Human biology
Cells structures

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Reference

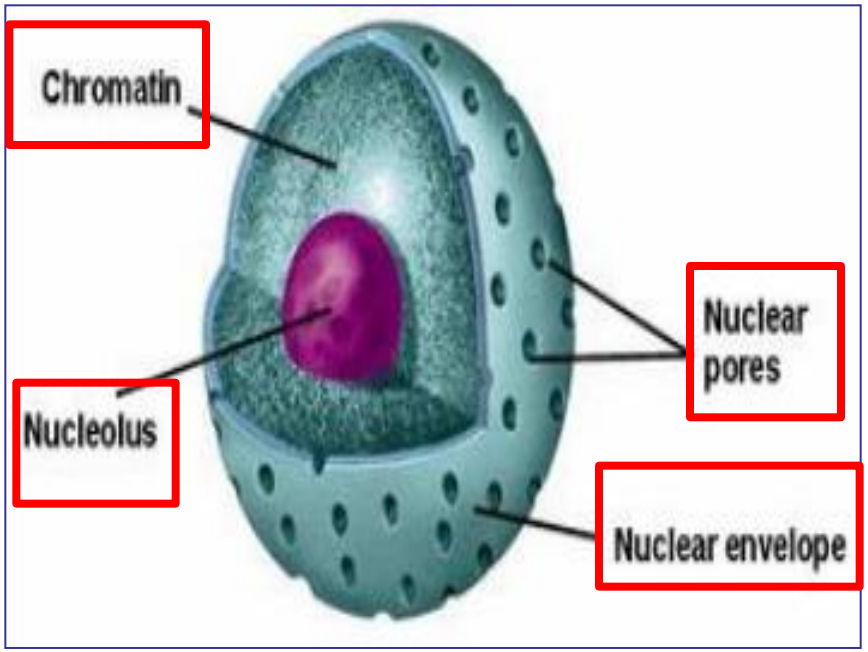
- Text book of human biology by John Kenneth Inglis 3rd Ed (1985)

The nucleus

Nuclear membrane that has nuclear pores to permit the two-way traffic of large molecules

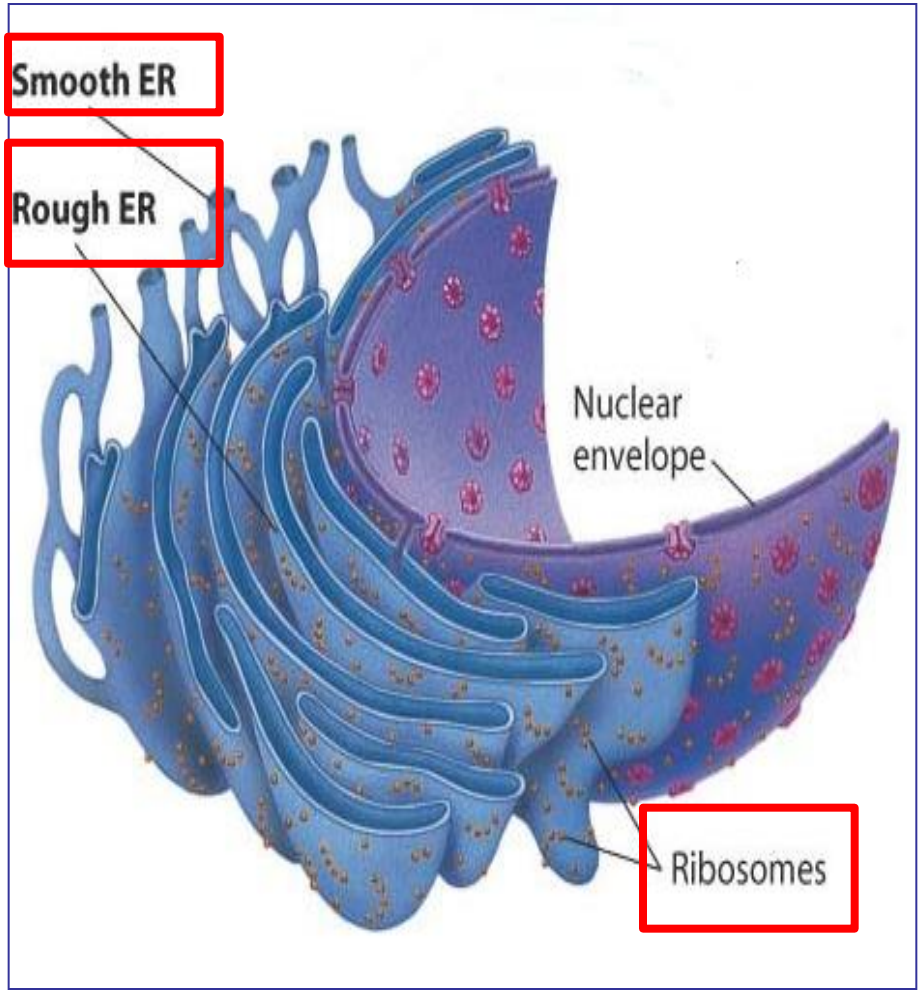
Chromatin coils up into rod–like chromosomes during cell division

