

Ban the Burn handbook

**Student Guide
to Skin Cancer
Prevention**

**An Educational
Tool for
High School
Students**

**The Ulman Cancer
Fund for Young Adults
& The Coalition for Skin
Cancer Prevention
in Maryland Says:**

***Play it safe
in the Sun...***

Use Protection!



www.ulmanfund.org



www.sungardman.org

Ban the Burn

Student Guide to Skin Cancer Prevention

Sun Facts: What *YOU* should know about the Sun

There are many types of rays that come from the sun: heat rays, visible light, and invisible ***ultraviolet light (UV) light***. The ultraviolet rays of the sun are the most frequent cause of skin cancer. The sun's energy is more intense closer to the equator, on mountain tops, in summer, and in the middle of the day.

The UV radiation that reaches the earth's surface consists of two types of rays, called UVA and UVB rays. Scientists believe both types of rays can add to skin damage and ultimately cause burning and skin cancer. For this reason, Doctors recommend that people wear sunscreens that protect us from both types of rays.

UVA rays: Constantly present in the environment. These rays do not leave a visible burn, but rather affect the skin's deepest layers, the dermis, causing premature aging and wrinkling. With a longer wavelength, these rays penetrate deeper into the skin and damage collagen and elastin, causing a loss of elasticity in the skin. Excessive UVA exposure can be responsible for dry, leathery, wrinkly skin, and may also contribute to melanoma.

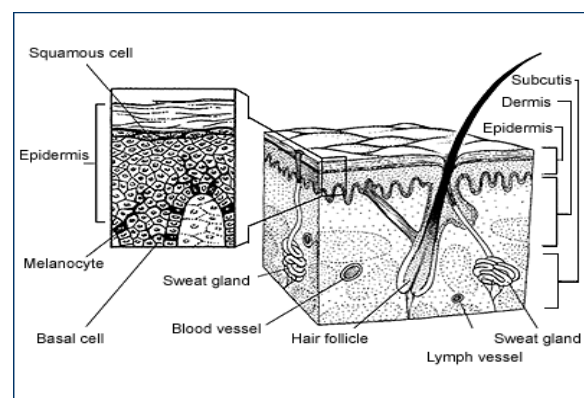
UVB rays: Primarily affect the topmost layers of the skin, the ***epidermis***. These rays leave visible sunburns. Deliberate sun tanning and burning will increase the incidence of skin cancer.



Your Skin and the Sun

Your ***skin*** is the largest organ in your body. It helps your body do a number of things; protect the body from injury and infection, regulate body temperature, transmit sensory information to the brain, and regulate body temperature and fluid balance. The skin has two layers-the epidermis and dermis.

The ***epidermis*** is the thin outer layer of the skin. It is composed of several layers of cells. The upper layer is called the ***squamous cells***. They are flat and scaly and help protect the lower layers of skin. The lower layer contains the round basal cells. These cells replenish the squamous cells as they are sloughed off. Within the basal cell layer is ***melanocytes***, which contain the pigment ***melanin***. Melanocytes are responsible for giving the skin its color.



The ***dermis*** is a thick layer of skin under the epidermis. This layer gives the skin its strength and elasticity, and helps insulate the body from cold and heat. The dermis also has blood vessels, fat, hair roots and nerve endings, which respond to touch, pressure, heat and cold.

When the body is cold, the skin closes up the *hair follicles*, shafts or openings in which the hair grows, and pores (or tiny holes). This causes the hairs to stand up straight and creates what we call goose bumps. When the body is hot, our *sweat glands* react. The skin lets water (or sweat) out of the pores. The sweat evaporates and cools the body.

Skin color depends on the activity level of *melanin-producing cells (melanocytes)* in the epidermis. Everyone has the same number of melanin-producing cells, but people who have more active melanin-producing cells or pigment have darker skins. People who have more active melanin-producing cells in some parts of their skin develop freckles when exposed to sunlight.

