

Skin Cancer

Background:

- ❖ The largest organ of the body is the skin and is consists of the epidermis and the dermis. The outer layer, the epidermis is designed to stores essential nutrients and concentrated nutrients, regulates body temperature and produces vitamin D in the body. (National Cancer Institute)
- ❖ In the United States, skin cancer is the most common type of cancer. (CDC, 2007)
- ❖ Sun exposure is the cause of 90 percent of all skin cancers. (The Skin Cancer Foundation)
- ❖ The cells located in the skin are ultimately where skin cancer originates. Cells of the skin grow and die every day, followed by new cells to take their place. New cells form when the skin does not need them, and the old cells are not replaced when they should have been indicates that the process has gone wrong somewhere in the body. These extra cells can form a mass of tissue called a tumor. (National Cancer Institute)
- ❖ Benign (not cancerous) or malignant (cancerous) are two ways of classifying tumors. (CDC, 2007)
- ❖ Benign growths are non-life threatening, meaning they can be easily excised and normally do not grow back. Cells from benign growths do not invade the tissues or spread to other parts of the body. (National Cancer Institute)
- ❖ More serious and may be life threatening are classified as malignant tumors. Malignant growths can often be removed but sometimes may grow back. Cells from malignant growths can invade the cells and damage nearby tissue and organs. Cancerous growths can metastasize resulting in the cancer called melanoma. (National Cancer Institute)
- ❖ According to the CDC, the two highly common types of skin cancer, *basal cells and squamous cell carcinoma* are curable. However, melanoma is the most dangerous especially among young people and is considered the third most common form of skin cancer. (CDC, 2007)
- ❖ Basal cell skin cancer grows at a slow pace and usually occurs on areas that have been exposed to the sun. It is found commonly on the face and rarely spreads to other parts of the body. (National Cancer Institute)
- ❖ Squamous cell skin cancer is also found on places exposed to the sun as well as those that have not been in the sun. This type of cells will sometimes spread to the lymph nodes surrounding the skin and organs inside the body. (National Cancer Institute)

- ❖ National Cancer Institute classifies skin cancer by the spreading of cells to another part of the body. The new growth has the same kind of abnormal cells or the same name as the primary growth. (National Cancer Institute)

Prevention:

- ❖ According to the CDC, studies have shown that one can decrease the incidence of nonmelanoma skin cancer (basal cell carcinoma and squamous cell carcinoma) by reducing exposure to ultraviolet radiation. The most common form of UV radiation exposure would come from tanning booths. (CDC, 2007)
- ❖ By reducing one's outdoor activities as well as limiting the time of exposure to UV radiation between the hours of 11am and 3 pm, wearing clothes that protect from the sunlight (such as long sleeves and hats), and by using adequate amounts of protective sunscreen can help protect one from sun exposure. (CDC, 2007)
- ❖ People with fair skin, light eyes or those who burn easily from sun exposure can be particularly susceptible to non-melanoma skin cancer. (CDC, 2007)
- ❖ Tests were inconclusive to determine if the development of melanoma can be reduced by avoiding sunburn or sun-damage to the skin. (CDC, 2007)
- ❖ Stating from the CDC, people who have a large number of abnormal moles located on areas of the skin may have a higher risk of developing melanoma skin cancer. (CDC, 2007)

Statement of the Problem:

- ❖ Preventable forms of skin cancer are based on new research and evidence. The existence and application of various types of resources determine the ability to reduce cancer death rates. (Healthy People 2010)
- ❖ Crucial resources include appropriate information on prevention, essential early treatment and detection, systems that provide people with access to state-of-the-art preventive services and treatment, and finally mechanisms for maintaining continued and new research progress. (Healthy People 2010)
- ❖ According to Healthy People 2010, the deadliest of all skin cancers, melanoma, was expected to account for an estimated "47,700 new cancer cases and 7,700 deaths in 2000." (Healthy People 2010)
- ❖ Risk factors which include any history of melanoma whether it be personal or family, atypical moles on the body, an increased number of moles, overexposure to the sun, known sunburns early in life, freckles, and sun-sensitive skin (as measured by poor tanning ability and light skin, eye, or hair color) contribute to this possible life-threatening cancer, melanoma. Unfortunately, the cause is not to be found. (Healthy People 2010).

