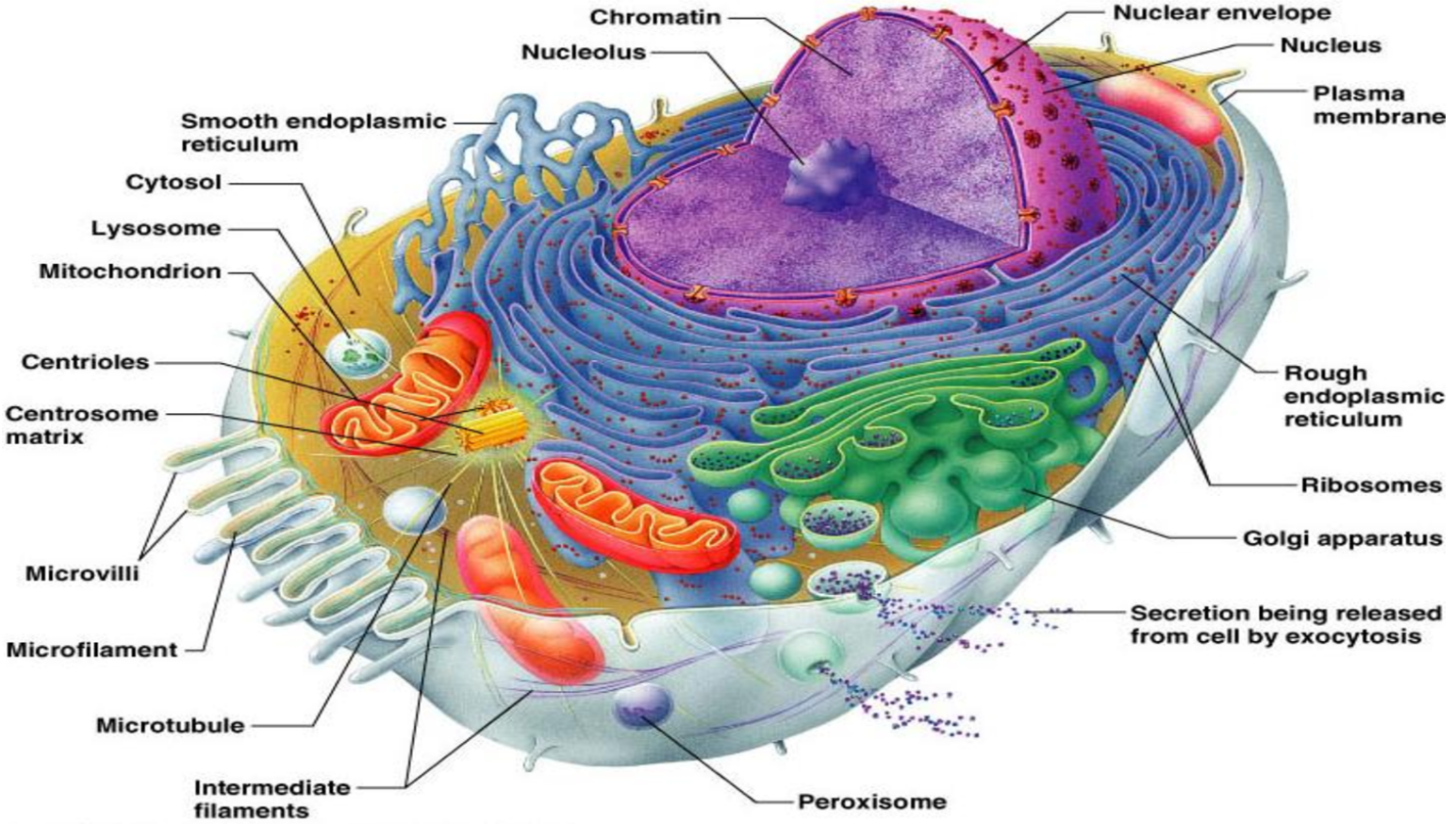
