**Molecular Structure of Fat**

Howard Hughes Medical Institute

Access the BioInteractive Module, **Molecular Structure of Fat** at: <http://www.hhmi.org/biointeractive/molecular-structure-fat>. Click on the highlighted area that says, “Start Click and Learn.” As you are reviewing the module, answer the following questions:

1. Fat is know as both a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and a class of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Fat (adipose) tissue is used for both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the body.
3. Provide 2 examples of how as a tissue, fat can act as a dynamic organ:
4. Fat cells are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Briefly explain the difference between a “fat” and an “oil”
6. List the 4 major types of lipids:
7. What are the 2 major structural components of a triglyceride?
8. What structural feature determines the properties of a triglyceride?
9. Explain the structural differences between a saturated fatty acid and an unsaturated fatty acid. Draw an example.
10. How does a monounsaturated fatty acid differ from a polyunsaturated fatty acid? Draw an example.
11. Explain the structural difference between a *cis* and a *trans* fatty acid.
12. List the health consequences that result from consuming *trans* fatty acids.
13. Are trans fatty acids common in nature?
14. What is an omega-3 fatty acid?
15. What type of disease do naturally-occurring fatty acids possible help to prevent?
16. How does cholesterol differ structurally from triglycerides?
17. List all of the roles that cholesterol plays in the body:
18. Phospholipids comprise the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in biological membranes.