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www.epa.gov/sunwise

SunWise monitor

An Update on EPA's SunWise School Program

A Message From the Dermatologist

It's hard to believe that summer is just around the corner. Of course, that means a break from school, summer vacations, and lots more time spent outside enjoying the warm, sunny weather.

Now more than ever, it is important to properly protect ourselves from the damaging ultraviolet (UV) rays of the sun. Skin cancer has been on the rise and is one of the most prevalent and serious current public health problems. In fact, in the United States alone, we can expect more than 1 million nonmelanoma cancers to be diagnosed this year. Nonmelanoma skin cancer is the most

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A SunWise Survivor Story

Doug Ulman is considered a hero and role model by many. At only 22 years of age, he is a three-time survivor of cancer, including two bouts with melanoma skin cancer. He now dedicates his life to advocacy work—helping young adults with all types of cancer cope with their diagnoses, facilitating support groups, and speaking to organizations across th e country. The SunWise School Program recently had a chance to catch up with him.

Doug Ulman

Tell us about when and how you found out you had skin cancer.

I was first diagnosed in March 1997. During a routine physical with my family doctor, he suggested I have a suspicious-looking mole on my chest removed. I have a lot of moles, and several had been removed prior to this. I went to Johns Hopkins and had it removed. Two weeks later, while back at school at Brown University, I received a call one evening from my dermatologist. He said "Doug, remember that mole we removed?" Of course I remembered, but I hadn't thought about it in 2 weeks. It turned out to be malignant melanoma in situ. Luckily all of the malignant cells were encapsulated, so after surgery, I was essentially cured of that episode.

What type of skin cancer were you diagnosed with and what kind of treatment did you undergo?

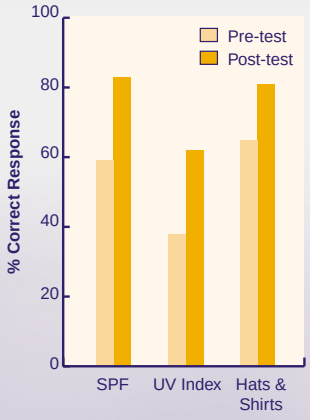
In March 1997, I was diagnosed with melanoma in situ. In June 1997, I was again diagnosed, this time with invasive

<*Continued on page 3*>

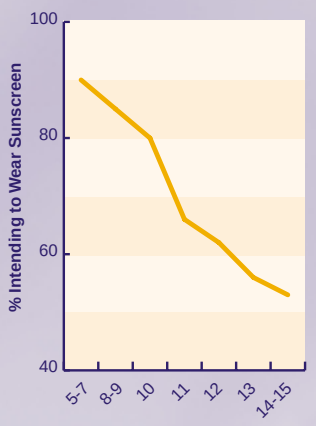
SunWise Honors

In March, EPA's SunWise School Program was awarded the 1999 Excellence in Education Award at the American Academy of Dermatology (AAD) Annual Meeting in San Francisco, California. AAD established the award to recognize groups, organizations, or institutions that have developed an educational program or programs that have contributed uniquely to educational excellence in the specialty of dermatology. The SunWise School Program won the award for a local, state, regional, or national professional society or organization.

Surveys Help Identify SunWise Education Needs



Knowledge Variables
(May 1999 Pilot)



Age of Student Respondents
(May 1999 Pilot)

Student surveys are helping the SunWise School Program understand important information about children's sun-protection knowledge, attitudes, and potential behaviors that will help guide education efforts.

For example, did you know that children are more likely to use sunscreen when they are younger than when they get older? This reinforces the need to continue sun-protection education with students in higher grades.

This information was gleaned from a survey of more than 1,000 students (ages 5 to 15) across the country. To develop a benchmark and analyze students' knowledge, attitudes, and intended behaviors about sun protection, teachers from 12 of 25 schools participating in the SunWise School Program submitted student surveys both before and after using the SunWise learning tools.

"What we found in the pretest presents many challenges—less than 20 percent of the students at SunWise schools used sunscreen, sunglasses, or shirts before the program was conducted, and more than 70 percent of students had at least one sunburn in the previous year," said Alan Geller, Associate Director of Boston University's Cancer Prevention and Control Center, who developed the survey.

