

Body Membranes

Functions of body membranes:

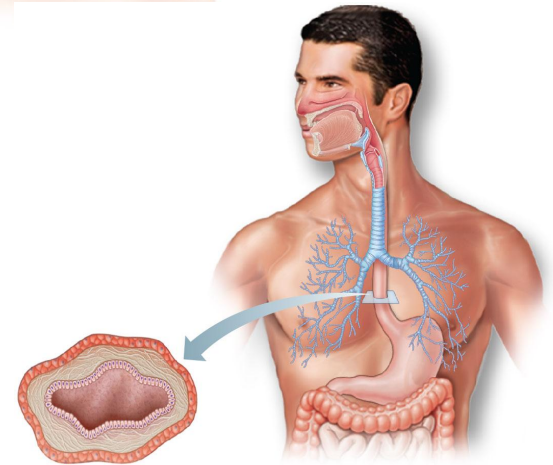
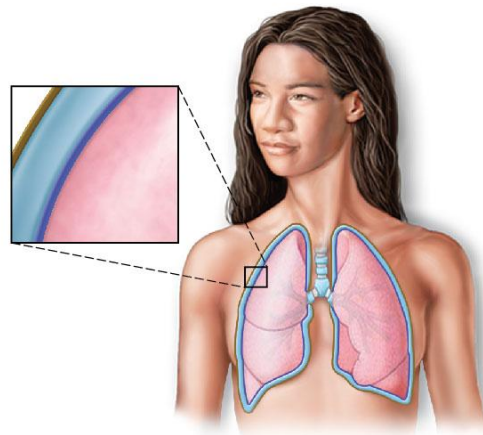
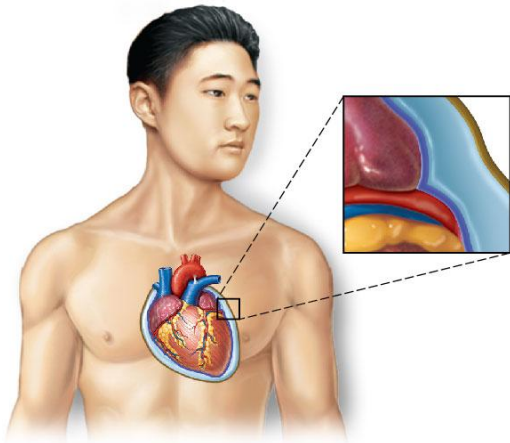
- **Cover body surfaces**
- **Line body cavities**
- **Form protective sheets around organs**

Body membranes are classified according to **tissue types**:

- **Epithelial membranes**
 - ✓ **Cutaneous**
 - ✓ **Mucous**
 - ✓ **Serous**
- **Connective tissue membranes**
 - ✓ **Synovial**

Epithelial Membranes

- Epithelial membranes are **simple organs**
- Also called **covering** and **lining** membranes
- These membranes contain:
 - ✓ **Epithelial tissue layer AND...**
 - ✓ **Connective tissue layer**



Epithelial Membranes

Cutaneous membrane = **skin**

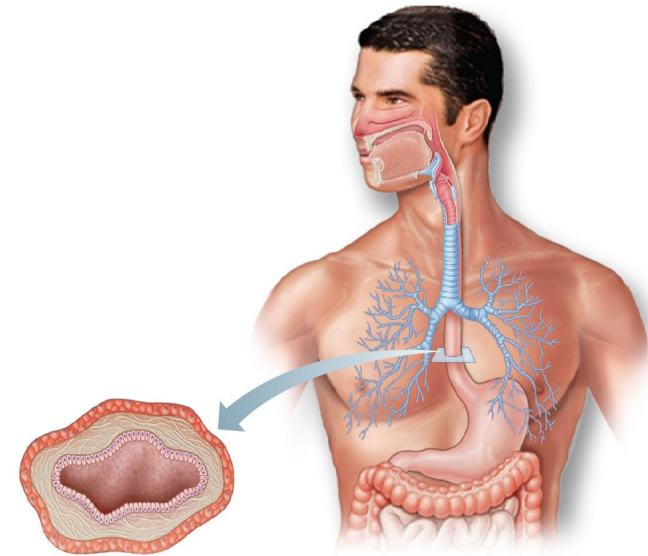
- **Dry** membrane
- Outermost **protective** boundary
 - ✓ Exposed to air
- Composed of two layers:
 - **Superficial epidermis**
 - ✓ Composed of keratinized **stratified squamous epithelium**
 - **Deep dermis**
 - ✓ Composed of mostly **dense (fibrous) irregular connective tissue**



