

Name _____

<http://entertainment.howstuffworks.com/sports-physiology1.htm>

1. Muscles are like electric motors, but the energy they use to exert force is
2. What three things do muscles need to do during the “burning” of ATP?
3. List the summary of the reactions that turn ATP into energy
4. List the three different biochemical systems that muscles use to obtain energy
5. How long does it take a muscle cell to use up its stored ATP
6. When muscle cells need to replenish ATP quickly, they use what high-energy molecule?
7. Describe how creatine phosphate enhances the formation of ATP.
8. What is meant by the phosphagen system and during what type of exertion are muscles accessing ATP by this system?
9. What is glycogen?
10. How do muscle cells obtain energy from glycogen anaerobically and during what type of exertion are muscles accessing ATP by this system?

11. Describe the limit to the amount of anaerobic respiration that can occur in muscle cells.
12. Describe the three origins of glucose that is broken down in aerobic respiration.
13. What other molecules can muscle cells utilize in the aerobic reactions and in what order?
14. During what type of exertion are muscles accessing ATP by aerobic respiration?
15. Describe several ways that the body can increase the flow of oxygen-rich blood to working muscles.
16. Describe what is meant by vasodilation and the sequence of events that leads to it.
17. Describe what is meant by vasoconstriction and explain why it is a person might get “light-headed” from exercising strenuously.
18. Describe what hemoglobin is and how it functions.
19. How is heat produced by working muscles and how does the body remove the excess heat?