Nucleolus most nuclei contain at least one



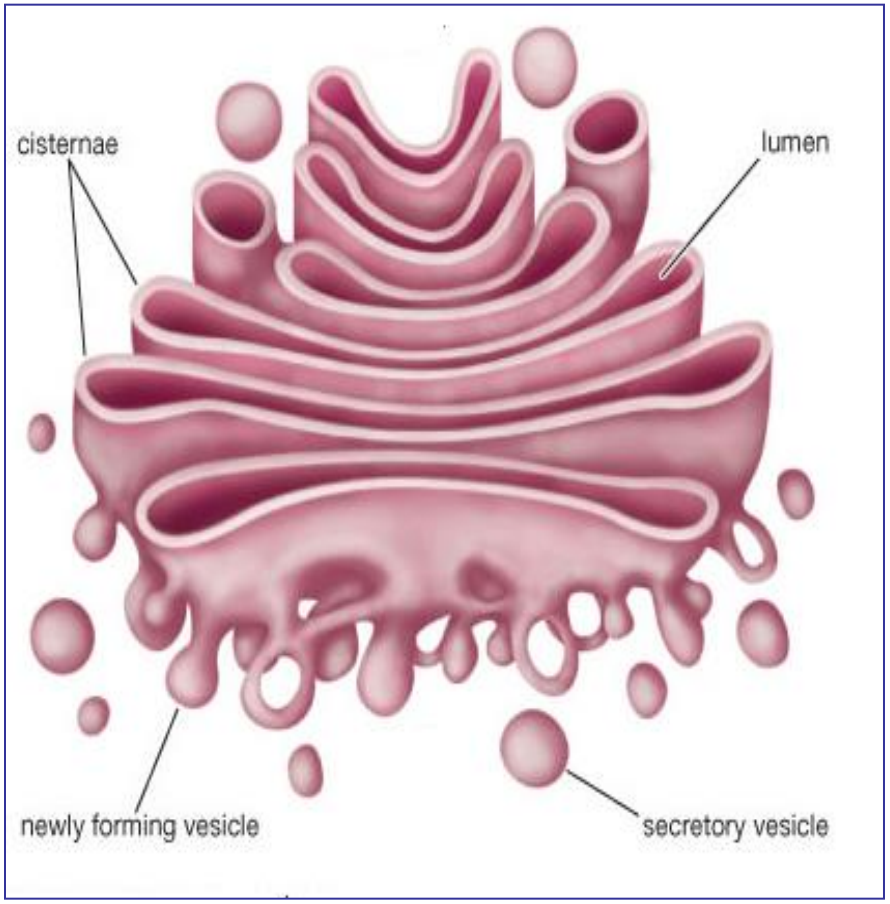
Endoplasmic reticulum (ER)

- **ER** is a system of double-membraned tubular canals found in the cytoplasm
- **Rough** endoplasmic reticulum contains **ribosomes** the site of protein synthesis
- **Smooth** endoplasmic reticulum without ribosomes



Golgi bodies (or Golgi apparatus)

- Its membranous sacs increased in size and filled up when a cell produced secretions.
- These packages of chemicals then snip off from the main Golgi bodies and migrate to the outer cell membrane where they discharge to the outside.
- The packages are called **vacuoles** or if they are extremely small, **vesicles**.



Lysosomes

- Lysosomes are vacuoles that probably snip-off from Golgi apparatus.

- They contain enzymes (lysozymes) that break down the cell material itself by a process of self-digestion or autolysis.

The plasma membrane

It's encloses all the cell components
It's a double structure like the endoplasmic reticulum.
It regulates what enters and exits the cell.

