

Name: _____

Date: _____

Period: _____

Skin Color and Skin Cancer

Week # _____

Directions: Read and annotate the passage below. Then answer questions 1 – 3.

Many of us may already know that excessive exposure to ultraviolet radiation from the sun can cause skin cancer. However, we simply cannot avoid sunlight because ultraviolet radiation is necessary for the production of vitamin D, which helps our bodies absorb calcium for healthy bones. To obtain the correct amount of sunlight, our skin contains melanin, a pigment that absorbs excess ultraviolet radiation. Melanin is responsible for skin color as well, so those individuals with more melanin have darker skin colors.

1. Using your prior knowledge about cancer, how does ultraviolet radiation cause skin cancer? _____

2. Why might people with lighter skin colors be at a higher risk of skin cancer? _____

3. Why might people with darker skin colors be at a higher risk of breaking a bone? _____

Directions: Use the information below and Figure 1 and Figure 2 to answer questions 4 – 5.

Figure 1 shows the difference in ultraviolet radiation that reaches the ground around the world. Places near the equator are not only hotter, but receive more ultraviolet radiation. Figure 2 shows the skin color of *native* individuals around the world.



Figure 1

Figure 2

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4. Use Figure 1 and Figure 2 to:
- a. Name two countries that receive a lot of ultraviolet radiation: _____
 - b. Describe the skin color of the native people in these countries: _____
 - c. Name two countries that receive very little ultraviolet radiation: _____
 - d. Describe the amount of melanin of the people in these countries: _____
5. What conclusion can you draw about ultraviolet radiation and the amount of melanin in people? _____

Directions: Use Figures 1, 2, 3 and the information below to answer questions 6 and 7.

Today, Australia (Figure 2 – A) consists of a population of light-skinned individuals, many of whom are descendants of people from England (Figure 2 – B). Interestingly, Australia has one of the highest rates of skin cancer in the world (Figure 3).

Melanoma of skin, Incidence: ASR (World) (per 100,000) (All ages)

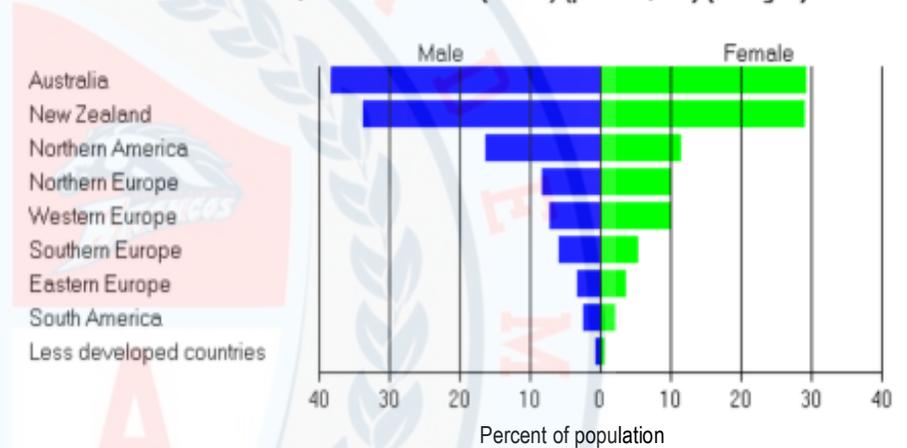


Figure 3

6. Using the information in Figures 1, 2, and 3, why do you think Australia has such a high rate of skin cancer?
- _____
- _____
- _____
- _____
- _____
7. Individuals who have darker skin colors now live in more northern countries like the United States, Canada, England, and Russia. These individuals are often diagnosed with vitamin D deficiency. Why do you think this occurs?
- _____
- _____
- _____