GENERAL ANATOMY OF MEMBRANES

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LECTURER ANATOMY KGMC

Membranes **cover** and **line** all the parts of our body, inside and out.

Membranes

The membranes are made of thin layers of connective and epithelia tissues that cover, support and separate viscera and lines the body cavities. The meminges for example, line the dorsal cavities of the brain and spinal cord.

The main membranes of the body are

1. Mucous membrane
2. Serous membrane
3. Synovial membrane

- 4) CUTANANEOU MEMBRANES
- 5) MENINGES

Mucous membranes: line cavities that communicate with the exterior, including digestive, respiratory, reproductive and urinary tracts.

Many mucous membrane are lined by simple epithelium that perform secretory or absorptive functions.

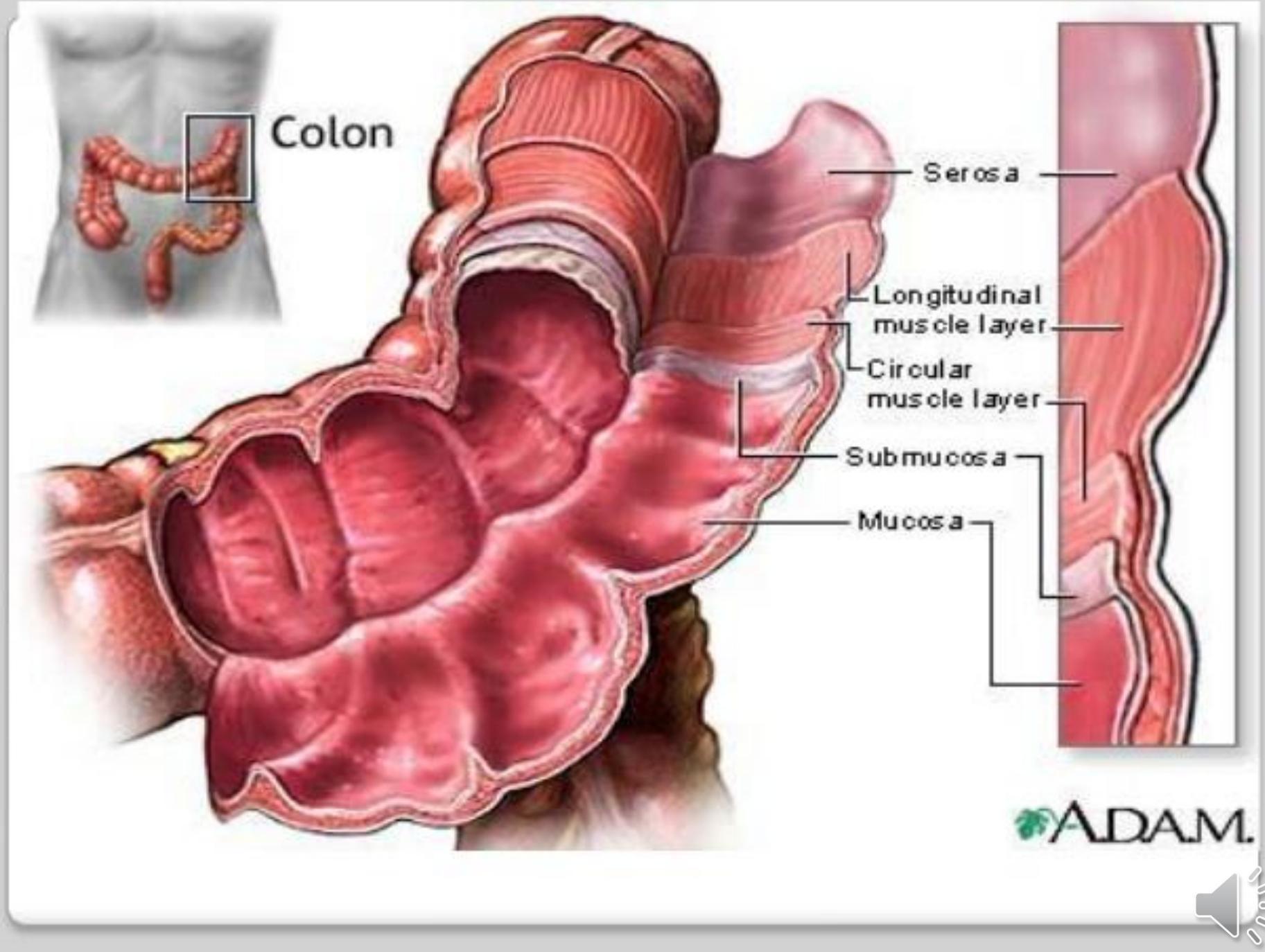
secretes a thick liquid substance called mucus which lubricates the organs.