The amount of melanin determines how much sun the skin can tolerate without being damaged. The skin makes more melanin when the sun shines on it. In essence, if exposed to excess sunlight, melanin makes the skin darker (“tan”) to protect the lower skin layers from ultraviolet radiation.

TANS ARE NOT A SIGN OF HEALTH. Rather, melanin production is the skin’s defense mechanism, which still permits one kind of ultraviolet light (UVB) to damage the skin. People with light skin need to be more careful about sun exposure.

Sunburn looks red because the blood vessels, within the Subcutis tissue in the skin, dilate or expand to help heal the cells that have been injured by the sun. *Blood vessels* remove any waste from the cells, while replenishing them with nutrients and oxygen. The *Subcutis tissue* provides a layer of insulation for the skin. Both blood vessels and *lymph vessels* flow through this area to help provide protection from injury and transport defense mechanisms throughout the body.

Your Skin and Cancer

Cancer is the term for diseases in which abnormal cells grow and divide without control. Cancer cells can invade nearby tissue and spread to all parts of the body through the bloodstream and lymphatic system (*metastasize*). Cancers are usually diagnosed and treated by *Medical Oncologists*, doctors who specialize in the cancer field. When any suspicious cells or body parts are removed or checked for cancer, the Oncologist classifies them as either *benign* or *malignant*. Malignant means that the cells are in fact cancerous with a tendency to spread throughout the body. Benign defines a cell that is not cancerous

Most skin cancers are caused by sun exposure. The majority of people do not get skin cancer when they are young but each time they are out in the sun without protection they increase their chance of getting skin cancer later in life. Getting sunburned adds to the risk of getting melanoma, the most dangerous type of skin cancer. Repeated sunburns will greatly increase the chances of getting skin cancer later on in life. *Dermatologists*, specialized skin doctors, can help diagnose and treat all skin diseases, especially skin cancer. Your actions today will directly impact your health in the future.

The three most common types of skin cancer are:

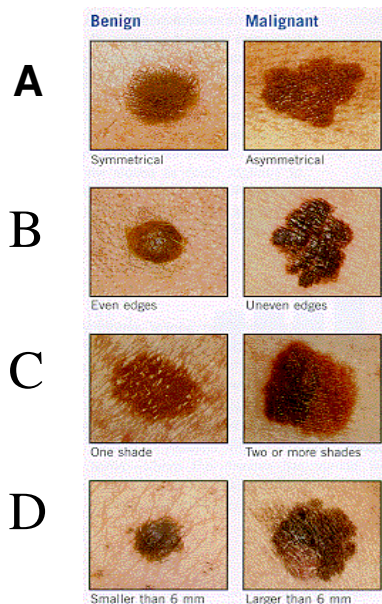
1. *Basal cell carcinoma (cancer)* - The most common type of skin cancer, affecting 800,000 people each year in the US. It is a slow growing cancer that seldom spreads (metastasize) to other parts of the body.

- *Appearance:* Usually appears as a small bump or nodule, a open sore that fails to heal, or a reddish patch of skin.
- *Treatment:* This cancer can be treated with surgery or radiation.
- *Survival:* When detected early, the cure rate is approximately 95%.

2. **Squamous cell carcinoma** - The second most common cause of skin cancer in Caucasians and accounts for 200,000 cases annually in the US. Usually found on the ear, face, lips, and back of hands.

- *Appearance:* It can differ in appearance from a scaly red patch of skin with irregular borders to wart-like bump that cracks and periodically bleeds.
- *Treatment:* Surgery
- *Survival:* Unlike basal cell cancer, squamous cell cancer can spread (metastasize) to other parts of the body. When detected early, the cure rate is 95%.

3. **Malignant Melanoma** - Melanoma is a very serious cancer, affecting about 40,000 people in the US. It accounts for over two thirds of all skin cancer deaths, averaging about 7,000 each year.



