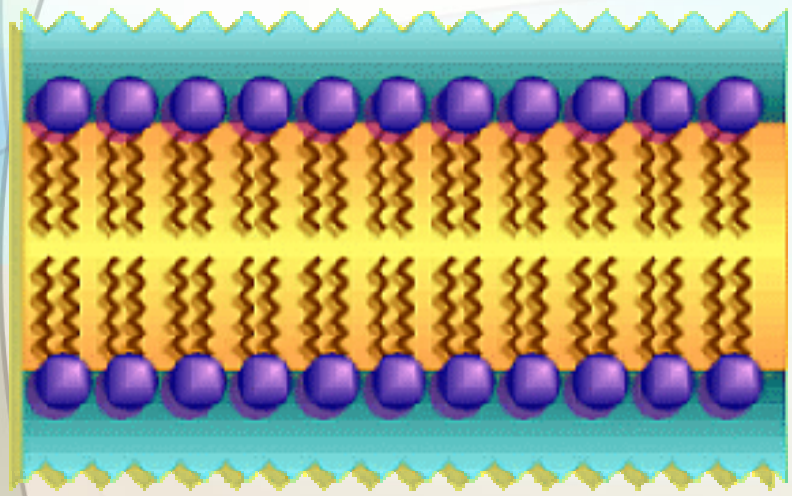
Cell Processes

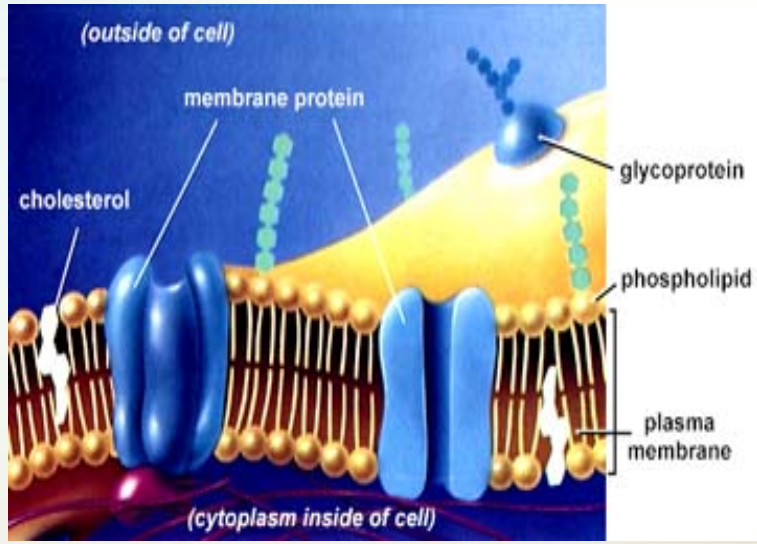
Movement Across Cell Membranes

Cell Membrane Models



Phospholipid bilayer

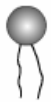
Dynamic Membrane



Membrane with transport, receptor, recognition, and adhesion proteins

Construction of the Cell Membrane

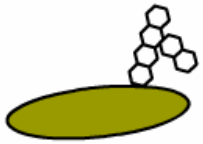
These are the different types of molecules of the cell membrane.



