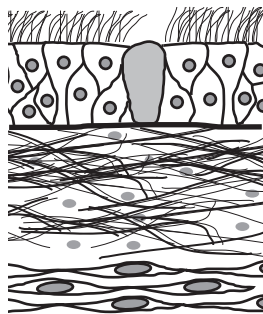


Membranes

A short review of the
Morphology and Function
of
Serous and Mucous Membranes



By Noel Ways

Membrane Overview

The two membranes considered here consist of an epithelial layer associated with a supportive connective tissue. The connective tissue layer usually a Loose Aerolar Connective Tissue, but it may be a modification of it. The connective tissue supports the epithelia through it's vascular characteristics, the fibers that reinforce this "foundation", and the various cell types found therein.

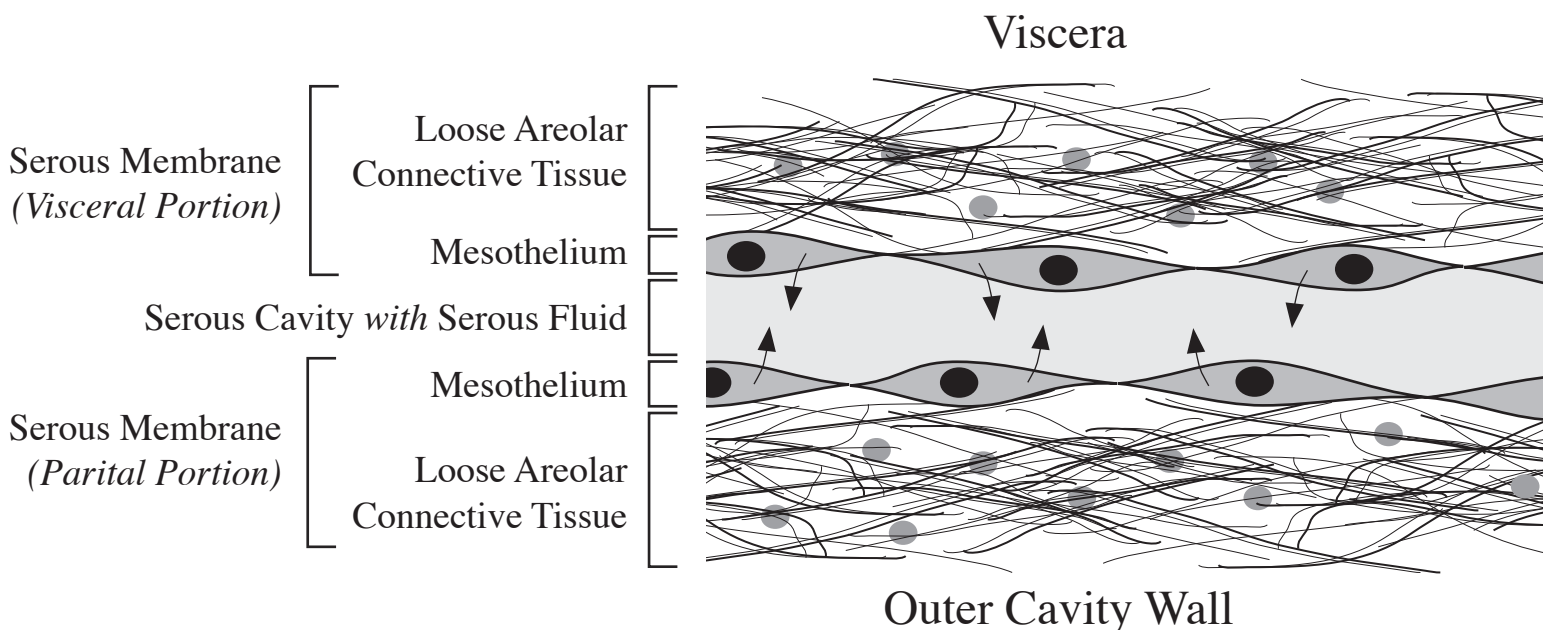


There are four basic membrane types, only two are reviewed here, the serous membrane and the mucous membrane. (Synovial membranes and cutaneous membranes will be considered later in the course).

Serous Membranes

A serous membrane consists of Mesothelium (a simple squamous epithelia that lines an internal cavity) and a supportive Loose Aerolar Connective Tissue. The Mesothelium functions in the secretion of a serous fluid that lubricates adjacent membranes so that they can slide with near frictionless ease. The serous membrane that is associated with viscera is the visceral portion, and the serous membrane associated with the outer cavity wall is the parietal portion.

