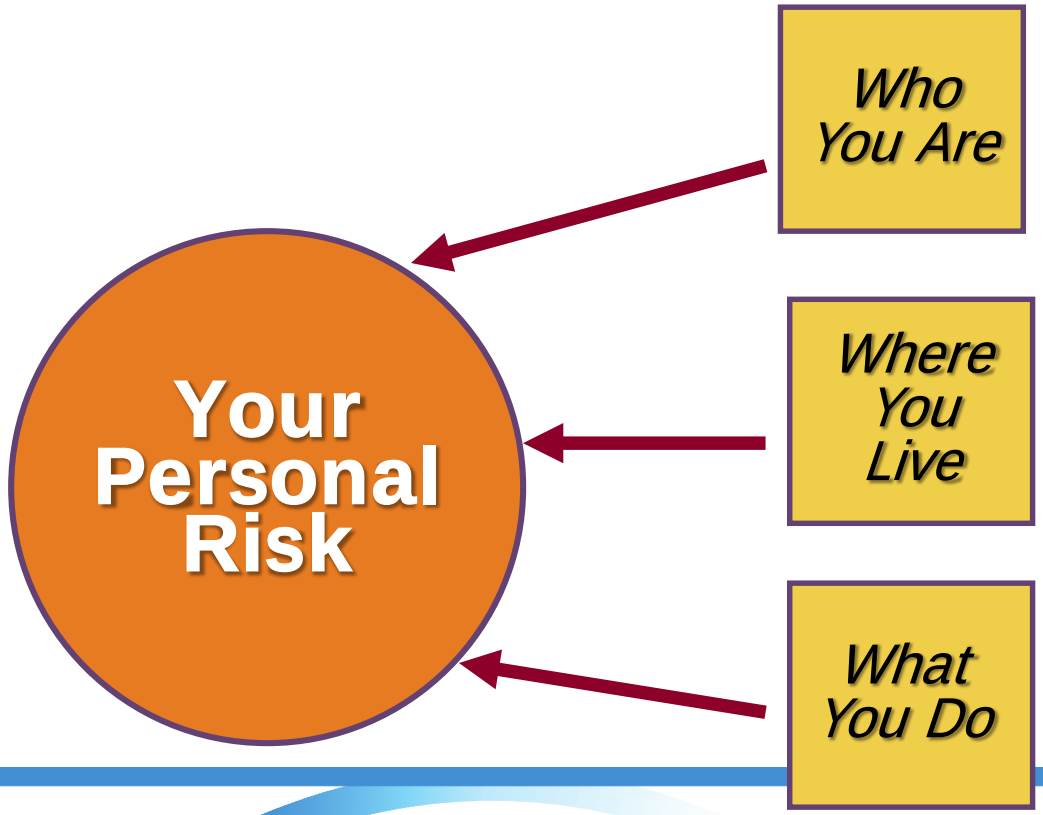
- Know your risk
- Practice sun safety
- Examine your skin



Assess Your Risk for Skin Cancer

Understanding Your Risk

Your risk of getting harmed from over-exposure to UV is determined by:



Who You Are: The Six Skin Types

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

Highest Risk Factors

- Blond or red hair
- Blue, green or gray eyes
- Fair skin
- Skin that freckles easily
- Skin that burns easily and doesn't’ tan
- Many moles; large moles
- Family members with melanoma
- Male

