Genetic Counseling Visual Aids

[These materials were shown to members of no-test control families in the University of Utah BRIGHT Project.
Please refer to the Bright Project Genetic Counseling Protocol Summary, also in these supplementary materials, for more information.]

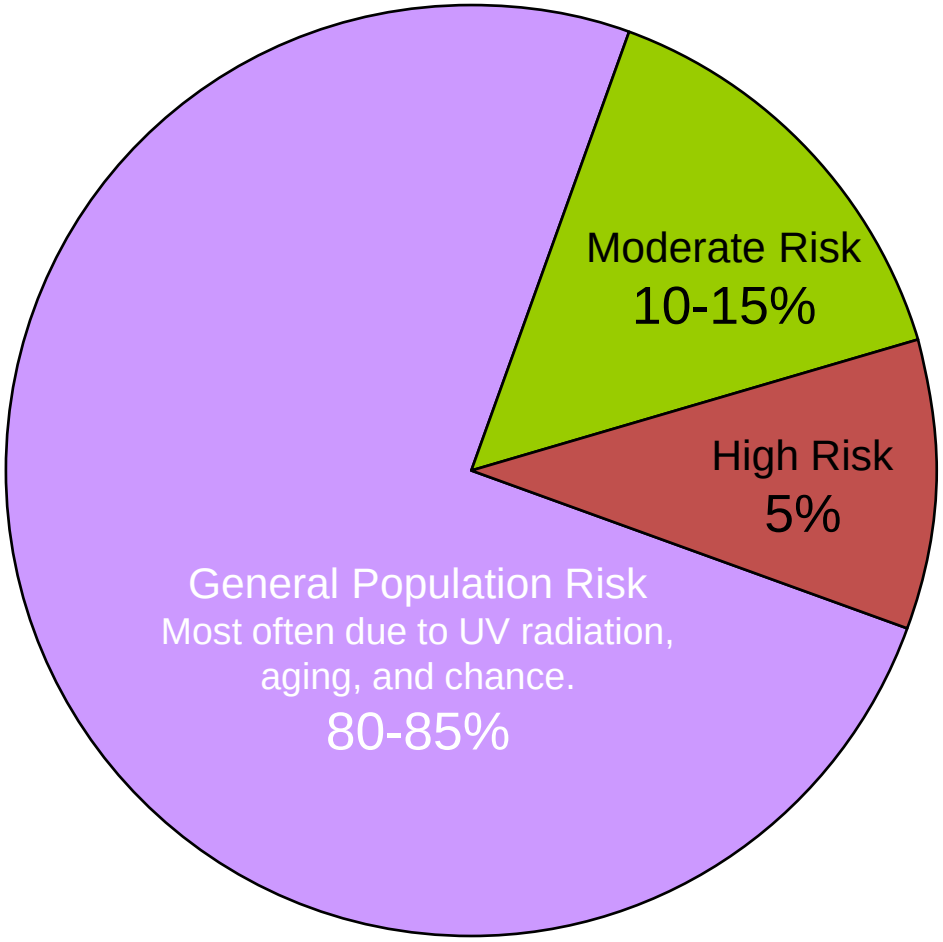
Family Tree

The patient's personal family tree will be drawn out on this slide. The genetic counselor will review the family history for accuracy and to determine the patient's experience with melanoma in the family.

Melanoma

- Melanoma is a deadly form of skin cancer.
- Melanoma starts in cells that give your skin its color. These cells are called melanocytes.
- About 1 in 100 (1%) of Caucasians with no family history of melanoma will get this disease at some point during their lives.