1. Mucous Membranes

These are open to the outside of the body.

Sticky mucus helps protect our openings.

- Digestive (mouth, esophagus, etc.)
- Respiratory (nose, trachea, etc.)
- Reproductive (vagina)
- Urinary (urethra)


Colon
Serosa
Longitudinal muscle layer
Circular muscle layer
Submucosa
Mucosa
A.D.A.M.

MEMBRANES(Cont'd)

Serous membranes line the sealed internal cavities of the body.

- covers the thoracic and abdominopelvic cavities and covers the visceral organs that secrete watery fluid called serous fluid. Other parts of the body that contain serous membrane include :
- Lungs:pleura are a type of serous membrane that lines the interior of the lungs.

2. Serous Membranes

These are in spaces contained inside our bodies (no openings to the outside).

When they line a body cavity they are called *parietal* membranes.

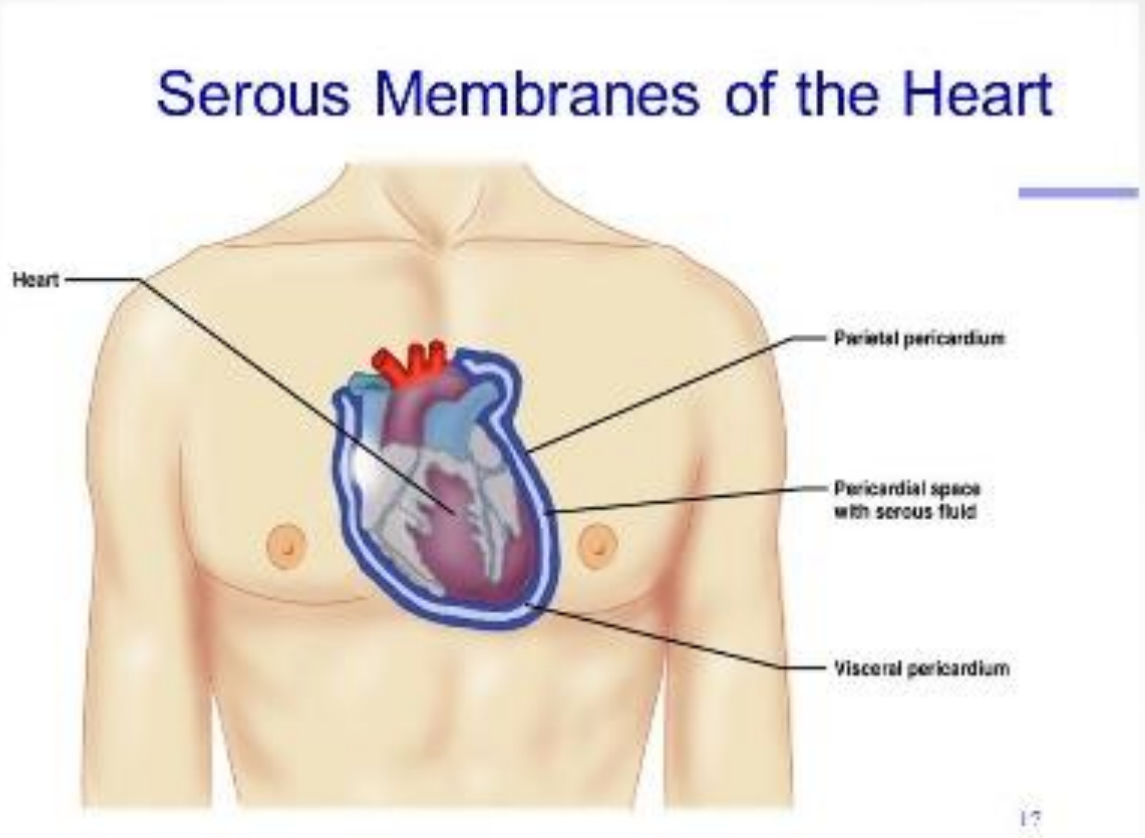
When they cover organs they are called *visceral* membranes.

