Sun Safety

Empowering Girl Scouts to save lives
through skin cancer education
and prevention

girl scouts
nation's capital

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Sun Safety: Empowering Girl Scouts and Saving Lives

The world we live in is made possible because of the central star in the solar system - the sun. Its rays keep the Earth warm and help plants grow. But the sun can also be harmful and make you sick.

Studies have shown a connection between UV light exposure - whether from the sun or an artificial source - and skin cancer occurrences. Teens make up 2.3 million of the nearly 30 million people who go indoor tanning, and girls ages 10-19 years old make up 90 percent of all pediatric melanoma cases. Melanoma is the most dangerous type of skin cancer, accounting for the most skin cancer deaths.

These scary statistics are just a few of the many reasons the Girl Scout Council Nation's Capital, with the generous support of The Gendell Family Foundation, has created the Sun Safety patch program to educate you about the unseen - but dangerous - ultraviolet (UV) rays and empower you to take preventative action to help yourself and others be sun-safe.

In completing this patch program, you will learn to help yourself and others be sun safe.

Activity Requirements

The patch program activities are separated into three themes: ***Sun Savvy*** (activities introducing sun safety concepts), ***Sun Protection*** (activities applying sun safe knowledge) and ***Sun-Sational*** (activities promoting positive sun aspects). The program concludes with the required ***Sun Safety Pledge***.

Required Activities:
Girl Scout Cadettes complete any two activities from each theme, plus the Sun Safety pledge
Girl Scout Seniors complete two activities from each theme, and one additional activity of your choice, plus the Sun Safety pledge
Girl Scout Ambassadors complete two activities from each theme, and two additional activities of your choice, +Sun Safety pledge

*Throughout the program, there are suggested Extension Ideas which may help you extend your learning beyond the activity. These are not required activities.

Once you complete the program you will earn the Sun Safety patch, which is sold in the council shops.

Some patch activities require you to be outside. Regardless of the length of time, you should take precautions to protect yourself from the sun when doing any outdoor activities. Sun protection is an important step for people of all skin types and all Girl Scouts should be encouraged to make good sun choices. Remember, even when it's cloudy or cold outside, the sun can be dangerous-some rays can filter through clouds, and reflect off snow, water, concrete or other surfaces onto skin and into eyes.

Sun Savvy

Made In The Shade Sometimes, you can't avoid being outside or you may choose to enjoy time outdoors; either way, you don't want to end up punished by the sun. When you are in the sun, it is important to take appropriate precautions, including seeking shade. Between the hours of 10 am and 4 pm, it is especially important to find cover as the sun's rays are the most direct and strong during that time.

Choose a few places where you and others may spend time outside such as a patio, swimming pool, camp or outdoor seating at a restaurant. Observe each of the spaces during the day and take notes on what types of shade are available. Both natural cover and man-made structures can block the sun's rays and provide areas of shade. If there is shade provided, is it convenient for people to gather in the shady places or do most people stay in the sunnier spots? Pick one location that you think could be most improved by the addition of shade structures and create a new design for the space. You can use graph paper to draw a floor plan of the space and layout of the existing design and then use a different color to show the elements you would add to increase the shade. You can take photos to show the areas you would address this and print pictures of products and materials you would like to incorporate into the space. You may want to consider different leafy vegetation, awnings, umbrellas or window coverings that filter UV light. Refer to other spaces which have good shade options for inspiration for your redesign.

Extension Idea Share your observations and possible solutions with the owner of the space you identified in the activity above. If it's a public space, present your findings at a local town or county council meeting or write a letter to the editor about the importance of shade and your suggestions for creating more shady spaces.

Ozone Detective The ozone layer is one protection you have from the sun. Find out what it is, where it is located and why it is important in keeping you sun-safe; pay careful attention to what it does to UV rays. You may want to draw a diagram or create a model to help your understanding. Learn what "CFC" is an abbreviation for and why they were originally used. Investigate what common activities and products society uses which deplete the ozone layer and try to avoid them for at least two weeks.

