

# Melanoma

## Introduction

Although the majority of Americans know about cancer, and potentially a few ways in which they can protect themselves, I believe in the importance of being educated on the facts of the second leading cause of death in the United States. Cancer has had an impact on me personally; my grandfather and grandmother both had cancer, my mother is a breast cancer survivor, and I lost a close friend at the age of 27 to stomach cancer. Watching some of the closest people to me go through the pain of radiation and chemotherapy was awful, but they serve as a reminder to me of how important it is to remain educated and educate those around me about what they can do to help reduce their risk of developing this 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: Although there is not a great deal of information listed about melanoma on the Healthy People 2020 Web site, cancer prevention and detection is one of the main objectives of Healthy People 2020. The goal set by the initiative is to reduce the melanoma death rate from 2.7 per 100,000 to the target 2.4 per 100,000.
- **Web site #2 Name: American Cancer Society**
- **Web address:**
  - <http://www.cancer.org/Cancer/SkinCancer-Melanoma/DetailedGuide/melanoma-skin-cancer-risk-factors>
- **Background Information:**
  - The American Cancer Society provides useful information about the risk factors of Melanoma such as heredity, age, ultraviolet rays, and moles. The site also relays the importance of checking your skin regularly and seeing a dermatologist once a month if you have a family history of Melanoma. Early detection is stressed thoroughly, as it may save your life.
- **Web site #3 Name: United States Department of Health and Human Services**
- **Web address:** <http://www.usgcrp.gov/usgcrp/Library/ocp2009/ocp2009-hhs.htm>
- **Background Information:**
  - Due in part to the changing climate and research on the effects of Ultra-violet radiation, the United States Department of Health and Human Services has deemed Melanoma to be a significant health concern because of its rapidly rising numbers. Along with funding research on the effects of exposure to UV light, and the UV exposure, the department's goals include finding methods of preventing and reducing Melanoma.

## Section 2: Research

### Web site #1 Name: Skin Cancer Foundation

- **Web address:**
  - <http://www.skincancer.org/breakthrough-melanoma-drug-approved-first-in-a-new-class-of-targeted-treatments.html>
- **Summary of the research:**
  - The development of a new and groundbreaking drug recently approved by Federal Drug Administration gives hope to those battling inoperable or advanced metastatic Melanoma. The drug ZELBORAF has had an 81% success rate in diminishing the size of tumors in patients during clinical trials. According to the site, ZELBORAF is the “first targeted genetic therapy for Melanoma approved to date.” Its success in clinical trials is hopefully an indicator of this drug’s ability to extend patient’s lives who are afflicted with Melanoma.

- **Web site #2 Name: National Cancer Institute at the National Institutes for Health**

- **Web address:**
  - <http://www.cancer.gov/clinicaltrials/results/summary/2010/sunscreen-melanoma2010>
- **Summary of the research:**
  - The randomized controlled study performed by the Queensland Institute of Medical Research aimed to show a link between the use of sunscreen and Melanoma. Researchers divided participants into a control group, and a group that applied sunscreen multiple times daily for 4 years. Researchers tracked participants for the next 10 years, and found that there was a 73% reduction in the cases of invasive Melanoma in participants in the daily sunscreen group. Although this test does not prove that sunscreen is 100% effective in preventing Melanoma, it does show that it can help prevent the disease along with other preventative measures.

- **Web site #3 Name: Science Daily**

- **Web address:** <http://www.sciencedaily.com/releases/2010/12/101222173045.htm>
- **Summary of the research:**
  - Researchers at the Mount Sinai School of Medicine have found evidence that may serve as a new treatment option for patients suffering with malignant melanoma. The researchers discovered that a particular protein suppresses the progression of melanoma through regulation of an oncogene, a gene responsible for cancer growth. By manipulating the histone variant macroH2A, researchers found that in early stages of malignant melanoma progressed and metastasized quickly, and when it was added in late stage aggressive melanoma the effects were subsequently reversed. With further study, this research may prolong the life of those with aggressive late stage melanoma, and hopefully one day lead to a cure.

## Section 3: Statistics

- **Web site #1 Name: Skin Cancer Foundation**
- **Web address: <http://www.skincancer.org/Skin-Cancer-Facts/#melanoma>**
- **Summary of the statistics:**
  - The Skin Cancer Foundation offers many statistics about Melanoma. According to the site it is estimated that 123,590 new cases of melanoma will be diagnosed in the US in 2011 of which 53,360 will be noninvasive (*in situ*) and 70,230 invasive. Of these 123,590 cases, with 8,790 resulting in death. The site also lists other statistics that I found shocking such as how the incidence of Melanoma has continued to rise “at a faster rate than that of any of the seven most common cancers.” This is an alarming statistic that proved that Melanoma is a significant health threat. These numbers also support the importance of advocacy and educating the public on not only what they can do to prevent Melanoma, but also the warning signs and importance of early detection, because between 1992 and 1994, Melanoma increased 45% annually.
  
- **Web site #2 Name: World Health Organization’s International Agency for Research on Cancer**
  - **Web address:**
  - **[http://www.iarc.fr/en/media-centre/iarcnews/2009/sunbeds\\_uvradiation.php](http://www.iarc.fr/en/media-centre/iarcnews/2009/sunbeds_uvradiation.php)**
- **Summary of the statistics:**
  - According to the World Health Organization’s International Agency for Research on Cancer (IARC), using a tanning bed before the age of 30 increases the user’s chances of developing Melanoma by 75%. A staggering statistic when you take into account how many men and women use tanning beds year round to achieve and maintain the skin color they desire. Regular use of a tanning bed is so detrimental that the IARC reclassified tanning devices into the highest cancer risk category and deemed them to be carcinogenic to humans. Even only occasional exposure to the Ultraviolet lights can triple a person’s risk of developing Melanoma.
  
