

Skin cancer essay sample

[Health & Medicine](#), [Cancer](#)



1. What are the causes of skin cancer?

Most skin cancer are caused by sun exposure. Exposure to some chemicals and in rare cases the abnormal genes that cause skin cancer can be inherited by children from their parents

2. Why are Caucasians more at risk of skin cancer than other populations?

Caucasians are more likely to sun damage and skin cancer than people with more pigment in their skin.

3. At what age does skin cancer typically occur? Is the incidence of skin

cancer greater in youth or old age? People over 50 years of age. However people who are exposed to large quantities of ultraviolet radiation can develop skin cancer as early as 20 to 30 years of age. The average age of skin cancer diagnosis occurs at 53 years old.

4. Does the amount of UV light reaching the Earth vary in a predictable manner? If so, describe the pattern you observe.

5. What latitude receives the greatest amount of UV light? The least?

6. Based on these data, where might you expect to find the most lightly pigmented and most darkly pigmented people on the planet? Be as specific as you can.

7. Provide a rationale to your answer above (i. e., why did you think that more darkly pigmented people would be found in those areas)?

8. Interpret this graph and the trend it describes.

a). Is skin reflectance randomly distributed throughout the globe? If not, how would you describe the pattern?

9. Hypothesize why different skin colors have evolved. Based on what you know, what factor is most likely to exert a selective pressure on skin color?

10. Review your answer to Question 3. Keeping your answer in mind, how strong a selective pressure do you expect skin cancer (UV-induced mutations) to exert on reproductive success?

11. Based on this information, does your hypothesis about the evolution of skin color (Question 9) seem likely? Why or why not? How does skin color meet, or fail to meet, the three requirements of natural selection outlined above?

12. Based on Branda and Eaton's results (Figure 3), what is the apparent effect of UV light exposure on blood folate levels?

13. What is the apparent effect of UV light on folate levels in these test tubes?

14. How is folate linked to natural selection?

15. All other things being equal, which skin tone would you expect to be correlated with higher levels of folate?

16. Based on this new information, revise your hypothesis to explain the evolution of human skin color.

17. What would happen to the reproductive success of:

a). A light-skinned person living in the tropics?

b). A light-skinned person living in the polar region?

c). A dark-skinned person living in the tropics?

d). A dark-skinned person living in the polar region?

18. Predict the skin tones expected at different latitudes, taking folate needs into consideration. Use the world map (Figure 4) to indicate the skin tone expected at each latitude (shade the areas where populations are darkly pigmented).

19. Can folate explain the variation and distribution of light- and dark-skinned individuals around the world?

20. How is vitamin D linked to natural selection?

21. Which skin tone allows someone to maintain the recommended level of vitamin D?