Epithelial Membranes

Mucous membranes (mucosa)

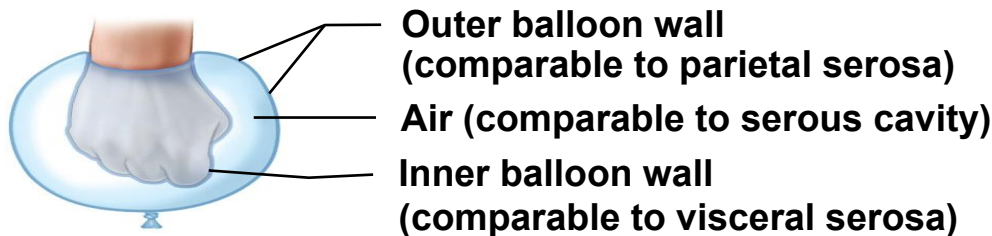
- **Moist** membranes
- **Line all body cavities** that **OPEN** to the exterior body surface (such as those of the hollow organs of the respiratory, digestive, urinary, and reproductive tracts)
- Adapted for **absorption** or **secretion**
 - Many secrete **mucus**
- Composed of:
 - **Epithelium** (type depends on site)
 - ✓ **Stratified squamous** (in the mouth and esophagus)
 - ✓ **Simple columnar** (in the rest of the digestive tract)
 - **Underlying loose connective tissue (lamina propria)**



Epithelial Membranes

Serous membranes (**serosa**)

- **Line body cavities** that are **CLOSED** to the exterior of the body in the ventral cavity
- Occur in pairs:
 - **Parietal** layer lines a wall of the ventral body cavity
 - **Visceral** layer covers the outside of the organ(s) in that cavity
 - (Parietal layer folds in on itself to form the visceral layer)

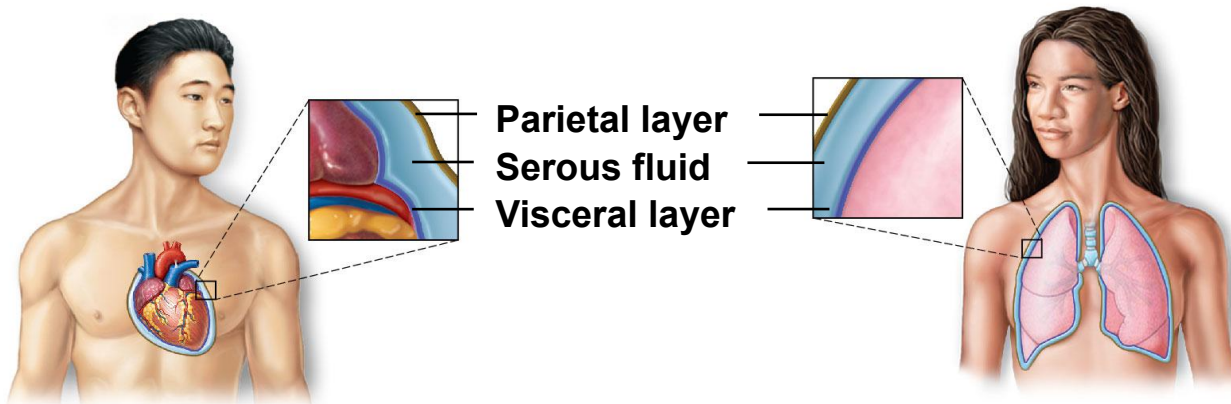


A fist thrust into a limp balloon demonstrates the relationship between the parietal and visceral serous membrane layers.