- *Appearance:* It can usually begin as a light brown blemish or a flat black blemish with irregular borders. It will sometimes begin to itch, develop a crust and bleed. Although melanomas may feel different, they often do not cause pain. In detecting melanoma, we should use the “A,B,C,D” changes in the surface of a mole which are:

A Symmetry - one half unlike the other half

B Border irregular - poorly defined border

C Color - varied from one area to another

D Diameter - larger than 6mm (diameter of a pencil eraser)

(Itching moles should be checked also)

- *Treatment:* First you must surgically remove the cancerous area on the skin. Most Doctors then check lymph nodes closest to the melanoma. If the cancer has spread to the lymph nodes, those cancerous lymph nodes will be surgically removed. Chemotherapy is administered if the melanoma has spread to the lymph nodes and other areas of the body.
- *Survival:* When detected and treated early, the melanoma survival rate is nearly 100%. But, if left untreated, melanoma can rapidly spread throughout the body and cause death.

Skin cancer can be easily treated if it's detected early. Self mole checks are important.

Who is at Risk?

**A risk factor is something that puts you at greater jeopardy for developing a disease. This does not mean that someone who doesn't have a risk factor is immune.*

The risk factors* for skin cancer are:

- Fair Skin
- Blue, green or hazel eyes
- Light colored hair
- Freckles
- Tendency to burn rather than tan
- History of severe sunburns
- Have many moles (especially over 100)
- Personal or family history of skin cancer

Smart Steps to Prevent Skin Cancer

- Examine your skin regularly and completely. Become familiar with your own skin – get someone to help check your back.
- Reduce sun exposure from 10:00 am to 4:00 pm, when UV rays are strongest. This is especially important from mid-spring through mid-fall.
- Wear tightly woven, loose fitting clothing that covers as much of the body as possible. Dark colors protect better than light.
- Wear a wide brimmed hat (four inches) that produces a shadow that covers the eyes, ears, nose, face, and back of the neck.
- Find shade (trees, physical structures) to shield you, especially from 10:00 am to 4:00 pm.
- Use sunglasses that include a warranty stating that they provide at least 95 percent UVA and UVB (broad spectrum) protection.
- Liberally apply sunscreen to exposed skin one half hour before venturing outdoors. The sunscreen container should have a *sun protection factor (SPF)* rating of 15 or above and should state that it has broad-spectrum (UVA or UVB) protection. PABA free sunscreens are recommended for persons with sensitive skin. Depending on outdoor conditions, sunscreen should be re-applied at least every two hours.

*****SPF is the scale for rating the level of sunburn protection in sunscreen products*****

SunGuard Your Skin Survey

Age _____

Circle one: Male Female

Part A – Check the space before the best answer.

1. A person with a tan looks attractive.

___ strongly agree ___ agree ___ no opinion ___ disagree ___ strongly disagree

2. A person with a tan looks healthy.

___ strongly agree ___ agree ___ no opinion ___ disagree ___ strongly disagree

3. People who protects themselves from the sun are cool.

___ strongly agree ___ agree ___ no opinion ___ disagree ___ strongly disagree

4. How many painful sunburns did you have last summer?

___ none ___ 1 ___ 2 ___ 3 ___ more than three ___ I don't remember

5. When you were out in the sun last summer, how often did you use sunscreen?

___ always ___ sometimes ___ I don't remember ___ rarely ___ never

6. When you were out in the sun last summer and wore a hat for protection, what kind of hat did you wear?

___ wide-brimmed hat ___ baseball cap ___ visor ___ other ___ I never wore a hat

Part B – Fill in the blank with the letter next to the best answer.

___ 7. The sun's rays are the strongest, and should be avoided between the hours of

- a. 9:00 a.m. and 12:00 p.m.
- b. 10:00 a.m. and 4:00 p.m.
- c. 2:00 p.m. and 5:00 p.m.
- d. 3:00 p.m. and 6:00 p.m.