"At the pretest, many children did not know what number SPF to use or the value of hats and shirts," Geller said. After teachers used SunWise materials to educate their students, however, a post-test survey showed that their knowledge of the following statements markedly increased:

- I know the correct SPF number to use (pretest, 59 percent, post-test, 83 percent).
- I have to use the most sun protection when the UV Index is 10 (pretest, 38 percent, post-test, 62 percent).
- Wearing a hat and shirt outside are ways to protect myself from the sun (pretest, 65 percent, post-test, 81 percent). (See top graph at left.)

As for their attitudes, although fewer students thought a suntan was good for their skin after learning SunWise concepts, the number who thought "people look healthy with a suntan" did not change significantly from the pretest to the post-test. This shows that it requires continued efforts to change people's attitudes.

Although the survey didn't test how students actually behaved in the sun, it did test their intended practices before and after learning about SunWise behaviors. Significantly more students said they would try to play in the shade after receiving SunWise education, while the overall percentage of those who said they would wear sunscreen this summer did not change. According to Geller, this issue was age: the older children surveyed were less likely to say they would use sunscreen than the younger children, even after they learned more about it. (See lower graph at left.)

These surveys will help guide the SunWise School Program in improving its overall approach and targeting various age groups. "Evaluation is very practical," Geller said. "It's a guide for developing new education programs."

Survivor Story...

<*Continued from page 1*>

melanoma. Between the two episodes, I have had approximately six surgeries for skin cancer and other biopsy exploratory procedures.

What other steps did you take to cope with your diagnosis?

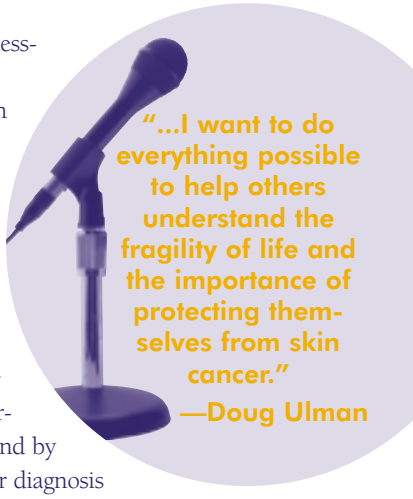
I became a vocal advocate for sun protection. I speak to kids and young adults all the time to try to convince them that having a tan, which is really just having damaged skin, is not worth the consequences of having cancer. I use sunscreen every day no matter what the weather is like and wear a wide-brimmed hat when I play golf. I take the utmost precaution and want to share my story so that other young people do not have to go through what I did.

What measures can people take to protect themselves from sun damage and avoid skin cancer?

Cover up. Use sunscreen correctly. Apply sunscreen 30 minutes before sun exposure and reapply after 1 to 2 hours of exposure. Wear long sleeve shirts, sun-protective eyeglasses and sunglasses, and wide-brimmed hats. Avoid sun exposure between 10 a.m. and 4 p.m. Develop a daily sun protection routine. For me, that means keeping my sunscreen right next to my toothpaste. When I wash my face and brush my teeth in the morning I put on my sunscreen. It's that simple.

You're very active with advocacy work related to children and young adults with all types of cancer. Tell us more about The Ulman Cancer Fund for Young Adults.

The Ulman Cancer Fund for Young Adults was formed to provide support, education, and resources to young adults, their families, and friends who are affected by cancer. This involves support groups, survivors' networks and information, as well as education and prevention services for young people to teach them early detection and prevention.



"...I want to do everything possible to help others understand the fragility of life and the importance of protecting themselves from skin cancer."

—Doug Ulman

Skin cancer can be treated successfully if found early. The most important issue that The Ulman Cancer Fund supports in terms of skin cancer is that children, in conjunction with their physician and parents, need to watch their own skin and look for lesions or changes in moles. If they see a change, they NEED to tell their parents or doctors. Over 50 percent of melanoma cases are found by patients. My second skin cancer diagnosis resulted after a tiny mole on my arm was itching and I mentioned something to my doctor. She decided to take it off as a precaution and it turned out to be invasive melanoma. Who would have of thought that a 19-year-old would have skin cancer twice? Not me. Another message we convey is that skin cancer does not discriminate. It affects young and old. People of all races. Male and female.