Extension Idea Since 1995, September 16 has been celebrated as the International Day for the Preservation of the Ozone Layer. Research the history of this event. Find out why the United Nations designated this day and the purpose behind its establishment. What is the significance of the date selected and what happened on that date in 1987? Find out if there are any events or activities being planned in your community to commemorate the day and if there are, take part.

UV Intensity The UV Index uses numbers and colors to tell people how dangerous it is to be outside based on the intensity of the sun's rays and the risk of overexposure to ultraviolet rays. Find out what the five index levels are and what each level means, including the numbers and colors that represent them. You can refer to page 12 for assistance. Develop a way to teach people what the UV Index is and communicate with them what sun-safe precautions they should take at each level. For at least two weeks find out what the UV rating is for the day and use your project to educate others. Create a short presentation about the UV Index and what information it provides and give it at an upcoming troop meeting or other group setting.

What You Can't See *Can* Hurt You Though you can't see UV light, it can do a lot of damage to your body. Too much exposure to UV radiation from the sun or artificial sources, such as tanning beds, can cause your skin to wrinkle, burn and even develop areas of cancer which can make you very sick.

Try this experiment using tonic water and tap water to demonstrate how UV light can be present even though it's not visible. On a sunny day, fill two beakers or similar clear containers nearly to the brim - one with tap water and the other with tonic water. Take the beakers outside and put them on a flat surface in direct sunlight. Hold a piece of black paper or cloth behind the beakers and look closely. Compare the two beakers; do you notice anything different about the color at the surface of the containers? The top portion of the tonic water should glow blue because a mineral in the tonic water absorbs the invisible UV light and then re-emits it as the blue glow we can see. The tap water doesn't contain the same mineral, so even though UV light is also present at the tap water's surface, you can't see it.

Just like you can't always see the harmful UV light, you may not always see the extent of the sun's damage. By the time you notice your skin is suntanned or sunburned, it means UV rays have already damaged and killed some skin cells.

There are different types of UV rays - UVA, UVB and UVC. While most UVC rays don't make it to Earth because they are absorbed by the ozone layer, UVA and UVB each penetrate different layers of skin. Find out what the different elements of the skin are and label the diagram, then add arrows showing how deep in the skin the different types of UV rays penetrate and learn what type of damage they cause.

Calculate The Protection Rate Test the strengths of sunscreen lotions by getting at least 3-4 lotions with different SPFs. How strong a sunscreen is, depends on its Sun Protection Factor (SPF). The higher the number, the longer it takes your skin to burn when wearing it properly

Do this experiment to demonstrate sunscreen's effectiveness: Wipe the sunscreens onto one side of zipper sandwich bags - each strength on a separate bag. Label the SPF on each bag. Add a small scoop of UV-sensitive beads to each of the sunscreen bags. Position the beads so that they are in an area of the bag that is coated with a thin layer of sunscreen. Put a small scoop of UV-sensitive beads into an empty bag and then take all of the bags into the sunlight and observe how the beads change. (If you can't see the beads, you have too much sunscreen on the bags and should wipe some off.) Compare and contrast the beads in the different bags - do the beads protected by the lotions change as quickly as the beads in the bag with no sunscreen? Which sunscreen SPF works best? What are two ways that the beads are like your skin when exposed to UV rays from the sun? Remember, everyone should use sunscreen with at least an SPF of 15.

Sun Protection

Solar Shopping Smarts Sunscreen isn't the only thing you can buy that uses SPF to protect your skin from UV rays. Some clothing and laundry detergent have SPF, too. Take a real window-shopping trip or a virtual trip online and see what products you can find that have built-in SPF. Can you find a piece of clothing and makeup or toiletry item that has SPF? On your trip, can you discover items that use methods besides SPF to prevent harm from the sun? Keep a list of your findings. Are there any products that you think would be beneficial to incorporate into your life? If you find an item that can help you without costing too much - maybe a lip balm that moisturizes and blocks UV rays - get the okay from a parent or guardian to purchase it or plan out a budget to help you save up.

