7.2- Plasma Membrane

Homeostasis- The process of maintaining **balance** in an organism's internal environment

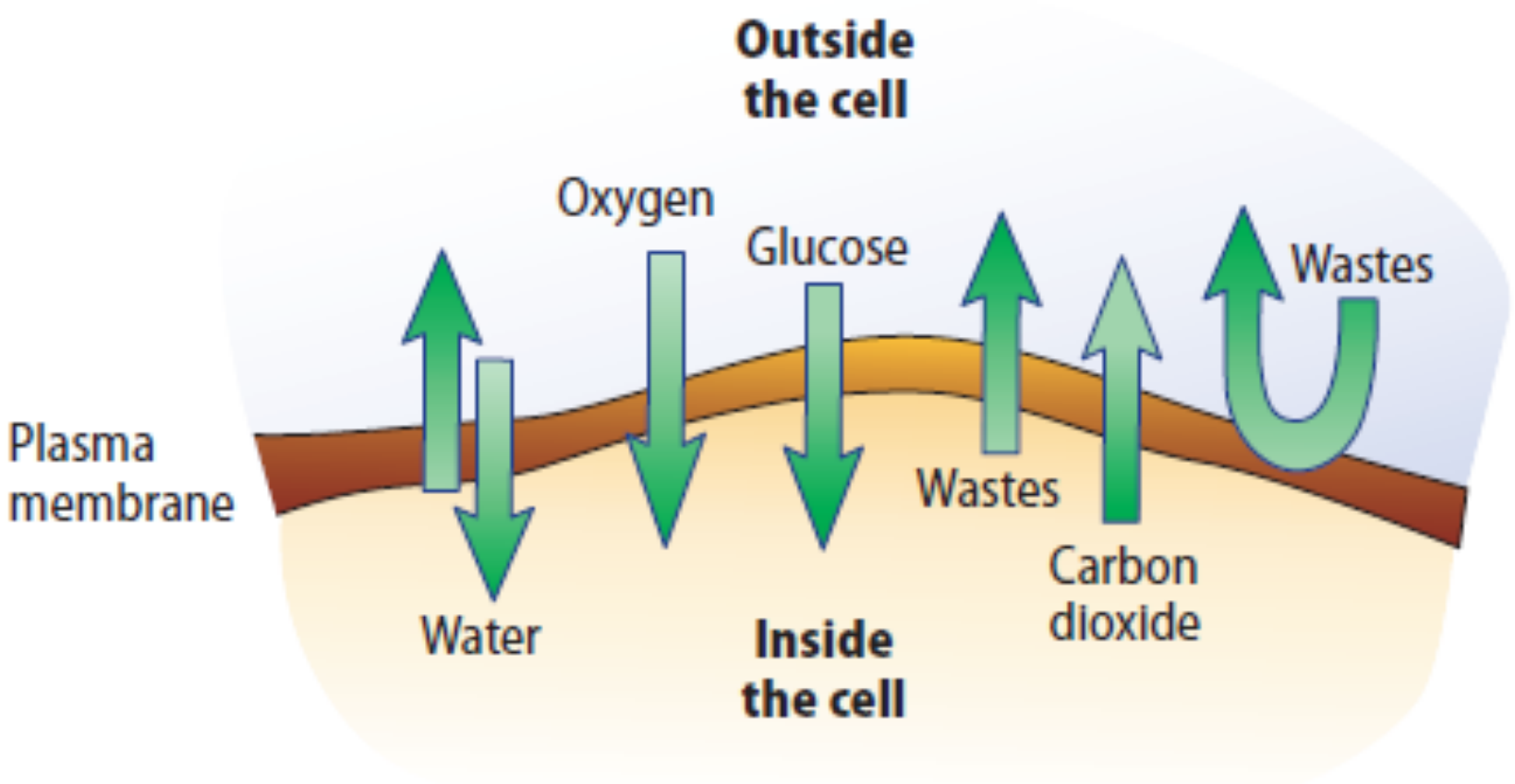
One of the structures responsible for homeostasis is the **plasma membrane**

All cells have a plasma membrane.