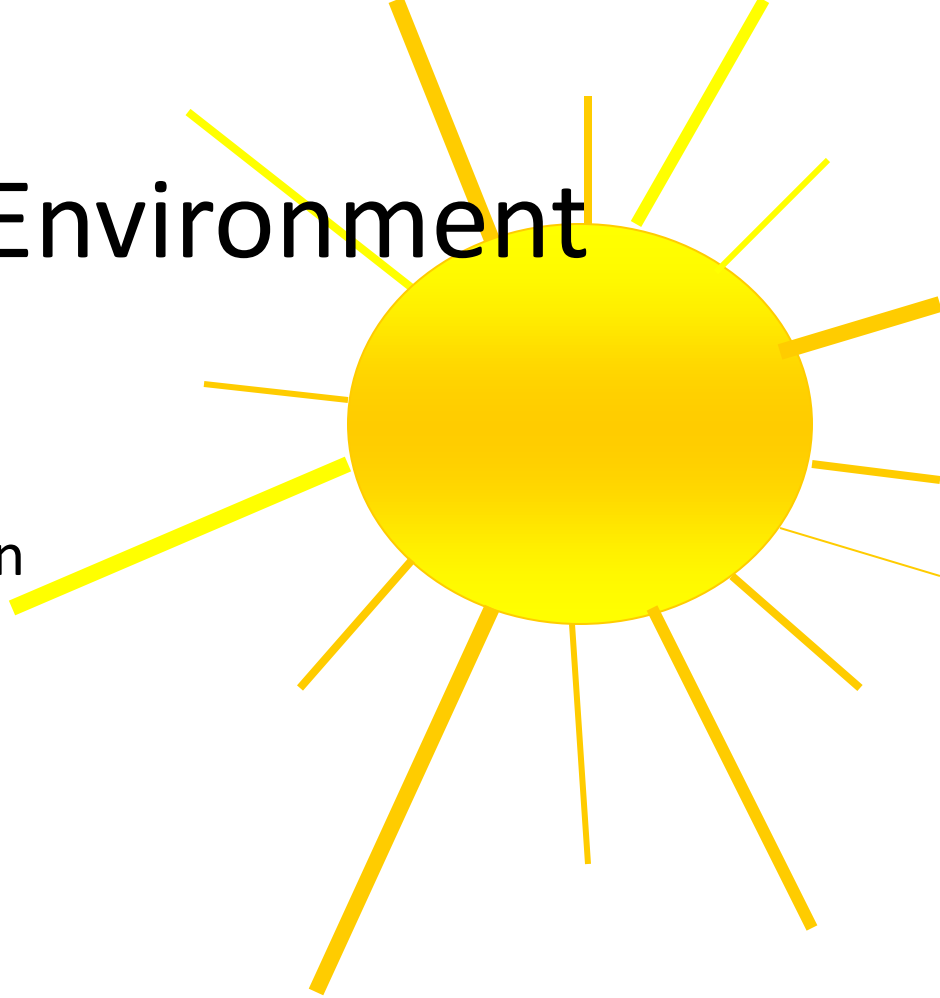
Levels of Melanoma Risk



Melanoma Risk Factors

- Environment
- Genes that determine physical features
- High-risk genes that don’t determine physical features

Risk Factor: Environment

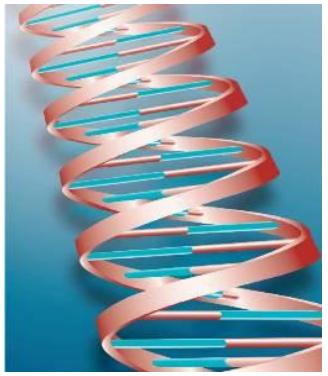


- Ultraviolet radiation (UV)
  - The **sun** is the most common source of UV radiation.
  - **Tanning beds** are also an intense source of UV radiation.
  - A safe amount of sun exposure has **not been determined**.
  - A **blistering** sun burn doubles your risk for developing melanoma.

Risk Factors: Genes that Determine Physical Features

- Genes control our hair color, skin color, and the number and type of moles we get.
- People who have fair skin, red or blond hair, or many moles have a higher risk of getting melanoma.
- These genes can double or triple your risk of getting melanoma.