Sun Exposure Chart for Skin Type and UV Index

Type	Skin Color	Characteristics	UVI: 3 - 5	UVI: 6 - 7:	UVI: 8 - 10	UVI: 11+
I	White; very fair, red or blond hair; blue eyes; freckles	Always burns, never tans	10 - 15 minutes	5 - 10 minutes	2 - 5 minutes	1 - 2 minutes
II	White; fair; red or blond hair; blue, hazel, or green eyes	Usually burns, tanks with difficulty	15 - 20 minutes	10 - 15 minutes	5 - 10 minutes	2 - 5 minutes
III	Cream white; fair with any eye or hair color; very common	Sometimes mild burn, gradually tans	20 - 30 minutes	15 - 20 minutes	10 - 15 minutes	5 - 10 minutes
IV	Brown; typical Mediterranean Caucasian skin	Rarely burns, tans with ease	30 - 40 minutes	20 - 30 minutes	15 - 20 minutes	10 - 15 minutes
V	Dark Brown - mid-eastern skin types; Black	Very rarely or never burns, tans very easily	40 - 60 minutes	30 - 40 minutes	20 - 30 minutes	15 - 20 minutes

Where You Live:

- Sunny days.
- High elevation: UV intensity increases 5% every 1000 feet above sea level.
- An outdoor-oriented lifestyle.

What you do: Outdoor Workers

- Get up to 8 times more UV than indoor workers
- Have a 60% greater risk of developing skin cancer
- Are at higher risk for non-melanoma skin cancer
- Indoor workers are at higher risk for melanoma

Reflective Work Surfaces

- Flowers & lawn grass: 1-2%
- Clay soil: 4-6%
- Aged asphalt roadway: 5-9%
- Light concrete: 10-12%
- Weathered aluminum: 13%
- Sand: 15-18%
- Water: 20-25%
- White metal oxide house paint: 22%
- Fresh snow: 88%

What else do you do ???

- Do you sunbathe to get a tan?
- Do you use tanning lamps?
- Do use sun protection?

Think Sun Safety!

Checklist for Sun Safety

- Monitor UV
- Use Shade
- Cover Up
  - Clothes
  - Sunglasses
  - Hats
- Apply Sunscreen

Monitor UV

- Check the UV Index for high UV days.
- Watch the clock for peak UV hours of 10:00 am to 4:00 pm.
- Check the weather; Clouds block only 20 to 40% of UV.
- Arrange work around peak sun hours if possible.

Use Shade

- Bring portable shade cover to your job site.
- Attach a shade device to your road equipment.
- Seek shade structures or umbrella tables for breaks.
- Go indoors for lunch or meetings.
- Work inside during peak sun hours.
- If you work in a car or truck, the glass blocks UVB, but not all UVA.

Skin Cancer and Driving

- More UV-related melanoma skin cancer occurs on the left side of the body in the US
- The left arm is more affected than the right arm
- An open window increases UV dose 5X more than a closed window

(Paulson K, Iyer, J.G, & Ngheim, P., 2011)

Cover Up

- Long Sleeves
- Long Pants
- Sunglasses
- Hats
- Gloves

Photo-damaged Skin

Sun Protective Clothing

- Clothing can block 100% of UVA and UVB.
- Wear clothing that covers a large amount of your skin.
- Wear long-sleeved shirts and long pants.
- Choose fabrics with a tight weave that allows little or no light to pass through.
- A thin white t-shirt has an SPF of about 4.
- Wear darker colors because they absorb more UV.

Hats

Less Sun Safe ⟷ More Sun Safe

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

Sunglasses

- UV can cause cataracts, macular degeneration, blindness and melanoma of the eye.
- Wear large sunglasses that block 99-100% of UV rays.
- Look for lenses labeled UV 400 or ANSI Z80.3.
- Lenses don't have to be dark or expensive.

Apply Sunscreen

- Lotion
- Gel
- Stick
- Towelette
- Make up
- Lip balm

New FDA Rules
(Effective December, 2012)

- Broad Spectrum Protection – certified to protect against UVA.
- Can longer use: Sunblock, Waterproof, All Day Protection, Sweat Proof.
- Reapply every 2 hours.
- Water Resistant – 40 or 80 minutes.

Sunscreen Basics

- Choose SPF 30 or more for working outdoors.
- Use a broad spectrum sunscreen for UVA <u>and</u> UVB.
- Make sunscreen a daily habit.
- And don't forget lip balm with SPF 15 or more.

