

Skin Cancer Awareness and Prevention

“Beauty is only skin deep.” We are often taught this age old saying at a very early age. However, our actions speak louder than words, and based on our actions, it pains me to say that our society places a premium on outward appearances and physical beauty over a person’s intellectual and spiritual qualities. Nothing exemplifies this more than our obsession with obtaining “the perfect” skin tan. We do this with utter disregard and abandonment of our skin’s long term health. In doing so, we expose our skin to the harmful Ultraviolet (UV) rays. Protecting the skin from these rays is a foreign concept to many, and it is often **too late** when we realize the dangerous consequences.

The **statistics** on skin cancer are overwhelming. Additionally, there exists a lot of confusion about the statistics. For example, according to American Cancer Society (ACS) (1), skin cancer is the most common form of cancer in the United States with more than 3.5 million skin cancers diagnosed annually. Each year there are more new cases of skin cancer than breast, prostate, lung, and colon cancers combined! One in five Americans will develop skin cancer in the course of their lifetime. Moreover, over the past three decades, more people have had skin cancer than all other cancers combined. However, it is important to note that ACS classifies basal and squamous cell carcinoma as “skin cancer,” in addition to Melanoma, although in many instances basal/squamous cell carcinoma are not life-threatening. SEER data exacerbates this confusion by only listing statistics for melanoma and not other skin cancers. (2) The primary reason for this is that non-melanoma skin cancers often go unreported (because they’re often not as life-threatening as melanoma), and thus are hard to estimate. This fact can cause people to become complacent and take skin cancer lightly. Not only can non-melanoma skin cancer be deadly in some (rarer) occasions, but it can cause great emotional and physical agony, due to disfigurement from surgeries and radiation. I learned this first-hand from local Ithaca citizen Donna Berich, who has had basal cell carcinoma nevus syndrome since she was 20 years old. She has had to have over 20 facial surgeries and said that she suffers a great deal due to this, almost on a daily basis. Finally, between 40 and 50 percent of Americans who live to age 65 will have either basal cell carcinoma or squamous cell carcinoma at least once (3). This is important to realize because this means that half of us will eventually get “skin cancer.” We feel invincible when we are young, but it is just a matter of time. So, it is imperative that appropriate precautions be taken. Skin cancer is a tremendous burden, not only on patients but also the economy. As per data collected in 2006, the annual cost of treating skin cancers in the U.S. is estimated at \$8.1 billion (an aggregate of all three forms of skin cancer): about \$4.8 billion for nonmelanoma skin cancers and \$3.3 billion for melanoma (4). It is likely that the annual cost has increased since then, given the rising health care costs in general.

The burden can be better understood if we understand the various types of skin cancers (5). Basal cell carcinoma is the most common form, accounting for 90% of all skin cancers. It starts in the basal cells of the outer skin layer. This skin cancer is caused by long-term exposure to sunlight. It is usually seen on the face and neck and is the most easily treated. Squamous cell carcinoma is the second most common type of skin cancer. It starts in the outer skin layer and eventually penetrates the underlying tissue if left untreated. It is seen on the extremities or face and neck. Approximately 4 million cases of basal cell cancer and 1 million cases of squamous cell cancer are diagnosed in the U.S. each year. Malignant melanoma is a cancer of the melanocytes or pigment cells. It is the most serious type of skin cancer and is responsible for the most deaths. According to ACS, one person dies of melanoma every hour. However, it can be

cured if it is diagnosed and removed early. Finally, a rare type of skin cancer called Kaposi sarcoma (KS) is caused by a virus. This is usually seen in people affected with AIDS.