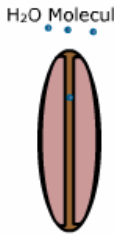
Phospholipid

Fibrous protein

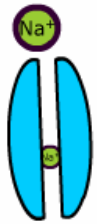
Examples of globular-shaped proteins



Gylcoprotein



Pore protein



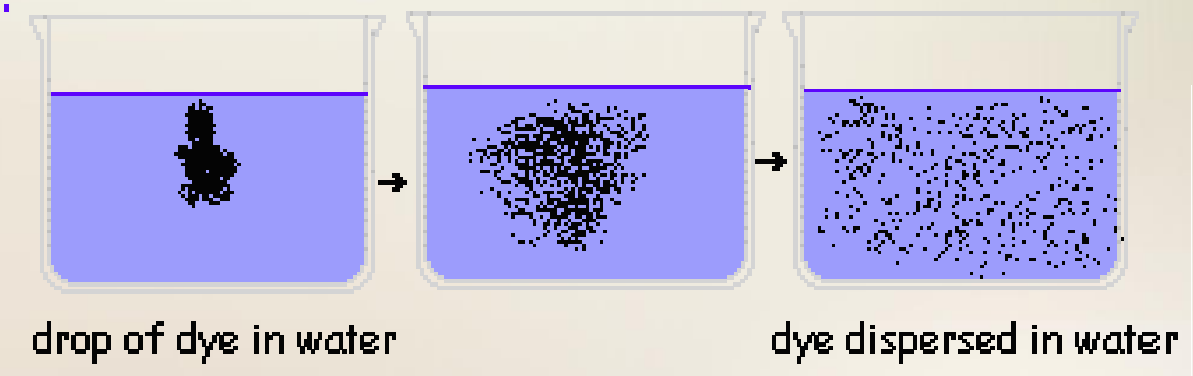
Channel protein

Back Next

Substances Enter and Leave Cells

- Diffusion more diffusion
- Osmosis more osmosis
- Passive or facilitated diffusion
- Active transport
- Endocytosis
  - Pinocytosis and Phagocytosis
- Exocytosis