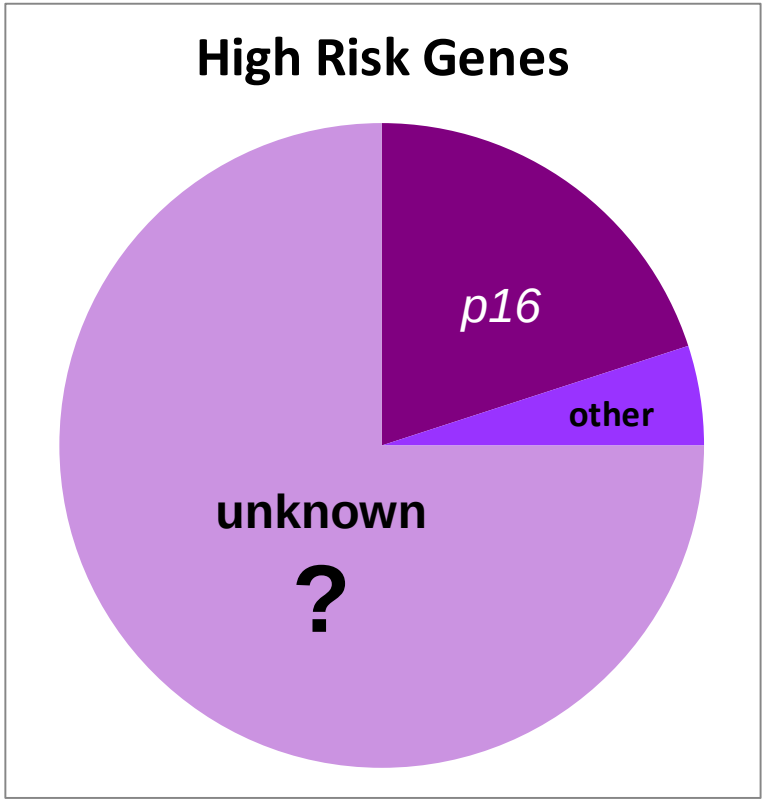
Risk Factors: High-Risk Genes



- Not all genes affect appearance.
- Some genes control processes that go on inside your body, such as how cells grow and divide.
- Some genes control how cells repair damage caused by UV light.
- If these genes are not working properly, there is a higher risk for getting melanoma, even if your skin and hair are dark.

Risk Factors: High Risk Genes

- Mutations in a gene called *p16* cause a high risk for melanoma.
- About 20% of families with a high risk for melanoma have a mutation in the *p16* gene.
- Through our research, we found that your family **<u>does not</u>** have a *p16* mutation.
- We still don't know the genetic cause of melanoma in most high risk families.



What is your cancer risk?

- These risk factors can interact to increase your risk of developing melanoma.
- Currently, we are unable to give you a comprehensive risk assessment number that takes into account all of your personal risk factors.
- However, we can give you a general risk assessment based on your family history.

Approximate Lifetime Cancer Risk

Type of Cancer	General Population Risk of Melanoma with No Family History	Your Risk as a Member of a High Risk Family
Melanoma	1 in 100	30 in 100 to 70 in 100

Taking Charge of Your Melanoma Risk

- Even people at high risk for melanoma may lower their risk by limiting UV exposure.

- You can manage your risk for melanoma through:
  - Screening
  - Protection

Screening: Dermatologist Exam

- Every year have a dermatologist do a total body skin exam.
- The dermatologist will examine your skin from the top of your scalp to the bottom of your feet.