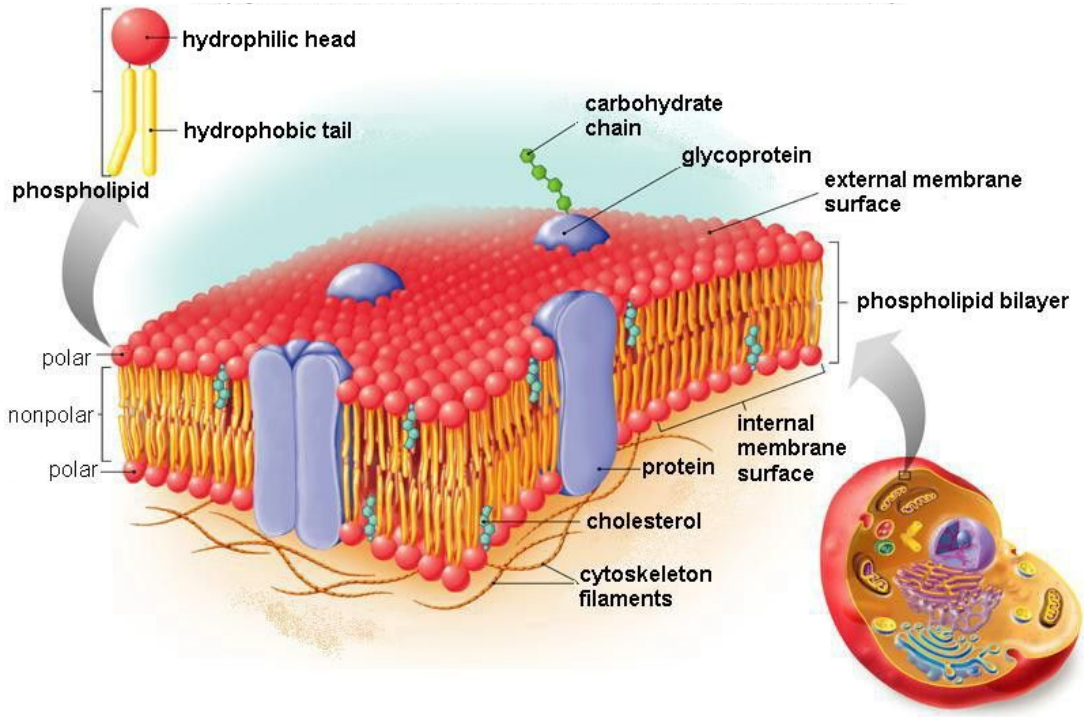
# Lesson 7
# Cellular organization