More



Some Definitions

Diffusion

movement ***with*** a concentration gradient

dye in water

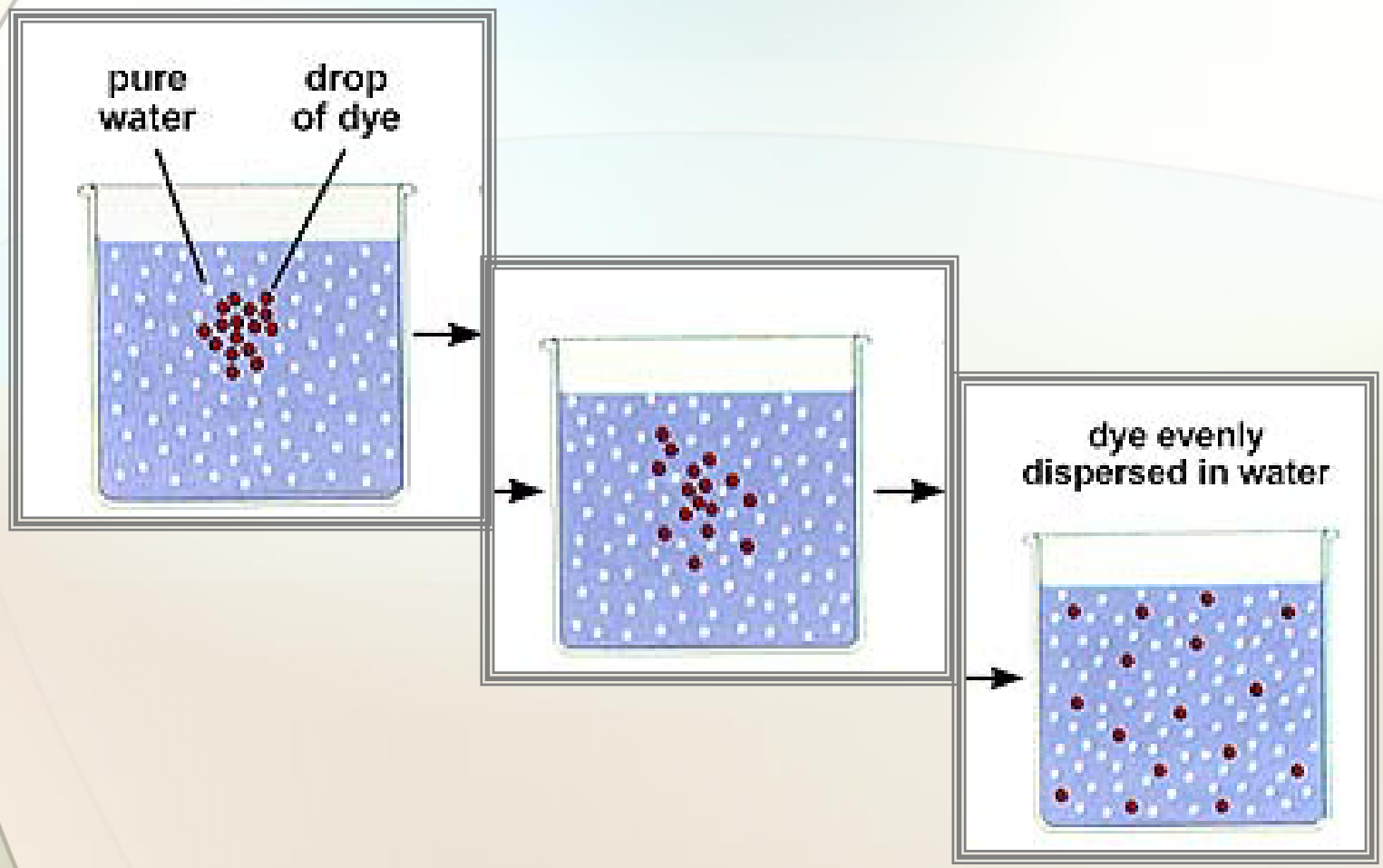
perfume

smoke

drop of dye in water

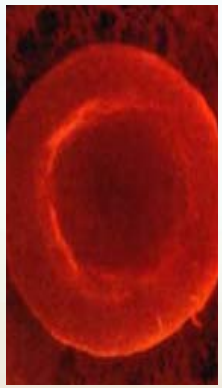
dye dispersed in water

Diffusion



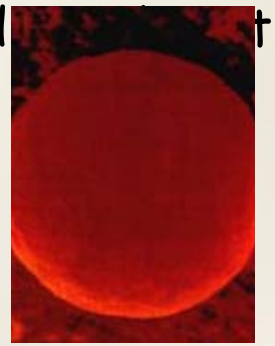
Osmosis in Action

If red blood cells are placed in a **hypertonic** solution, more water leaves than enters, and the cells shrink.

