Melanoma

Introduction

The topic I chose to write about for this fact sheet is Melanoma. I decided to discuss this topic because a past soccer coach of mine had Melanoma and suffered severely from it. Even though she survived her battle, it still affects her everyday life, and she even had to stop coaching because of it. Melanoma has also become more known throughout the United States and has been a topic of concern especially in the past decade with the risks of being diagnosed with Melanoma rising. Melanoma is the most dangerous type of skin cancer, and is the leading cause of death from skin disease.

Section 1: Background and Problem Statement

- **Web site #1 Name:** **Healthy People 2020**
- **Web address:** **http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=5**
- **Background Information:**
  - **Melanoma cancer is the leading cause of death among skin cancer patients each year. In the United States n 2007, there were an estimated 2.7 melanoma cancer deaths per 100,000 people in the population. Healthy People 2020 are targeting to decrease that number to 2.4 deaths per 100,000 in the population. If this were to happen, it would be a ten percent improvement rate (Section C-8 under "View Details"). In order to work towards this goal, Healthy People 2020 wants to work on increasing the proportion of adults who were counseled about cancer screenings that are consistent with current guidelines (Section C-18), and also increase the proportion of persons who participate in behaviors that reduce their exposure to harmful ultraviolet (UV) irradiation and avoid sunburn (Section C-20).**

- **Web site #2 Name:** **PubMed Health**
- **Web address:** **http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001853/**
- **Background Information:**
  - **Melanoma can involve the colored part of the eye as well as on a persons' skin. It is caused by changes in cells called melanocytes, which produce a skin pigment called melanin. These cells are responsible for skin and hair color. The Melanoma cancer cells can appear on normal skin, or it can begin as a mole or other area that has changed in appearance. Some moles that are present at birth may develop into melanomas. Even though Melanoma is not as common as other types of skin cancer, the rate of melanoma is steadily increasing. There are four major types of melanoma. The first is "Superficial spreading melanoma." This is the most common type. It is**

usually flat and irregular in shape and color with different shades of black and brown. It is most common in Caucasians. The second type is "Nodular melanoma." This usually starts as a raised area that is dark and blackish-blue or bluish-red in color. However, some forms of this type do not have any color. The third type is "Lentigo maligna melanoma." This type usually occurs in the elderly. It is the most common in sun-damaged skin on the face, neck, and arms. The abnormal skin areas are usually large, flat, and tan with areas of brown. The fourth type of melanoma is "Acral lentiginous melanoma." It is the least common form. It usually occurs on the palms, soles, or under the nails and is more common in African Americans.

- **Web site #3 Name: Mayo Clinic**
- **Web address: http://www.mayoclinic.com/health/melanoma/DS00439**
- **Background Information:**
  - **Melanoma is the most serious types of skin cancer. It can form on your skin, in your eyes, and rarely, in internal organs such as intestines. The exact cause of all melanomas isn't clear, but exposure to ultraviolet radiation from sunlight or tanning lamps and beds increases a person's risk of developing melanoma. Limiting exposure to UV radiation can help reduce the risk of developing melanoma. The risk of melanoma is increasing in people less than 40 years of age, especially in women. Even though it is the most deadly form of skin cancer, it can be treated successfully if it is detected early enough.**

Section 2: Research

Web site #1 Name: American Cancer Society

- **Web address: http://www.cancer.org/cancer/skincancer-melanoma/detailedguide/melanoma-skin-cancer-new-research**
- **Summary of the research:**
  - **Recent studies suggest that there may be two general ways that UV exposure is linked to melanoma, but there is likely some overlap. The first link is to sun exposure to as a child and teenager. People with melanoma often have an early history of sunburns or other intense sun exposures. This early sun exposure can cause changes in the DNA of the person's melanocyte skin cells and this starts them on a path to becoming melanoma cells in their later years. Some doctors think that this may explain why melanoma often occurs on the legs and trunk of a person, because these areas generally aren't exposed to the sun as much in adulthood.**
  - **The second link is to melanomas that occur on the arms, neck, and face. These areas are chronically exposed to the sun, particularly in men. Tanning booths also encourage either kind of melanoma to develop. Researchers are looking to see how melanomas that develop as a result of these types of UV exposure may differ.**
  - **Scientists have also made a great amount of progress during the past few years in understanding how UV light damages a person's DNA, and how**