___ 8. What is the minimum SPF (sun protection factor) a sunscreen should have to protect you adequately from the damaging effects of the sun?

- a. 15
- b. 8
- c. 30
- d. 5

___ 9. Which of the following is not a type of skin cancer?

- a. Squamous cell carcinoma
- b. Malignant melanoma
- c. Sickle cell carcinoma
- d. Basal cell carcinoma

___ 10. All of the following are risk factors for skin cancer except

- a. Having dark hair
- b. Having light colored skin
- c. Being severely sunburned as a child
- d. Having family members who have had skin cancer

- ___ 11. The substance in the skin that makes people tan is called
- Melatonin
 - Myanmar
 - Mandarin
 - Melanin
- ___ 12. Which of the following is not one of the ABCD's of Melanoma?
- Border
 - Diameter
 - Atypical
 - Asymmetrical
 - Color
- ___ 13. Which of the following is the best method of protecting yourself from the harmful effects of the sun?
- Wear light colored clothing
 - Wear a baseball cap
 - Use sunscreen with SPF 8
 - Seek shade

Part C – True or False: Place a T or F in the blank to make the statement correct.

- ___ 14. The sun's rays are less intense at high altitudes.
- ___ 15. People with a large number of moles on their bodies are at greater risk for developing malignant melanoma.
- ___ 16. Sunscreen should be put on ½ hour before going outside and reapplied every four hours.
- ___ 17. People with naturally dark skin can develop skin cancer.
- ___ 18. A tan is a sign that the skin is damaged.
- ___ 19. Tanning salons and sun lamps are safe ways to get a tan.
- ___ 20. A wide-brimmed hat gives more sun protection than a baseball cap.
- ___ 21. Ultraviolet A (UVA) rays cause the skin to become sunburned.
- ___ 22. Wearing a hat and long sleeved shirts are good methods of protection from sunburn.
- ___ 23. You can get burned from reflection of the sun's rays off sand, water, and snow.
- ___ 24. Protecting yourself from sunburns as an adolescent will help prevent skin cancer later in life.
- ___ 25. The outside layer of skin is called the dermis.
- ___ 26. People can die from malignant melanoma.

SUNGAURD YOUR SKIN

WORD SEARCH

Find the following skin cancer related terms in the word search below.

self-examination
moles
color
prevention
sunburn
benign
malignant

ultraviolet
damage
melanoma
skin
diameter
sunscreen
diagnosis
asymmetry

border
cancer
SPF
protection
hats
long sleeves
risk

The words can be found horizontally, vertically, diagonally, forward or backward.

A G L R S E E H C O L O R T W A I C K S I R Z B M F
V I O E T R C J B H C S X U M P D K S T B I H A N R
F R L D - P J H O I T H E V E R P A U U L C H D V T
D O S G M V S C P C N M Y S E A L G B E N I G N I J
M S E H N A R H K U L T R A V I O L E T N B I K C O
G R D E T V L U Y N P R O T E C T I O N H M U D A F
E S C E R T B I D S E K D E E A L O O M E T S R A G
G O A T B L T A G J U G I L O N E A Y P R O L E N M
A P L M E C S K I N N Y A H - C X N A G H Y E D U C
M W A Y E C H O L S A I M S T E F R E L R B E T R S
A I B T R G H L C E V N E O P R S K T T D R E A L P
D L O S B T P K L E A N T H A M P J E E S B C T O F
F R E A T S U N S C R E E N A R T M L C Y U K B G O
P A P L E S U C E T R E R O O L M R C T L H O O E L
A L O N G - S L E E V E S K O Y G R A C H P E R Y S
M E L A N O M A C H I L K N S - D W C E A L I D O T
V E R I B L U D R E S D I A G N O S I S N O W E R A
W A T Y S N O I T A N I M A X E - F L E S D O R X H

Ban the Burn Exercise

Vocabulary

Basal Cells:

Cancer:

Dermatologist:

Dermis:

Epidermis:

Hair follicles:

Malignant:

Medical Oncologist:

Melanin:

Melanocytes:

Melanoma:

Metastasis:

Risk factor:

Squamous cells:

Sun Protection Factor:

Sunscreen:

Ultraviolet radiation:

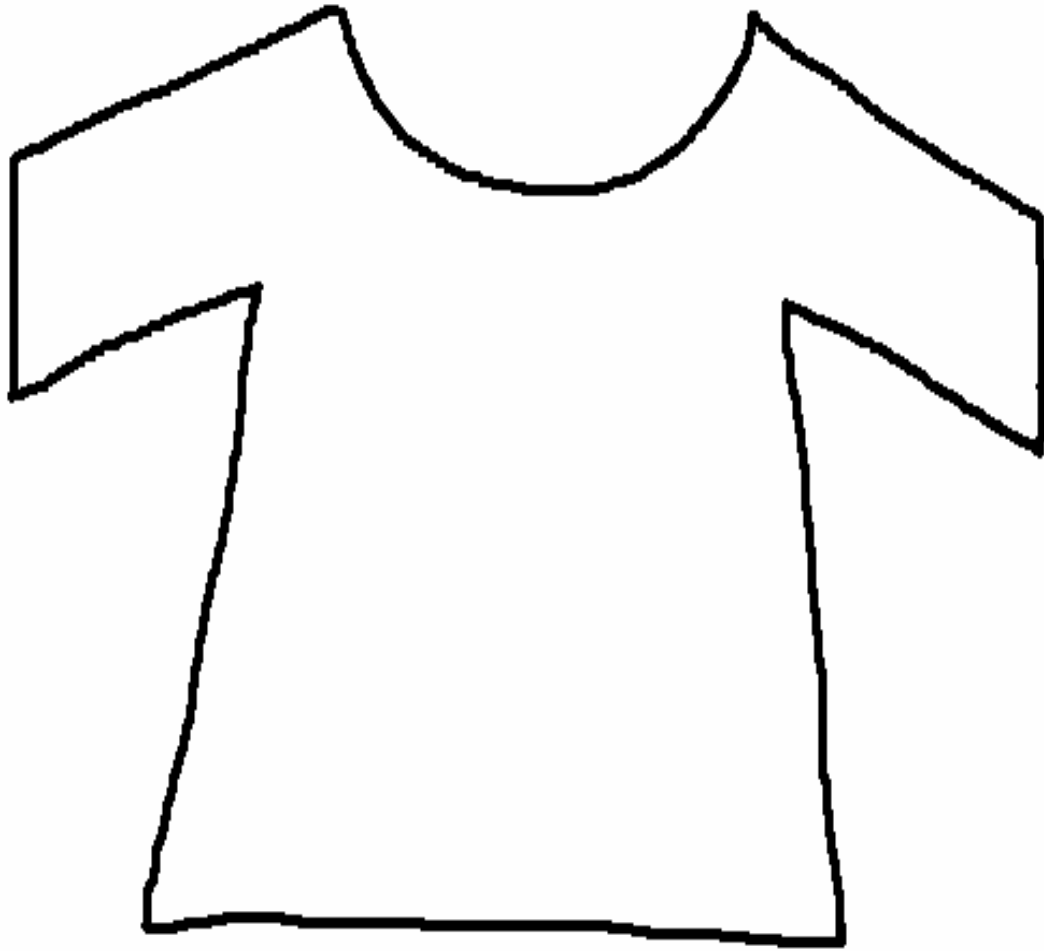
UVA rays:

UVB rays:

Questions

1. List the types of UV radiation and their negative effects on the body.
2. List three risk factors for skin cancer.
3. List three steps you can take do to reduce your risk of getting skin cancer.
4. What are the “A,B,C,D’s” of Malignant Melanoma?

Ban the Burn T-shirt Contest



Name: _____ Class: _____ School: _____