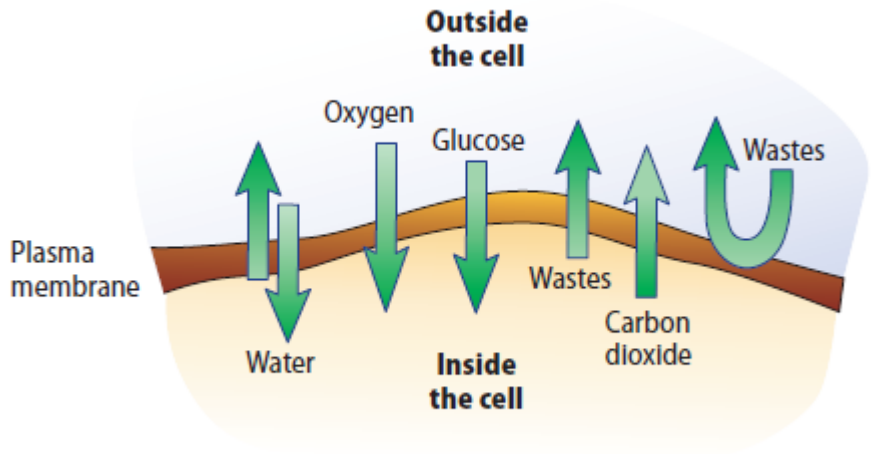
- **plasma membrane** the boundary that controls what enters and leaves the cell.

It forms a thin, flexible boundary between a cell and its environment.

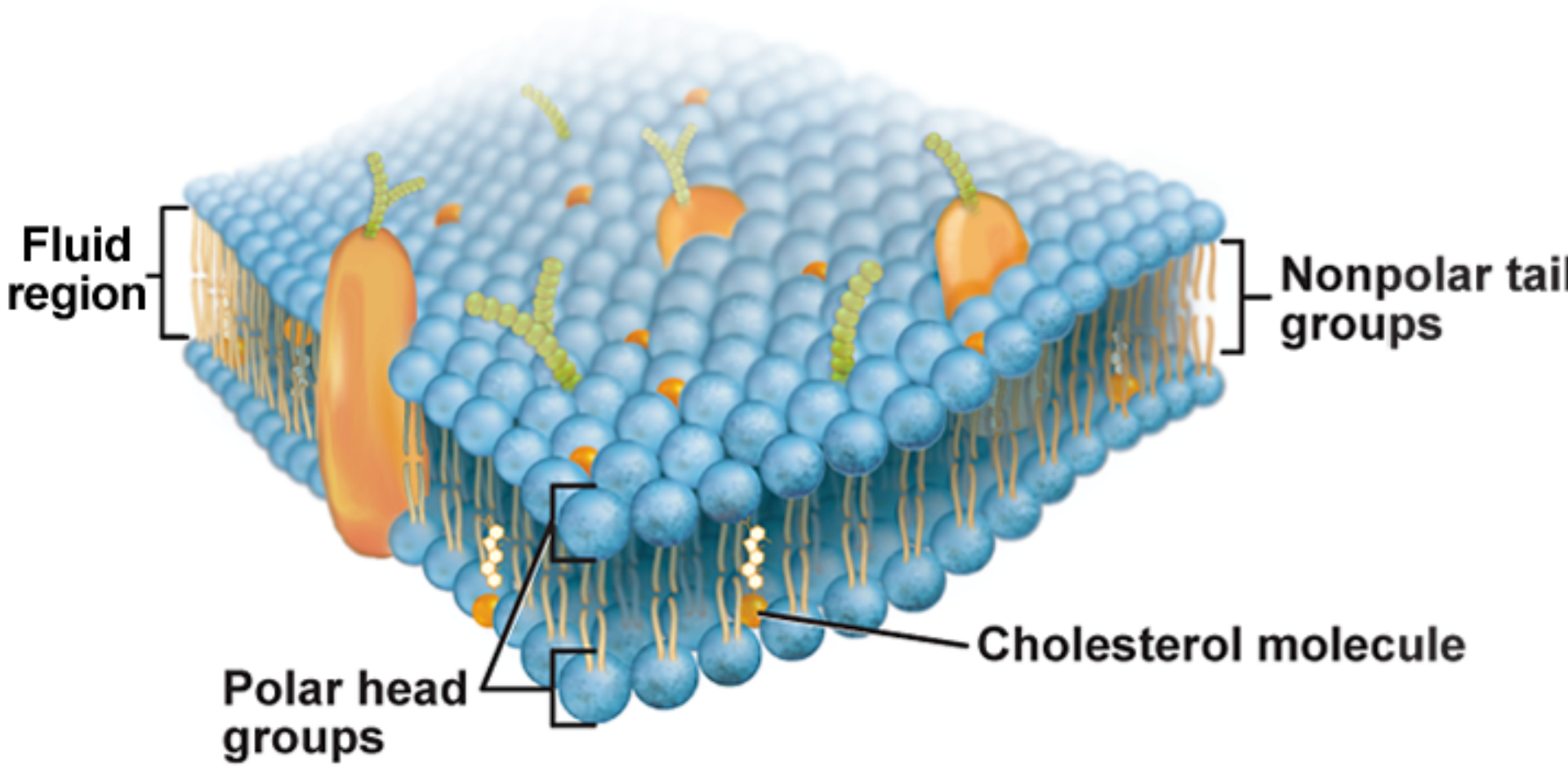
selective permeability- allow some substances to pass through while keeping others out.