Learn Your ABCs Though it isn't the most common, melanoma is the most dangerous type of skin cancer. Melanoma starts in the skin cells that produce melanin, which is what gives skin color and provides some natural protection against the sun. Using the "Detect Skin Cancer: Body Mole Map" on page 13, do a thorough check of your skin to see if there are any moles that may be of concern. A good time to check your skin is after a shower or bath. You may need to ask a trusted relative or friend to check the places you can't see on your own. One way to keep track of any changing or new moles is to use a body map. A body map is a blank outline of a body - front and back and about the size of a sheet of paper - you use to mark where your moles are and what they look like. Make sure to date the filled-in outline and create a new one each time. Every time you do a skin check, compare your new findings to the previous picture and if you observe any changes that you don't think are normal, make sure you tell your parents or guardian and doctor.

All In Good Measure... Wearing sunscreen can be an easy way to protect your skin and it's recommended you use a broad-spectrum sunscreen of SPF 15 or higher daily. It's also important to know how much to use. Get two containers that measure ounces. Fill the first container with how much sunscreen you typically use or think you should use. Then fill the second container with 1 oz of sunscreen using the measuring marks. Compare the contents of the two containers - which one has more or are they the exact same? Experts recommend most people use about 1 oz of sunscreen during each application - the first being about 30 minutes before you head out into the sunlight. Try this experiment with a few friends or family members; ask them to measure how much sunscreen you should use and then show them what the actual amount should be - are they surprised? (Hint: You may want to do this part of the activity as a troop so that you don't waste sunscreen.)

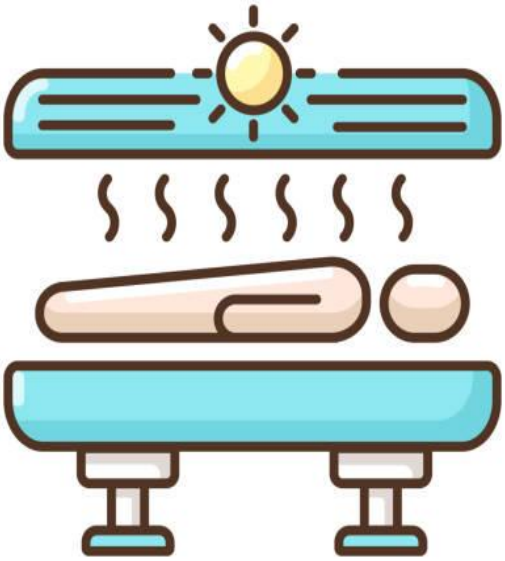
Find several 1 oz containers that you can use to hold and dispense sunscreen for later use. Fill a few 1 oz travel cosmetic containers with sunscreen and take them on your next trip to the beach or another sun-filled outing. Whenever you need to reapply your sunscreen - most sunscreens need to be applied at least every two hours and more often if you've sweated or have gotten wet - use the mini-containers so you'll make sure you're using the right amount during each application. Be sure that you bring enough to cover your full time of exposure.

A general guide to determine how long sunscreen is effective in normal conditions is to use a simple formula to calculate the effective time. Take the number of minutes your unprotected skin normally takes to start burning and multiply it by the SPF. Using the formula, if your unprotected skin normally takes 20 minutes to burn and you use sunscreen with SPF 15 then you have about 300 minutes (5 hours) of protection (20 X 15 = 300). Use the formula to calculate how long each of the sunscreens you selected would protect you. It is important to remember you are still expected to follow the proper application and use instructions, and other factors-such as geographic location, and participating in activities involving water and sweating can affect the timing. (Hint: if you don't know how long it usually takes for your skin to burn, approximate. Do not let your skin burn on purpose.)