- **Web site #3: Melanoma Research Foundation**
- **Web address: <http://www.melanoma.org/learn-more/melanoma-101/melanoma-statistics-facts>**
- **Summary of the statistics:**
  - According to the Melanoma Research Foundation, every 8 minutes someone in the United States is diagnosed with Melanoma, while every hour someone will die from this disease. This statistic is alarming and brings to light the importance of educating the public about not only prevention, but also early detection. The site also gives other alarming statistics such as how Melanoma most commonly strikes young adults between the ages of 25-29, and is also the second most common cancer in adolescents ages 15-29.

## Section 4: Consumer Information

- **Web site #1 Name: Aim at Melanoma**
- **Web address: <http://www.aimatmelanoma.org/aim-for-answers/risk-factors.html>**
- **Summary of the information:**
  - This site provides a lot of useful facts and information about the prevention, detection and treatment of Melanoma. It also gives some interesting facts about Melanoma such as how Caucasians are 20 times more likely to develop Melanoma than those of African American decent. It is important to know and understand this fact because skin tone is the primary risk factor for developing Melanoma. The fairer ones skin tone, the less their body produces the pigment melanin, a skin pigment that is responsible for skin and hair color.
  
- **Web site #2 Name: Melanoma Center**
- **Web address: <http://www.melanomacenter.org/prevention/index.html>**
- **Summary of the information:**
  - This Web site offers information on Melanoma and its hereditary and environmental risks. It reminds the public that 80% of lifetime exposure to the sun occurs prior to the age of 18. This serves as a reminder to parents to remain diligent about protecting their children with sunscreen each time they go outside, in water or after 2 hours of exposure to the sun. The site also discusses skin cancer screenings, early detection, the stages of Melanoma, and treatment, amongst other important topics. Overall, the sight is a very useful tool for educating the public as well as someone who may be affected by this disease.
  
- **Web site #3 Name: American Melanoma Foundation**
- **Web address: <http://www.melanomafoundation.org/facts/Facts.htm>**
- **Summary of the information:**
  - The American Melanoma Foundation's facts section contains important information about Melanoma. This site also answers questions such as whether Melanoma is a serious disease, the causes of Melanoma as well as rate of occurrence of Melanoma in the United States. Information on this site is easy to understand, and there are links to more in depth information available.

## Section 5: Solutions to the Problem (or Issues)

- **Web site #1 Name: Melanoma Research Foundation**
- **Web address:**
  - **<http://www.melanoma.org/sites/default/files/u13882/It%27s%20a%20Fact%20Sheet%20-%20Updated.pdf>**
- **Summary of the information:**
  - The Melanoma Research Foundation is a national organization dedicated to informing the public about the facts of Melanoma, how to reduce the risk of developing Melanoma, and also promotes the importance of early detection. The

organization also offers support to those suffering with Melanoma and their families. The site outlines steps one can take to reduce the risks of Melanoma such as reducing exposure to the sun, using sunscreen with a minimum of 30 SPF and UVB protection.

- **Web site #2 Name: American Melanoma Foundation**
- **Web address: <http://www.melanomafoundation.org/prevention/Prevention.htm>**
- **Summary of the information:**
  - The American Melanoma Foundation was founded by patients who were suffering with Melanoma to support research efforts and advocacy programs. The foundation is a non-profitable, charitable organization that offers facts on Melanoma, prevention of the disease, treatment options and support for patients already diagnosed with Melanoma.
  
- **Web site #3 Name: Melanoma Research Alliance**
- **Web address: <http://www.curemelanoma.org/research/MRAFactSheetScience2011.pdf>**
- **Summary of the information:**
  - The Melanoma Research Alliance is a privately funded organization that uses its funds to help fund the most promising research programs. Since its founding in 2007, the Melanoma Research Alliance has distributed over \$30 million dollars to 73 research programs to help supplement efforts to discover advancements in prevention, diagnosing, treatment and biological research of Melanoma. The alliance is also active in promoting awareness of Melanoma, and has formed alliances with other organizations such as the Danny Fund and Bruce Springsteen to inform the public of the effects of Ultra-violet sun exposure, the importance of avoiding tanning beds as well as the importance of early detection and awareness of changes of one's skin.

## Conclusions

Although there is no 100% guaranteed method to protect oneself from melanoma, it is crucial to understand the facts and educate others. Most young people are not aware of the detrimental effects that exposure to sun without the protection of sunscreen can have on the body, or the potential long term effects. The fact that California has banned individuals under the age of 18 from using tanning devices is the first step in helping curb a growing problem in the United States.

Through this project I learned that exposure to ultraviolet light is not the primary risk factor for developing Melanoma, as I had previously thought. It turns out that people with darker skin tones run a much lower risk for potentially developing Melanoma than individuals with fair skin. Staggering statistics such as every 8 minutes someone is diagnosed with Melanoma, and using a tanning bed increase your risk of developing Melanoma really outline the need for increased advocacy and education on the detrimental effects of unprotected exposure to the sun. Another statistic that I was not aware of prior to my research was that Melanoma is that leading form of cancer in young adults ages 25-29 years old. I personally, along with the majority of my

friends fall in this age bracket, and just reading this made me reflect on all the years that we sunbathed by each other's pools or at the beach with little or no knowledge of exactly how detrimental this was for our bodies. It made me realize how important it is to make people aware, because what the public does not know can potentially kill them or a loved one.

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