

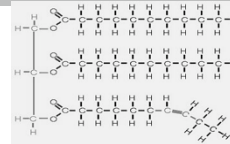
LIPIDS

Polymers that don't mix with water!

This means they are hydrophobic.

Groups are **FATS, PHOSPHOLIPIDS & STEROIDS**

Fats = 1 Glycerol + 3 Fatty Acids

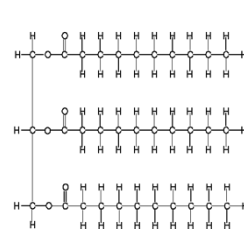


- Fats are large molecules made of 2 monomers : **glycerol + fatty acids.**
- There are two types of fatty acids - **saturated** and **unsaturated.**
- **Functions** of fats include: insulation, energy storage, shock absorber for internal organs (like bubble wrap!), functions of hormones

Saturated Fatty Acids

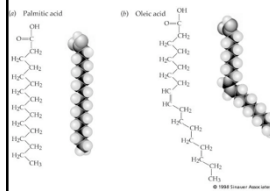
- Characteristics:
 - Solid at room temperature (can pack together tightly)
 - Mostly found in animals
 - **No double bonds between Carbons** (filled with hydrogens)
 - Examples :

A Saturated Fat



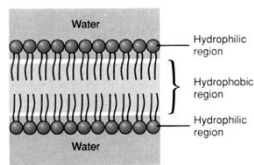
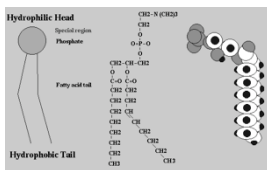
Unsaturated Fatty Acids

- Characteristics
 - Liquid at room temperature (can't pack together tightly)
 - Found mostly in plants
 - **Double bonds found between Carbons** (not filled with hydrogens)
 - Examples :



Phospholipids = 2 Fatty Acids + Phosphate

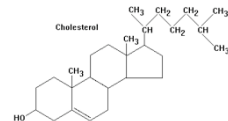
- Where do you find phospholipids in a cell???
- Phospholipids have polar (charged) & nonpolar (not charged) ends. The phosphate end is **HYDROPHILIC**. The fatty acid end is **HYDROPHOBIC**.
- The **unique structure** (polar & nonpolar) contributes to the function of these molecules in the cell.



Steroids = Carbon skeleton with 4 fused rings

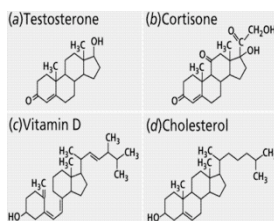


not just anabolic steroids!!



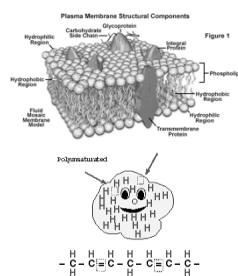
- Steroids are a **natural** and **important** components of the cell membrane in many organisms.
- An example is **cholesterol**
- It is used to help construct other important hormones in organisms.

Steroids (continued)



- Examples of hormones created using steroids are **estrogen**, **progesterone** and **testosterone**.
- Anabolic steroids are a **synthetic** form of testosterone to increase muscle mass. Both men and women who take testosterone *increase* the masculine physical features normally triggered by varied levels of testosterone in the body.

Review of Lipids



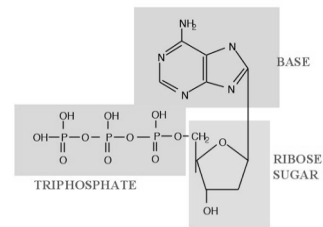
- Monomers of **FATS**:
- Functions of **fats**:
- Monomers of **PHOSPHOLIPIDS**:
- Functions of **phospholipids**:
- Structure and function of **steroids**:

NUCLEIC ACIDS:
THE POLYMERS BUILT OF
NUCLEOTIDES

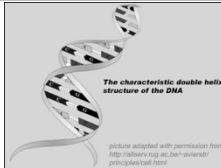
DNA
RNA

Nucleotides - the building blocks
of nucleic acids

NUCLEOTIDE



DNA - deoxyribonucleic acid



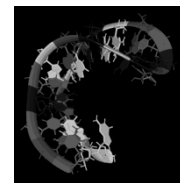
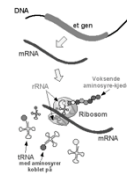
Characteristics

- ▢ Double helix
- ▢ Four nitrogenous bases : A, T, C, G
- ▢ Deoxyribose sugar (5-carbon sugar)
- ▢ **Function:** storage of genetic codes

RNA - ribonucleic acid

Characteristics

- ▢ Single stranded
- ▢ Four nitrogenous bases - A, U, C, G
- ▢ Ribose sugar (5-carbon sugar)
- ▢ **Function :** transcribe and translate DNA into proteins



Review of Nucleic Acids



- Monomers :
- Polymers :
- Structures:
- Functions :