Extension Idea There are many UV-sensitive products on the market that you can use to make your own UV-detecting tool. Make a bracelet from UV-sensitive beads or give yourself a manicure using UV-sensitive nail polish. When you see your bracelet or nails change color in the sun, think about whether you're practicing good sun safety. You can also make a bracelet to give to a friend and include a short note to share the sun safety message. See the Shopping List on page 11 for places to buy UV-sensitive products.

Look It Up Look up the following terms to help you learn more about sun savvy terminology: ***radiation, chlorofluorocarbons, ultraviolet, Montreal Protocol, melanoma, malignant, cataract, broad-spectrum*** Then develop a quiz or game using the terms and definitions to give to your friends and family to test their sun-safety savvy. You may want to create a matching game or a crossword puzzle using the definitions as clues.

Put A Ban On Tan As awareness and education spreads about the hazards of UV exposure-both from natural and artificial sources-legislators are passing laws to help protect you. Laws have been proposed and put in place to regulate the use of tanning machinery. Some legislation is national, while other laws are enacted by local governments. At the national level, find out what the TAN Act is (including what the TAN acronym stands for), and how the 2010 "tanning tax" works. Then see if your state, county or city has laws regarding tanning salons. Would someone your age be allowed to use a tanning bed at a salon in your town? What law regarding skin cancer protection and prevention would you want to see put in place in your community?



Sun-Sational

The Scent-sible Sun In addition to hazardous radiation, the sun also provides heat and light, making life on Earth possible. Plants and animals need the sun to survive. Look at the ingredients of your favorite perfume - how many of them are derived from plants? The paper you use to write on likely came from a tree. Find instructions to make recycled paper and use it to write a sun safety message to a friend or try making plant-based perfume using this simple recipe or one of your own: Combine 1 tsp of cucumber essential oil, 1 tsp of lemon essential oil, 1 Tbsp of witch hazel and 1 cup of water and put it into a spray bottle. (Hint: If you have sensitive skin, you may want to avoid this activity.)

Vitamin D-lemma Your body needs different nutrients and vitamins to function and stay healthy. Find out what Vitamin D does for your body. Though getting some sun exposure can help you prevent Vitamin D deficiency, too much of a good thing can be harmful. How much time is appropriate to be exposed to sunlight to get the necessary amount of Vitamin D? Besides sunlight, where else can you get it?

The Truth About SAD For some, the lack of sunlight has been linked to winter-onset Seasonal Affective Disorder (SAD) - a condition in which people develop temporary depression in the wintertime. This is thought to be because in the winter, daylight hours are shorter, and people tend to spend more time indoors because of the cold. Read at least two articles on SAD. Find out three symptoms of SAD and three sun-safe ways people can combat it. What are melatonin and serotonin and how might they relate to SAD?

Now That's Solar Power Special tools called solar panels can be used to harness energy from the sun and turn it into power. Visit a building in your area that uses solar panels to provide electricity or heating or use one of the many kits on the market to demonstrate how solar energy works by using solar cells to power miniature motors. Experiment with its power at different times of the day.

The Skin You're In While everyone, regardless of their skin color or type, should take appropriate precautions against hazards from the sun, some skin types are more susceptible to quicker damage from UV rays than others, depending on melanin content, among other factors. Though people with darker skin may not readily notice damage to their skin because its higher melanin provides some natural protection against the sun, it doesn't mean damage isn't taking place. Skin cancer in people of color is often diagnosed in later stages, making effective treatment more difficult. Melanoma - the most dangerous type of skin cancer in people of color - most often occurs on areas with less pigment like the palms of hands and the soles of feet. Take a skin assessment to determine what type of skin you have and what precautions you need to take to protect it. The Skin Cancer Foundation has a quiz at www.skincancer.org or you can find one on your own.

Extension Idea Dermatologists are doctors who specialize in skin issues. They can help you identify potential skin problems, and you can talk to them about skin concerns you have. Talk to a parent or guardian and see if it makes sense for you to schedule a visit with a dermatologist and if so, make an appointment.

