

Source: [KBhBIO101Lipids]

## 1 | Structure of Lipids

### 1.1 | Fatty acids

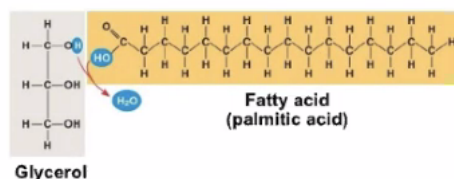


Figure 1: Screen Shot 2020-09-09 at 2.58.49 PM.png

A single pentaine and embellishments. **Single Fatty acids = Glycerol**

### 1.2 | Trygricerol

**Fat! (a.k.a. adapose tissue) = Triglycerol: three fatty acids together.**

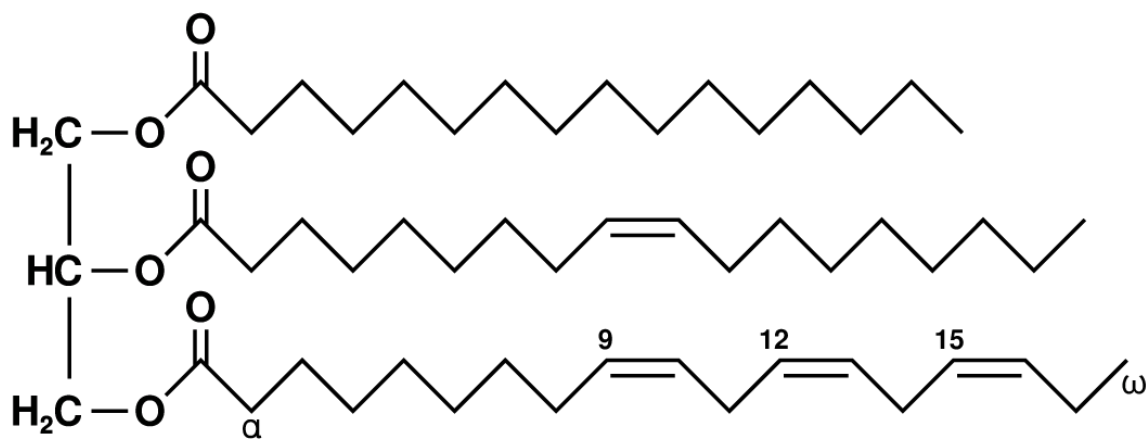


Figure 2: Fat\_triglyceride\_shorthand\_formula.png

#### 1.2.1 | Saturated vs. Unsaturated fats

**Saturate Fats** *No double bonds* in the carbon chain — think! butter

**Unsaturated Fats** *Double bonds* in the carbon chain — think! olive oils

Saturated fats has a higher melting point then the unsaturated fats, but unsaturated fats have double bonds whereas saturated fats have single bonds only. Why?

- Double bonds, due to their caused VESPR geometry (and hence the -1 hydrogen), are curved. This makes it harder to stack together, causing a lower melting point
- Single bonds, due to their caused VESPR geometry, is flat. This makes them easier to stack together, causing a higher melting point.

### 1.3 | Phospholipids

2 fatty acids (hydrophobic) + phosphate group (hydrophilic)

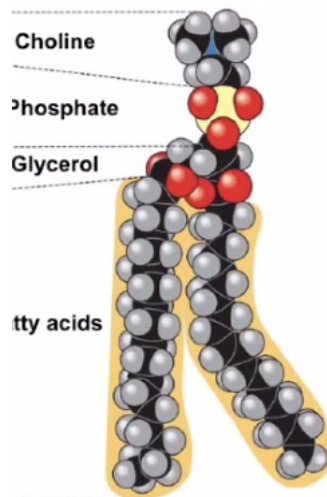
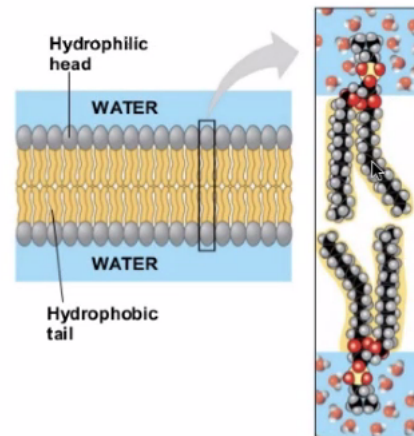


Figure 3: Screen Shot 2020-09-09 at 3.15.41 PM.png



A combination of many of these will end up with membrane:

The hydrophobic tail stays inside, and the hydrophilic head pokes outside and attracts water.

### 1.4 | Liposomes + micelles

Lots of phospholipids

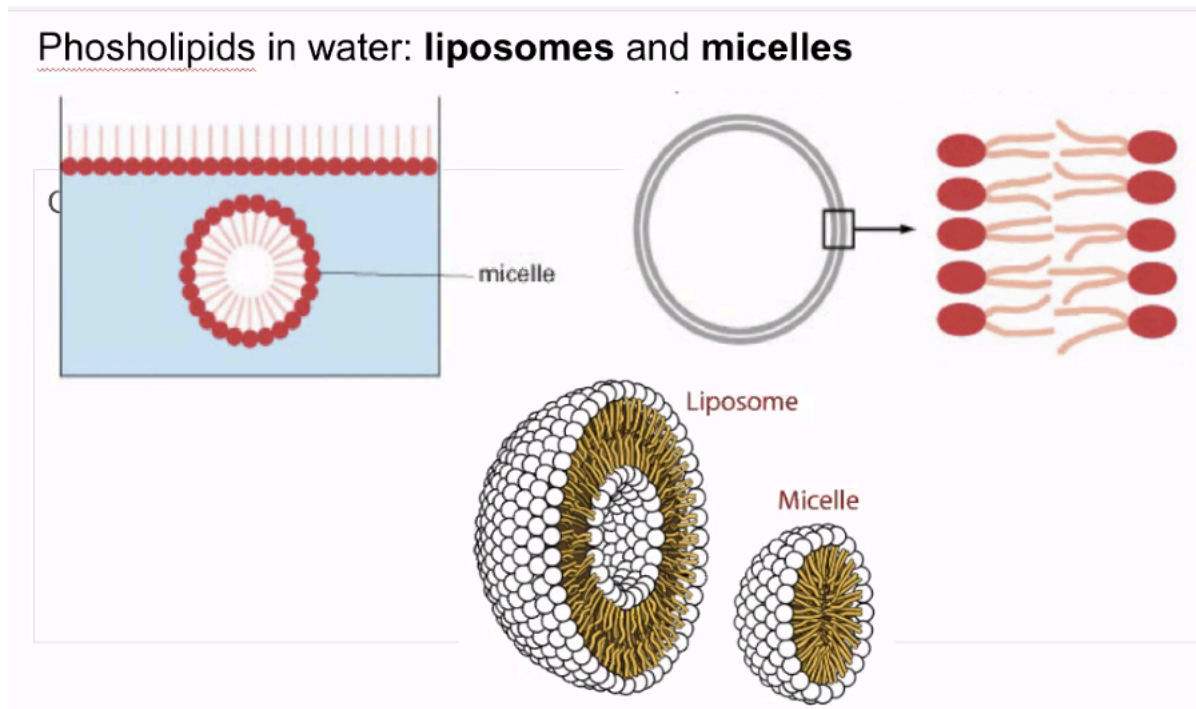


Figure 4: Screen Shot 2020-09-09 at 3.11.54 PM.png

A same idea as Phospholipids, but instead in a big wad of Phospholipids. this arrangement is also how basic cells form membranes. [KBhBIO101CellMembranes](#)

## 1.5 | Steroids

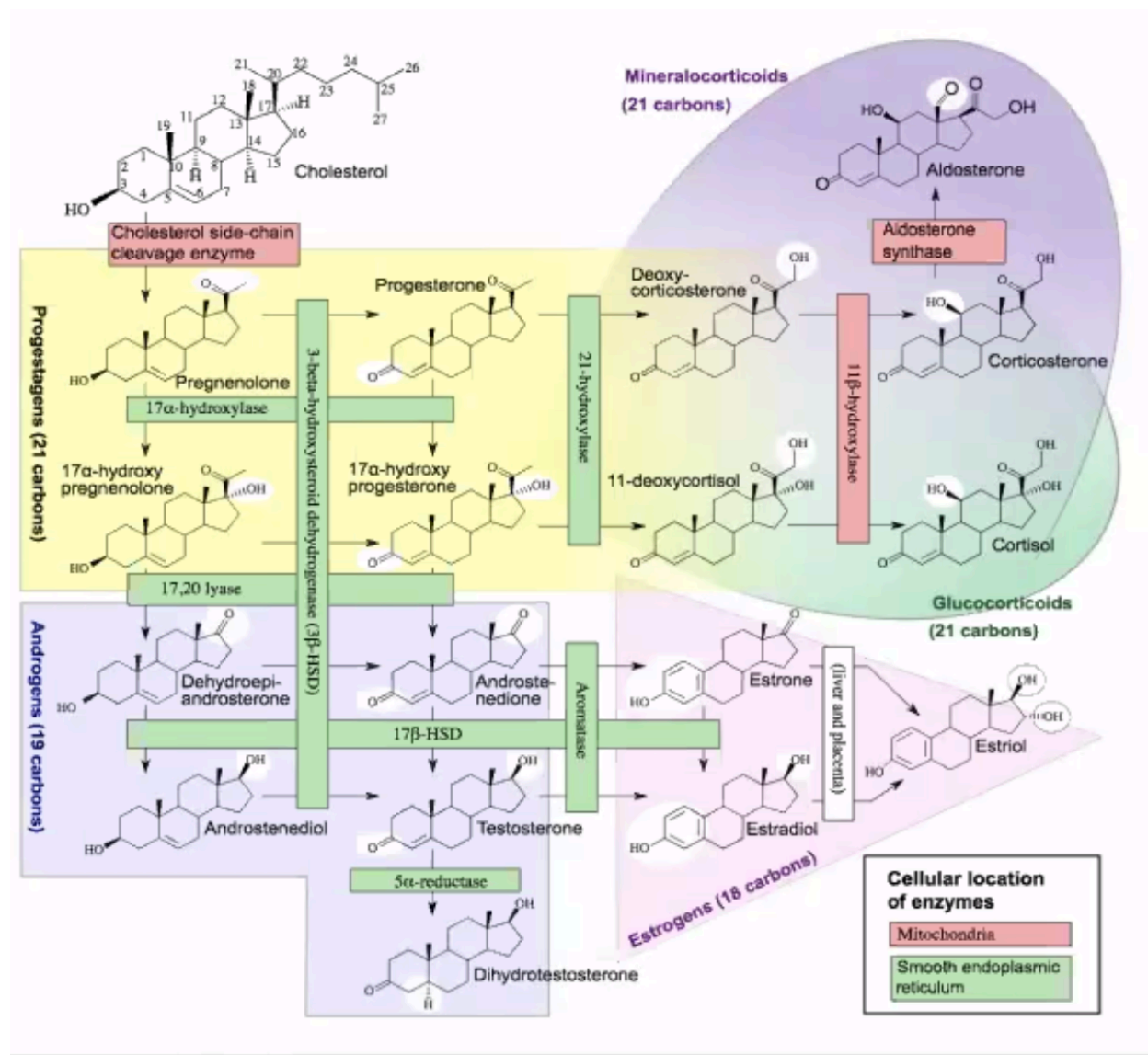


Figure 5: Screen Shot 2020-09-11 at 2.43.35 PM.png

Steroids typically are lipids that contain a ring structure, which usually contains 16 carbon lipids