# Cell membrane

- Cells are building blocks of life
- Cells are surrounded (protected) by a **plasma (or cell) membrane = highly hydrophobic amphipathic lipid bilayer**



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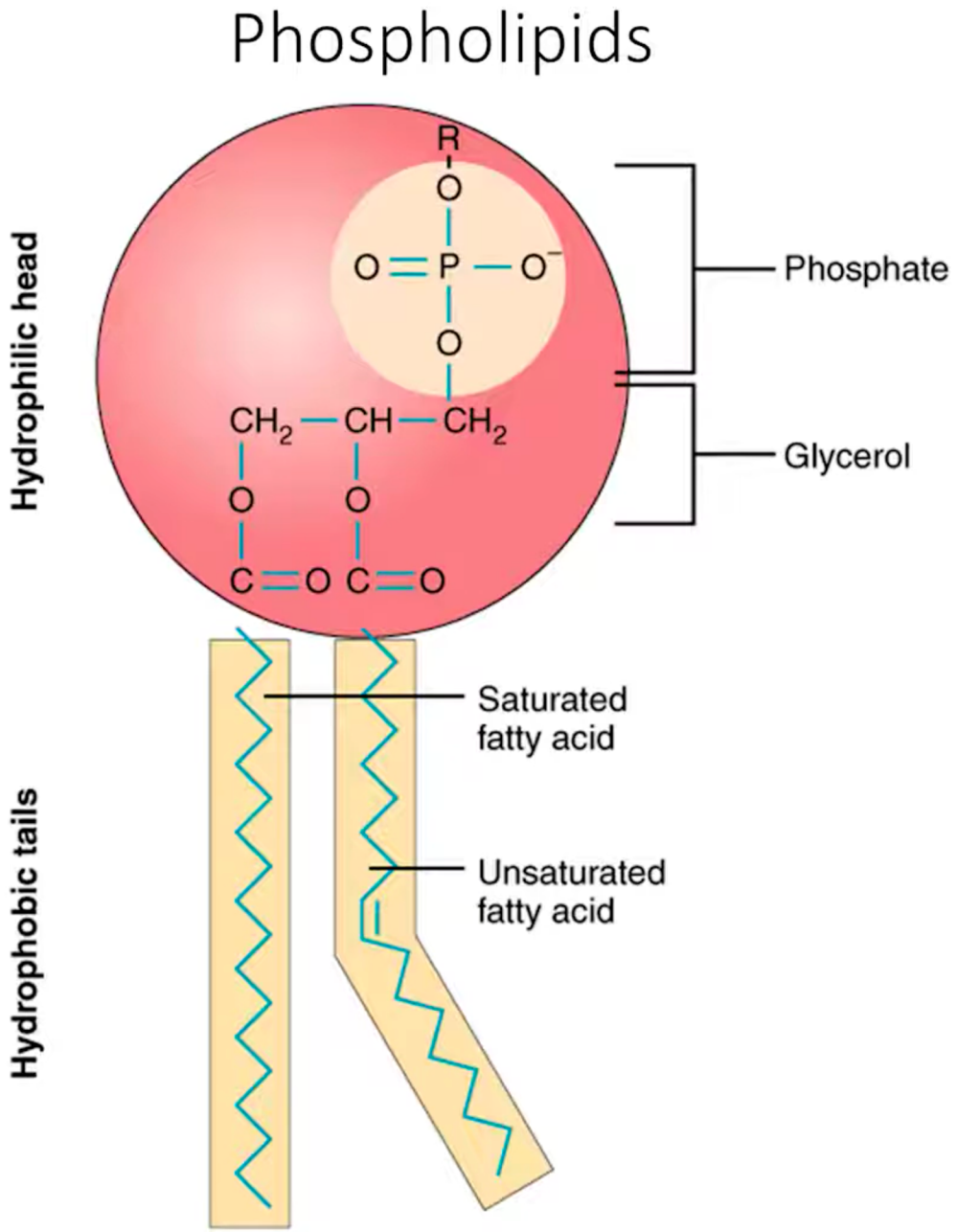

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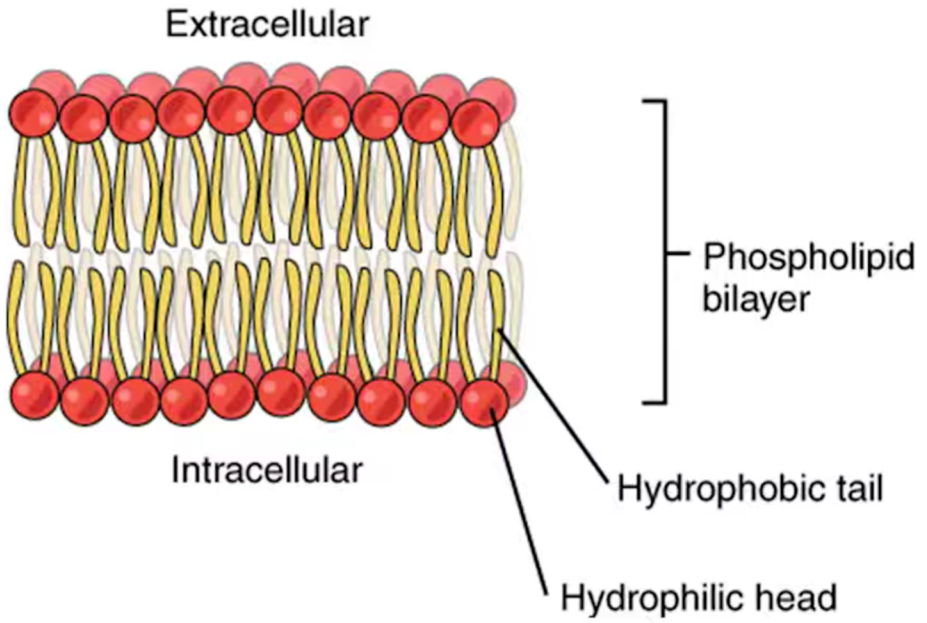


