

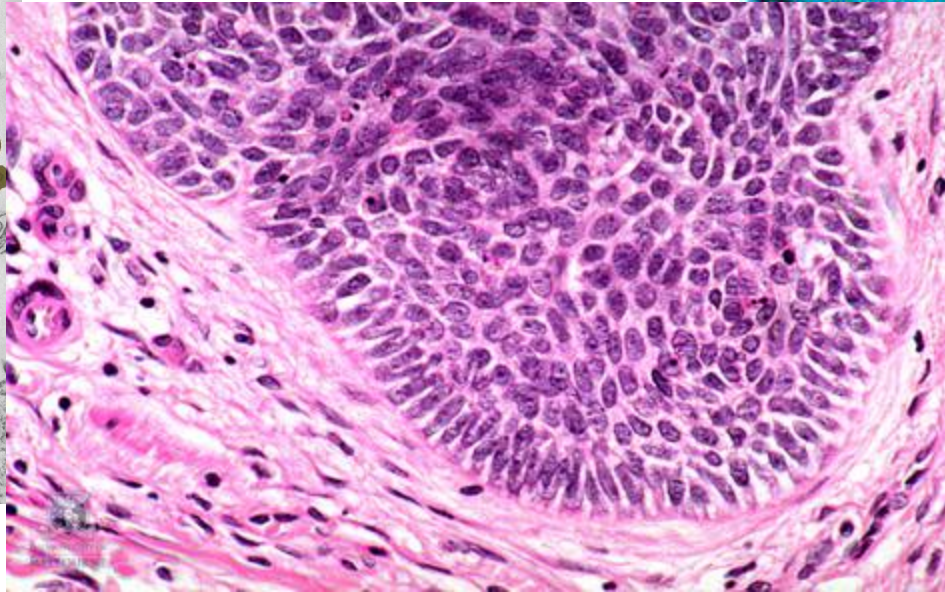
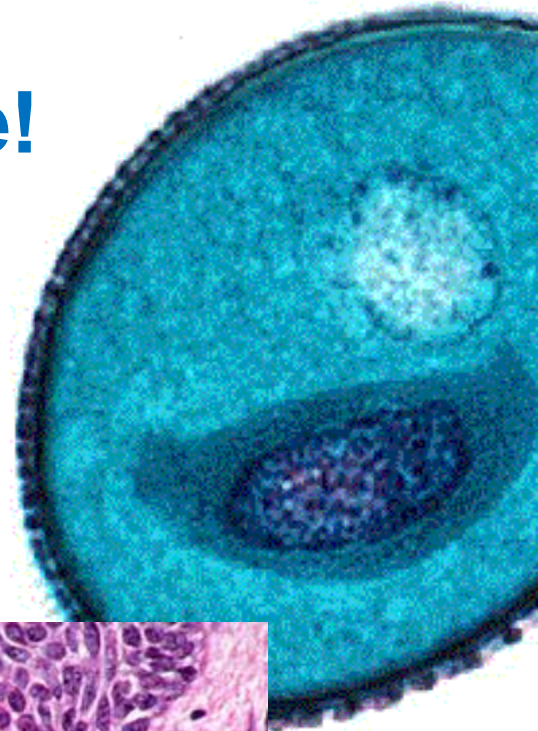
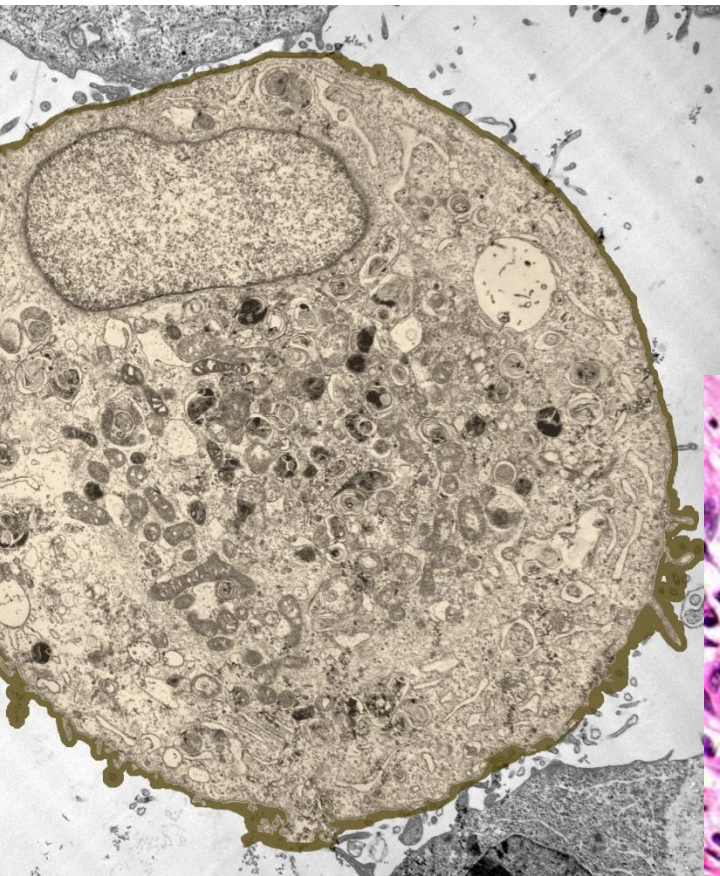
Section 7-3