What is SPF?

- SPF = Sun Protection Factor
- SPF tells you how much UV will be absorbed or reflected.
- SPF also tells you how long a sunscreen will protect your skin from sunburn.
- SPF is a measure of UVB protection, not a measure of UVA protection.

Strength of Protection

- SPF 15 screens 93% of UVB
- SPF 30 screens 97% of UVB
- SPF 50 screens 98% of UVB
- SPF 70 screens 98.5% of UVB
- SPF 100 screens 99% of UVB

No sunscreen blocks 100% of UV.

Length of Protection

Your Time To Burn Without Protection
x SPF of your sunscreen

= ____ MINUTES OF PROTECTION

Examples (fair skin):

12 minutes x SPF 15 = 180 minutes (3 hours) until sunburn
12 minutes x SPF 30 = 360 minutes (6 hours) until sunburn
12 minutes x SPF 45 = 540 minutes (9 hours) until sunburn

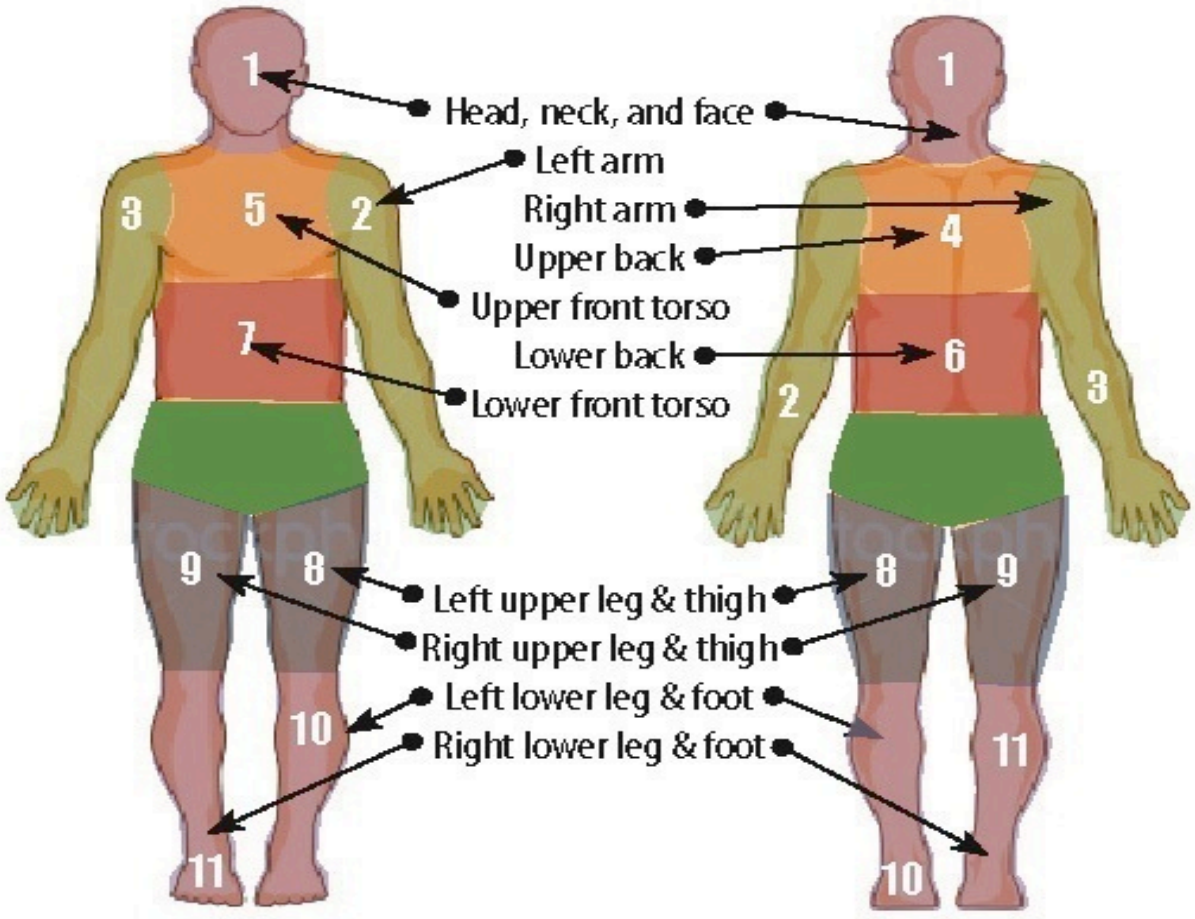
Two Types of Sunscreen

- <u>Chemical UV Absorbers</u>
  - Chemicals that work like a sponge on your skin to absorb UV for a set amount of time
  - Need time to bond with skin; do not work right away
  - Harder to rub off
- <u>Physical Reflectors</u>
  - Tiny metals that work like aluminum foil to reflects UV away from your skin
  - Don't need time to bond with skin; work right away
  - Easier to rub off

Both work well; use what you like.

The Rule of Two Fingers: How Much Sunscreen to Apply

The Rule of Two Fingers: Where to Apply Sunscreen



How to Apply Sunscreen

- Apply it about 15-30 minutes before going out in the sun.
- Apply it on all exposed skin, but not open wounds.
- Don't forget places like ears, neck and hands.
- Don't rub it in too hard – it reduces effectiveness by at least 25%.

When to Reapply

- Reapply after 20 minutes to cover missed spots.
- Reapply every two hours to keep it powerful.
- Reapply more often after sweating.

Sunscreen and DEET Mosquito Repellant

- Use separate products
- Apply sunscreen first; then repellant
- Reapply sunscreen often; don't reapply repellant (25% DEET should last 5 hours)

Practice Early Detection

Detect Skin Cancer Early