- ❖ Unfortunately, there is no sufficient evidence to confirm whether or not early detection through routine skin examination (self or physician) decreases the number of deaths from melanoma. It has been concluded that one beneficial impact on the risk of melanoma and other non-melanoma skin cancers would be by reducing ultraviolet exposure to the skin. (Healthy People 2010)
- ❖ One major goal of Healthy People 2010 in regards to skin cancer is to “reduce the rate of melanoma cancer deaths.” (Healthy People 2010)
- ❖ Healthy People have decided to set its target for “2.5 deaths per 100,000 populations,” using “2.8 melanoma cancer deaths per 100,000 populations occurred in 1998 (age adjusted to the year 2000 standard population) as the baseline for their findings.” (Healthy People 2010)
- ❖ Eleven percent improvement will be used as the target setting, by using data from the National Vital Statistics System (NVSS), CDC, and NCHS. (Healthy People 2010)

Epidemiological Picture:

- ❖ The U.S. Preventive Services Task Force (USPSTF) reminds those that 1) light skinned men and women aged 65 and older, and people with atypical moles or more than 50 moles, are at greater risk for developing melanoma and 2) skin abnormalities should be reported to the physician. However, there is no conclusive evidence that recommends a total-body examination by your physician to lower the number of skin cancers a year. (USPSTF)
- ❖ If children, adolescents, and adults are protected from UV radiation, skin cancer can be reduced. (USPSTF)
- ❖ Determined between 2002-2004, “1.72% of men and women born today will be diagnosed with melanoma of the skin at some time during their lifetime.” This number can also be expressed as 1 in 58 men and women will be diagnosed with melanoma of the skin. (SEER)
- ❖ In the United States, the lifetime risk of dying of melanoma is 0.36% among men and 0.21% among women. (USPSTF)
- ❖ Between 1973 and 1995 the incidence of melanoma increased from 5.7 per 100,000 to 13.3 per 100,000. (USPSTF)
- ❖ Although primary prevention efforts have focused on young people, the elderly (especially elderly men) bear a disproportionate burden of morbidity and mortality from melanoma and non-melanoma skin cancer. (USPSTF)

- ❖ Men aged >65 (5.2% of the U.S. population) are diagnosed with 22% of the new cases of malignant melanoma each year; women aged >65 (7.4% of the population) are diagnosed with 14% of new cases. (USPSTF)
- ❖ Melanoma tends to be diagnosed at a later stage and is more likely to be deadly than it is in the general population when in the elderly years of life. (USPSTF)

The following statistics refer to new cases, which include deaths due to melanomas of the skin and other non-epithelial skin cancers. The United States Cancer Statistics registries do not include in their statistics data for basal cell and squamous cell carcinomas.

- ❖ In 2003, 45,625 people in the United States were diagnosed with skin cancer. (CDC, 2007)
- ❖ Similarly in 2003, 7,818 people in the United States died of skin cancer. (CDC, 2007)
- ❖ It is estimated that “59,940 men and women (33,910 men and 26,030 women) will be diagnosed with melanoma and 8,110 men and women will die of melanoma of the skin in 2007.” (SEER)

Rates based on patients who died in the US between 2000-2004 are shown in the following table. (SEER)

Death Rates by Race

Race/Ethnicity	Male	Female
All Races	3.9 per 100,000 men	1.7 per 100,000 women
White	4.3 per 100,000 men	2.0 per 100,000 women
Black	0.5 per 100,000 men	0.4 per 100,000 women
Asian/Pacific Islander	0.4 per 100,000 men	0.3 per 100,000 women
American Indian/Alaska Native	1.3 per 100,000 men	0.7 per 100,000 women
Hispanic	0.9 per 100,000 men	0.6 per 100,000 women

- ❖ Between 2000-2004, the median age at diagnosis for melanoma of the skin was 59 years of age. (SEER)

Incidence of melanoma diagnosed in 2000-2004 from 17 geographic locations is shown in the following table. (SEER)

Incidence Rates by Race

Race/Ethnicity	Male	Female
All Races	23.6 per 100,000 men	14.9 per 100,000 women
White	27.2 per 100,000 men	17.6 per 100,000 women
Black	1.1 per 100,000 men	0.9 per 100,000 women
Asian/Pacific Islander	1.7 per 100,000 men	1.3 per 100,000 women
American Indian/Alaska Native	4.1 per 100,000 men	2.0 per 100,000 women
Hispanic	4.5 per 100,000 men	4.6 per 100,000 women

- ❖ Ahead of prostate, lung and colon cancer, skin cancer is the #1 cancer in men over the age of 50. (The Skin Cancer Foundation)

Solutions:

The Skin Cancer Foundation (<http://www.skincancer.org/blogsection/skin-cancer/>)