Control of how, when, and how much of various substances enter and leave a cell depends on the structure of the plasma membrane.



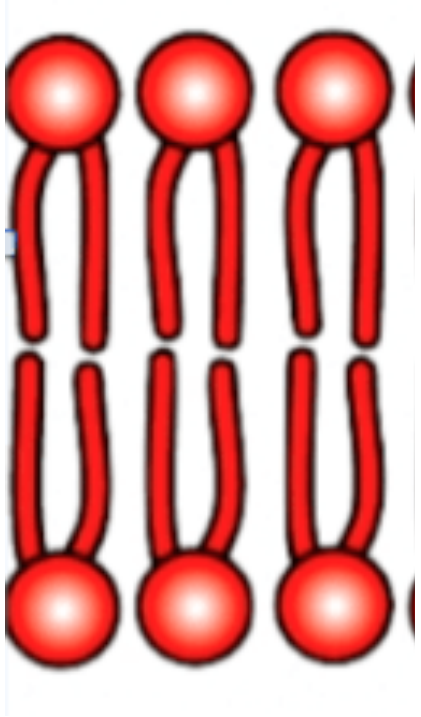
Structure of the Plasma Membrane

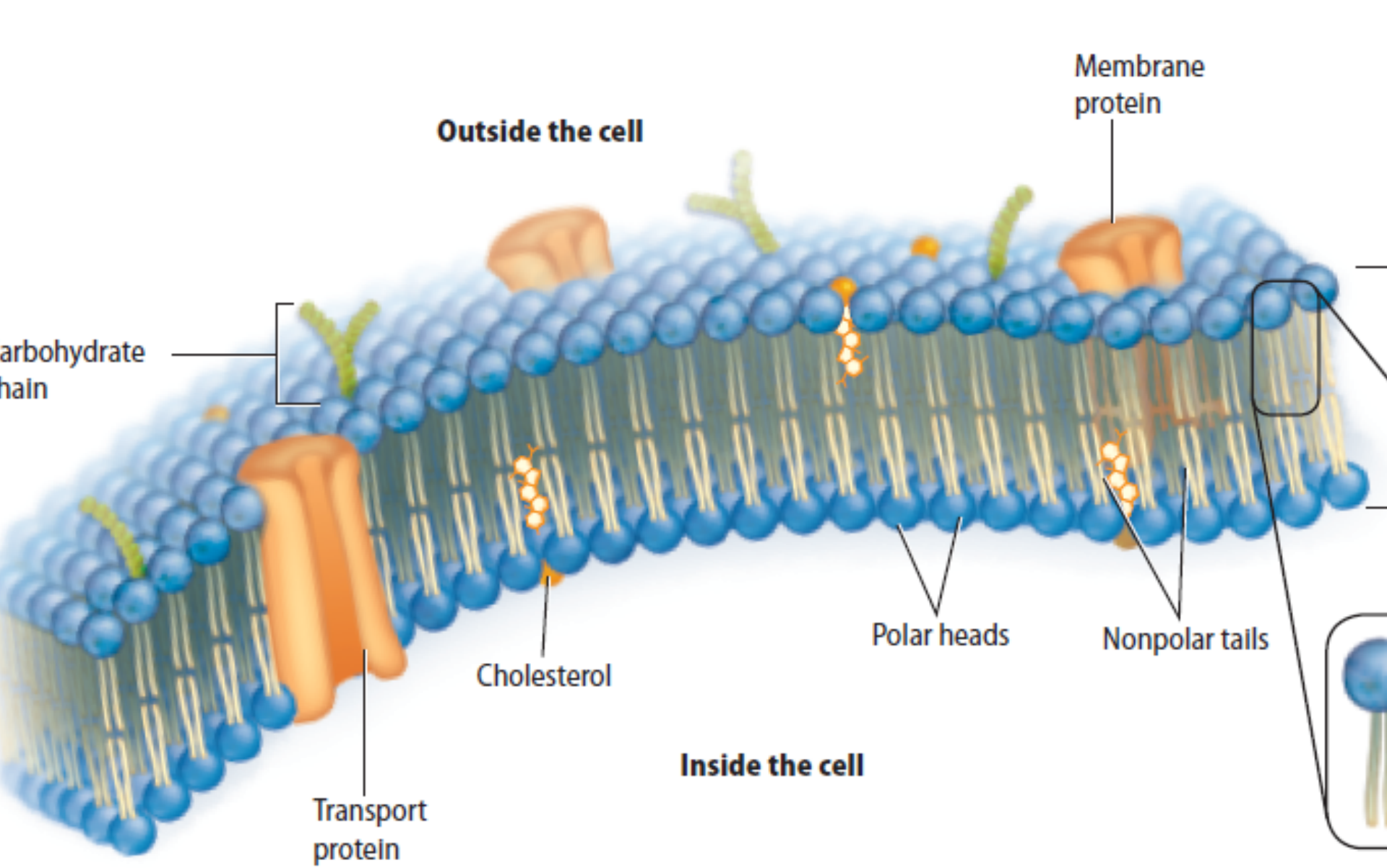


Structure of the Plasma Membrane

phospholipid bilayer – two layers of phospholipids