Cell Transport

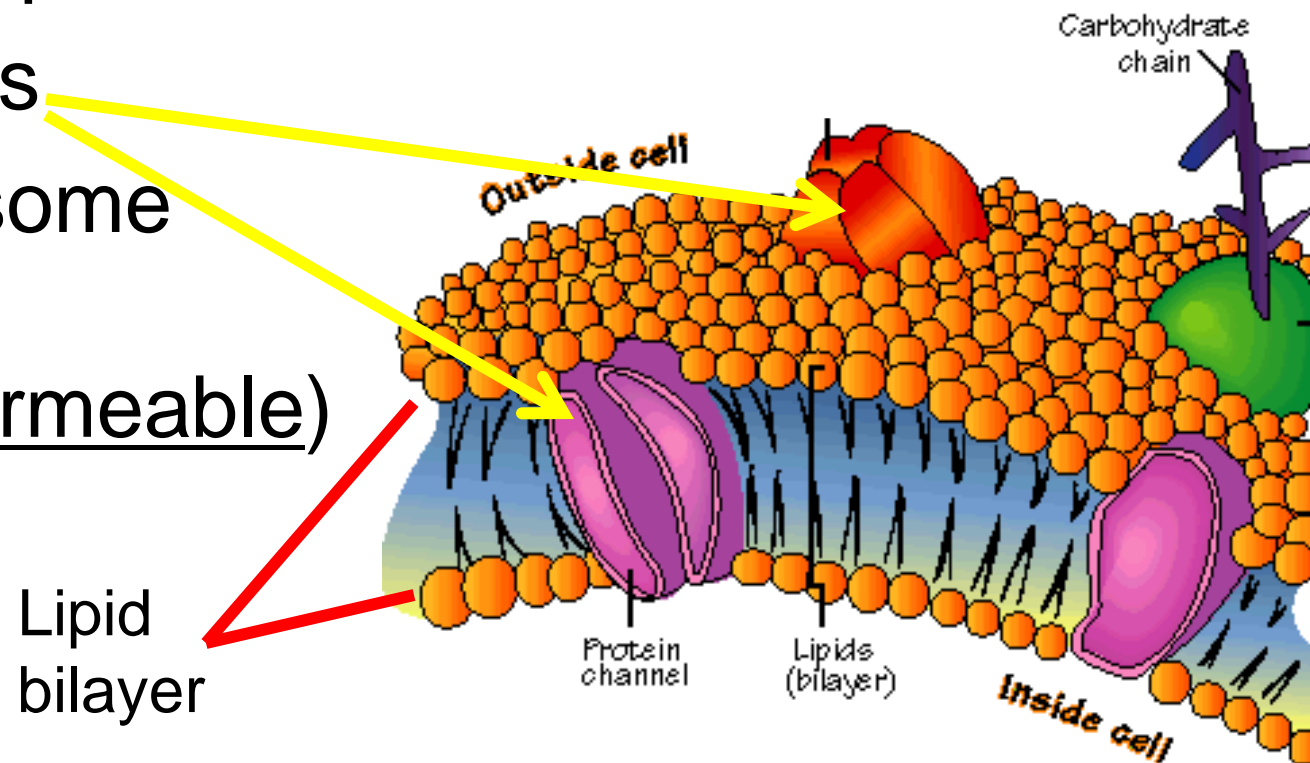


How do water, nutrients, or waste get into or out of cells?

Through the cell membrane!