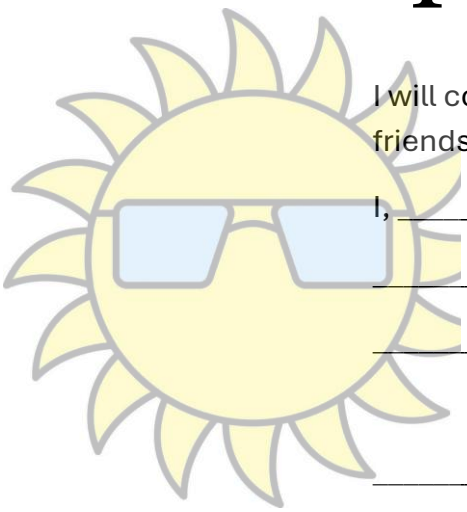
Dear Kim Despite studies showing the harms of tanning, some pop culture personalities and television show characters seek out methods to darken their skin using UV light. If you learn of a celebrity who "fake bakes" or see a show with a character who goes tanning, write a letter to the actor or character being portrayed explaining the dangers associated with tanning and convince them to stop. Be sure to think about how else that person could spend that time and money, and what example it sets for people who view them as a role model or watch their show. You may also want to include suggestions for sun-safe techniques they can use to achieve the same glow without the risks.

Interview A Survivor You can significantly reduce your risk of developing skin cancer if you take preventative steps. If it does develop and you catch it early enough, doctors can usually treat it. Interview a skin cancer survivor. Before the interview, brainstorm some questions to ask. You might want to know how old they were when they found out they had skin cancer or whether or not their habits have changed since the diagnosis.

Sun Safety Pledge

My Sun Safety Promise On My Honor Complete the patch requirements by making a Sun Safety Pledge. A pledge is a promise to do - or not to do - something. Think about what you learned by working on this patch program. What will you do to keep yourself and your friends and family sun-safe? Maybe you could help a younger Girl Scout earn their Sun Safety patch

My Safe Sun Promise



I will continue to practice Sun Safety and help my friends and family by sun safe too!

I, _____, Pledge to...

_____

_____

_____ Signature

_____ Adult Signature

A sample of a pledge card you can fill out to make your sun-safety promise or make one of your own.

Shopping List

Some supplies required for the activities in this patch program may not be readily available at stores and may need to be purchased through specialty vendors. For your convenience, this list of websites offers shopping suggestions for places to purchase some of the harder-to-find items. These are merely suggested vendors, and the quality and availability of materials cannot be guaranteed by GSCNC.

The Container Store www.containerstore.com
1 oz travel containers
Spray bottles

Educational Innovations www.teachersource.com
UV meter
UV-sensitive Beads
UV-sensitive Nail Polish
UV-sensitive Paper

S&S Worldwide www.ssww.com
UV-sensitive Beads

Steve Spangler Science www.stevespanglerscience.com
UV-sensitive Beads
UV-sensitive Cloth
UV-sensitive Paper