Serous membranes are thin, wet, and slippery.

Fluids may pass through them easily.

MEMBRANES(Cont'd)

- Heart : pericardial membrane is another type of serous membrane lining the heart.
- In the abdomen, the serous membrane lining the abdominal surface is called the peritoneal membrane.
- parietal peritoneum lines the abdominal wall while the visceral peritoneum covers the surfaces of organs.



Look closely. See how the ***parietal pericardium*** lines the pericardial cavity, and the ***visceral pericardium*** covers the surface of the heart?

There is fluid between the membranes so the heart can beat without the membranes rubbing.

Medical note:

Serous membranes can get infected and inflamed.

These are very serious illnesses:

- Pleura – ***Pleursy***
- Peritoneum – ***Peritonitis***
- Pericardium – ***Pericarditis or endocarditis***

3. Cutaneous Membranes

Cutaneous membranes are thick, warm, dry, and waterproof.

- **Skin (that's it!)**

Subcutaneous = under the skin.

When you get a shot in the arm, it is a *subcutaneous injection*, meaning the medicine was delivered under your skin.

Synovial Membranes

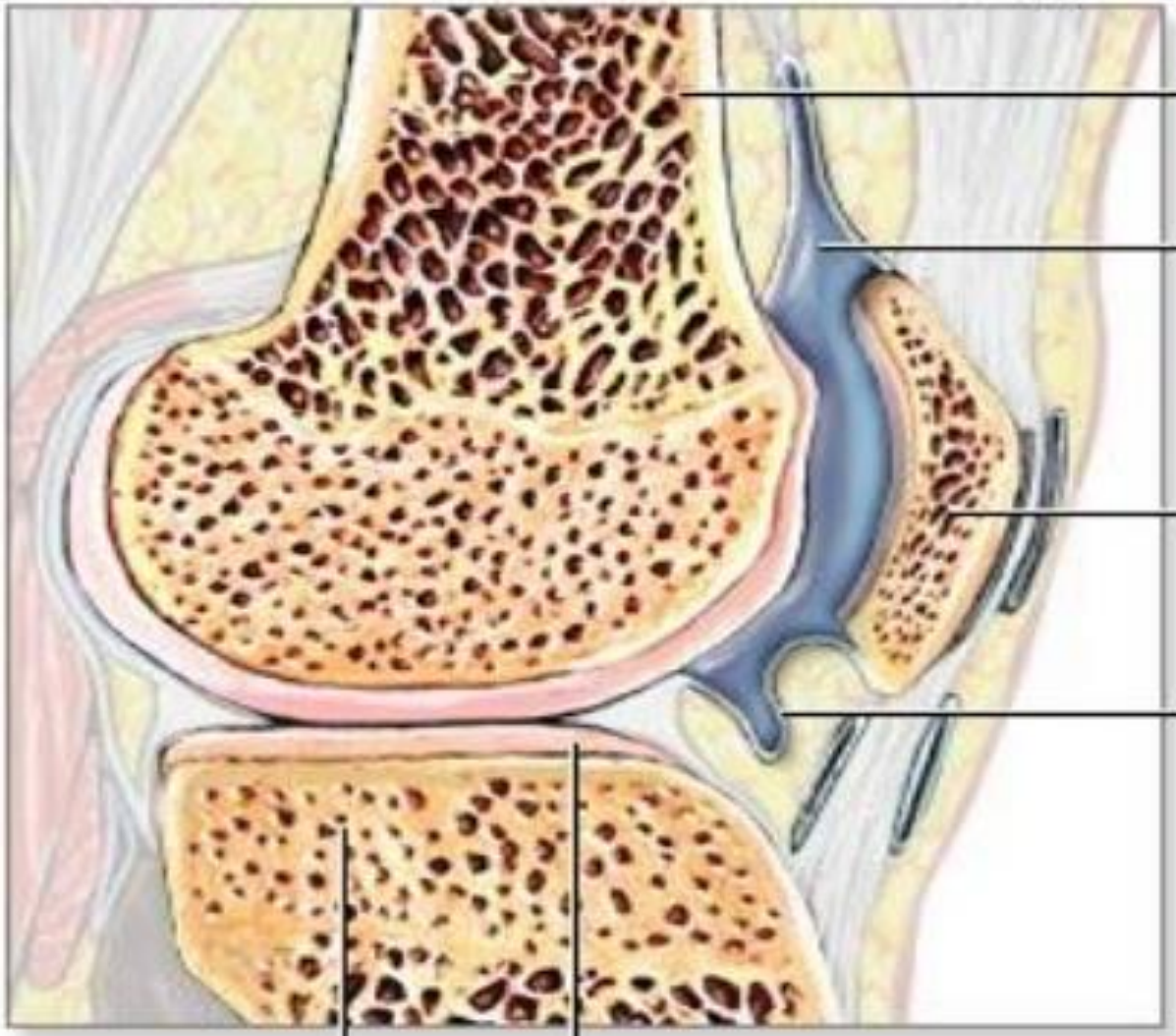
- Bones of the skeleton contact one another at joints.
- Ends of bones are covered by hyaline cartilage and separated by a viscous synovial fluid synovial membrane.
- Made only of connective tissue

- Synovial cavity

Function

- Secrete viscous synovial fluid in the joints for lubrication of joint.

Cut-section view of normal knee joint



Femur

Synovial fluid

Patella

Synovial membrane

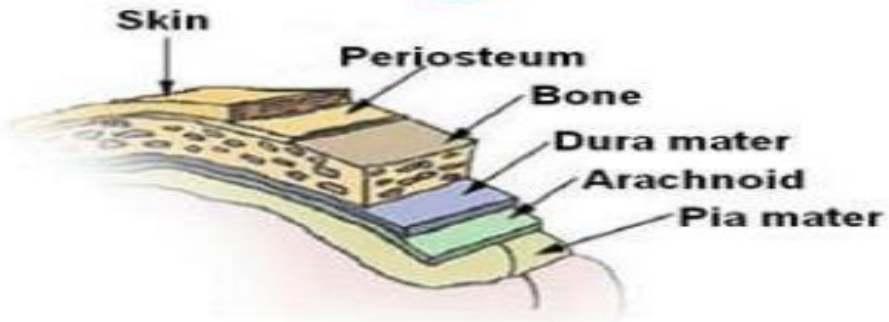
Tibia

Cartilage

MENINGES

Covering the brain is a dense connective tissue membrane, composed of three layers, called the meninges. The outer most layer is called the dura mater; it is a thick connective tissue that prevents the brain from moving too much in the skull. The second layer is the arachnoid layer; it is a loose connective tissue layer that resembles the web of a spider. The inner most layer is the pia mater; it is a thin layer that adheres directly onto the brain, according to California State University.

Meninges



Dura mater -- outer layer lining skull
Arachnoid (mater) -- contains blood vessels
    Subarachnoid space -- filled with CSF
Pia mater -- covers brain