Once melanoma, the deadliest form of skin cancer, has metastasized to other parts of the body, it is hard to stop. Fortunately, it can be easily taken care of in its earliest stages. According to the Skin Cancer Foundation, the best way to detect the early warning signs of basal cell carcinoma, squamous cell carcinoma, and melanoma is by a yearly skin exam by a doctor and self-examination of your skin once a month. The main focus is to look for any new abnormal or normal growth that was not there previously. Taken from the Skin Cancer Foundation Web site are tips in examining your body: Examine head and face, using one or both mirrors and use blow dryer to inspect scalp. Check hands, including nails and by using a full-length mirror one can examine elbows, arms, underarms. Focus on neck, chest, torso and women check under breasts, moles and growths can show up unnoticed. With your back to the mirror, use hand mirror to inspect back of neck, shoulders, upper arms, back, buttocks, legs. Finally, sitting down, check legs and feet, including soles, heels, and nails. Similarly to examine genitals, use a hand mirror. Cancer can show up in various places even when not exposed to the sun.

American Academy of Dermatology (<http://www.aad.org/>)

The initial diagnosis of melanoma can bring with it various emotions for not only the patient but the family as well. When caught early, “surgical removal shows a cure rate of approximately 95%.” The thickness of the primary tumor and stage of the cancer primarily determines the course of therapy which, may or not be different. Surgery is used to remove the primary tumor in the early stages and to determine if all the cancerous cells have been removed. If it is believed that one or more tumors can be completely removed or that surgery can bring some relief from symptoms surgery can also be an option. In more advanced cases, chemotherapy, immunotherapy, and radiation therapy may be used.

Once it has metastasized to distant organs, surgery cannot cure melanoma. One way of treating melanoma or early detection of skin cancer would be through Mohs surgery. The surgeon first removes any remaining visible tumor along with a thin layer of additional tissue during the first few minutes in Mohs surgery. Mohs is a unique surgery in which the removed tissue is examined while the patient is undergoing surgery not being the case for most surgeries. The removed tissue then undergoes microscopic examination to determine if cancerous cells are present. This procedure is repeated until cancer cells are no longer visible. The Mohs surgeon and technician examining the tissues hope to remove the cancer cells safely and ensure no additional growth of the cancerous cells. The surgical wound is treated as needed with various methods such as allowing the wound to heal naturally, suturing the area or by a skin flap once the cancer is no longer visible under the microscope. If the primary melanoma is located on the face or another area where it is essential to preserve as much healthy tissue as possible Mohs surgery would be a prime option. Another reason for Mohs would be if the tumor is large,

recurring melanoma in the same area, or it is unsure as to where the cancer ends in the skin.

Cancer Treatment Centers of American (<http://www.cancercenter.com/skin-cancer/photodynamic-therapy.cfm>)

Another type of treatment for removing and stopping the spread of melanoma would be a course of treatment that includes a regime of photodynamic therapy (PDT). According to the Cancer Treatment Centers of America, "PDT is a two-step procedure that is done on an outpatient basis." The patient is injected with Photofrin, a light-sensitive drug, which targets cancerous cells. The low-power laser used is not a typical laser used in most laser surgeries. The light used in PDT involved not heat, classifying it as a non-thermal laser. Roughly, 24-48 hours after the injection, the laser light is directed onto tumor cells, which, exposes the cancerous tissue to a certain spectrum of light. From this, the light "switches on" the drug that in part destroys the cancerous cells without damaging your surrounding healthy tissue. This type of therapy has many advantages such as relatively pain free, no overnight stay at the hospital, minimal side effects and has fewer risks associated than a surgical procedure. As with any procedure there are also disadvantages, which include light sensitivity to the body and eyes for approximately 30 days as well as some localized swelling on the skin and esophagus which can result due to the presence of the drug remaining in your body.

Additional Internet Sources:

American Academy of Dermatology. <http://www.aad.org/>

Medline Plus. *Skin Cancer*. <http://www.nlm.nih.gov/medlineplus/skincancer.html>

American Cancer Society. *Melanoma*. <http://www.cancer.org>

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Skin Cancer Handout

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- ❖ Sun exposure is the cause of 90 percent of all skin cancers. (The Skin Cancer Foundation)
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- ❖ Moles, brown spots and growths on the skin are usually harmless but not always. The first signs can appear in one or more atypical moles and progress many more. Look for the **ABCDEs** of melanoma, and if you see one or more, make an appointment with a physician immediately: (Skin Cancer Foundation)

Asymmetry **B**orders (uneven)

Diameter (large) **C**olor (variety of colors)