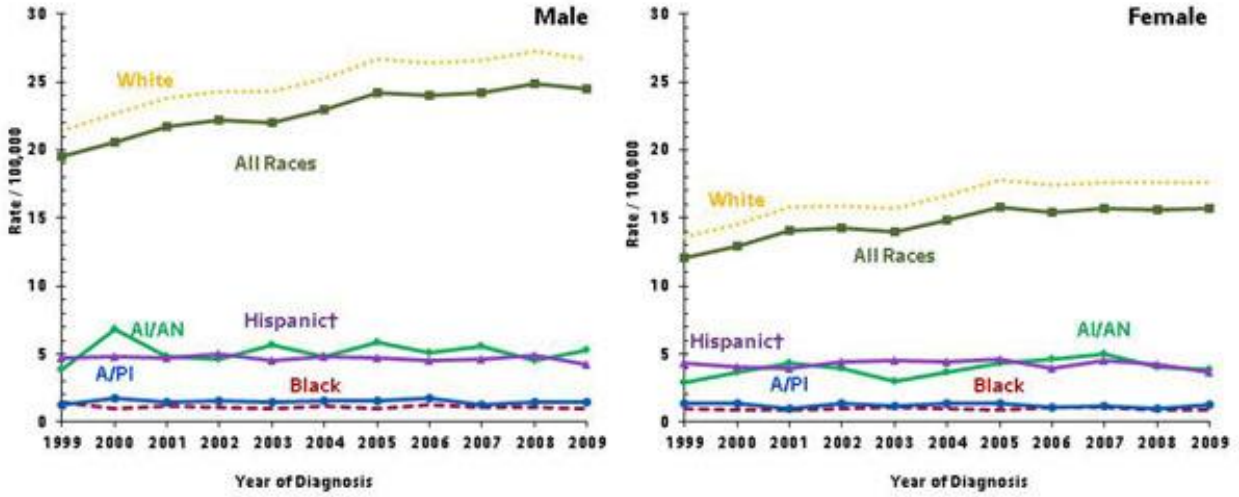
these changes in DNA can cause normal skin cells to become cancerous. However, some people may inherit mutated genes from their parents, seeing as research has shown melanomas to run in certain families.

- **Web site #2 Name: Indiana University News Room**
- **Web address: http://newsinfo.iu.edu/web/page/normal/16911.html**
- **Summary of the research:**
  - **A potent anti-tumor gene that has been introduced into mice with a certain type of melanoma has resulted in permanent immune reconfiguration and produced a complete remission of the mice's cancer, according to an article published in December 2010 in *The Journal of Clinical Investigation.* A National Institute of Health grant funded the research. It has paved the way for a new clinical trial in humans that will be funded by the V Foundation for Cancer Research. Indiana University School of Medicine researchers used a modified lentivirus to introduce a potent anti-melanoma T cell receptor gene into the hematopoietic stem cells of mice. These hematopoietic stem cells are the bone marrow cells that produce all blood and immune system cells. The T cell gene, which recognizes a specific protein found on the surface of melanoma, was isolated and cloned from a patient with melanoma. The gene-modified stem cells were transplanted back into hosts and found to eradicate metastatic melanoma for the mice's lifetime.**

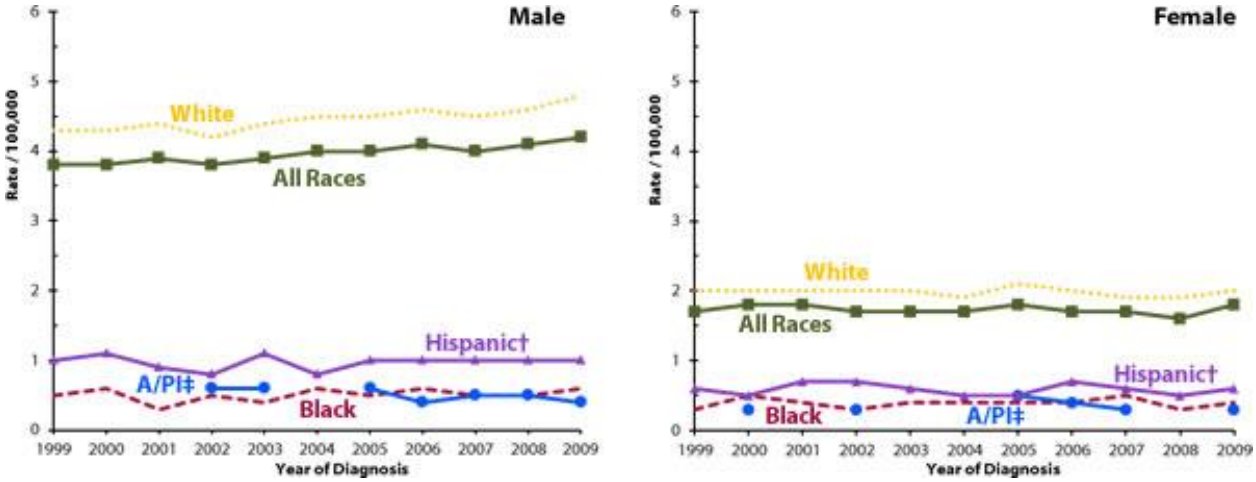
- **Web site #3 Name: National Cancer Institute**
- **Web address: http://www.cancer.gov/clinicaltrials/results/summary/2010/sunscreen-melanoma2010**
- **Summary of the research:**
  - **A trial reported on December 6, 2010 in the *Journal of Clinical Oncology* stated that regular sunscreen use might reduce the risk of developing melanoma. The results came from a randomized controlled clinical trial. The research was led by Adéle Green, Ph.D. of the Queensland Institute of Medical Research. His team of researchers and he examined the incidence of melanoma among 1,621 white adults. They divided the participants, age 20-69 into two groups. The participants in one group were given an unlimited supply of a broad-spectrum sunscreen with a sun protection factor (SPF) of 16 and were asked to apply it every morning to their head, neck, arms, and hands. They were also asked to reapply it after heavy sweating, bathing, or long sun exposure. The second group were asked to continue using sunscreen of any SPF at their usual discretionary frequency (for some, included no use). Over an additional 10 years, they found that eleven new cases of melanoma were diagnosed in the daily sunscreen group, and twenty-two new cases were found in the group of people who used sunscreen more discretely. These results show a 50% reduction of melanoma cases for people who used a SPF sunscreen daily.**