But “Why does it matter to me?” you may ask. As Thomas Gilovich once said, “*When we do cross paths with people whose beliefs and attitudes conflict with our own, we are rarely challenged.*” I was first confronted with skin cancer in high school when Ansley, my fellow beauty pageant friend, was diagnosed with it. The doctor felt that it was caused by the tanning bed that she used daily after school in her home, as a way to “de-stress” and get that “golden glow.” As devastating as the news was, I realized that I had an opportunity to make a difference. I understood that skin cancer was a menace, especially to teenagers, and could be prevented with increased education and awareness. I also realized that as obvious as the statistics are, it’s not easy to change one’s lifestyle. We teenagers often feel “invincible” and forget what effect our actions now can have on us in the future. While the instant gratification from getting that fresh tan from a tanning bed may seem indispensable, it is not worth the agony it may present later in life. With this in mind, I started an organization, Operation: Save Your Skin, to increase awareness of skin cancer. During my journey with Operation: Save Your Skin through the past years, I have been fortunate to meet many survivors of skin cancer. Their stories were inspirational, their advice was firm, and their regret was uniform: “I wish I had never tanned—my pageant coach who passed away in 2015 from Melanoma”...”I pray that my 18-year old daughter sees what all I’ve been through as a reminder to always wear sunscreen and stay away from tanning beds—Donna Berich.” This has only strengthened my resolve to intensify my efforts to make skin cancer a thing of the past, and bring forth a future where we have the knowledge and resources to prevent skin cancer. Medical science has made many important advances in the treatment of cancer. However, prevention is worth an ounce of cure, and this could not be truer for cancer, especially skin cancer. Unlike most other cancers, we know the causes of most forms of skin cancer, which makes it highly preventable. It’s never too late, or too early to start preventing skin cancer. Protect your skin through thick or thin. The next time you go out in the sun, THINK before you turn PINK! Experiencing just 5 sunburns between the ages of 15-18 increases one’s risk for melanoma by 80% (6). This upcoming week is Slope Day, and instead of baking under the UV lamp, take precaution! Read further to learn ways to protect your skin!

My friend, Matthew, is constantly lathering himself up with sunscreen, and never goes out without a long sleeve shirt and a hat, to the ridicule of his classmates. Little do they know that Matthew is aware of his high risk of skin cancer, not only because of his fair skin, red hair, blue eyes, and freckles, but also because his Mom has had skin cancers. Some people, such as Matthew, are at much higher risk for developing skin cancer. These include those with a family history of skin cancer, especially melanoma; those with many moles; people who have freckles and burn before tanning; people with fair skin, blue or green eyes, or blond, red, or light brown hair; people who spend a lot of time outdoors; and those with a weak immune system. These individuals need to follow Matthew’s example and take extra precautions to prevent skin cancer.

We also know that tanning beds are one of the main causes of the rising incidence of skin cancer, especially among young people, such as Ansley. Ultraviolet (UV) radiation of tanning beds is a proven human carcinogen (7). According to a study published in JAMA (8), more than 419,000 cases of skin cancer in the U.S. each year are linked to indoor tanning, including about 245,000 basal cell carcinomas, 168,000 squamous cell carcinomas, and 6,200 melanomas. They also reported that more people develop skin cancer because of tanning than develop lung cancer

because of smoking, and that those who have ever tanned indoors have a 67 percent increased risk of developing squamous cell carcinoma and a 29 percent increased risk of developing basal cell carcinoma. Realizing the danger that tanning beds pose, they have been reclassified by the FDA to Class II (moderate risk) devices, and twelve states prohibit people younger than 18 from using indoor tanning devices. Realizing that tanning beds are a menace, I made it my mission to promote awareness of the dangers of indoor tanning in my small community in Texas. Due to my efforts, the city passed an ordinance restricting tanning for minors, even before the state legislature.

Protection from the UV rays of the sun is paramount. There are some simple steps we can take to limit exposure to UV rays. Staying in the shade is one of the best, but probably not very practical, ways to limit our UV exposure, especially in the beautiful Finger Lakes region of Ithaca where people want to enjoy the beautiful outdoors. If we are going to be in the sun, “Slip! Slop! Slap! and Wrap” is a phrase that can help us remember some of the key steps we can take to protect ourselves: Slip on a shirt, Slop on sunscreen, Slap on a hat and Wrap on sunglasses.