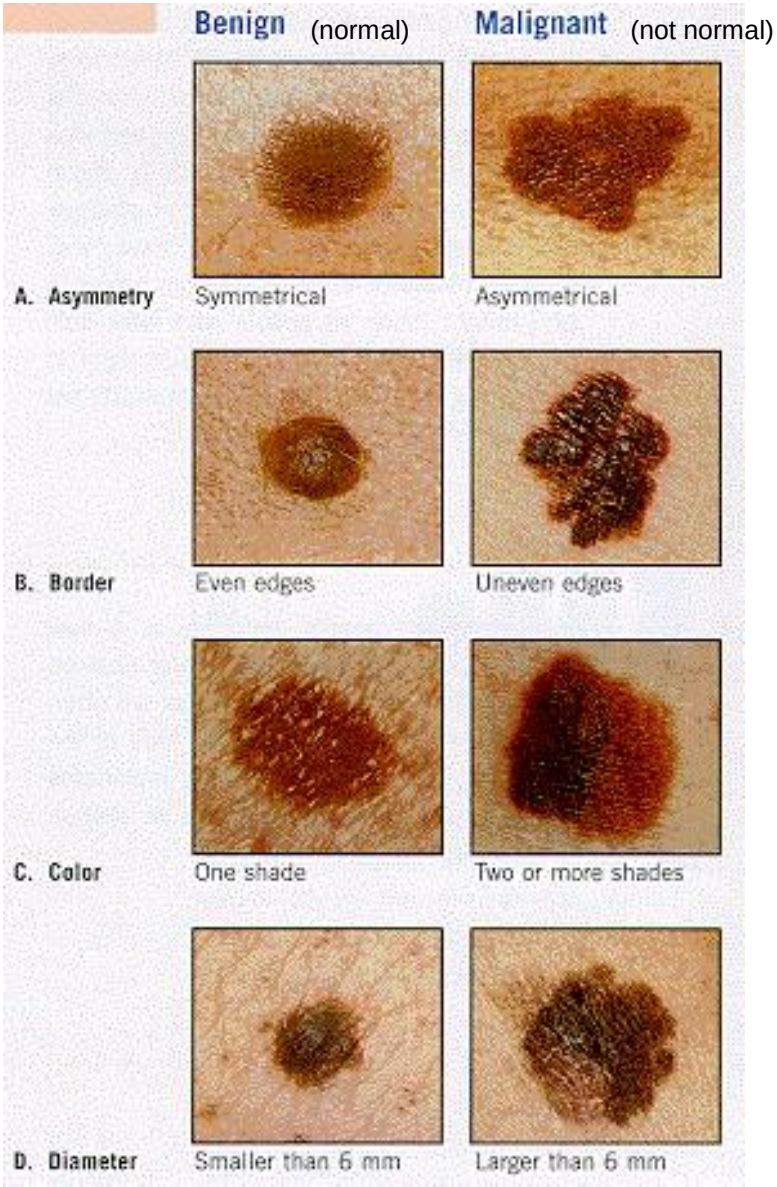
Screening: Skin Self-Examinations

- Examining your own skin
  - Most melanomas are found by individuals or their partners.
  - You are more likely to detect melanomas at an earlier, more curable stage by checking your skin monthly.

Screening: Skin Self-Examinations

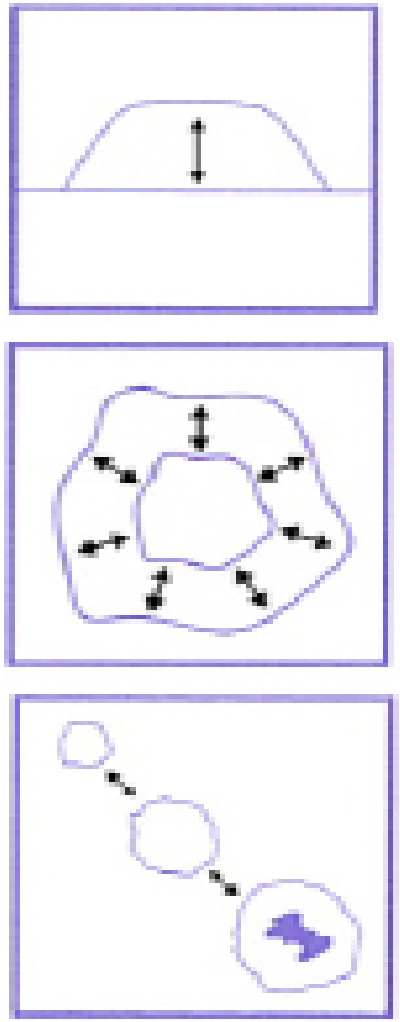
- Tips for examining your own skin:
  - Perform **once a month.**

    No more. No less.
  - Work with a partner.
  - Use pictures to help you track the appearance of moles over time.
  - Use a mirror to help you see all of your skin.
  - Look for ABCD and E…



Screening: Evolving (Changing) Moles

- Be aware of moles that:
  - Appear where none have been before
  - Disappear
  - Change in any of the following:
    - Size (bigger or smaller)
    - Shape
    - Color
  - Itch, bleed, or are tender