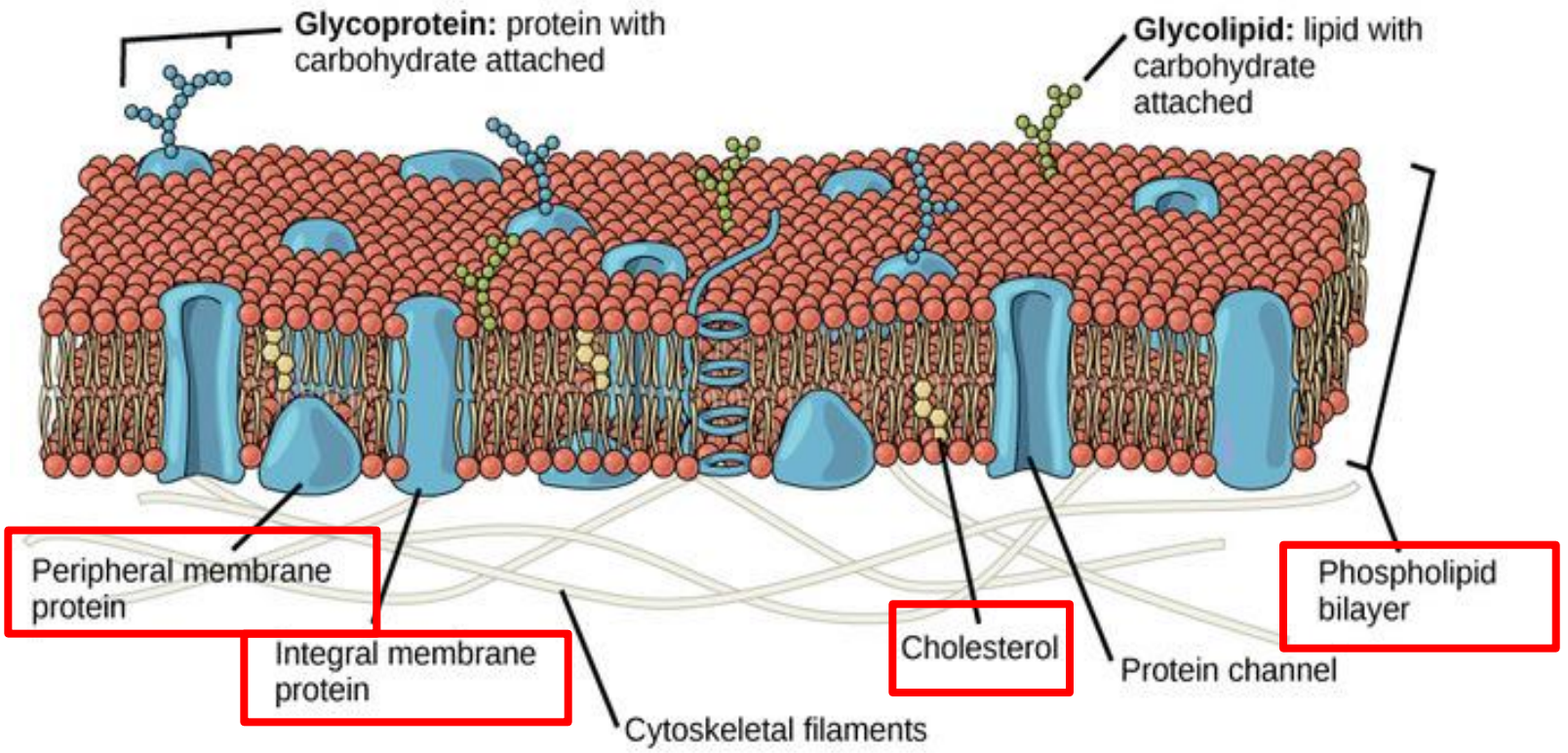
The principal components of the plasma membrane are:-