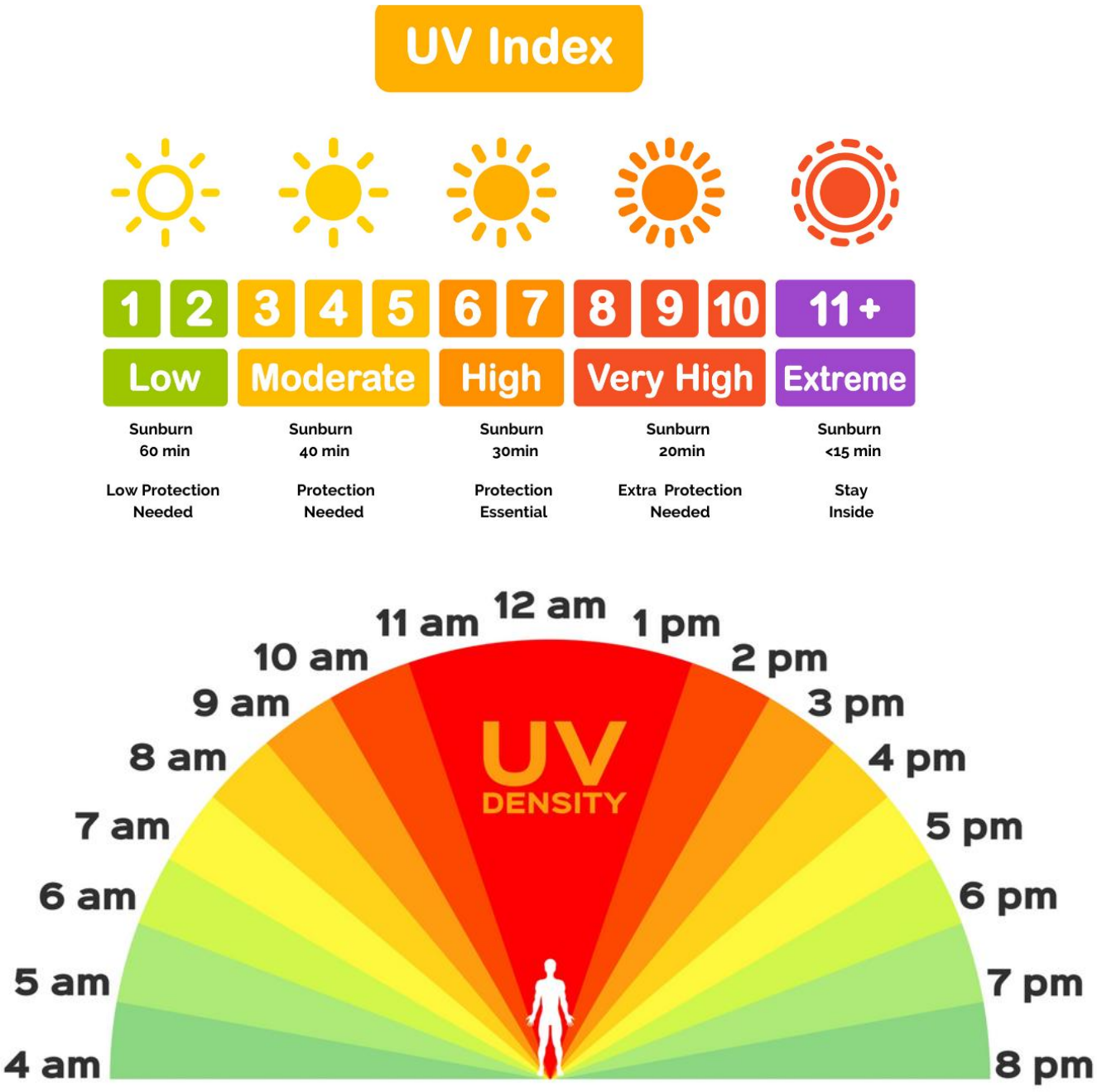
Though not required for use in any of the patch program activities, the following is a list of materials and vendors you may find helpful in coming up with your own sun safety activities to further your understanding.

UV-sensitive Flyer Discs
www.powerballgyroscope.com
www.dtworld.com

Plastic Visors
www.ssww.com

UV Index

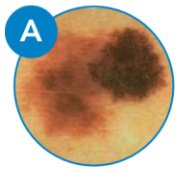
The UV Index scale uses colors and numbers to rate the intensity of UV rays at the Earth's surface. The levels are based on measurements that take into account the angle of the sun, ozone amounts in the atmosphere and other factors.



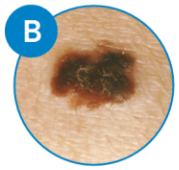
Detect Skin Cancer: Body Mole Map

1 The ABCDEs of Melanoma
What to Look for:

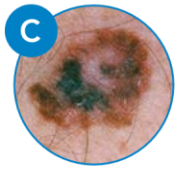
Melanoma is the deadliest form of skin cancer. However, when detected early, melanoma is highly treatable. You can identify the warning signs of melanoma by looking for the following:



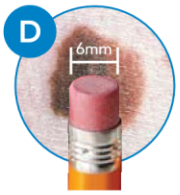
A stands for ASYMMETRY.
One half of the spot is unlike the other half.