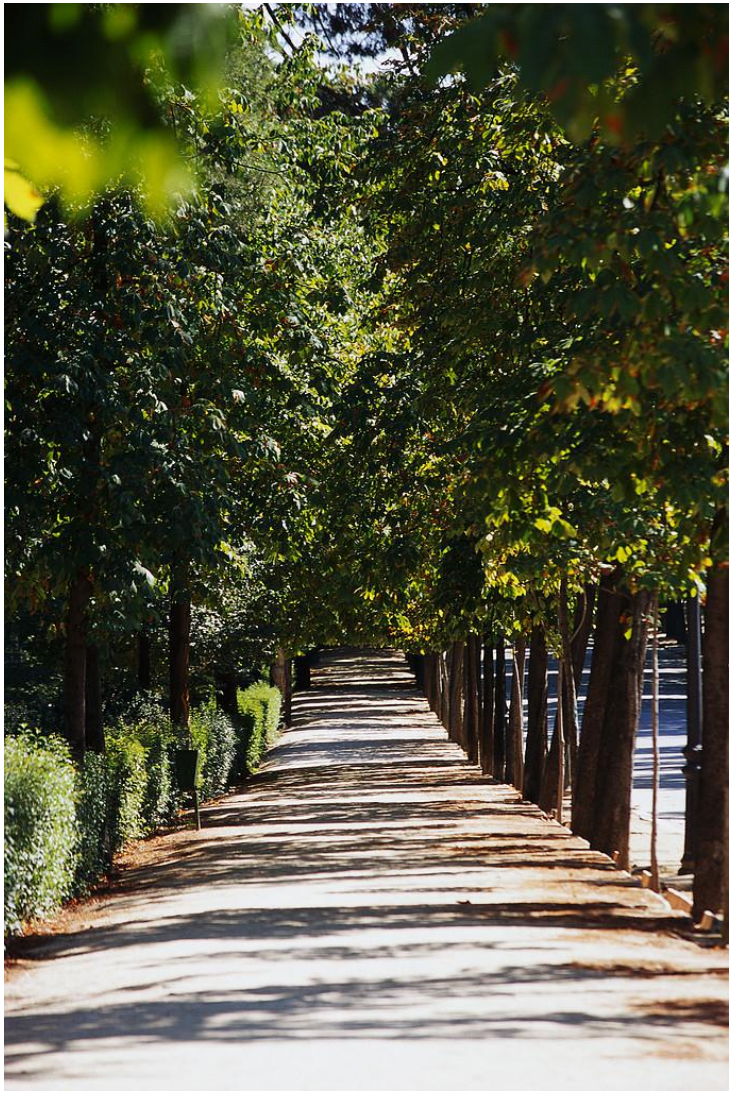


Protection: Clothing

- Wear protective clothing:
  - Wide-brimmed hats
  - UV protective sunglasses
  - Specially treated UV protective clothing
  - SunGuard

Protection: Avoid the Sun

- Avoid sun exposure
  - Stay in the shade
  - Avoid sun exposure between 10:00 a.m. to 4:00 p.m., when the sun is at its strongest



Protection: Sunblock

- Sunblock
  - Use every time you go outside
    - Use SPF 30 or higher
    - Look for products containing at least **5% zinc oxide or titanium dioxide**
  - Apply to all sun-exposed areas
  - Apply two coats
  - Reapply often
    - Every 2 hours
    - Every 30 minutes if in water or sweating

Common Myths Unraveled

Myth: I should wait until I am burned before applying sunscreen.

Fact: The best time to apply sunscreen is 30 minutes before going out into the sun.

Myth: A base tan at the beginning of summer helps me protect my skin all year.

Fact: There is no such thing as a healthy tan. Tanned skin does not protect you from UV radiation.

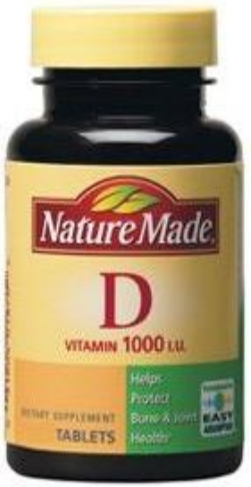
Myth: If I am outside for only a few minutes, I don't need to protect myself from the sun.

