

Lipids

Chapter 9 Learning Objectives

By the end of the chapter you should be able to:

1. Describe the general properties of the fatty acids. Include the properties of the chains found in lipid membranes in phospholipids
2. List the major physiological functions of fatty acids
3. Derive the structure of saturated or unsaturated fatty acids. Be able to specify the omega or delta ends. Recognize the alpha, beta and gamma carbons of fatty acids
4. Recognize the required fatty acids and know the essential fatty acids.
5. Explain why triacylglycerols are highly concentrated forms of stored metabolic energy.
6. Know the means by which fatty acids are lysed and move throughout the body
7. Be able to know the general structures of phospholipids and distinguish the various head groups. Also know the various positions on the glycerol and which acyl chains are bonded to which glycerol carbon.
8. List the actions of the phospholipases. Explain the specific functions of these lipases and their biochemical / physiological importance.
9. Recognize the structure and significance of an ether link at the sn1 position – platelet activating factor
10. Determine which lipid and lipase product is bioactive. What does bioactive mean?
11. Know the sphingolipids and their components.
12. List the different functions of sphingolipids including the cerebroside and gangliosides
13. Know the general structure of cholesterol. Be able to identify cholesterol from its derivatives.
14. Describe the role of cholesterol in membrane fluidity
15. List and be able to identify the general features of the eicosanoids.
16. Know the biochemical functions of the eicosanoids

17. Understand the basics in membrane composition and fluidity. This should include the proteins associated with the membrane.