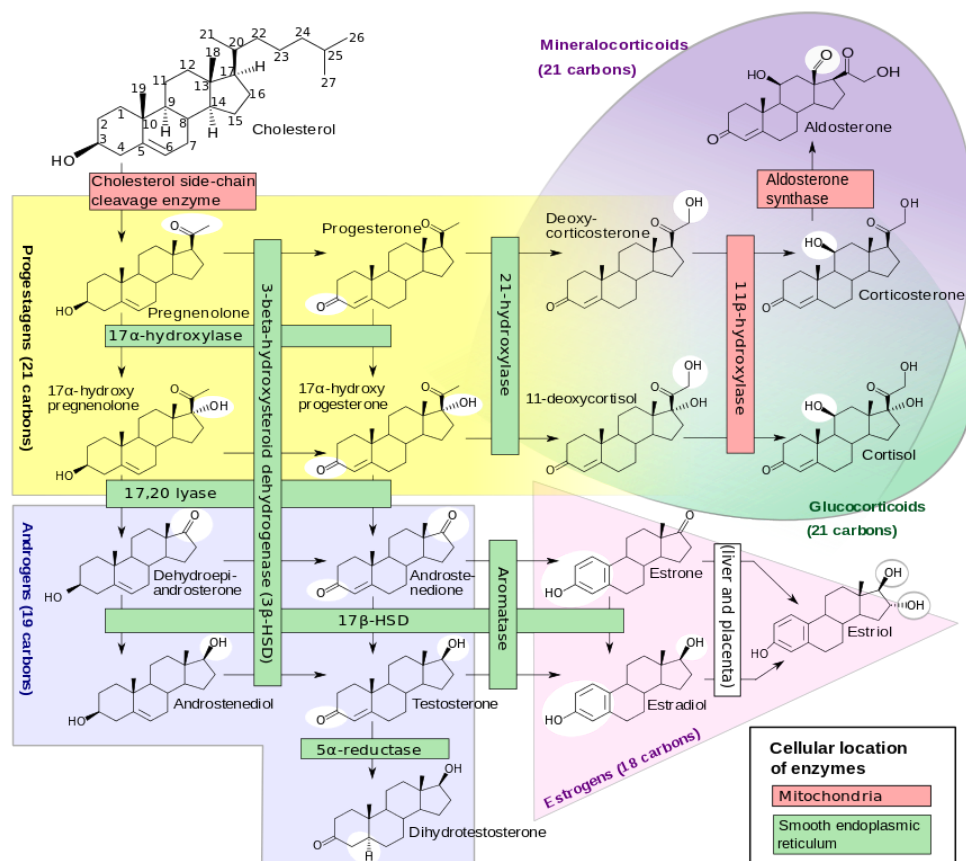


### 3.2.3

## Steroids

A **steroid lipid** is a type of lipid that differs in structure from triglycerides and phospholipids. A steroid lipid consists of 4 hydrocarbon rings (3 hexamers and a pentamer) that are joined to each other (see image below). However, the solubility characteristics of steroids are like other lipids in that they are nonpolar (hydrophobic). The best known and most abundant steroid lipid in the body is **cholesterol**. Cholesterol is very important for several reasons. First, it is required to build and maintain cellular membranes. Second, cholesterol is used to synthesize bile, an important component of digestive juices that helps in the digestion of fat. Third, cholesterol is also used to synthesize steroid hormones (see image below). Steroid hormones are critical for healthy growth and development of most tissues in our body. Cholesterol is essential to all animal life, so we find that animals (including humans) have the ability to make this important molecule. We can also ingest cholesterol. When we consume animal products, we obtain cholesterol to varying degrees. Cheese, egg yolks, beef, and pork are all examples of foods commonly considered to have substantial amounts of cholesterol. Excess cholesterol may contribute to the formation of deposits on the inner walls of blood vessels. These deposits can become quite hard and can result in a condition known as atherosclerosis.



**Steroideogenesis.** File: Steroidogenesis.svg; Author: Hoffmeier and Setters. Site:

*<https://en.wikipedia.org/wiki/File:Steroidogenesis.svg>; License: Creative Commons Attribution-Share Alike 3.0 Unported License.*

This figure shows many of the steroid hormones that are synthesized from cholesterol, including estrogen, progesterone, testosterone, and cortisol.



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