- polar heads facing outside
- nonpolar tails facing inside



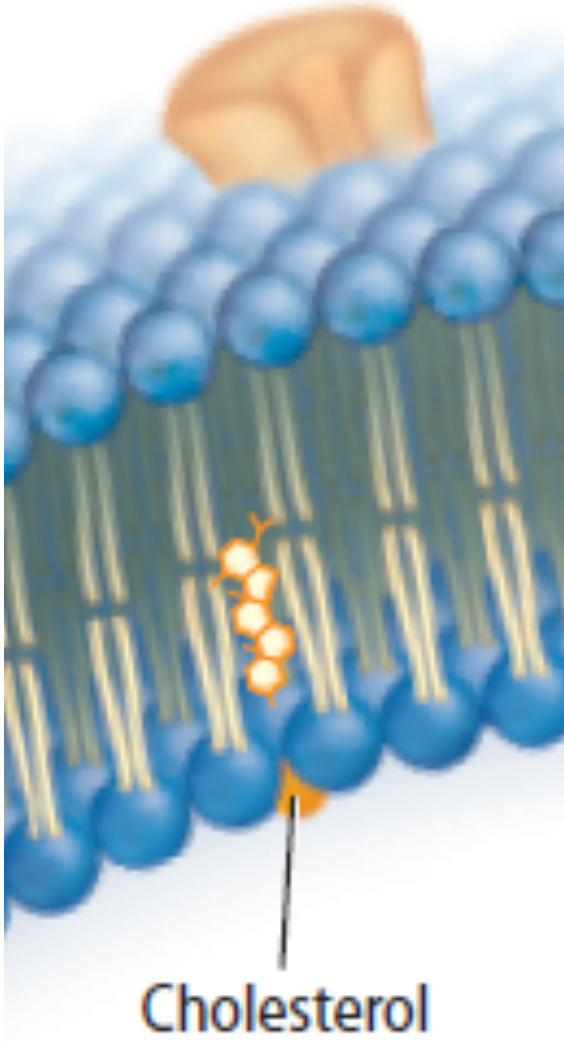

Membrane protein
Outside the cell
arbohydrate hain
Cholesterol
Polar heads
Nonpolar tails
Inside the cell
Transport protein

Proteins called **receptors** transmit signals to the inside of the cell.

