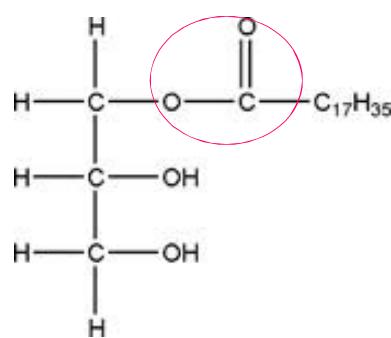
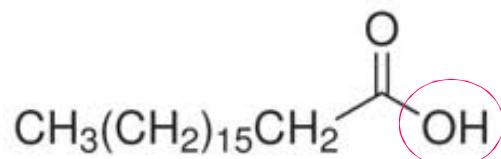
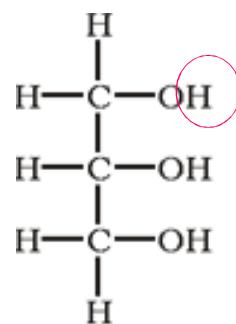


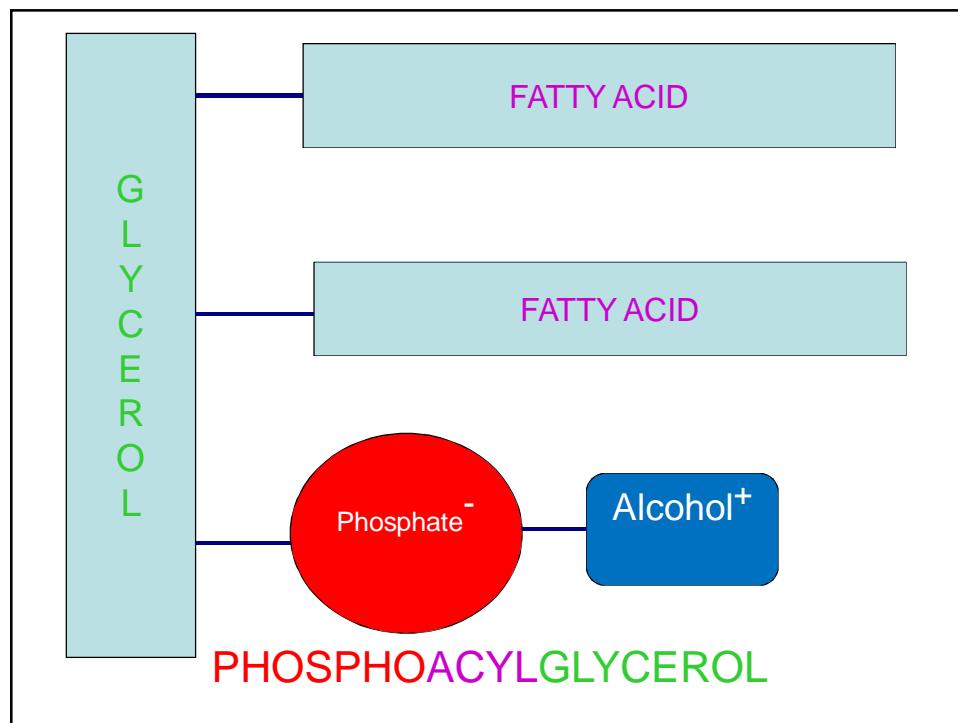
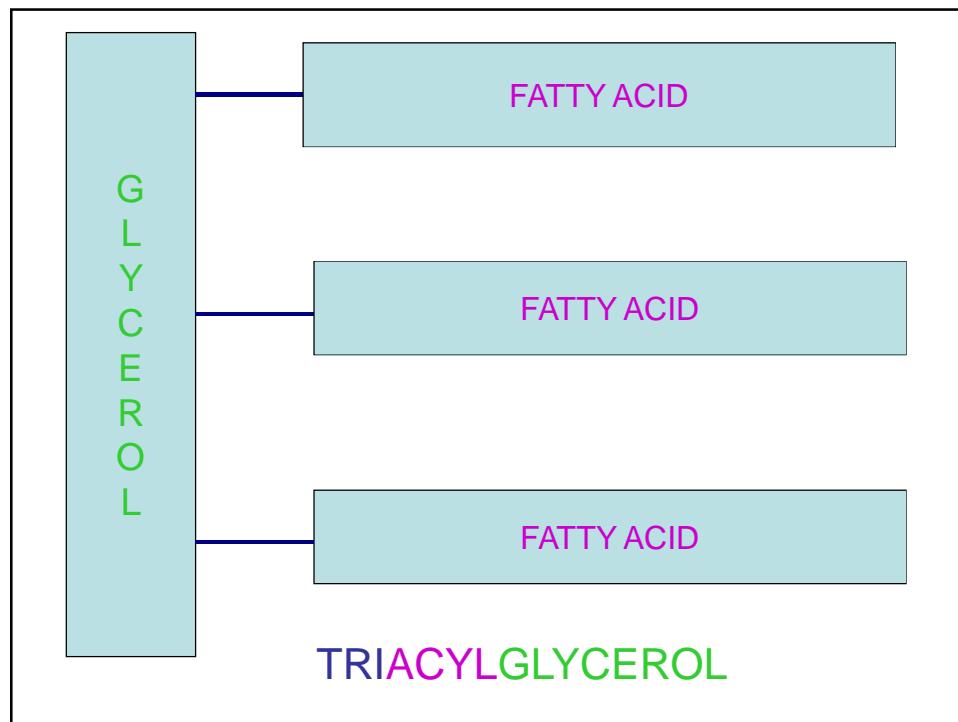
# Digestion and Transport of TAG by Plasma Lipoproteins

