

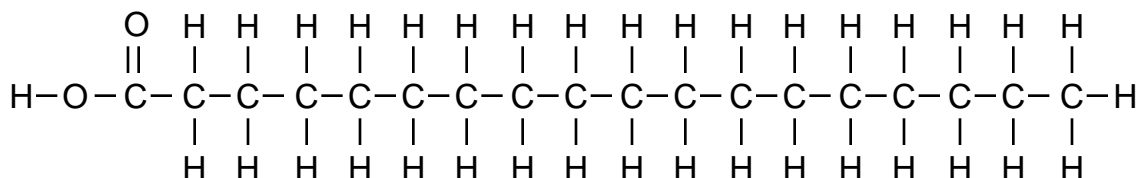
Fats : Notes/W.S.-30

Fats are nutrients that are used by the body for energy, or are used to build cells. They are also used to make other important compounds which are needed by the body.

Fats are composed of fatty acids. Fatty acids contain carbon, hydrogen and oxygen. But unlike carbohydrates, there is only a small amount of oxygen.

Stearic acid is a fatty acid which is found in beef fat. Its formula is $C_{18}H_{36}O_2$. It's structure shown below.

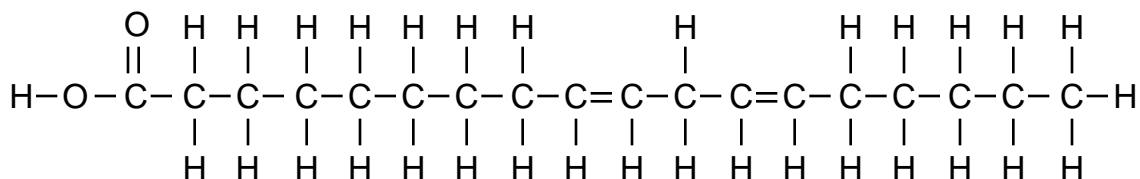
stearic acid



This is a saturated (full) fat, because there is no more room for hydrogen atoms. Saturated fats are solid at room temperature.

Linoleic acid is a fatty acid which is found in seeds like corn. It has the formula $C_{18}H_{32}O_2$. It is the only fatty acid which is essential. Its structure is shown below.

linoleic acid



This is an unsaturated (not full) fat, because there is more room for hydrogen atoms. Unsaturated fats are liquid at room temperature.

Examples of saturated fats are: butter (milk fat) and beef fat. Saturated fats come from animals. Examples of unsaturated fats are: corn oil and olive oil. Unsaturated fats come from vegetables.

Questions:

- 1) What are fats used for (give three things)?
- 2) What are fats composed of?
- 3) Give the formula for linoleic acid.
- 4) What is a saturated fat?
- 5) What is an unsaturated fat?
- 6) Name two saturated fats.
- 7) Name two unsaturated fats.
- 8) Is soybean oil a saturated or an unsaturated fat?

Answers: 1) They are used as a source of energy and as a component of cells and important compounds., 2) Fats are composed of fatty acids., 3) $C_{18}H_{32}O_2$, 4) It is a fatty acid in which no more hydrogen atoms will fit., 5) It is a fatty acid in which there is more room for hydrogen atoms., 6) butter, beef fat, 7) corn oil, olive oil, 8) unsaturated, it is a liquid seed oil.