B stands for BORDER.
The spot has an irregular, scalloped, or poorly defined border.



C stands for COLOR.
The spot has varying colors from one area to the next, such as shades of tan, brown or black, or areas of white, red, or blue.



D stands for DIAMETER.
While melanomas are usually greater than 6 mm, or about the size of a pencil eraser, when diagnosed, they can be smaller.

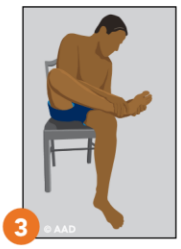
E stands for EVOLVING.
The spot looks different from the rest or is changing in size, shape, or color.

2 Skin Cancer Self-Examination
How to Check Your Spots:

Checking your skin means taking note of all the spots on your body, from moles to freckles to age spots. Skin cancer can develop anywhere on the skin and is one of the few cancers you can usually see on your skin. Anyone can get skin cancer, regardless of skin color. Ask someone for help when checking your skin, especially in hard-to-see places.

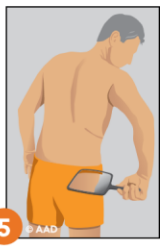
Examine your body front and back in a mirror, then look at the right and left sides with your arms raised.

Bend your elbows and look carefully at your forearms, underarms, and palms.



Look at the backs of your legs and feet, the spaces between your toes, and the soles of your feet.

Examine the back of your neck and scalp with a hand mirror. Part your hair for a closer look at your scalp.

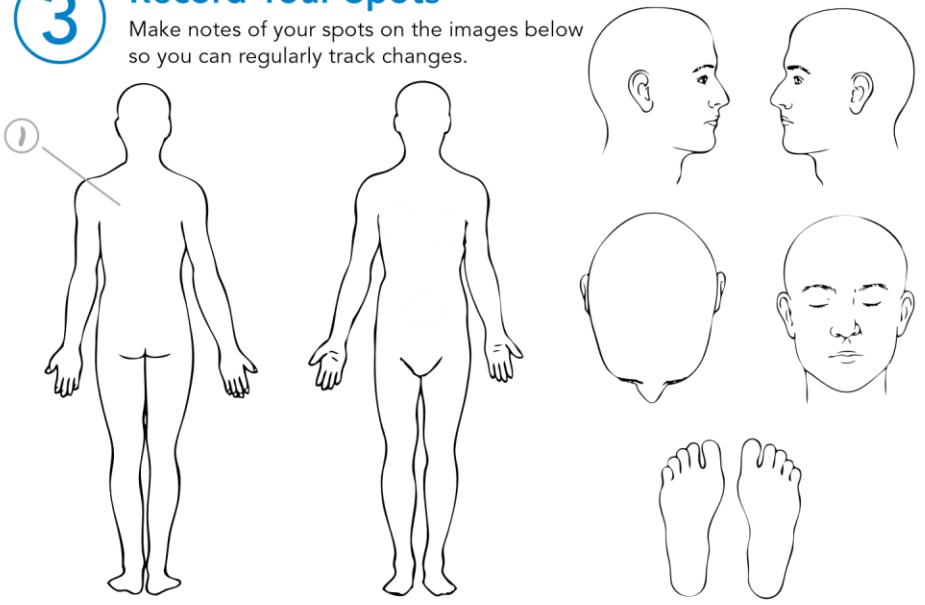


Finally, check your back and buttocks with a hand mirror.

If you wear nail polish, remember to check your nails when the polish is removed.

3 Record Your Spots

Make notes of your spots on the images below so you can regularly track changes.