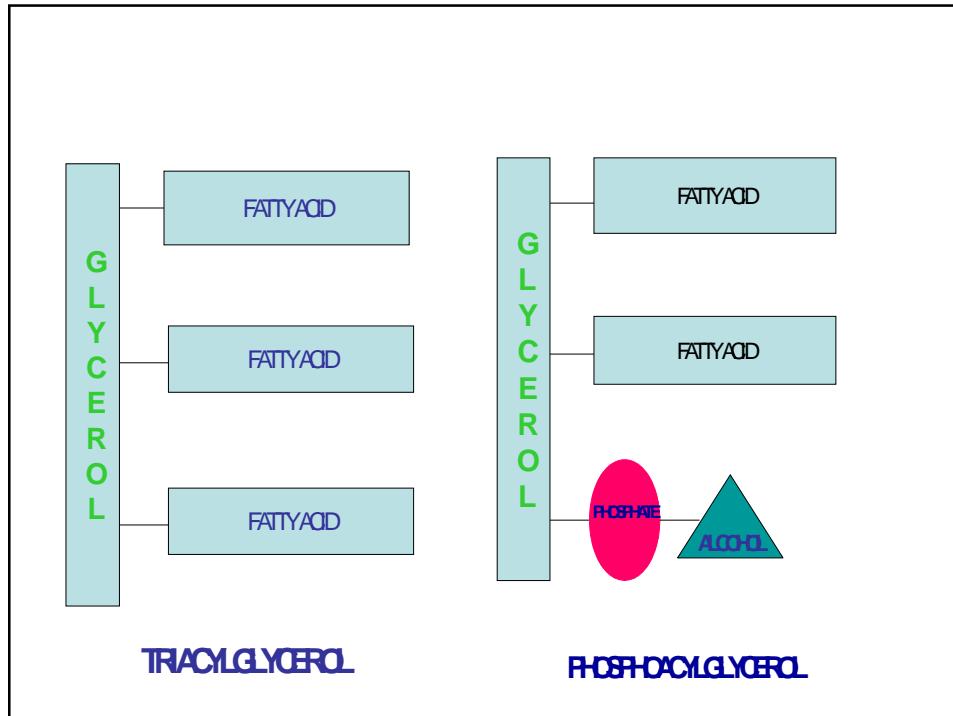
Chapter 18

Chapter 15

Lippincott's Illustrated Review  
Biochemistry





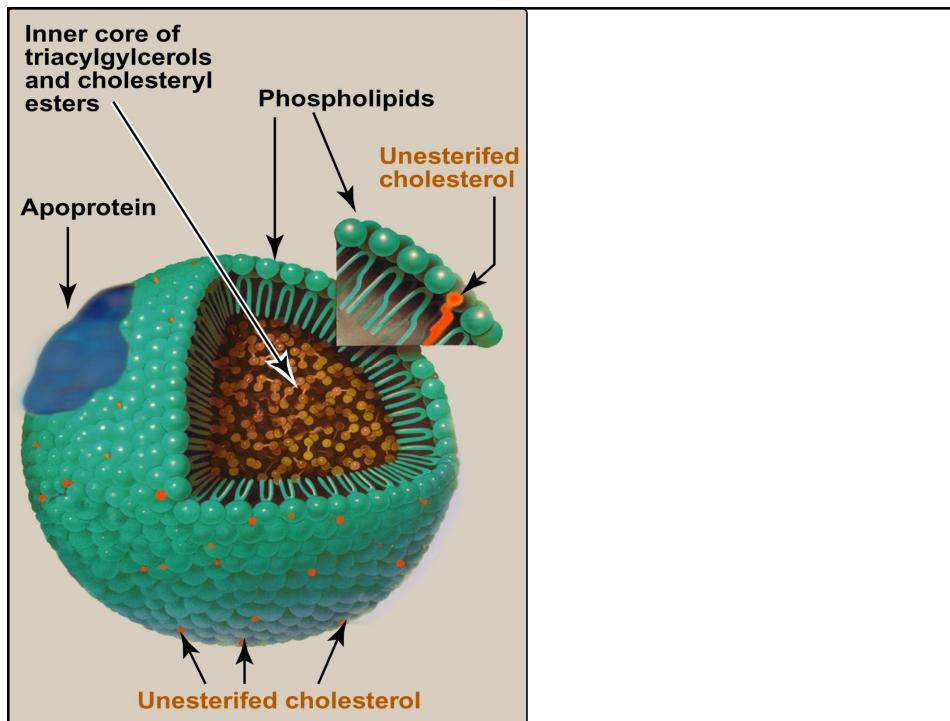


## Lipoproteins

- Multimolecular Complexes of Lipids and Proteins
- For Transport of Lipids in the Plasma
- Lipids Include
  - TAG Triacylglycerol
  - CE Cholesterol Ester
  - CH Cholesterol
  - PL Phospholipids