✓Phospholipid bilayer
✓ Proteins
✓Carbohydrate

The fluid mosaic model

- The plasma membrane is a mosaic of components

- phospholipids, cholesterol, and proteins



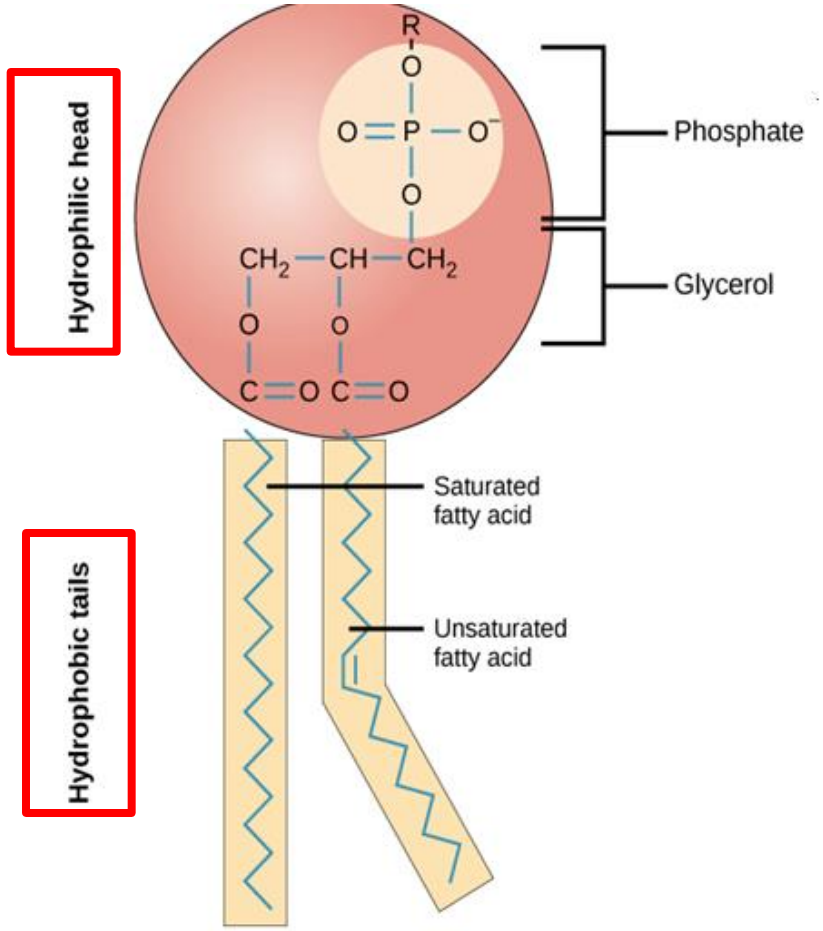
Phospholipids

Consists of **lipids** and **phosphate**

The phospholipids have **one head** and **two tails**.

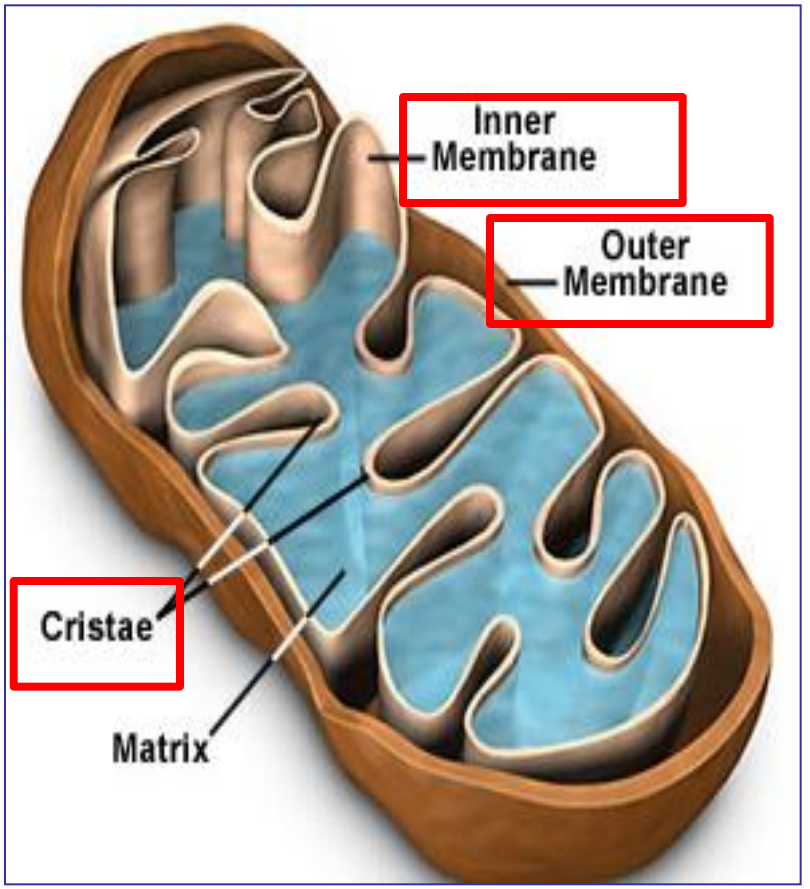
The head is polar and **hydrophilic**, or water-loving.

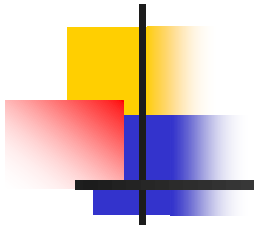
The tails are nonpolar and **hydrophobic**, or water-fearing.



Mitochondria

- A fluid-filled tubular structure
- Surrounded by double membrane
- The inner membrane is folded into projections called cristae (energy-producing enzymes are located)





Thank you