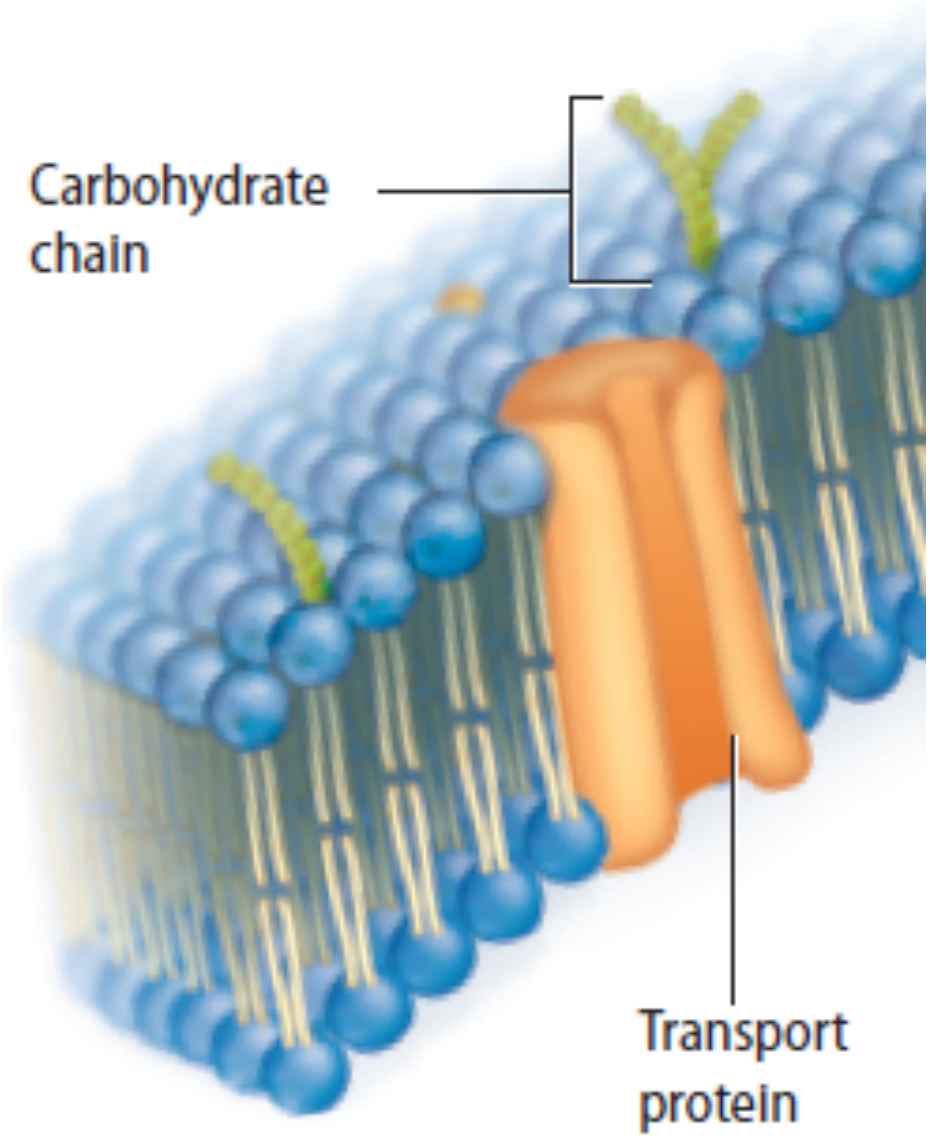
Some proteins serve as **support structures** for the membrane.

Transport proteins move substances through the membrane.

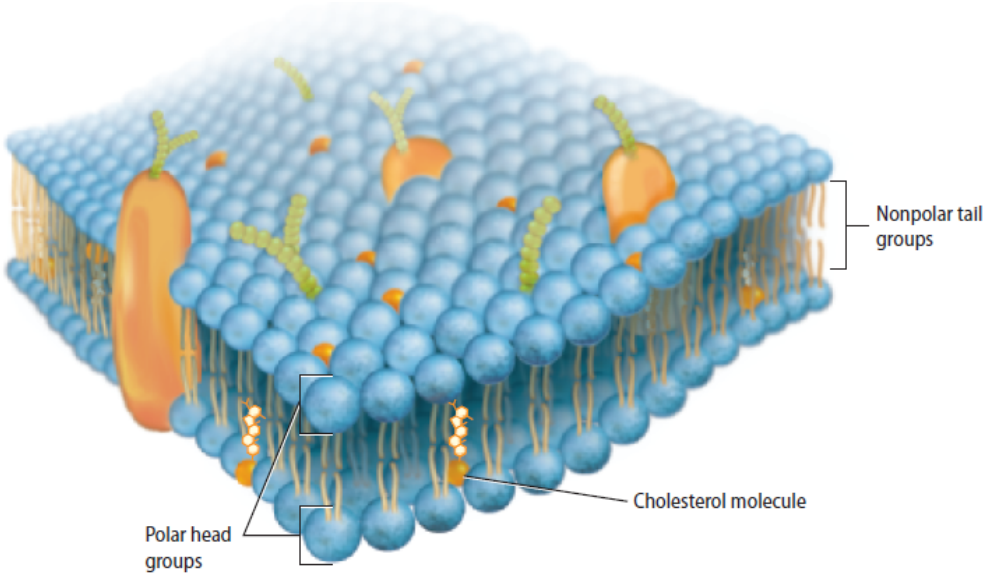
Cholesterol prevents the fatty acid tails of the phospholipid bilayer from sticking together.