## Apolipoproteins

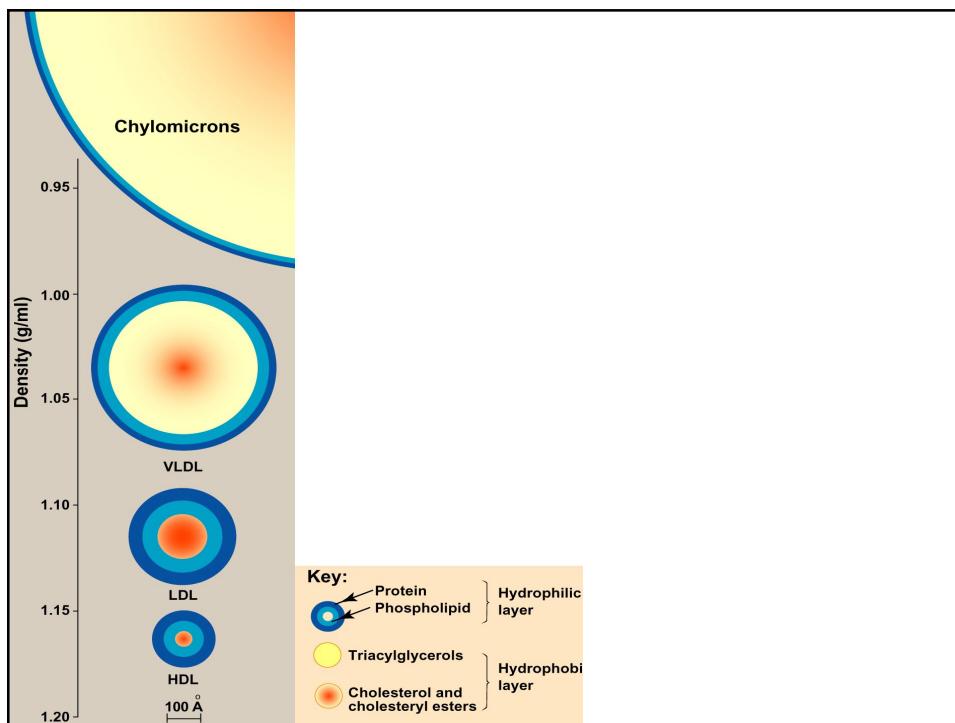
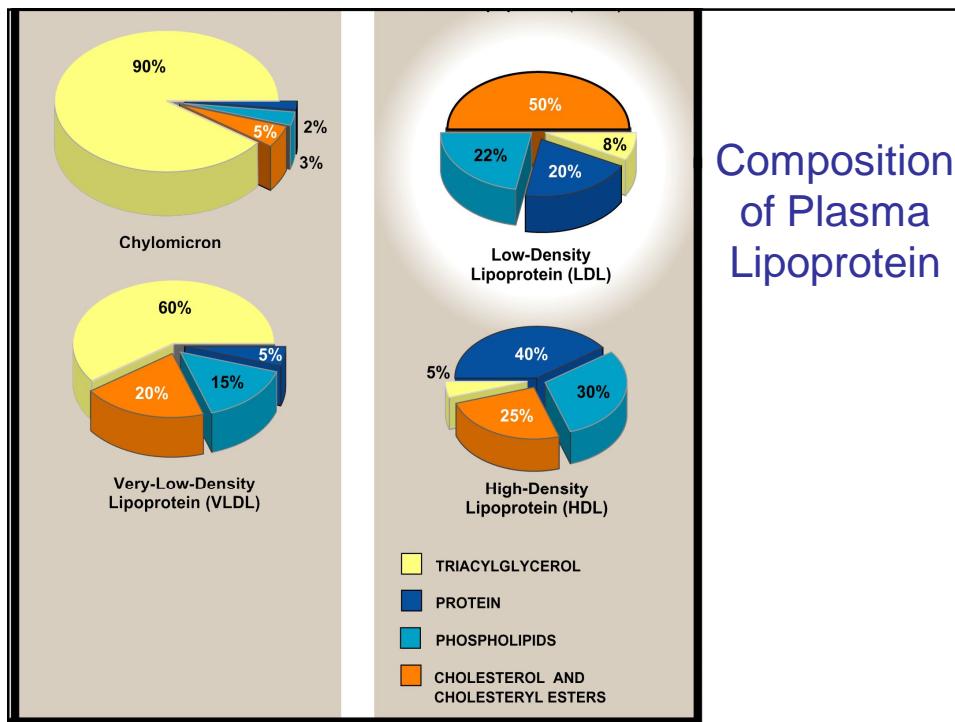
- The Protein Part of Lipoproteins
- Amphipathic
- Include Several Classes  
Apo A, Apo B-48, Apo E....
- Structural Role, Regulatory Role and Binding to Cell Surface Receptors