Section 3: Statistics

- **Web site #1 Name:** **Centers for Disease Control and Prevention**
- **Web address:** **http://www.cdc.gov/cancer/skin/statistics/race.htm**
- **Summary of the statistics:**
  - **The rate of people getting melanoma of the skin or dying from melanoma of the skin varies by race and ethnicity. The graphs on this website show how many people out of 100,000 got melanoma of the skin each year during the years of 1999-2009. The year 2009 is the most recent year for which the numbers have been reported. In 2009, white people had the highest rate of getting melanoma, followed by American Indian/Alaska Native, Hispanic, Asian/Pacific Islander, and blacks.**



  - **From 1999-2009 the rate of people dying from melanoma has varied, depending on race and ethnicity. In 2009, white people were more likely to die of melanoma than any other group, followed by Hispanic, black, and Asian/Pacific Islander people. Indian/Alaska Native data is not available.**



- **Web site #2 Name:** **American Academy of Dermatology**

- **Web address: http://www.aad.org/media-resources/stats-and-facts/conditions/melanoma-trends**
- **Summary of the statistics:**
    - **The incidences of melanoma have continued to increase in the United States and worldwide during the last four decades. Yearly estimates showed that 47,700 people in the US were expected to be diagnosed with melanoma in 2000, but that number rose to 68,720 by 2009. Recent studies have questioned whether there is really a melanoma epidemic currently occurring, or if rising rates reflect a change in how doctors diagnose melanoma, as well as the availability of skin cancer screenings. Dermatologist Darrell S. Rigel, MD, FAAD, clinical professor of dermatology at NYU Medical Center in NY says that the reason for the rise in diagnoses is because people aren't protecting themselves from sun exposure and other people subject themselves to UV radiation from indoor tanning beds and lamps. He says that nearly 28 million people tan indoors in the US annually and 70% of tanning salon patrons are white girls and women, primarily aged between 16 and 29 years old.**

- **Web site #3: Skin Cancer Foundation**
- **Web address: http://www.skincancer.org/skin-cancer-information/melanoma**
- **Summary of the statistics:**
    - **Melanoma kills an estimated 8,790 people in the United States annually. If it is treated early, it is almost always curable. If it is not, the cancer can advance and spread to other parts of the body where it becomes hard to treat and can be fatal. The American Cancer Society estimates that at present, about 120,000 new cases of melanoma in the US are diagnosed each year. In 2010, about 68,130 of these cases were invasive melanomas, with about 38,870 in males and 29,260 in women.**

Section 4: Consumer Information

- **Web site #1 Name: Melanoma Research Foundation**
- **Web address: http://www.melanoma.org/learn-more/melanoma-101/what-melanoma**
- **Summary of the information:**
    - **Just like there are many different cancer types, researchers are discovering that there are many forms of melanoma, and each has their own unique biology and response to treatment options. It is usually, but not always, cancer of the skin. Skin cancers can be divided into two types: melanoma and non-melanoma. Non-melanoma skin cancers are usually referred to as basal cell carcinoma and squamous cell carcinoma. These skin cancers are most often treated with surgery since they don't normally spread to other parts of the body. The different types of melanoma are cutaneous melanoma, mucosal melanoma, and ocular melanoma.**