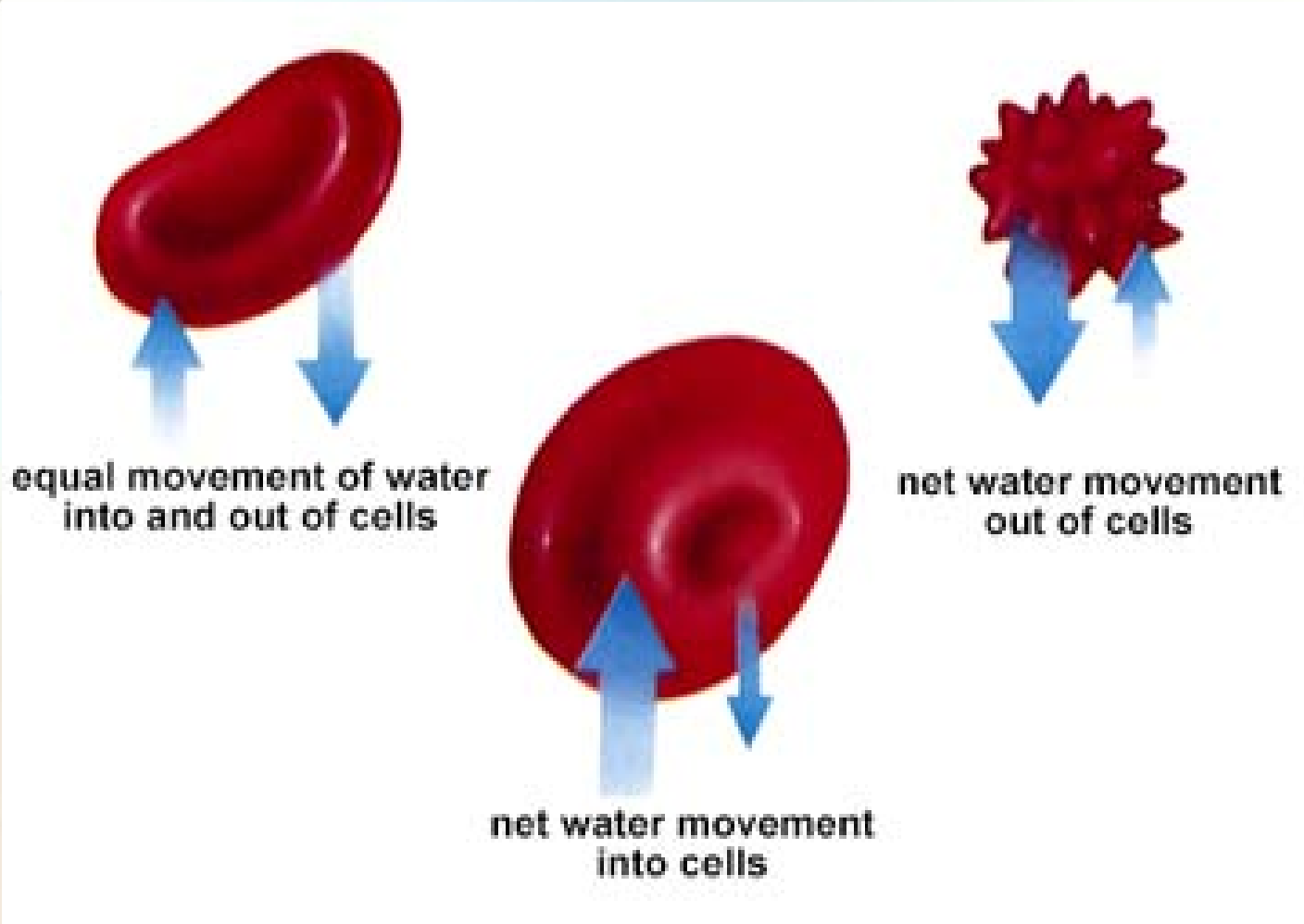


In a **isotonic solution**, water enters and leaves cells in equal amounts, and their sizes remain unchanged.

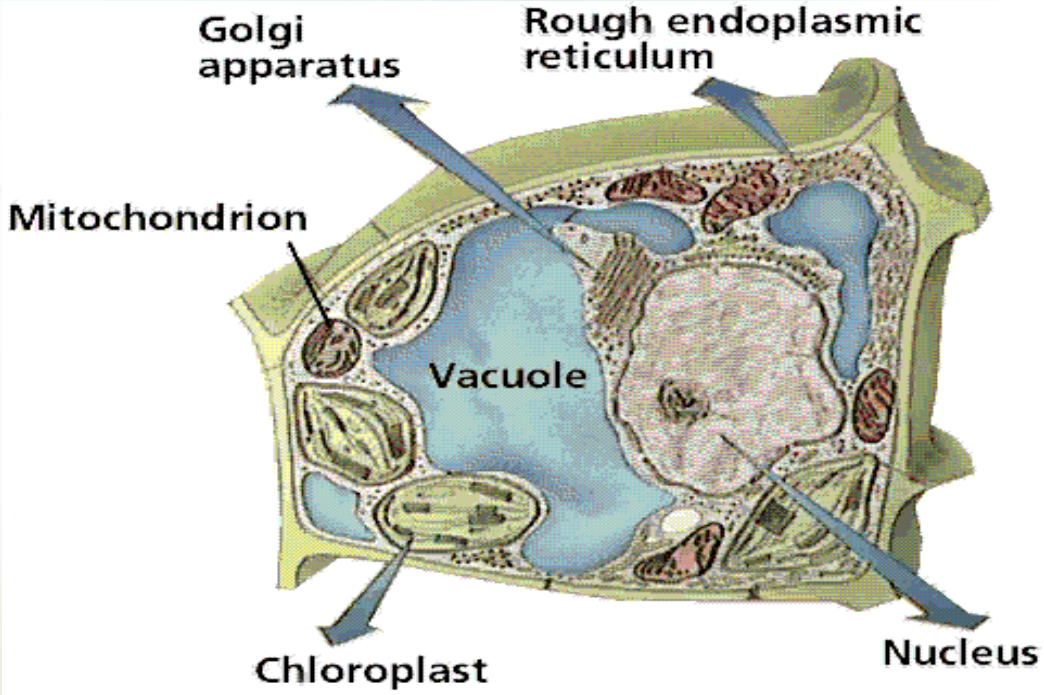
In a **hypotonic** solution, more water enters than leaves, and the cells swells and