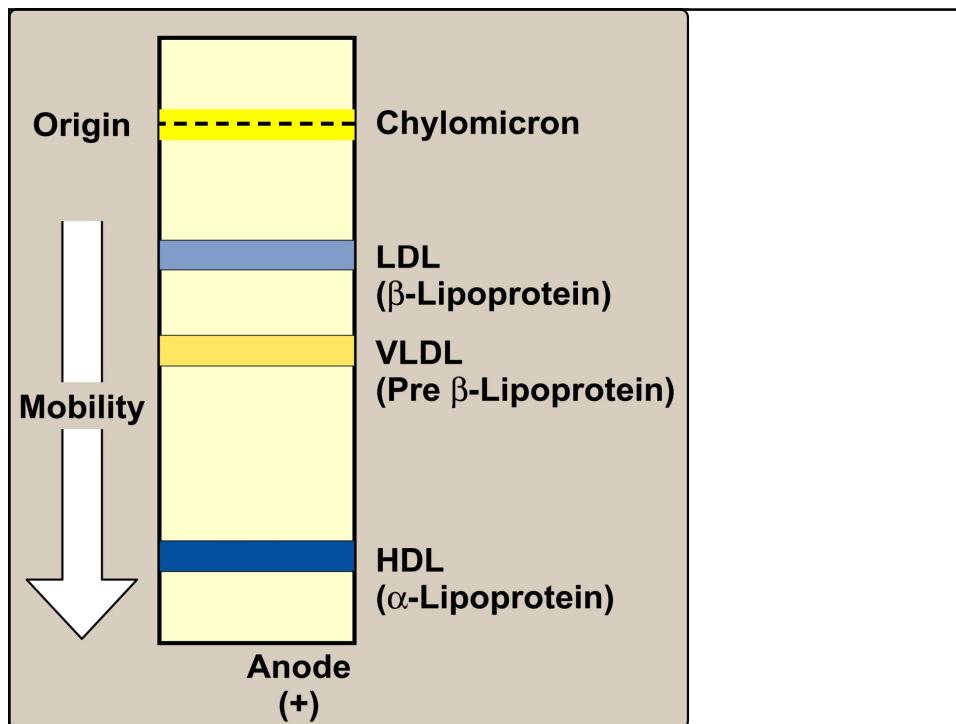


## Classes of Lipoproteins

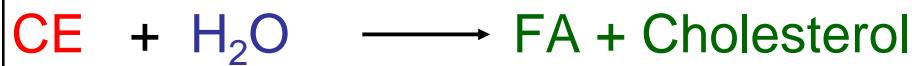
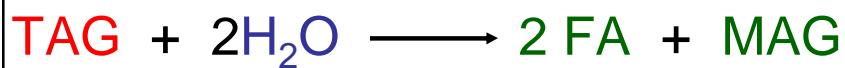
| <u>Lipoprotein</u> | <u>Density</u> | <u>Protein</u> | <u>Major Lipid</u>    |
|--------------------|----------------|----------------|-----------------------|
| Chylomicrons       | <0.95          | 2 %            | TAG (85%)             |
| VLDL               | 0.95- 1.006    | 9%             | TAG (55%)             |
| IDL                | 1.006-1.019    | 11%            | TAG (26%)<br>CE (30%) |
| LDL                | 1.019- 1.063   | 20%            | CE (35%)              |
| HDL                | 1.063- 1.21    | 45%            | PL (25%)              |

| <u>Lipoprotein</u> | <u>Apo Protein Types</u> |                                |
|--------------------|--------------------------|--------------------------------|
| Chylomicrons       | Apo B, Apo C,<br>Apo E   | Dietary Lipids                 |
| VLDL               | Apo B, Apo C,<br>Apo E   | Endogenous TAG                 |
| IDL                | Apo B, Apo E             |                                |
| LDL                | <b>Apo B</b>             | Cholesterol                    |
| HDL                | Apo A, Apo C,<br>Apo E   | Cholesterol<br>Return to Liver |

