

Skin Cancer and Sun Safety

Presenter Information

Summary

Participants will follow the case of a young woman who has an unusual mole on her shoulder. They will:

- Use the “ABCDE” characteristics of skin cancer to determine whether she should have a doctor check the mole.
- Learn that UV radiation exposure increases skin cancer risk.
- Use photosensitive beads and sun safety pictures to explore ways to prevent UV radiation exposure.

Core Concepts

This kit is designed to engage program participants in learning about the following core concepts:

- Unusual moles or changes to the skin should be checked by a doctor to be certain they are not skin cancer.
- UV (ultraviolet) radiation is the main environmental risk factor for skin cancer.
- There are many ways to reduce exposure UV radiation.

Presenters may need to provide further information that is appropriate for their program learning goals and for their participants.

Resources

Time Required

Approximately 20–30 minutes + discussion time

Each Kit Contains

- 2 **Skin Cancer and Sun Safety** kit instructions
- **Photo of Sofia’s Mole / ABCDE’s of Skin Cancer**
- 2 **Sun Safety Pictures**
- Bag of UV color changing beads
- Plastic plate for beads

Presenter Provides

- One **Skin Cancer and Sun Safety** kit for each pair of participants
- An outdoor area, window sill, or small inexpensive handheld UV light
- Pencil or pen

Warning: Choking Hazard

This Science Take-Out kit contains small parts. Do not allow children under the age of seven to have access to any kit components.

Presenters may need to provide further information regarding skin cancer and sun safety that is appropriate for their program learning goals and for their participants. The following sites may be useful for program planning, updates, or background information:

- **CDC: Skin Cancer** <https://www.cdc.gov/cancer/skin/index.htm>
- **EPA: Skin Cancer Facts for Your State** <https://www.epa.gov/sunsafety/skin-cancer-facts-your-state-0>
- **Cancer and the Environment**
http://www.niehs.nih.gov/health/materials/cancer_and_the_environment_508.pdf
- **UV Radiation & Skin Cancer: The Science Behind Age Restrictions for Tanning Beds**
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3440095/pdf/ehp.120-a308.pdf>

Suggested Procedure

1. For each **pair** of participants, you should provide a flat work area, one kit, and the materials described in the “Presenter Provides” section (on page i). Each kit is meant to be shared by a pair of participants and includes two copies of materials, as needed.
2. Most presenters use this kit as part of a larger program on skin cancer that includes additional information appropriate to their audience. The resources section above provides ideas for follow-up components such as additional information and take-home handouts.
3. We strongly suggest use of the **Skin Cancer and Sun Safety** kit as an introductory activity. Ideally, this should be done with participants working in pairs to spark conversation and questions.
4. Explain to participants that they will be working in pairs to complete an introductory activity about skin cancer and sun safety.
5. Explain that this activity will NOT provide all of the information that participants should know or might want to know about skin cancer and sun safety. The goals for the **Skin Cancer and Sun Safety** activity are simply to:
 - Provide an introduction to skin cancer and sun safety.
 - Give participants an opportunity to talk with each other about how skin cancer and sun safety relates to them.
 - Encourage participants to think about questions they have about skin cancer and sun safety.

6. Point out the disclaimer at the bottom of the Science Take-Out kit cover sheet. “The **Skin Cancer and Sun Safety** kit is not intended and should not be regarded as medical advice. Always seek the advice of a physician or other qualified health provider with any questions you may have regarding a health problem.”
7. Explain that you understand participants may have questions about skin cancer and sun safety. At the end of the activity, there will be an opportunity to discuss their questions.
8. Hand out one kit for each pair of participants. NOTE: There are 2 copies of the kit instructions in each kit bag.
9. Encourage participants to jot down their questions about skin cancer and sun safety in the box on page 3 of this activity. Show them where this box is before they start to work on the activity.
10. Read the information in the first box at the top of page 1 aloud to participants. Show participants sheet with the ABCDE’s of Skin Cancer and Photo of the Mole on Sophia’s shoulder from their kit.
11. Ask participants to work with their partners to read and follow the kit instructions, discuss, and write their answers to the questions in the kit instructions.
12. After all participants have completed their kits, facilitate a group discussion of their answers to questions in the activity. Review the kit’s core concepts (see page i).
13. Cleanup: If kits are to be reused, see the *Reusing Skin Cancer and Sun Safety kits* information below. If kits will not be reused, then participants should put all kit materials into the kit bag. Discard kit bags in the trash.
14. Provide additional information and answer participants’ questions as appropriate for the audience and/or local community. Possible discussion questions might include:
 - What are some symptoms of skin cancer?
 - What are some different kinds of skin cancer?
 - What can people do to reduce their risks for skin cancer?
 - How is skin cancer treated?

Helpful Hints

- We suggest using this activity as an introduction to the topic. Some participants may be uncomfortable with not having background or “the right answers” before they start. If you are doing the kit as part of a larger program, remind participants that you will provide more information and discuss their questions later; the kit is designed to get people thinking, interacting, and asking questions.
- Encourage participants to ask questions if they have difficulty understanding the activity instructions.
- Listening to the conversations as participants work will give you an opportunity to learn about participants’ interests and concerns about skin cancer and sun safety.
- You may find some participants are working more slowly and need questions answered or encouragement to move to the next step. If your program time is limited, you might suggest to participants how long to spend on each part of the activity.
- Let them go! For many groups, simply handing out the kits and encouraging the participants to work on their own will stimulate independent work and interactive discussion. For audiences with limited English reading skills, presenters may wish to read each kit step to the group.