Epithelial Membranes

Serous membranes (serosa)

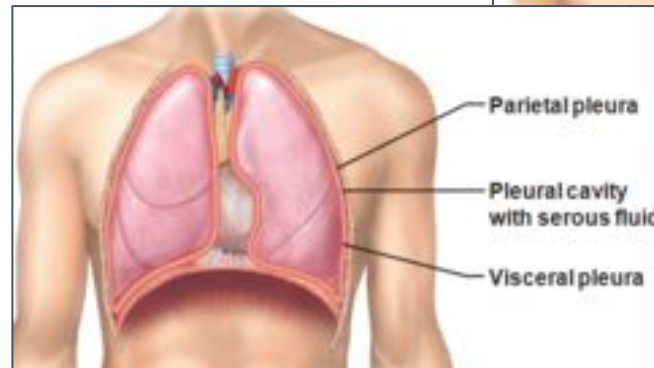
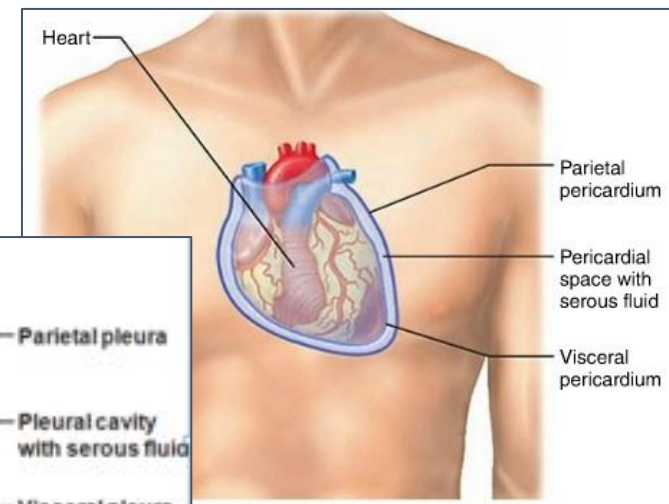
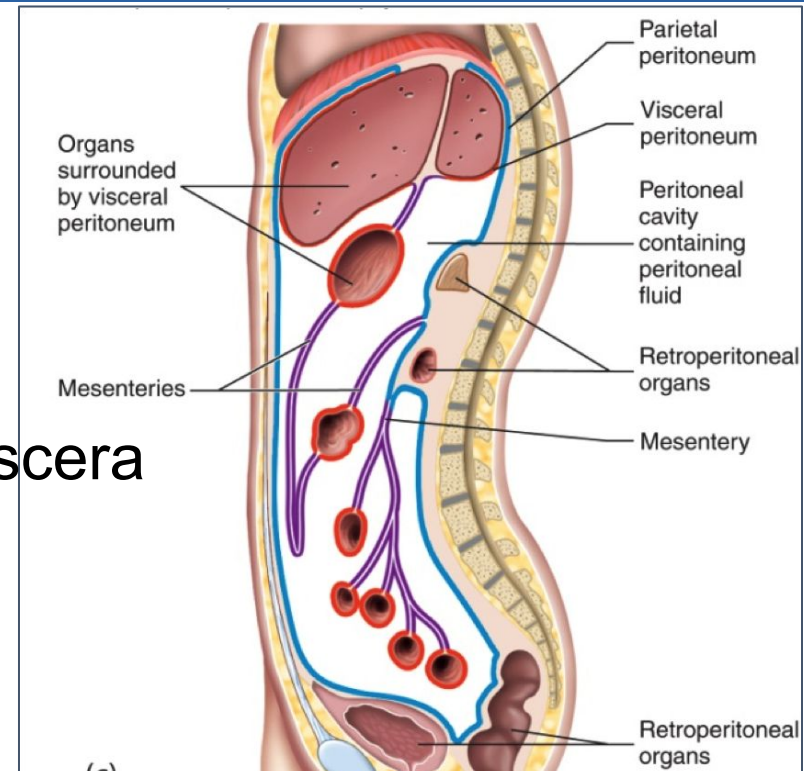
- Serous layers are **separated by serous fluid**
 - Clear, **lubricating** fluid
 - Allows organs to slide easily across the cavity walls and one another without friction as they carry out their functions
- Composed of:
 - **Simple squamous epithelium**
 - **Areolar connective tissue**



Epithelial Membranes

Serous membranes (serosa)

- Specific serous membranes
 - **Peritoneum**
 - ✓ Around the abdominal viscera
 - ✓ Abdominopelvic cavity
 - **Pleura**
 - ✓ Around the lungs
 - ✓ Thoracic cavity
 - **Pericardium**
 - ✓ Around the heart



Connective Tissue Membranes

Synovial membranes

- **Loose areolar connective tissue only**
 - ✓ (NO epithelial tissue)
- Line fibrous capsules surrounding **joints**
- **Secrete a lubricating fluid** to cushion organs moving against each other during muscle activity