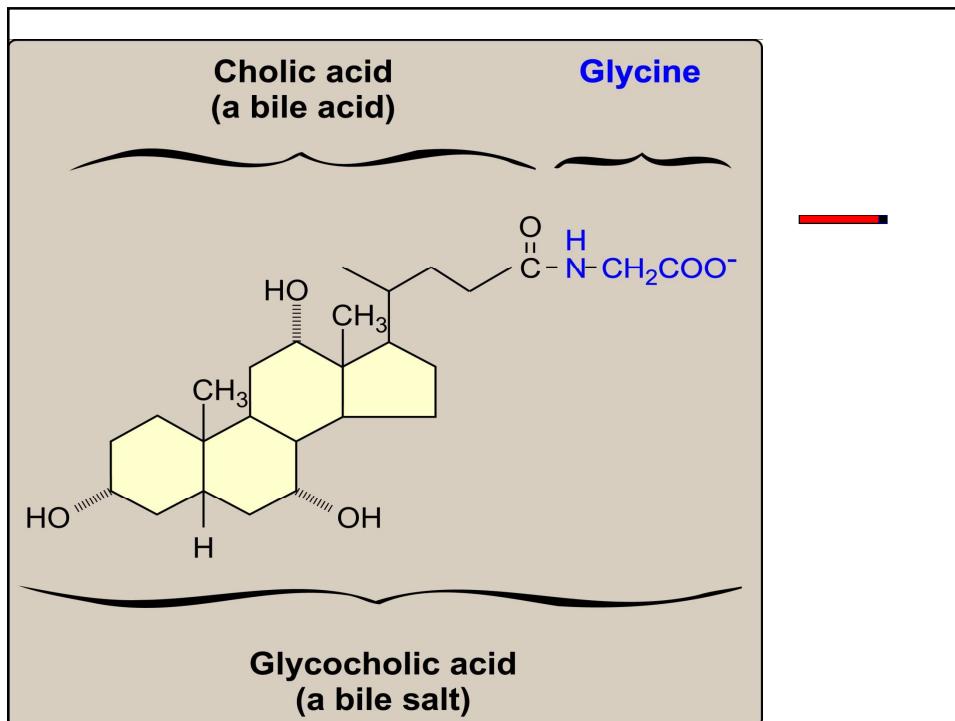
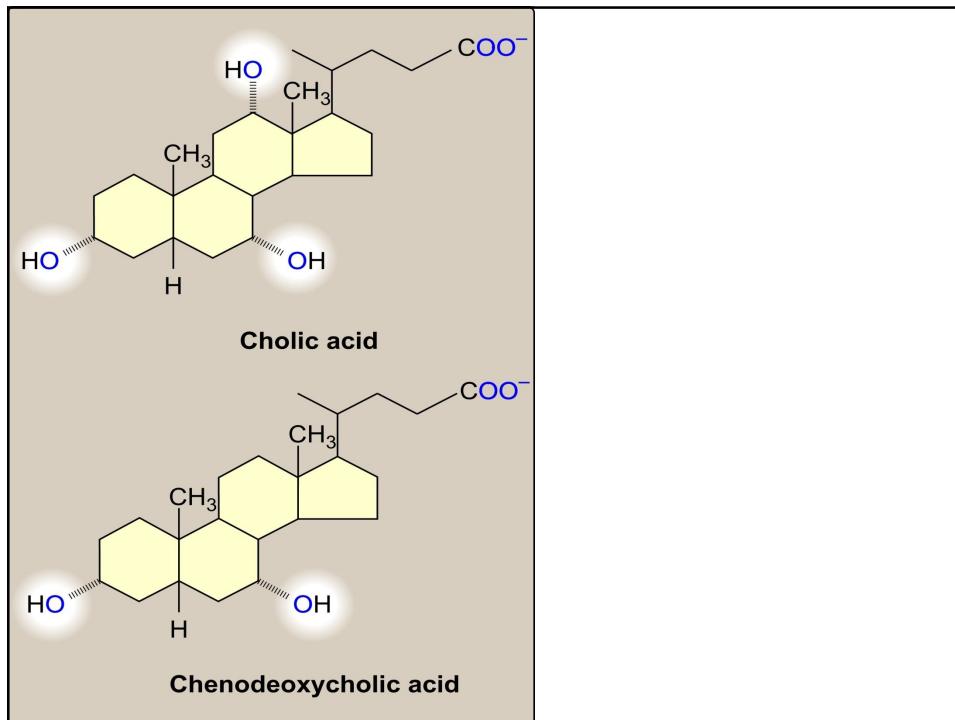