What's in the future for Doug Ulman?

I will continue to dedicate my life to cancer advocacy, including prevention and education awareness. I will not be satisfied until children are allowed to bring sunscreen to school with them, until children are taught in schools about the dangers of skin cancer and that they can avoid getting it by practicing good protection habits. I also want to bring awareness to the fact that cancer is not a death sentence! You can have cancer in your life (you can even have it three different times) and still return to a normal life and, as in my case, go above and beyond what you were doing prior to the diagnosis. I am very lucky to be alive at age 22, and I want to do everything possible to help others understand the fragility of life and the importance of protecting themselves from skin cancer.

For more information on The Ulman Cancer Fund, visit the Web site at <www.ulmanfund.org>.

Official SunWise Program Launch on the Horizon

Following its successful 1-year pilot period, EPA will launch the official SunWise School Program with a press event in May. A new SunWise "Tool Kit" for SunWise schools will be available to all schools beginning in September 2000. Details to follow.

In the SunWise Spotlight...

Read about SunWise in action! The following articles share some exciting SunWise stories from students and teachers across the country.

Exploring Ozone Out West

Ozone science recently took center stage in Colorado as teachers and students in the University of Colorado at Boulder's (CU's) 1999-2000 Science Explorer Program put new science curricula to the test. In a series of 17 day-long workshops held throughout the state, Colorado teachers and students tried out new science lessons focused on ground-level and stratospheric ozone as well as UV radiation.

Teams comprised of one teacher and five students, from fifth through eighth grade, took part in three 75-minute classes during the workshops. Each class featured a variety of ozone-related, hands-on lessons; for example, the teams searched for ground-level ozone by using Schoenbein paper—a special paper made of cornstarch, distilled water, and potassium iodide—which turns blue or purple when in contact with ozone.

In another activity, students and teachers learned about the effects of stratospheric ozone depletion, such as increased UV radiation reaching Earth's surface. Using color-changing, UV-sensitive Frisbees, the teams evaluated the effectiveness of various sun-protection materials, including sunscreen, sunglasses, and fabrics. The teams also constructed chemical models of ozone molecules from gumdrops and toothpicks. Studying the conditions of Antarctica, over which an ozone hole exists, is another topic for curricula activities.

"The student team members work side by side with their teachers in the workshops to develop knowledge and leadership skills," said Lannie Hagan, coordinator of the Science Explorer Program.

After participating in the Science Explorer activities, students and teachers will take their new knowledge and materials back to their classrooms to share with fellow students and colleagues. While this year's workshops and curricula focused strictly on the science of ozone and UV radiation, Hagan noted, "SunWise behavior lessons would be a perfect supplement for teachers to incorporate when they implement the new curricula in their classrooms."

Designed to encourage student interest and aptitude in science, math, and technology in Colorado and the West, the CU-Boulder Science Discovery Program has been operating the Science Explorer Program for 13 years, introducing new curricula to about 300 teachers each year.

For more information about CU's Science Explorer program, contact Lannie Hagan at 303 492-0771.

Students film a "News Flash" on ground-level ozone and its harmful effects on human health.

Students play an ozone board game—"The Hole in the Sky"—to gather facts and statistics on the history of ozone depletion.

Hi-Tech SunWise Students Ask the EPA Expert

Forget MTV—fifth-graders in Dottie Fundakowski's gifted science class used state-of-the-art video conferencing to tap into EPA expertise on ozone depletion and SunWise behavior. As part of a semester-long unit on ozone, Fundakowski's students at The Center for Creative Learning in Missouri's Rockwood School District, participated in virtual discussions with Jeffrey Levy, formerly of EPA's SunWise School Program.