Another view……

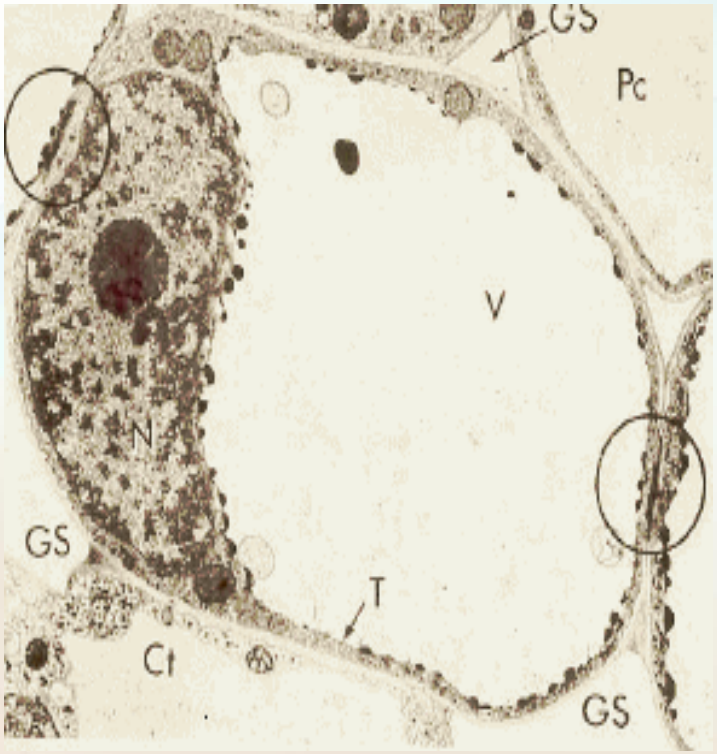


Plant Cell Diagram



Note the central vacuole and the location of cytoplasm

The Central Vacuole in a Plant Cell



Note the nucleus and cytoplasm on the side

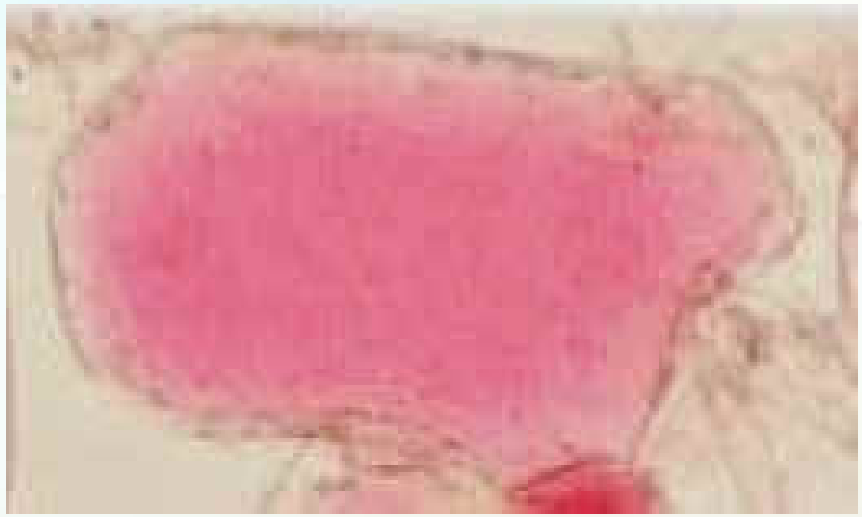
The vacuole is filled with "sugar solution"

The outside is hypotonic with respect to the inside

Water "flows in" to keep the plant rigid

Cell wall contributes to rigidity.