Phospholipid membrane (lipid bilayer)

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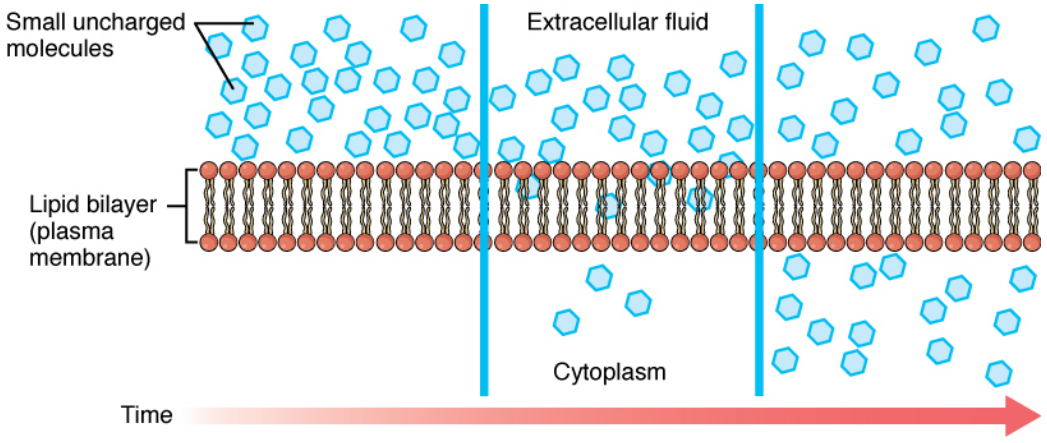

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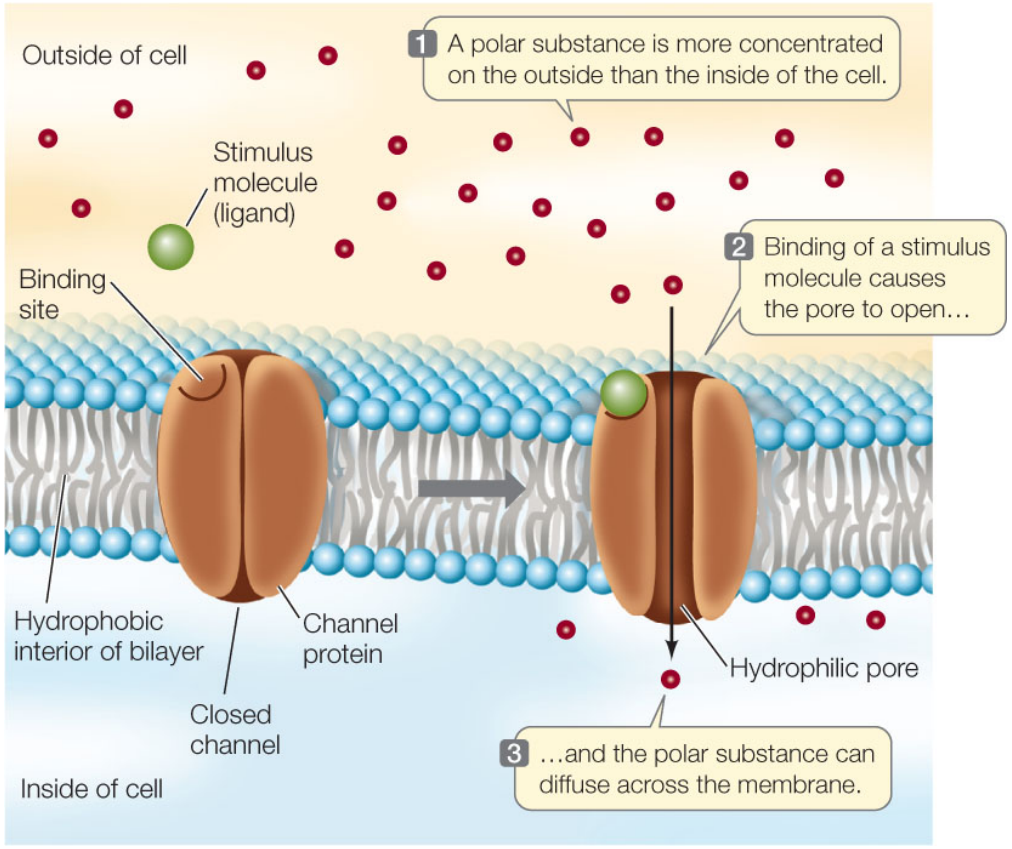
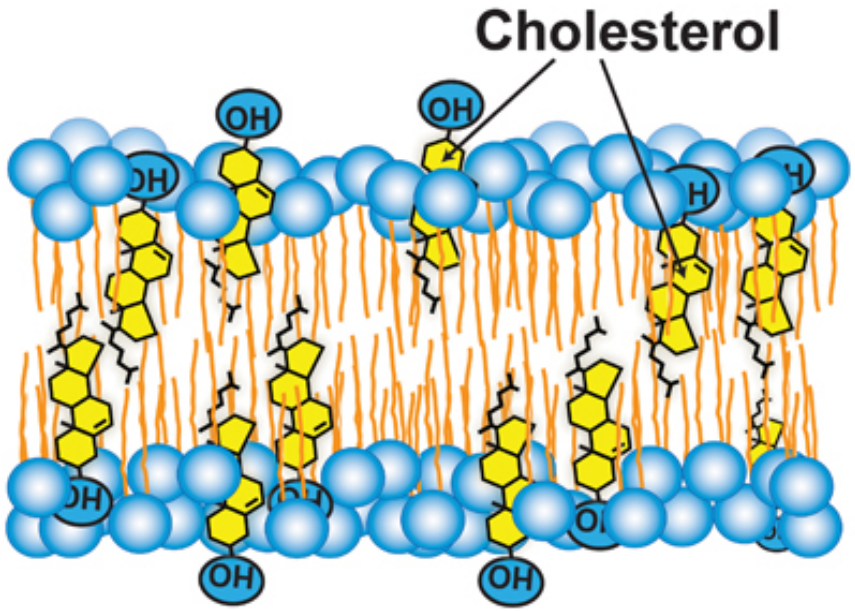
- Particular structures like **channels or pores** allows polar molecules in & our the plasma membrane