- At least 95% of skin cancer can be cured if detected early.
- Look for changes in spots or moles.
- Look for sores that don't heal.
- Report unusual findings to your doctor.

Check Your Self !

Know Your ABCDE's for Moles

- A=Asymmetry: One half of the mole or birthmark doesn't match the other.

- B=Border: The edges are ragged, irregular, or poorly defined.

ABCDE Rule Continued

- **C=Color**: Color varies from one area to another and may have differing shades of brown, black, white, red or blue.

- **D=Diameter**: Area is larger than 6 mm (about the size of a pencil eraser) and is growing larger.

- **E=Evolving**: Show any changes in size, color, shape or texture of a mole (or any skin changes) to your doctor.

-- American Academy of Dermatology

Take Aways

- Some UV exposure is healthy, but avoid over-exposure, sunburns and suntans.
- Limit your unprotected time in the sun, especially during peak UV hours at midday in the summer.
- Find shade or bring it with you.
- Use sunscreen with SPF 30 or higher every day.
- Wear cover-up clothing, hats and sunglasses.
- Don't use tanning beds or lamps.
- Check your skin for changes every year

Sun Safety Apps

- There are some great products available to provide information on expected UV from the sun.

- EPA's SunWise UV Index App
  - https://itunes.apple.com/us/app/epas-sunwise-uv-index/id466052686?mt=8

- Robocat Ultraviolet UV Index
  - https://itunes.apple.com/us/app/ultraviolet-uv-index/id445874481?mt=8&ign-mpt=uo%3D4

Environmental Health and Safety

- Programs and Services
  - Fire Protection Engineering
  - Life Safety & Emergency Preparedness
  - Environmental Compliance
  - Laboratory Safety
  - Occupational Safety
  - Occupational Health and Medical Surveillance
  - Materials Management
  - Industrial Hygiene
  - Chemical Hygiene
  - Safety Training

Location: University Health Services Bldg, Room 002 (basement)

Phone number: 744-7241 Email: EHS@okstate.edu

Website: http://ehs.okstate.edu/

QUESTIONS
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