**MEMBRANES**

Body membranes are thin sheets of [tissue](https://api.seer.cancer.gov/rest/glossary/latest/id/55097ed2e4b0c48f31d89a03) that cover the body, [line](https://api.seer.cancer.gov/rest/glossary/latest/id/55a277d3e4b05cd0cdd92f35) body cavities, and cover organs within the cavities in hollow organs. They can be categorized into epithelial and [connective tissue](https://api.seer.cancer.gov/rest/glossary/latest/id/546cf544e4b0d965832a941f) [membrane](https://api.seer.cancer.gov/rest/glossary/latest/id/5558f03be4b031c70bba241f).

1. **Epithelial membranes**

These membranes are sheets of epithelial tissue and supporting connective tissue that cover or line many internal structures or cavities. **The main ones are mucous membrane, serous membrane and the skin (cutaneous membrane)**

1. *Mucous membrane*

This is the moist lining of the alimentary, respiratory and genitourinary tracts which is sometimes referred to as the *mucosa*. The membrane surface consists of epithelial cells, some of which produce a secretion called *mucus*, a slimy tenacious fluid. As it accumulates the cells become distended and finally burst, discharging the mucus onto the free surface. As the cells fill up with mucus they have the appearance of a goblet or flask and are known as *goblet cells.* Organs lined by mucous membrane have a moist slippery surface. Mucus protects the lining membrane from drying, and mechanical and chemical injury. In the respiratory tract it traps inhaled foreign particles, preventing them from entering the alveoli of the lungs.

1. *Serous membrane*

Serous membranes, or *serosa*, secrete serous watery fluid. They consist of a double layer of loose areolar connective tissue lined by simple squamous epithelium. The *parietal* layer lines a cavity and the *visceral* layer surrounds organs (the viscera) within the cavity. The two layers are separated by *serous fluid* secreted by the epithelium. There are three sites where serous membranes are found:

* the *pleura* lining the thoracic cavity and surrounding the lungs
* the *pericardium* lining the pericardial cavity and surrounding the heart
* the *peritoneum* lining the abdominal cavity and surrounding abdominal organs.

The serous fluid between the visceral and parietal layers enables an organ to glide freely within the cavity without being damaged by friction between it and adjacent organs. For example, the heart changes its shape and size during each beat and friction damage is prevented by the arrangement of pericardium and its serous fluid.

1. Cutaneous membrane: The cutaneous membrane is skin. Skin consists of a layer of stratified squamous epithelium (epidermis) firmly attached to a thick layer of dense connective tissue (dermis). It differs from other membranes because it is exposed to air and is dry.
2. Synovial membrane

This membrane lines the cavities of moveable joints and surrounds tendons that could be injured by rubbing against bones, e.g. over the wrist joint. It is not an epithelial membrane, but instead consists of areolar connective tissue and elastic fibres. Synovial membrane secretes clear, sticky, oily *synovial fluid*, which lubricates and nourishes the Joints.

**GLANDS**

*Glands* are groups of epithelial cells that produce specialised secretions. Glands that discharge their secretion onto the epithelial surface of hollow organs, either directly or through a *duct*, are called *exocrine glands*. Exocrine glands vary considerably in size, shape and complexity.

Secretions of exocrine glands include mucus, saliva, digestive juices and earwax. Other glands discharge their secretions into blood and lymph. These are called *endocrine glands* (ductless glands) and their secretions are *hormones.*