Reusing *Skin Cancer and Sun Safety*

Presenters will need to instruct participants on how to handle clean-up and return of the reusable kit materials. For example, presenters might provide the following information for participants:

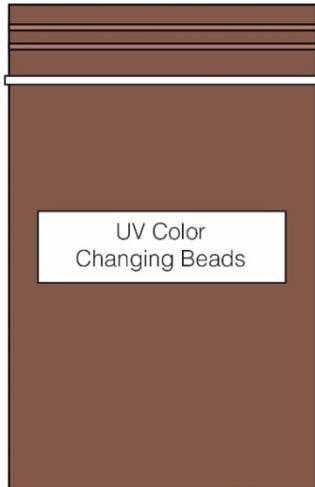
Return to Kit
<ul style="list-style-type: none">• Photo of Sofia’s Mole / ABCDE’s of Skin Cancer• Sun Safety Pictures• Brown bag containing UV beads• Plastic plate

If you want participants to keep copies of any handouts from the kit, you will need to make additional copies of the handouts before you re-use the kits.

Kit Contents Quick Guide



Plastic Plate



1. Skin cancer is the most common of all types of cancer
New Cancer Cases in the U.S This Year

SKIN CANCER (non-melanoma) 3,500,000

BREAST CANCER 235,030 **PROSTATE CANCER** 233,000

LUNG CANCER 224,210 **COLORECTAL CANCER** 136,830

□ = 10,000 cases

6. How and where to apply sunscreen

Use one ounce of sunscreen, about a palmful of sunscreen, to cover your body
Apply to all exposed skin

2. Do not use tanning beds or sun lamps

7. Skin cancer has been on the rise over the past few decades

Year	Male	Female	Male and Female
1980	12	10	11
1990	15	12	13
2000	18	15	16
2010	22	18	20

3. Anyone can get skin cancer

8. Your skin can be damaged even on a cool, cloudy day

4. 1 in 5 Americans will be diagnosed with skin cancer in their lifetime

9. Be extra careful if you...

- have a compromised immune system
- take medications that make you sensitive to light
- have a family history of skin cancer, especially melanoma
- have had lots of sun burns and burn before tanning

- spend a lot of time outside
- travel to or live in sunny climates or high altitudes
- have a lot of moles, or large or irregularly shaped moles

5. Select a protective sunscreen and apply it frequently

Reapply sunscreen at least every 2 hours, reapply more frequently if you are swimming or sweating

10. In addition to sunscreen you should...

wear a hat
wear sunglasses
stay in the shade
cover up with clothing

ABCDE's of Skin Cancer

NORMAL	DESCRIPTION	CANCEROUS
	A symmetry - if you draw a line through the center of the mole the two halves of the melanoma won't match in size	
	B order - the edges of an early melanoma tend to be irregular. The edges may be scalloped or notched.	
	C olor - Healthy moles have a uniform color. A variety of colors especially white and/or blue is a warning signal.	
	D iameter - Melanomas usually have a wider diameter than a pencil eraser but they may be smaller when first detected.	
	E volving - When a mole's traits such as color or size change, or any new symptoms occur, this points to danger.	

Photo of the Mole on Sofia's Shoulder

Skin Cancer and Sun Safety

Camilla noticed a mole (a dark, raised spot) on her teenage daughter Sofia's shoulder. She wants Sofia to get her mole checked by a doctor to make sure it isn't skin cancer. Sofia doesn't think that is necessary because she is young and has dark skin. She thinks that skin cancer only happens in older people who have light skin.

1. Look at the photo of the mole on Sofia's shoulder and the **ABCDE's of Skin Cancer** chart. Do you think that Sofia should have her mole checked by a doctor? Explain why or why not.

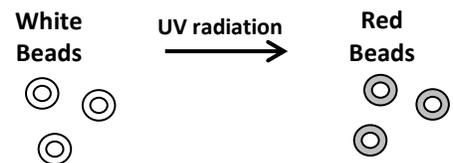
Yes, the mole is asymmetrical, has an irregular border, has irregular color (brown and black areas), and is large.

Sophia decided to ask her doctor about the mole. The doctor removed the mole and sent it to a lab for testing. The lab testing showed that Sophia has a type of skin cancer called melanoma.

Sophia wants to know what caused her skin cancer. Her doctor explains that skin cancer occurs when cells in the skin develop mutations (changes in the DNA) that lead to uncontrolled cell division. The exact cause of the mutations that lead to skin cancer isn't clear, but exposure to ultraviolet (UV) radiation from sunlight, tanning beds, sun lamps, or black lights increases people's risk of skin cancer.

You cannot see ultraviolet (UV) radiation—it is invisible. Even though you cannot see it, UV radiation is doing damage to your skin.

You will use special beads to simulate how UV radiation damages skin. These special beads change color from white to red when they are exposed to UV radiation.



2. Take the beads out of the brown bag. What color are the beads?
3. Now place the beads into the dish and put the dish near a source of UV radiation (such as a sunny window). What happens to the beads?

4. How is the effect of UV radiation on the special beads similar to the effect of UV radiation on your skin?

5. There are things that you can do to prevent exposing your skin to dangerous UV radiation. What could you do to prevent exposing the special beads to UV radiation so that the beads stay white?

6. Your kit has a colored sheet of 10 **Sun Safety Pictures**. Discuss the pictures with your partner. Select the 5 most important pictures that you would use to make your friends and family aware of things that they should do to reduce their risks for skin cancer.

7. Write the numbers of the 5 pictures you and your partner selected in the chart below. Write an explanation for why you and your partner selected each picture.

Picture Number	Reason for selecting the picture

What questions do you have about skin cancer and sun safety?

Science Take-Out