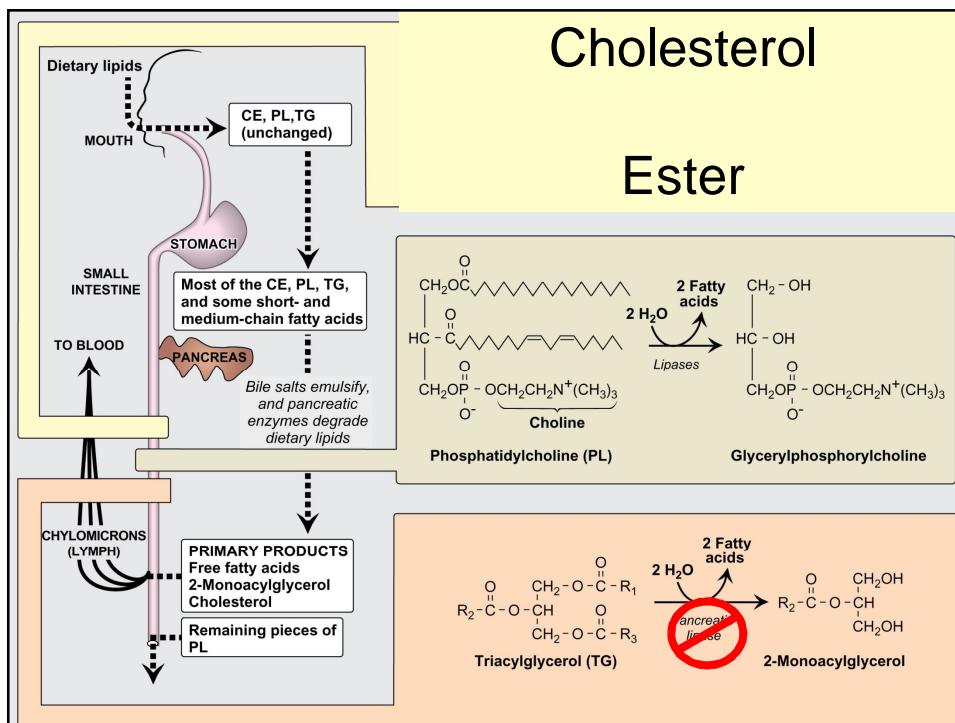
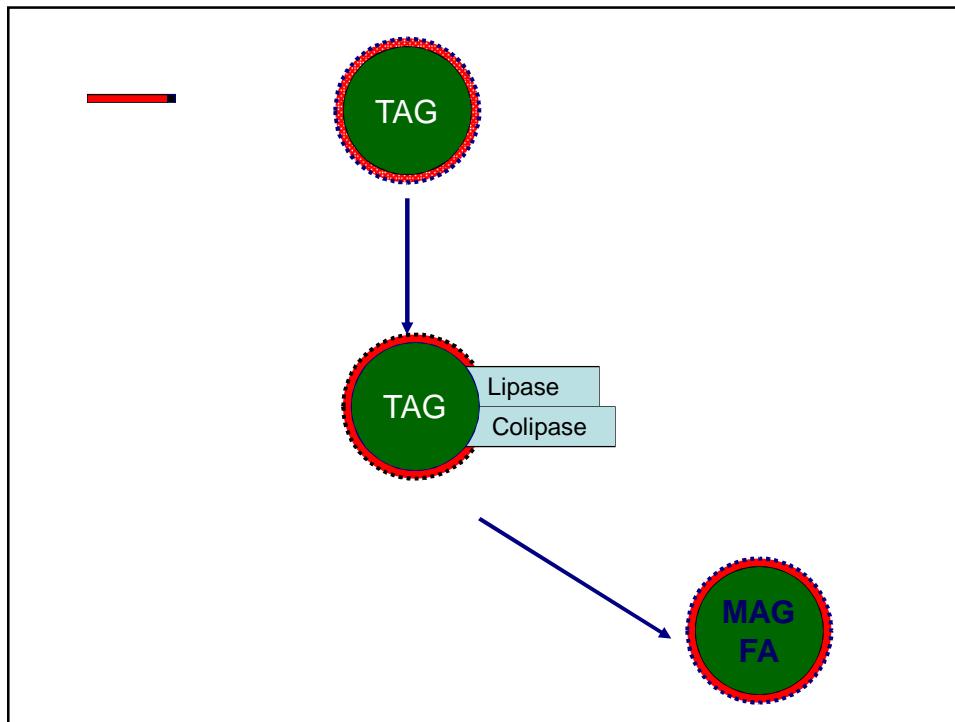