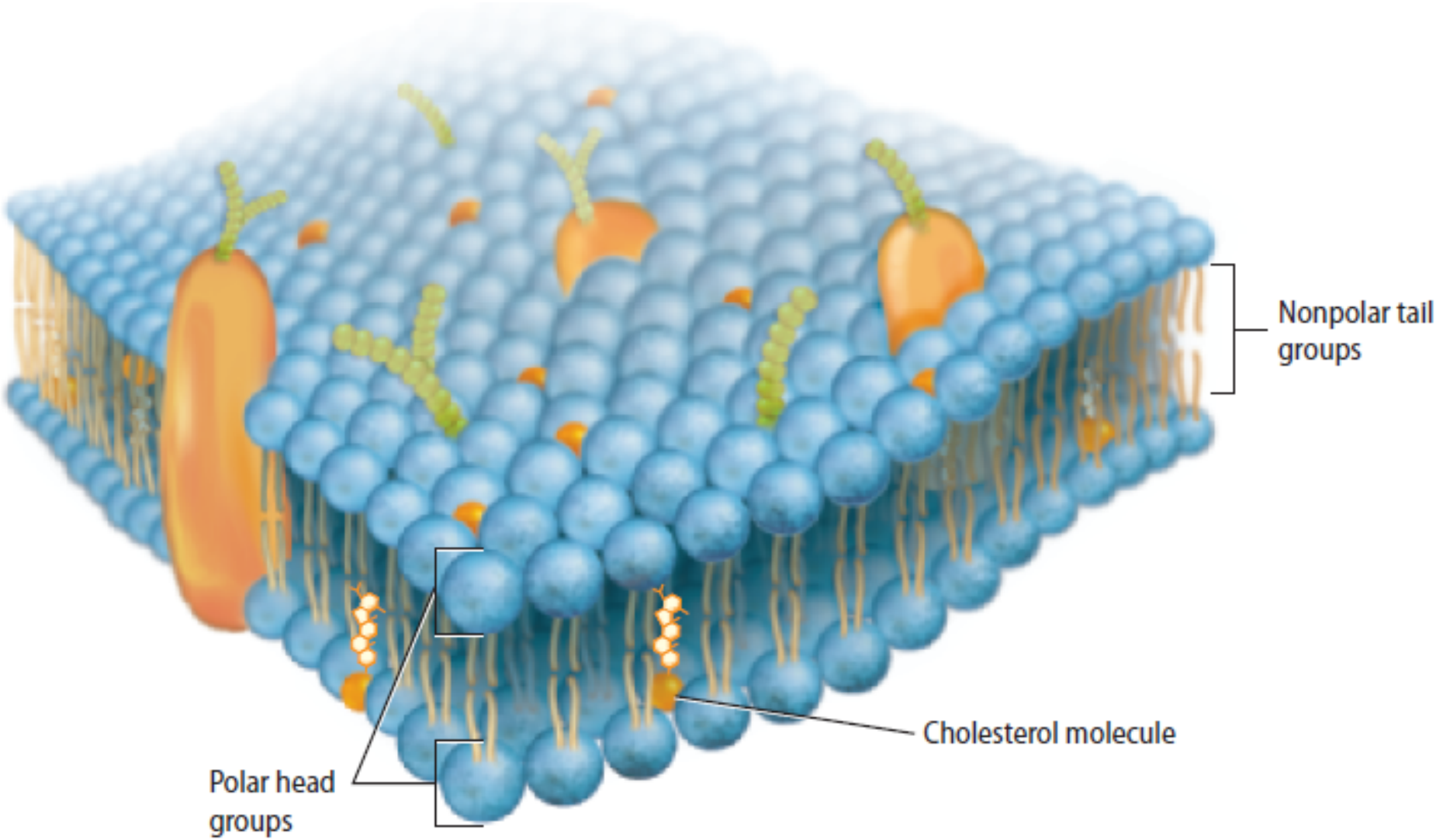


Carbohydrates help cells identify chemical signals



The **fluid mosaic model** describes the phospholipids in the bilayer as a “sea” in which other components can float and move around.




Nonpolar tail groups
Cholesterol molecule
Polar head groups