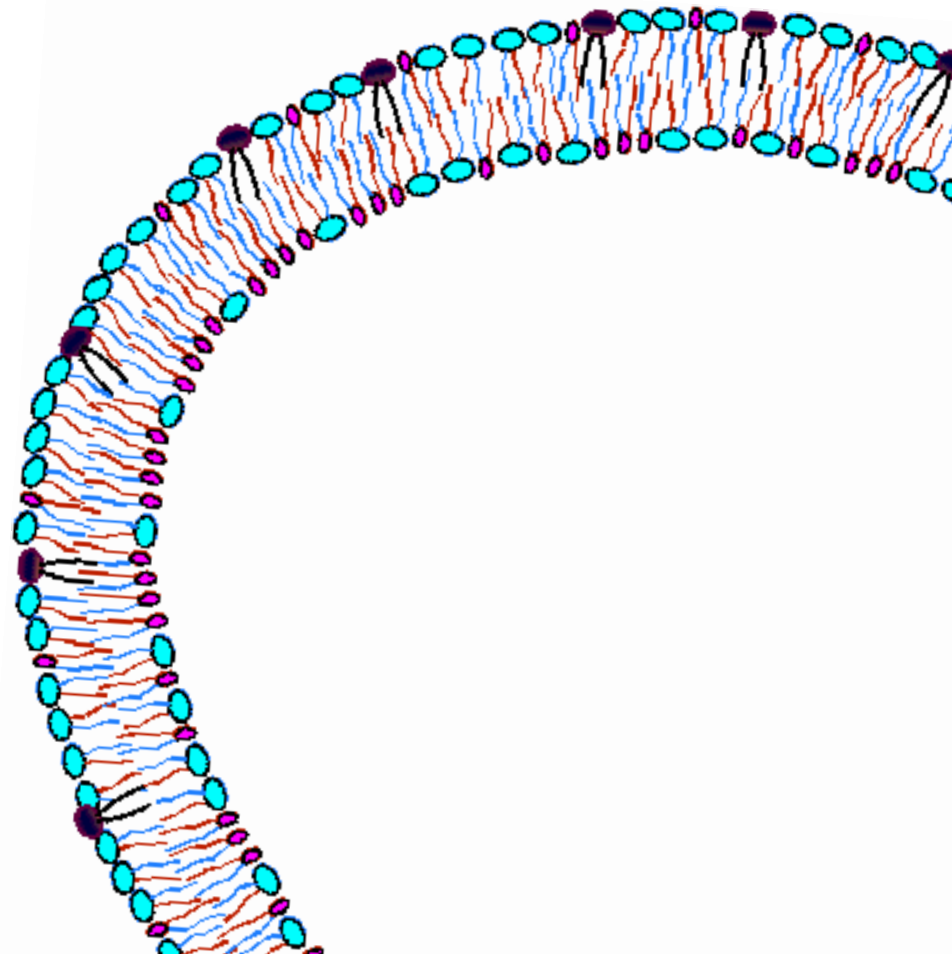
- The function of a cell membrane is to control what goes in and out of cells (the gatekeeper).
- Cell membranes are made of:
 - 2 layers of lipids and some proteins
- They only let some things through (selectively permeable)



So HOW do things move through the cell membrane?