Red Onion Skin Cell

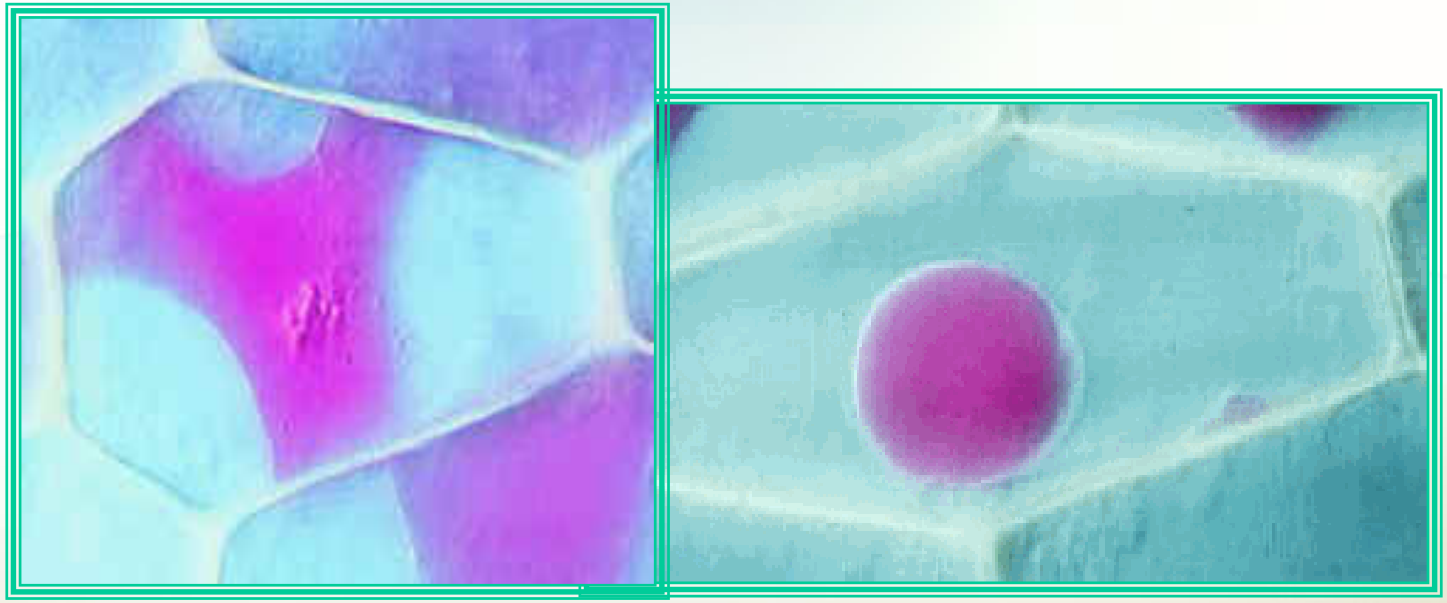


Central vacuole normally occupies most of the cell's interior.

The outside is hypotonic (has less salts, thus more water) relative to the inside.

Water flows into the vacuole, keeping it rigid.