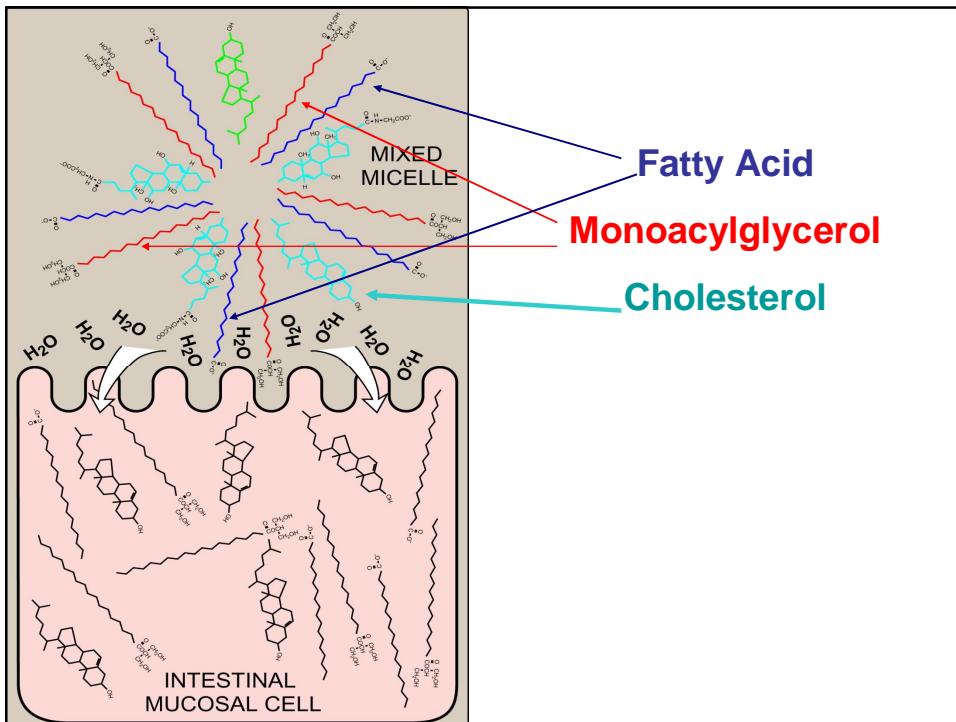
## Digestion of Dietary Lipids



Solubility Problem







## Digestion of TAG with Short or Medium Chain Fatty Acids

- Begins in the Stomach
  - Lingual Lipase
  - Gastric Lipase
- Acid Stable
- Significance
  - In Neonates
  - In Pancreatic Insufficiency