The video conference gave the students, who had already been studying ozone and UV radiation for 6 weeks, the unique chance to interact with a scientific expert. In addition to fielding the students' technical questions about ozone depletion, Levy reminded them of their responsibility to protect their skin and eyes from UV radiation. "Global issues, such as ozone depletion, can be worrisome for high-level learning students," Fundakowski noted. "The video conference with Jeffrey Levy was a great way to have the students learn about experts who are working to reduce ozone problems and to give students an interactive resource for their questions and concerns."

Throughout the past year, Levy participated in a total of 10 ozone-related video conferences with different groups of Fundakowski's students and also hosted an evening session to discuss parents' questions about UV radiation and sun protection. The success of the video-based exchanges has prompted Fundakowski to plan additional conferences. She also shared her students' high-tech activities with other educators at the Midwest Educational Technology Conference, held March 13 through 15 in St. Louis.

The video conferences were just one portion of Fundakowski's unit, which covers both stratospheric and ground-level ozone. Students completed many other SunWise activities, including daily visits to the SunWise UV Index Web site, UV-sensitive bead experiments, and lessons on the labeling of sunscreens. While studying the light spectrum, students became fully informed consumers, learning why sunscreens should protect skin from both UV-A and UV-B rays. In addition to lessons focused on what they can do to protect themselves, Fundakowski's students staged a mock congressional hearing on the ban of aerosol sprays, learning what other countries are doing to protect the planet from ozone depletion.

For the past several years, Fundakowski has found SunWise lessons to be an effective component of teaching ozone science. "I am usually introducing elementary school students to curricula on the atmosphere and sun protection. They know they're supposed to wear sunscreen, but they don't know about the 'why' behind that behavior. The SunWise School Program is very helpful, not only in teaching kids what to do, but in teaching them about the scientific and health reasons attached to those actions."

For more information, contact Dottie Fundakowski at 636 207-2579, ext. 334 or <CCT02@rockwood.k12.mo.us>.

In the SunWise Spotlight... Continued on page 8

SunWise Activity Corner

"Who Wants to Be SunWise?"

Here's a fun way to add some excitement and suspense to the classroom while teaching students about SunWise behavior and ozone science. This activity starts with fairly simple questions and graduates to harder questions. Each question is worth a certain dollar value or number of points. Correct answers are found at the bottom of this page.

Would you like to submit questions for "Who Wants to Be SunWise?" or do you have other fun activities that we could publish in the SunWise Monitor? If so, please contact Linda Rutsch at 202 564-2261, or <rutsch.linda@epa.gov>. If you submit questions for "Who Wants to Be SunWise?", be sure to indicate a dollar or point value, or whether the question should be categorized as very easy, easy, medium, or difficult.

1. The sun is a:
a. planet
b. star
c. meteor
d. none of the above

2. SPF is the abbreviation for:
a. skin pollution formula
b. super protective formula
c. sun protection factor
d. super protein food

3. You should wear sunscreen with an SPF of this number or higher:
a. 3
b. 5
c. 8
d. 15

4. The sun is important for:
a. photosynthesis
b. visible light
c. warmth
d. all of the above

5. The UV Index is reported on a scale of:
a. 0-100
b. 0-5
c. 0-10+
d. 2-12

6. The distance from the sun to the Earth is
a. 86,000 miles
b. 93 million miles
c. 26.2 miles
d. none of the above

7. This mammal secretes an oily pink sunscreen to protect itself:
a. flamingo
b. hippo
c. pig
d. human

8. The stratosphere is located:
a. 10-30 miles above Earth's surface
b. 0-10 miles above Earth's surface
c. 2 miles from the moon
d. 93 million miles from Earth

9. Out of every 10 million air molecules, about 2 million are normal oxygen, but only this number are ozone:
a. one million
b. one thousand
c. one hundred
d. three

Answers: 1. b, 2. c, 3. d, 4. d, 5. c, 6. b, 7. b, 8. a, 9. d

A Message...

<Continued from page 1>

common form of skin cancer. Unlike melanoma skin cancer, it is not usually fatal, but can still cause serious damage to skin and eyes.

The S's of Sun Protection

Fortunately, there are many steps we can take to protect ourselves from skin cancer and other harmful effects of sun exposure. By following these rules, we can avoid damaging sunburns and achieve better overall health.