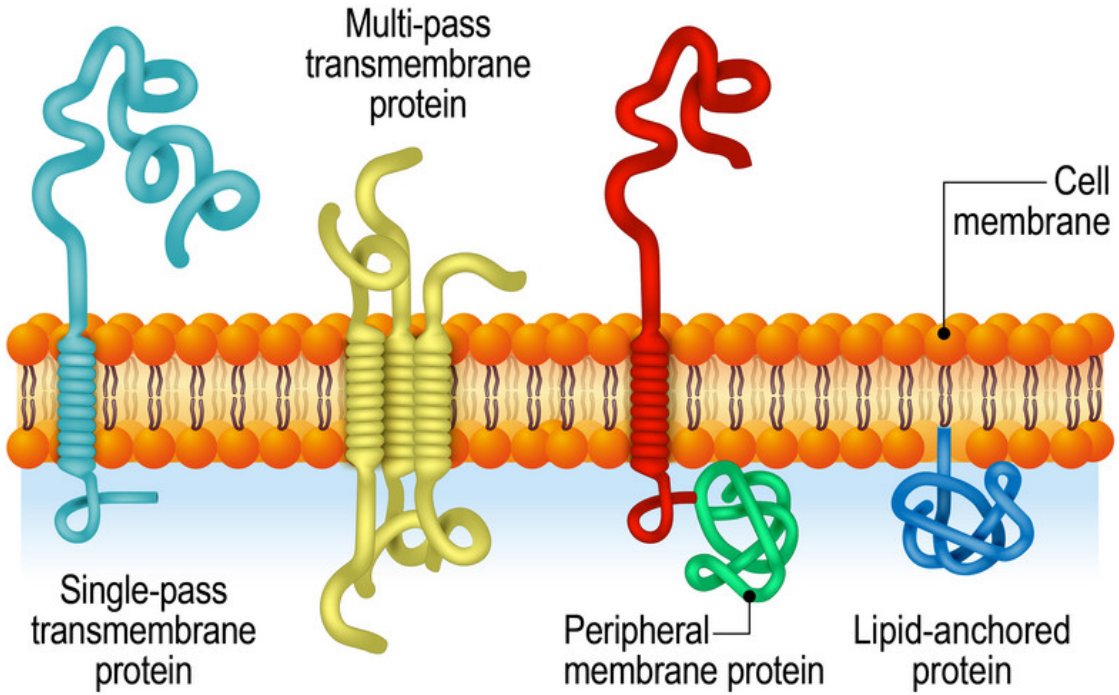
# Cell membrane

- Cholesterol – a steroid (lipid)
  → membrane fluidity



# Cell membrane

- Cholesterol – a steroid (lipid) → membrane fluidity
- Membrane proteins
  - **Integral proteins** = span the entire width of the phospholipidic bilayer
  - **Peripheral proteins** = loosely bound to the exterior or interior membrane surfaces
- Both integral and peripheral proteins may serve as:
  - Enzymes
  - Structural attachments for the fibers of the cytoskeleton