It is important to dispel some **myths** about skin cancer. Some believe that precautions need not be taken on cloudy days or during the long winter months, like in Ithaca. But the UV rays from the sun have unique characteristics that make them so dangerous all year round. These rays are definitely the strongest between the hours of 10am and 4pm, and extra precautions are advisable during this time. But these rays can reach the ground all year, even on cloudy days. UV rays start getting more intense in spring and then peak during summer. Additionally, the UV rays are reflected by water and snow. So one has to be especially careful around the pool or beach or snow because the reflection increases the amount of UV radiation. UV rays can also penetrate the water’s surface, so we can still get a burn even if we are under water. Another overlooked fact is that UV rays can also pass through windows. Typical car and home windows block most UVB rays but not all UVA rays. So, our skin may still get damaged inside the vehicle or by the office window.

When we are out in the sun, we should wear clothing to cover as much skin as possible. Some companies now make special UV protective clothing that absorbs UV rays. These sun-protective clothes may have a label listing the UV protection factor value (the level of protection the garment provides from the sun’s UV rays). The higher the UPF, the higher the protection provided.

Application of sunscreen is an important protection from the sun’s UV rays. But a prevailing **myth** is that sunscreen can only be applied once and it protects you all day long. In fact, sunscreen needs to be reapplied at least every 2 hours to maintain protection, or more often if we are sweating or swimming. Also the sunscreen should not be used as a way to justify spending more time in the sun because even with proper sunscreen use (9), some UV rays get through. This is why using other forms of sun protection is also important. Sunscreens are available in many different forms such as lotions, creams, ointments, gels, sprays, wipes etc. When choosing a sunscreen product, it is important to read the label. Sunscreens with broad spectrum protection (against both UVA and UVB rays) and with sun protection factor (SPF) values of 30 or higher are recommended. It is even more important to know how to apply the sunscreen properly. Sunscreen should be applied generously. We should pay close attention to areas not covered by clothing such as face, ears and neck. Ideally, about 1 ounce of sunscreen (about a palmful) should be used to cover the arms, legs, neck, and face.

Another protective mechanism is wearing a hat. One with at least a 2-inch brim all around is ideal because it protects areas exposed to intense sun, such as the ears, eyes, forehead, nose, and scalp.

Finally, UV-blocking sunglasses are essential for protecting the eyes and the delicate skin around them. Research has shown that UV rays from the sun can increase our chances of developing certain eye diseases such as cataracts. Large-framed and wraparound sunglasses are better at protecting our eyes from light coming in from different angles.

Last but not the least, skin exams are a proven way of detecting skin cancer early (10). Exams by the doctor as well as self-exams can help find cancers early, when they are easier to treat. Regular skin exams are especially important for people who are at higher risk of developing skin cancer, such as an individual with a family history of skin cancer, having fair skin, and having a large number of moles (11). A skin self-exam should be done once a month. According to Cancer.org, it is best done in a well-lit room in front of a full-length mirror. A hand-held mirror may be used to look at areas that are hard to see, such as the backs of our thighs. A spouse or close friend or family member may be able to help us with these exams, especially for those hard-to-see areas like the back or scalp. We should familiarize ourselves with the moles on our skin so that we can notice any changes over time.

The ABCDE rule is a well-known guide to detect melanoma (12). We should look for and tell the doctor about spots that have any of the following features: Asymmetry - One half of a mole does not match the other; Border - The edges are irregular or blurred; Color - The color is not the same all over and may include shades of brown or black; Diameter - The spot is larger than 6 millimeters across (about the size of a pencil eraser), although melanomas can sometimes be smaller than this; Evolving - The mole is changing in size, shape, or color. Not all melanomas fit the rules described above, so it's important to tell the doctor about any changes or new spots on the skin.

I have been touched by skin cancer and have made it my mission to raise awareness of it. During this journey that started in my hometown, I have been successful, not because of the brochures I have passed out, not because of the money I raised or the media attention that I have received, not because of the skin cancer screening events I have hosted, or the educational programs that I created for students, but because I was able to gain the trust of people in my community, and was able to impact their lives for the better. I will continue to do the same with the community of Cornell and Ithaca. During this semester, my interactions with cancer survivors in Ithaca has been a source of inspiration and has only strengthened my resolve. I realize that such an effort would involve bringing the community, schools, and health care providers together, working towards a common goal. My hope is for us to understand that our Sun, the source for all life on Earth, should not be feared, but rather, with some basic precautions, can be safely enjoyed by all.

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