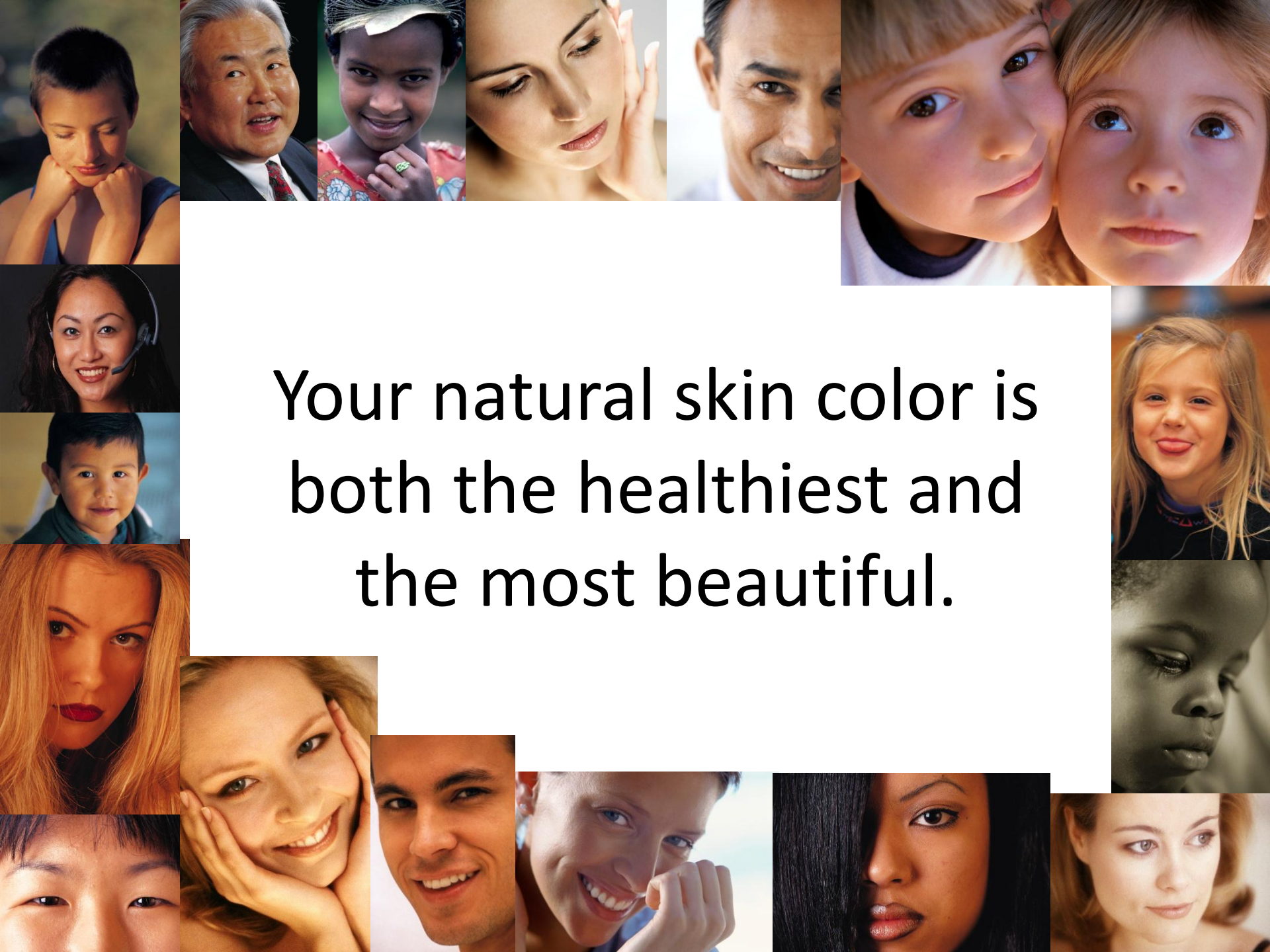
Fact: Any amount of unprotected exposure to the sun can increase your risk of melanoma.

Common Myths (cont.)

Myth: Being in the sun for 15 minutes a day is a good way to increase my Vitamin D levels.

Fact: There are other, safer, ways to get Vitamin D that will not increase your risk for melanoma. These include eating foods that are a good source of Vitamin D. You can also talk to your doctor about taking an oral Vitamin D_3 supplement (without calcium).





Your natural skin color is both the healthiest and the most beautiful.

We encourage you to do what works for you. Remember that you have many tools that you can use to help take charge of your melanoma risk!