Recall that the pericardial cavity, the pleural cavity, and the peritoneal cavity all have serous membranes.



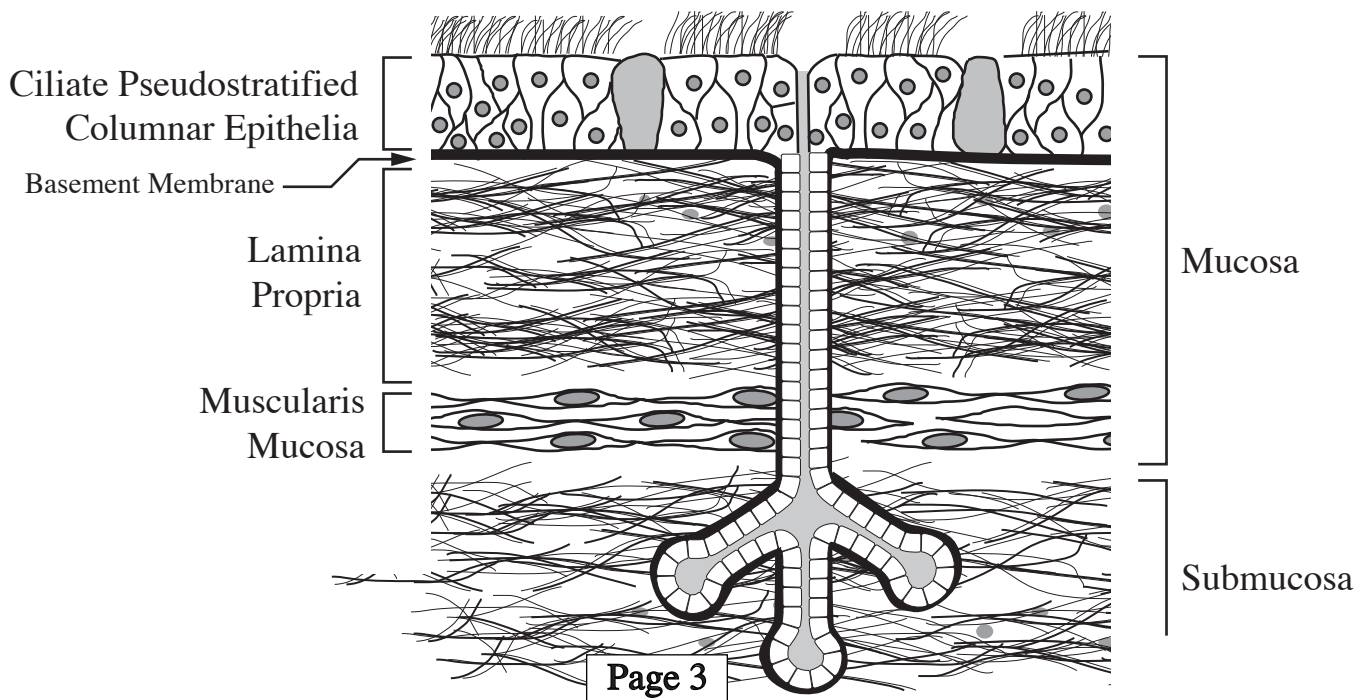
Mucous Membranes

Mucous membranes, like serous membranes, consist of epithelia united by a basement membrane to supportive connective tissue. The Epithelia, however, may be of several epithelial type. Functional differences, however, will vary depending upon the epithelia used, and the manor in which the mucous is used. In the stomach, the mucous protects the epithelial from caustic HCl; in the respiratory tract, the mucous will trap air borne particles for removal; in the female reproductive tract, the mucous will carry the egg through the uterine tubes. Wherever mucous membrane is found, the mucous will have a function unique to the particular organ that it is associated with.

The most common epithelia found will be of a columnar type. But notable exceptions exist. In the esophagus and oral cavity, stratified squamous epithelium is seen. In the urinary bladder, transitional epithelium is found. All of these are associated with mucous membrane.

The mucous membrane depicted below resembles that found in the respiratory tree. Here, the epithelial is a ciliated pseudostratified columnar epithelia with goblet cells dispersed throughout. As the quantity of mucous produced by the goblet cells is inadequate, auxiliary glands provide additional secretions to cover the lumen surface. The epithelia is attached to an underlying loose areolar connective tissue called the Lamina Propria. The lamina propria contains the vasculature, and varous cell types that support the epithelia.

Some mucous membranes also have a layer of smooth muscle called the muscularis mucosa. This layer is important for lumen size adjustments and can be found just deep to the lamina propria.



Mucous Membrane