  - Part of the cell's recognition sites



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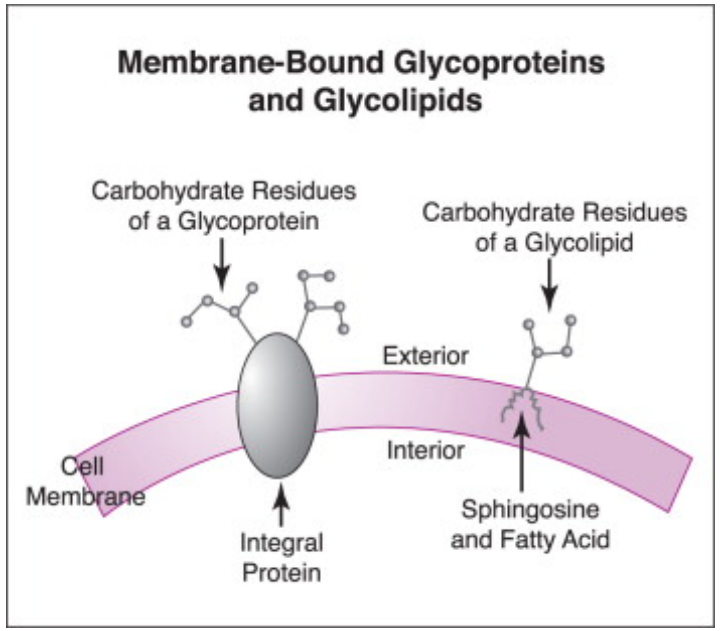
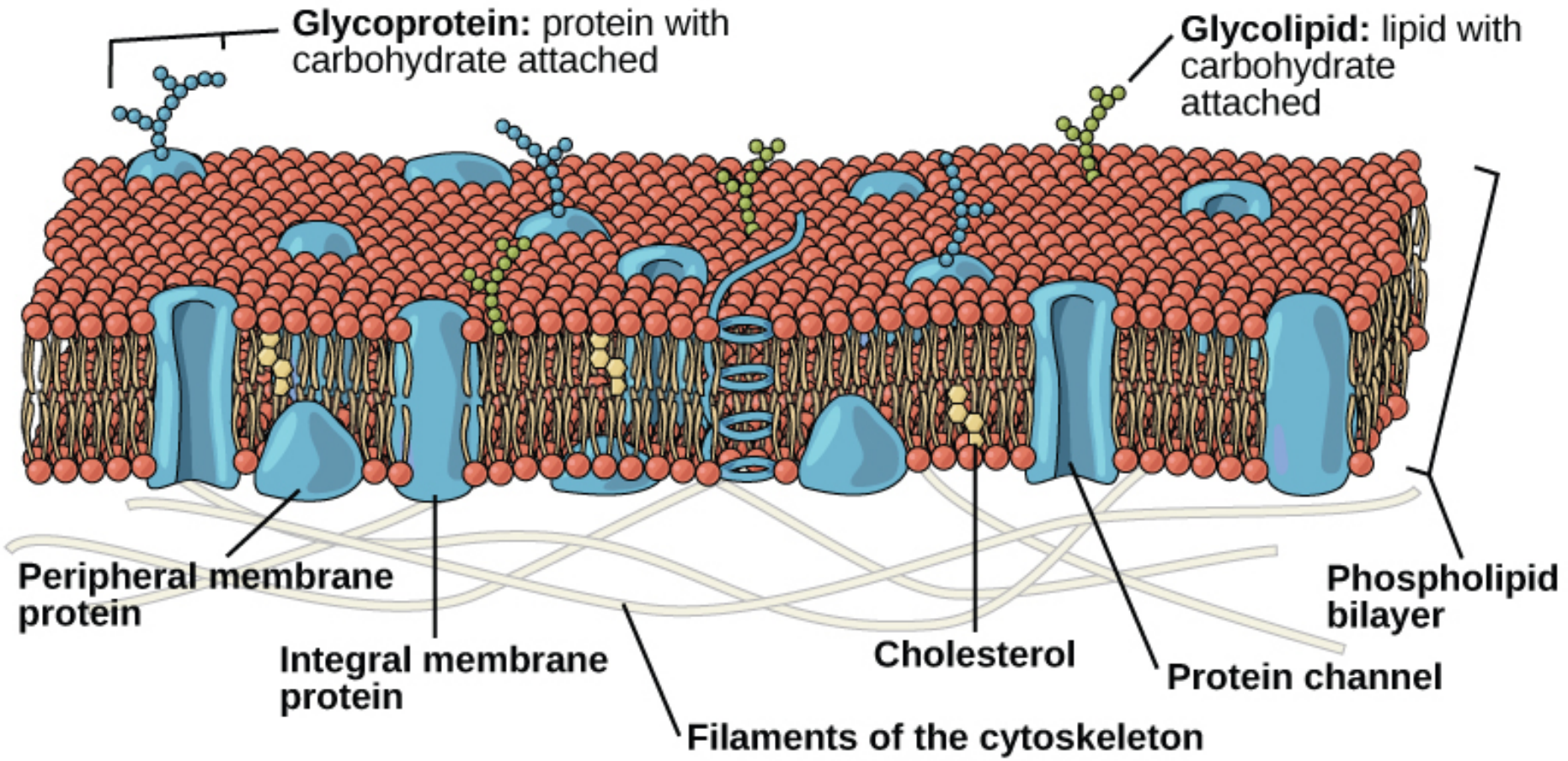
- **Carbohydrates**
  - always found on the exterior surface of cells
  - always bound to:
  - proteins → glycoproteins
  - lipids → glycolipids
- Along with peripheral proteins, carbohydrates form specialized sites on the cell surface that allow cells to recognize each other