MOLE #	A Asymmetrical? Shape of Mole	B Type of Border?	C Color of Mole	D Diameter/Size of Mole. Use ruler provided.	E How has mole changed?
1	OVAL, EVEN	JAGGED	PINK	1.5MM	YES, LARGER

References and Resources

American Academy of Dermatology www.aad.org

American Cancer Society www.cancer.org

Centers for Disease Control and Prevention www.cdc.gov/cancer/skin

Environmental Protection Agency www.epa.gov

Drinking water information and children's activities:
http://water.epa.gov/learn/kids/drinkingwater/upload/TheWater-Sourcebooks-Grade-Level-K-2.pdf

KidsHealth www.kidshealth.org
(with companion info for parents) https://kidshealth.org/en/parents/all-categories.html
Searchable site with articles specific to teens
https://kidshealth.org/en/teens/all-categories.html

TeensHealth www.teenshealth.org

The Learning Channel www.tlc.howstuffworks.com/family/sunshine-activities.htm

National Institutes of Health www.health.nih.gov/topic/SkinCancer
Sun exposure information and links to other resources:
www.nlm.nih.gov/medlineplus/sunexposure.html
Brief journal article on Vitamin D and sunlight: www.ncbi.nlm.nih.gov/pubmed/15585788

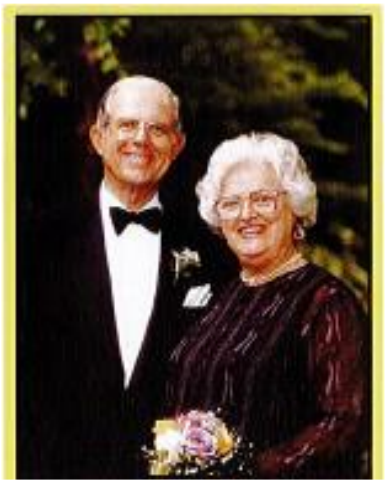
San Diego State University www.foundation.sdsu.edu/sunwisestampede/meetanimals.html

Skin Cancer Foundation www.skincancer.org
Skin cancer statistics: www.skincancer.org/skin-cancer-facts.html

United Nations www.ozone.unep.org
Additional information about the UN's ozone-supporting efforts: www.unep.org/ozonaction

The Sun Safety Story

By Carin Gendell



Gerry & Marion Gendall

A current TV show calls it the "Big C" - cancer. Many families face losing a loved one to cancer, and our family was no exception. My father, Gerry Gendell, valiantly fought melanoma for 18 months before he lost his battle in July 2009, just two weeks after turning 80 years old.

Like many bereaved families, we wanted to honor our father by educating people about skin cancer, which can strike both young and old. We were shocked to discover that melanoma the deadliest form of skin cancer - is the second leading cause of cancer deaths among women in their late twenties. As a longtime GSCNC volunteer, I knew that one of GSCNC's former staffers, Teen Program Specialist Jessica L. (Hodgkins) Dovi, succumbed to the disease at only 30 in April 2008.

The natural place for us to start educating girls was Girl Scouts. Our family has a long Girl Scout history starting with my mother who loved being a Girl Guide in England. My sisters and I fondly remembered Girl Scout camping and hiking when we were young, but we weren't aware of the dangers of sun exposure. As an adult leader, I knew about the dangers and always encouraged my daughters and their scout friends to use sunscreen during our wonderful adventures outdoors. But the truth is I only worried that the girls would get bad sunburn; I didn't worry enough that they were at risk for melanoma. Another important reason for honoring my father through Girl Scouts is to remember his commitment to developing leadership skills in young women. As a senior executive at the Procter & Gamble Company, my father was an early advocate for hiring young women into the marketing ranks and developing them into future executives. He mentored numerous young women, including his three daughters, who went on to be successful managers and leaders. It's no surprise that he encouraged his own daughters to join Girl Scouts, one of the few activities in the 1970's that encouraged girls to take on leadership roles.

The Gendell Family Foundation is proud to fund the creation of the Sun Safety program in honor of Gerry. Our greatest hope is to teach girls to enjoy the outdoors safely while avoiding the risks of melanoma so that they can grow up to be outstanding leaders who make the world a better place.