The Science of Fat Name _____

http://media.hhmi.org/biointeractive/click/obesity_molecular/01.html?_ga=1.113163396.1614595815.1439693554

1. What are three meanings of the word fat in biology

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2. Animals use fat for _____.

3. Fat tissue is also known as _____ _____.

4. Fat cells are called _____.

5. Fats are _____ at room temperature and oils are _____.

6. Lipids are _____ in water.

7. Lipids include fat molecules as well as ....

8. A fat molecule is called a _____. It is made of a _____ molecule and _____ long carbon organic acids called _____.

9. When triglyceride is made another product is _____.

10. The properties of the triglyceride depend on the types of _____.

11. Fatty acids are organic _____ organic acids.

12. Fatty acids can be saturated. This means...

13. Fatty acids can also be unsaturated. This means...

14. Monounsaturated have _____ double bonds where as polyunsaturated have _____.

15. What is the structural difference between cis and trans fats?

16. _____ fats are rare in nature. They are usually made from an industrial process called _____.

17. Trans fats have _____ chains, are _____ at room temperature and have a _____ shelf-life. Examples are _____ and _____.

18. Trans fats elevate _____ cholesterol and lower _____ cholesterol.

19. Trans fats are thought to be _____.

20. "Omega-3" is a term for _____ and _____ fatty acids. These are thought to help protect against _____.

21. An example of a saturated fat is _____, an unsaturated cis fat is _____.

22. _____ is a type of lipid important in the cell membrane and a precursor to various key molecules such as bile acids and steroid hormones.

23. _____ are the main molecules that for the lipid bilayer of membranes.

24. Phospholipids are made of _____ and _____.

How the body uses fat

http://media.hhmi.org/biointeractive/click/obesity_processing_fat/01.html?_ga=1.76464021.1614595815.1439693554

1. _____ contains _____ times as much energy as _____.

2. _____ is a simple sugar and _____ energy source.

3. _____ is a complex carbohydrate made from _____ of glucose.

4. Glycogen is made and stored primarily in the _____ and _____.

5. _____ is our body's primary _____ source of energy.

6. It is _____ in blood and has special mechanisms for _____.

7. Excess glucose is converted into _____. Any further excess is converted into _____ and stored.

8. Fat is ingested as food and 1st subjected to _____ digestion. Solid material is broken down and formed into _____. They are absorbed in the _____.

9. _____ are produced by cholesterol in the _____ and stored in the _____ _____. The bile acids _____ the fat droplets which increases _____.

10. _____ are also added to the duodenum. These juices include _____ which digests _____, converting eat into _____ and a _____.

11. Fatty acids and monoglycerides are absorbed by the _____ lining the _____ _____.

12. Triglycerides are packaged into _____.

13. Play the Fate of Fat on slide 13

14. Chylomicrons are a type of _____ and create a _____ interior.

15. What is the purpose of HDL?

16. High levels of _____ and low levels of _____ correlate to heart disease.

17. LDL is sometimes known as _____ and HDL is called _____.

18. It is the _____ of LDL to HDL that is healthy or unhealthy.

19. Fatty acids released by adipose tissue are transported by _____, a protein.

20. What organ is key in storing and processing fat? _____

Obesity Related Health Problems

http://www.hhmi.org/biointeractive/obesity-related-health-problems

1. Watch the short video.
2. Create a timeline that illustrates the effects of obesity on the body.

Heart Attack

http://www.hhmi.org/biointeractive/how-heart-attack-occurs

1. Watch the animation.
2. Describe the events that led up a heart attack.

Pima Indians

http://www.hhmi.org/biointeractive/pima-indians

1. Think about our conversations earlier in the year about behavior, learned and innate. The Pima Indians in both populations have a similar gene pool. What does this example illustrate?