- **Web site #2 Name:** **Medicine Plus**
- **Web address:** **http://www.nlm.nih.gov/medlineplus/melanoma.html#cat22**
- **Summary of the information:**
  - **Often the first sign of melanoma is a change in the size, shape, color, or feel of a mole. Most melanomas have a black-blue area. It can also appear as a new mole and it can be black, abnormal, or "ugly looking." The strategy of "ABCDE" can help a person remember what to look for when looking for melanoma signs on the body.**
  - **A-Asymmetry: the shape of one half does not match the other**
  - **B-Border: the edges are ragged, blurred, or irregular**
  - **C-Color: the color is uneven and may include shades of black, brown, and tan**
  - **D-Diameter: there is a change in size, usually an increase**
  - **E-Evolving: the mole has changed over the past few weeks or months**

- **Web site #3 Name:** **WebMD**
- **Web address:** **http://www.webmd.com/melanoma-skin-cancer/melanoma-guide/skin-cancer-melanoma-what-increases-your-risk**
- **Summary of the information:**
  - **There are many factors that can increase your risk of being diagnosed with melanoma. Some of these are exposure to ultraviolet radiation, blistering sunburns at any time of life, and intense sun exposure, even if it is only every now and then. Other factors can unfortunately be characteristics of your skin. For example, fair skin that doesn't tan and tends to sunburn or freckle, numerous moles and/or more than one atypical mole, or a large mole you had since birth. Eye and hair color can also be risk factors. If you have blue or green eyes, you are more at risk; also if you have red or blond hair you are more at risk. The last two factors that increase your risk of diagnoses are having a personal or family history of melanoma, and having certain gene changes.**

Section 5: Solutions to the Problem (or Issue)

- **Web site #1 Name:** **Melanoma Exposed**
- **Web address:** **http://www.melanomaexposed.com/**
- **Summary of the information:**
  - **This website is run by Coach Bill Cowher and the Bristol-Myers Squibb Company. He is an ex-NFL coach, and now is a Sports Commentator for a major television network. He set a personal goal of preventing as many people as he can from getting melanoma. He set this goal after having a personal experience with the disease. On the site, he has researched, cited, and provided facts about melanoma, how it is treated, and also has a link to help people find screening areas close to where they live if they enter their zip code. The site also lists different ways of protecting yourself against**

melanoma. Coach Cowher encourages everyone to take a more active role in their skin health, and his motto is "Screen, Protect, Know, and Tell."

- **Web site #2 Name: American Melanoma Foundation**
- **Web address: http://www.melanomafoundation.org/**
- **Summary of the information:**
  - **The American Melanoma Foundation (AMF), originally known as the Merlin Foundation, was founded in Southern California in 1990 by a group of melanoma patients and their relatives who believed in the importance and ever-growing need for support of specific research for new treatment approaches in melanoma. Through fundraising efforts, AMF has supported research for new treatments in melanoma. It expanded to successfully contributing to the general community with education and awareness programs as well as to the patient community through patient support groups. AMF achieved national recognition in recent years for its education and awareness information and programs, support programs through direct events, and other communication vehicles such as a newsletter and website.**

- **Web site #3 Name: AIM at Melanoma**
- **Web address: http://www.aimatmelanoma.org/en/index.html**
- **Summary of the information:**
  - **AIM at Melanoma has a goal to "increase support for melanoma research; to promote prevention and education among the general public and medical professionals; and to provide comprehensive and easily accessible melanoma resources for patients, survivors, and caregivers." On their "About AIM at Melanoma" page, they list this overall goal and also break the goals down into individual goals to reach the overall goal.**

Conclusions

Writing this fact sheet was very informative. I will admit, I am one who has always been insecure about being very pale-skinned, and have subjected myself to using tanning beds and going out into the sun without SPF sunscreen on. I will also admit, that due to my insecurities I will probably still continue to use indoor tanning beds until the summertime. However, I know that I will not use them AS OFTEN as I have in the past. Learning about melanoma and all of the facts is very scary. I am fair skinned with green eyes, and that immediately makes me more at risk for developing melanoma cancer, and it is also scary because I have had personal experience with someone who almost died from melanoma. I will definitely start to be more cautious in the summer time and limit my use of tanning beds in order to better my own protection of my skin.

Five-minute Twitter Brief

"A person's chances of developing melanoma decreases by almost 50% when a SPF sunscreen is used daily and reapplied regularly."