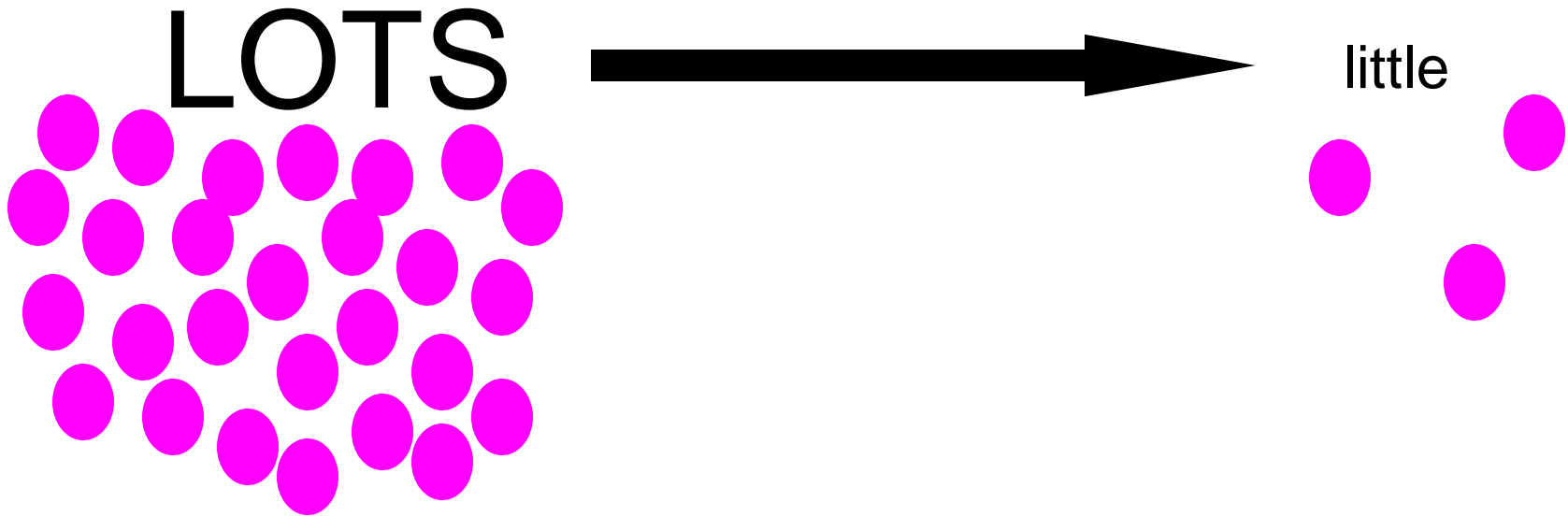
- **Passive Transport**: movement of a substance through a membrane without using energy.
There are 3 types:

1. Diffusion
2. Osmosis
3. Facilitated diffusion



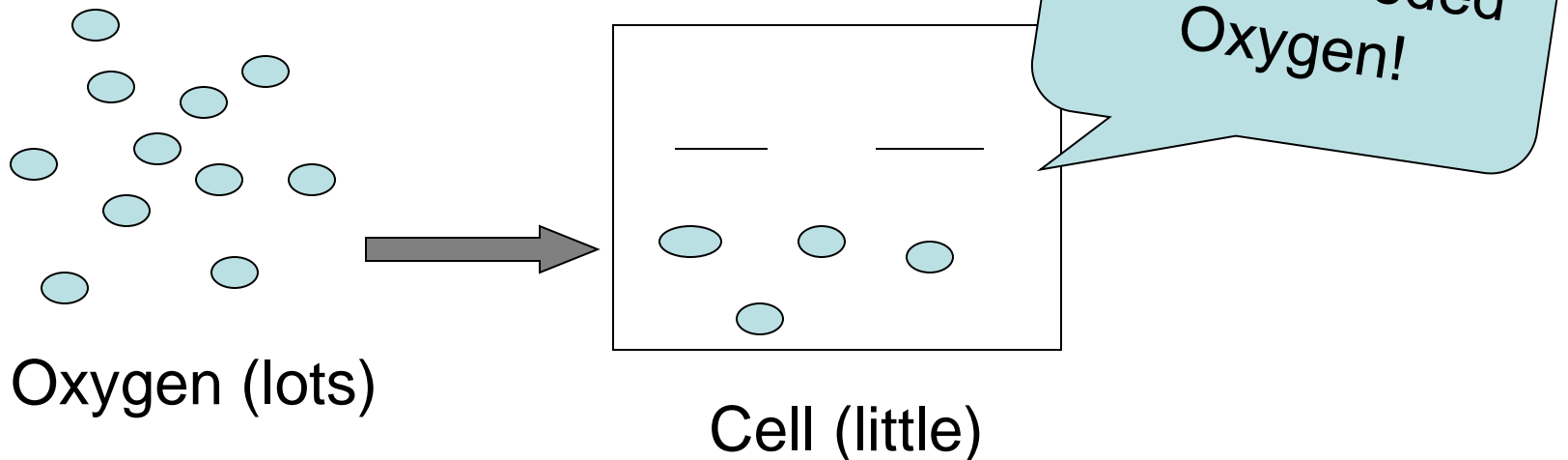
Diffusion

- Movement of molecules from an area of high concentration to low concentration until equilibrium is reached.