Plasmolysis in Plant Cells

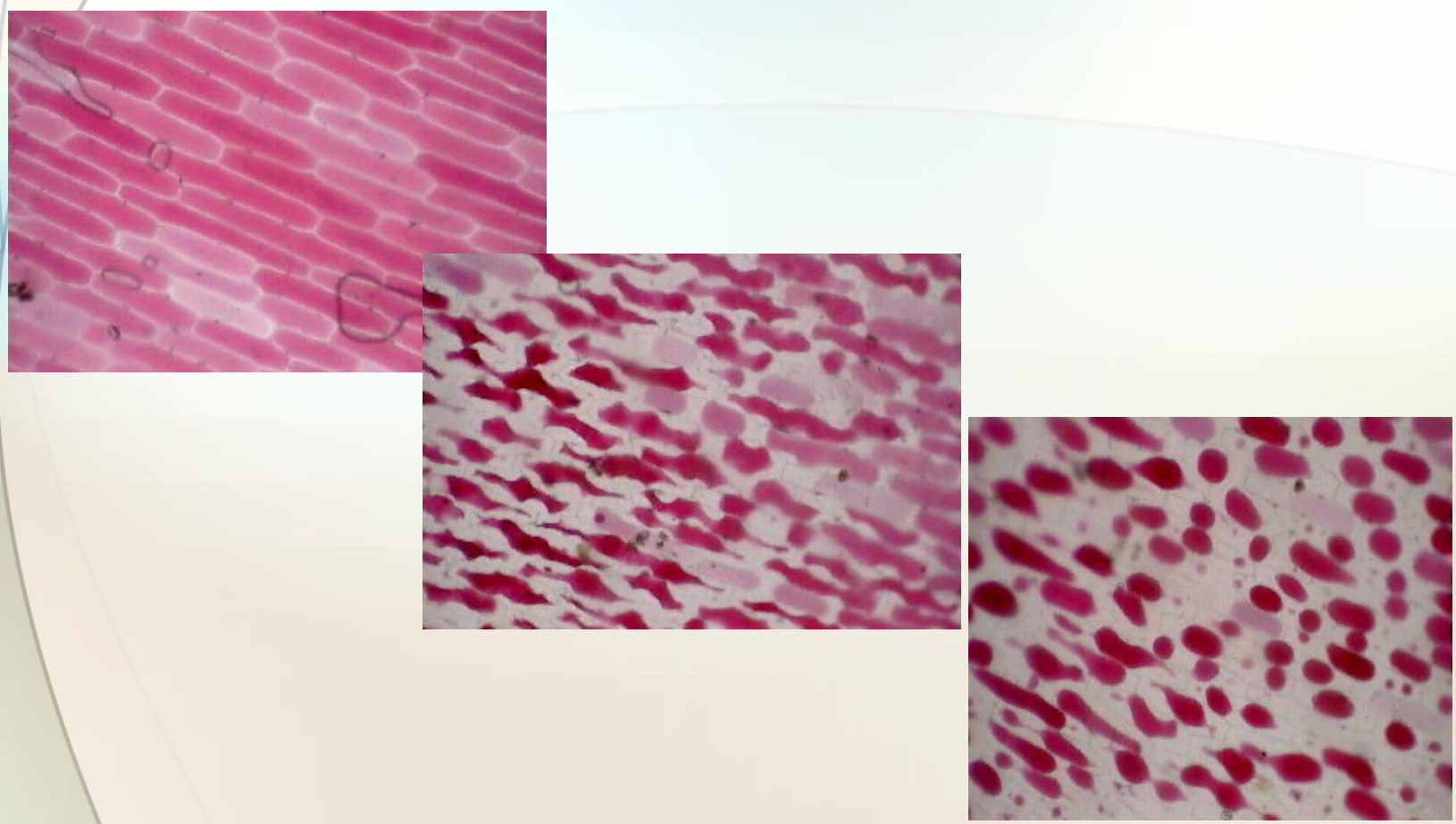


Plant cells in a hypertonic solution (more salt outside).

Water flows out of cell from the central vacuole and cytoplasm shrinks.

The cell wall does not change shape.

Red Onion Cells in *Hypertonic* Solution



Review

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