

Biology 14000 / Nutrition
Study Guide Chapter 5
Carbohydrates

1. What is the most important monosaccharide in the human body? Does all the monosaccharide have the same “sweetness”?
2. What are the sources for the monosaccharide?
3. Is sucrose a natural disaccharide? Where does most of our sucrose come from?
4. Is honey a superior sweetener? Why shouldn't you feed honey to infants?
5. What are the three benefits of adding sugars to baked cereal products?
6. How many Calories are in a gram of sugar?
7. What is the difference between nutritive and nonnutritive sweeteners? Why do we use alternative sweeteners? Give examples of an alternative sweetener used in chewing gums and what are the advantages over sucrose?
8. What are common nonnutritive sweeteners? Which nonnutritive sweetener is made from amino acids and what risk is associated with this sweetener?
9. What are polysaccharides? How do animals and plants store carbohydrates? Are animal sources a good source for polysaccharides?
10. How is dietary fiber different than starch? What does dietary fiber contribute to?
11. What fiber “types” are in our diet? What is the significance?
12. How is carbohydrate digested and absorbed in the human body?
13. What cells play a role in the regulation of blood glucose levels? What is the normal range for blood glucose? Explain the mechanism controlling blood glucose levels in the blood?
14. Insulin plays an important role in glucose regulation. What other metabolic function(s) is regulated by insulin?
15. What happens to glucose when glycogen storage reaches maximum capacity?
16. What happens when energy is released from glucose?
17. Cells need a “small” amount of glucose to properly metabolize fat for energy. What happens if there is not enough glucose to support proper fat metabolism?

18. Are some cells only “glucose” feeders?
19. What percent of kcal per day should you consume from each macronutrient?
20. How many teaspoons of sugar does the average American consume daily? What is recommended? How much sugar is in a 12 oz can of regular pop?
21. Are carbohydrates fattening? Explain
22. How does fat and carbohydrates work together to make the food we eat taste better?
23. How many kcal are there in a gram of fat? Why is this “dangerous”?
24. Why do we call regular pop an empty-calorie food and what do scientific studies suggest is the danger associated with drinking pop?
25. How did our average national food energy consumption changes between 1970 and 2003?
26. What is diabetes? What are the symptoms? What is the root cause for the long term damage to the body?
27. How do the two forms of diabetes differ from each other?
28. What is glycated hemoglobin?
29. How does exercise effect glucose uptake?
30. Can diabetes be prevented? Is the Western diet a good diet?
31. What hormone is released because of hypoglycemia? What is the effect of this hormone on the body?
32. What is reactive hypoglycemia?
33. What are the risks associated with metabolic syndrome?
34. What is nursing bottle syndrome?
35. What is the cause of lactose intolerance?
36. Compare and contrast colonic diverticula and hemorrhoids: