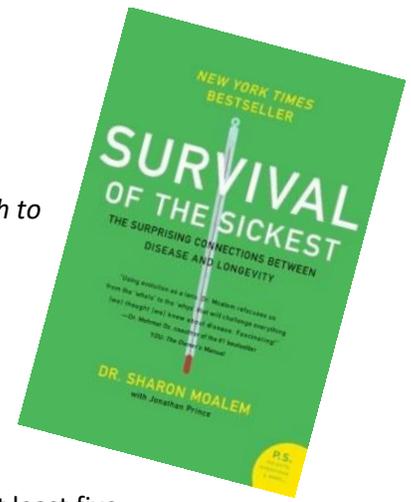


Name \_\_\_\_\_

Evolution Reading Assignment: Survival of the Sickest

The following questions should be answered on a separate piece of paper and attach to this assignment page.



Introduction

1. What is the “big” question the book will attempt to answer?

Chapter I

2. The author points out many ways in which iron impacts life. Identify/describe at least five.
3. In the context of this chapter, explain the author’s reference to Bruce Lee and to the barber pole.

Chapter II

4. Distinguish between each of the three types of diabetes.
5. What did the ice cores of 1989 reveal about the Younger Dryas?
6. Describe the body’s “arsenal of natural defenses” against cold.
7. Describe the connection between *Rana sylvatica* and diabetes.
8. In Chapters I and II several inherited disorders were discussed. Create and complete a chart with the following information: Disease/Disorder, Symptoms, Evolutionary Advantage

Chapter III

9. Why do we need Vitamin D? Cholesterol? Folic acid?
10. Briefly describe the connection between the two concepts:
  - a. tanning beds; birth defects
  - b. sunglasses; sunburn
  - c. hypertension; slave trade
  - d. Asian flush; drinking water
  - e. skull shape; climate
  - f. body hair; malaria
11. What’s so *fishy* about the Inuits skin color?
12. Explain the good and the bad of ApoE4.

Chapter IV

13. Explain the role of G6PO.
14. Briefly describe the connection between the two concepts:
  - a. European clover; Australian sheep breeding crisis of the 1940s

- b. Capsaicin; birds and mammals
- c. Malaria; air conditioning
- d. Fauvism; fava beans

15. Explain the following statement found on page 87: "Life is such a compromise."

### Chapter V: "Of Microbes and Men"

16. Complete Parasite Chart (go to end of assignment)

17. Identify 3 ways in which microbes/parasites move from host to host.

18. For each pathway listed in question #2, explain the relationship of the mode of transmission to the virulence of the invader.

19. What is our advantage in the survive-and -produce race?

### Chapter VI: "Jump into the Gene Pool"

20. Briefly discuss the following terms/scientists:

- a. Jenner
- b. vaccine
- c. antibodies
- d. B-cells
- e. "junk DNA"
- f. Lamarck
- g. McClintock
- h. retroviruses

21. What is the Weissman barrier?

22. Make connections between the following terms:

- a. transposons; viruses; evolution
- b. sunspots; flu epidemics

23. Humans have about 25,000 genes and more than a million different antibodies. How is this possible?

24. What is a *persisting virus*?

### Chapter VII: "Methyl Madness"

25. Make connections between the following terms:

- a. vitamin supplement; agouti mice
- b. snakes; long-tailed lizards
- c. Barker Hypothesis; fathers who smoke
- d. Smoking grandmothers; asthmatic children
- e. Betel nut chewing; cancer

26. Epigenesis may be partially responsible for the childhood epidemic of obesity. Explain.

27. "Good times mean more boys. Tough times mean more girls." Explain.

## Chapter VIII: “That’s Life: Why You and Your iPod Must Die”

28. Make connections between the following terms:

- a. Progeria; lamina A
- b. Hayflick limit; telomeres
- c. Cancer cells; stem cells
- d. Size; life expectancy
- e. Risky child birth; big brains and bipedalism

29. Explain the author’s iPod and aging analogy.

30. Identify the 5 lines of cancer defense.

31. What are the two accomplishments of biogenic obsolescence?

32. Compare and contrast the *Savanna* and *aquatic ape* hypotheses.

### Conclusion

33. The author hopes that you will come away from this book with an appreciation of three things:

- ✓ Life is in a constant state of creation
- ✓ Nothing in our world exists in isolation
- ✓ Our relationship with disease is often much more complex than we may have previously realized.

On a personal note, what would you add to his list?

34. “Nothing in biology makes sense except in the light of evolution.” How does the book, *Survival of the Sickest*, support this quote by Theodosius Dobzhansky, a noted evolutionary biologist?

COMPLETE THE CHART BELOW FROM THE READING.

IN ADDITION TO THAT PLEASE JOIN THE GOOGLE CLASSROOM FOR AP BIOLOGY. Use your lausd my mail account and join the AP Biology class – code w53h0z.

Parasites: Survive and Reproduce!

Parasite	Host/s	Manipulative Adaptation	Evolutionary Advantage
<p><i>Dracunculus metinensis</i> Guinea worm</p>			
<p><i>Hymenoepimecis argyraphaga</i> wasp</p>			
<p><i>Dicrocoelium dentriticum</i> Liver fluke</p>			
<p><i>Spinochordodes tellinii</i> Hairworm</p>			
<p>Rabies virus</p>			
<p><i>Toxoplasma gondii</i></p>			
<p>Pin worms</p>			
<p>Cholera</p>			
<p><i>Plasmodium</i> Malaria</p>			

Inherited Genetic Disorders

Disease/Disorder	Symptoms	Evolutionary Advantage