- **S**lip on a shirt.*
- **S**lop on sunscreen (SPF 15 or higher).*
- **S**lap on a wide-brimmed hat.*
- **S**unglasses should be worn to prevent cataracts.
- **S**hadow rule: if your shadow is shorter than you are, you are more likely to sunburn. Remember, "No shadow—Seek shade." The sun is most intense between 10 a.m. and 4 p.m.
- **S**unburns should be avoided at any age and especially by children.
- **S**unbathing in natural sunlight and at tanning parlors should be avoided.

So as we turn our sights to summer, let's have fun, but remember to be SunWise! Follow the steps above and check the UV Index daily to help plan your outdoor activities. For more information on the SunWise School Program and the UV Index, visit <www.epa.gov/sunwise>.

— Dr. Thomas F. Downham II, MD
Henry Ford Medical Center
thomasd@ic.net

The UV Index

In addition to the sun-safety tips to the left, the UV Index also can be a valuable tool in helping to avoid too much sun. The National Weather Service, the Centers for Disease Control, and EPA initiated the UV Index for 58 cities in 1994. It is a forecast of the level of skin-damaging UV radiation reaching the Earth's surface at noon. Knowing the intensity of UV radiation enables people to take appropriate sun-protection steps to avoid overexposure. Exposure levels and index values are categorized in the following manner:

Minimal: A UV Index reading of 0 to 2 indicates minimal danger from the sun's UV radiation.

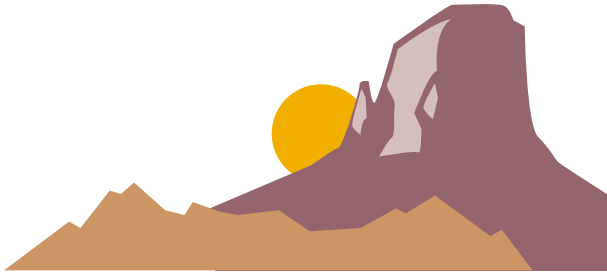
Low: A UV Index reading of 3 to 4 indicates low risk of harm to the skin from the sun's UV radiation.

Moderate: A UV Index reading of 5 to 6 indicates some significant risk of skin damage due to the sun.

High: A UV Index reading of 7 to 9 indicates high risk of harm from unprotected exposure to the sun. Time in the sun should be avoided between 10 a.m. and 4 p.m.

Very High: A UV index reading of 10 or more indicates very high risk of harm from unprotected sun exposure.

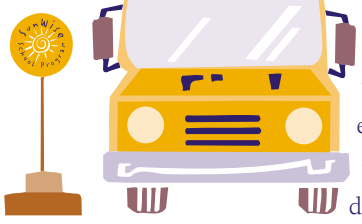
In the SunWise Spotlight... Continued



SunWise on the Road...

Linda Rutsch and Kristin Kenausis recently took the SunWise message on the road to Crestview Elementary School in Boulder, Colorado. Laura Farris of EPA's Region 8 office arranged for the school visit, where four 4th and 5th grade physical education classes were taught how and why to be SunWise.

Each class started out with an introductory slide show explaining the importance of sun safety. In an effort to keep the lesson both entertaining and informative, students in each class were then broken up into four groups, with each group rotating into learning centers set up around the gym. In Laura's learning center, students learned how to pick the best sunscreen, hat, sunglassees, and clothing for optimum sun protection. Laura also demonstrated proper sunscreen application.



In Linda's learning center, students made UV bead bracelets and necklaces. The beads, when exposed to UV radiation, turn an array of vibrant colors. Many students noted that the UV beads would be a great reminder while skiing because they sometimes forget that in the cold of winter, UV radiation still exists, especially considering the altitude and the reflection from the snow.

In Kristin's learning center, the students engaged in a sun-safe relay race. The relay race required that teams of students run to the side of the gym where sun-safe outfits had been left earlier. Once there, they had to dress a chosen person on their team to be sun-safe (with appropriate hat, sunglasses, clothing, and sunscreen bottle), and race back. Each class ended with a review of lessons learned. A good time was had by all who participated.

The SunWise School Program is an Environmental Monitoring for Public Access and Community Tracking (EMPACT) project.

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