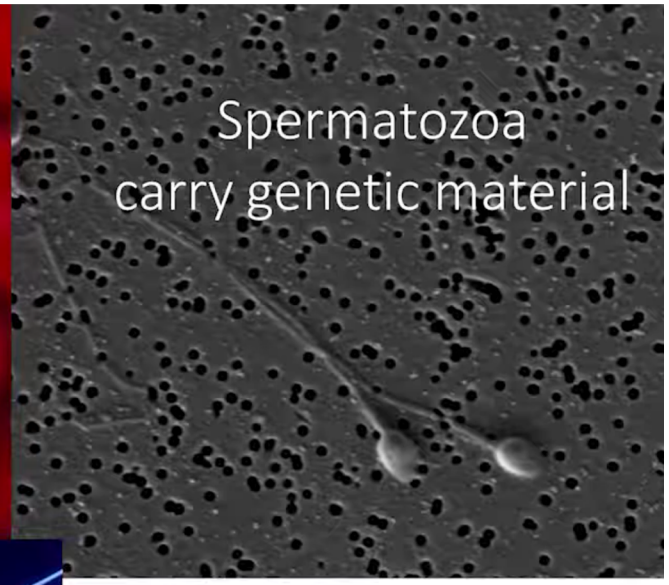


# The fluid mosaic model



# Cell types

- There are about 200 different types of cells in a human body
- Each human cell type has a different
  - structure
  - size
  - shape
  - function (and organelles)



Many different
cell types
with
different functions

# Artificial organs for transplants