Diffusion

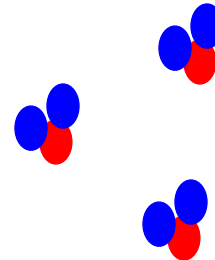
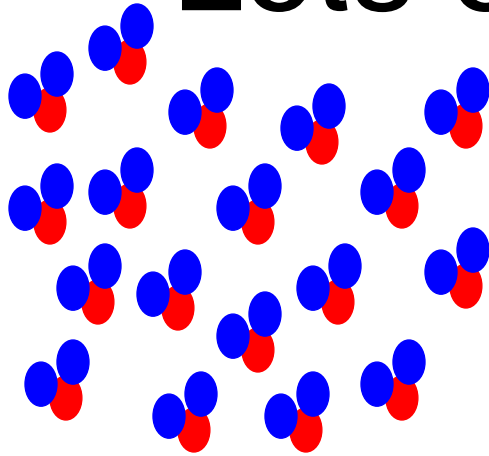
- Happens naturally (no extra help needed)
- No energy required!
- A physical law of nature
- Molecules move until they are equal in all areas (equilibrium)



Osmosis

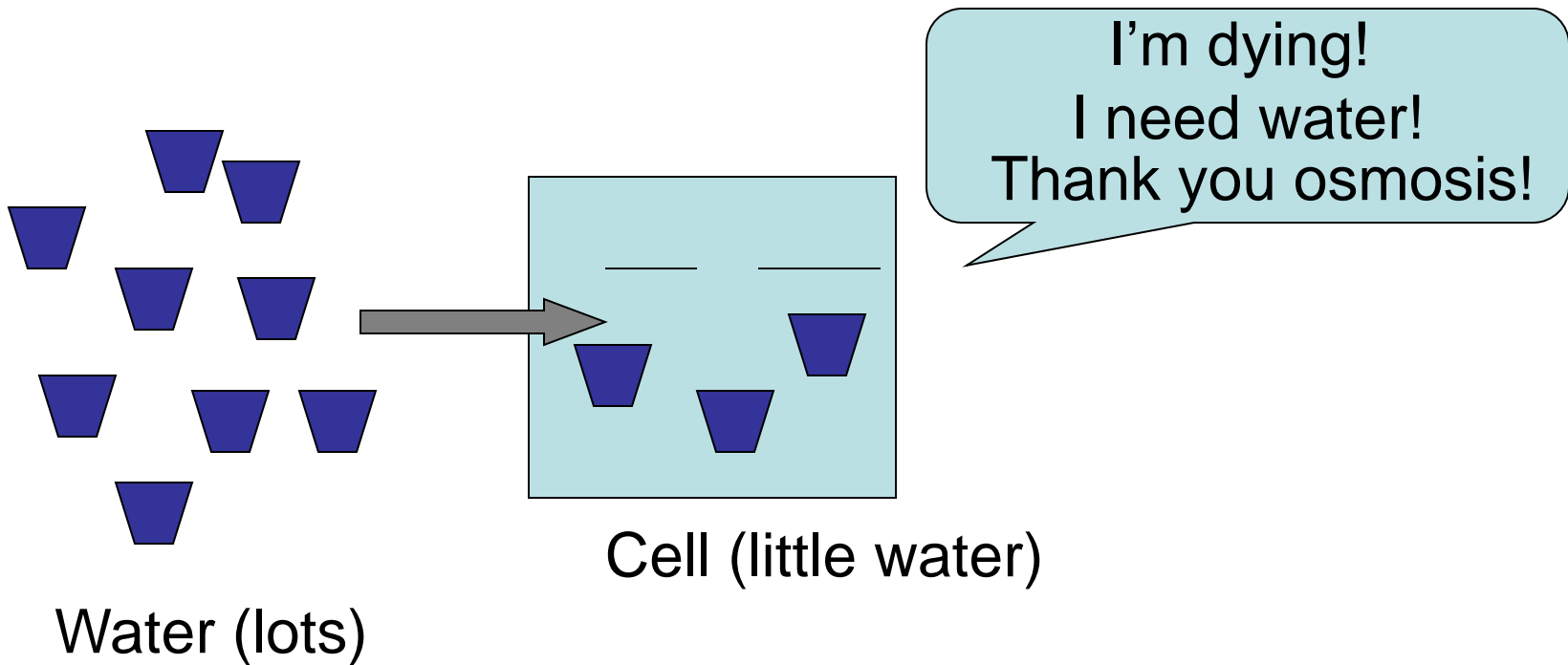
- Movement of **water** across a membrane from high water concentration to low water concentration until equilibrium is reached.

Lots of water → little water



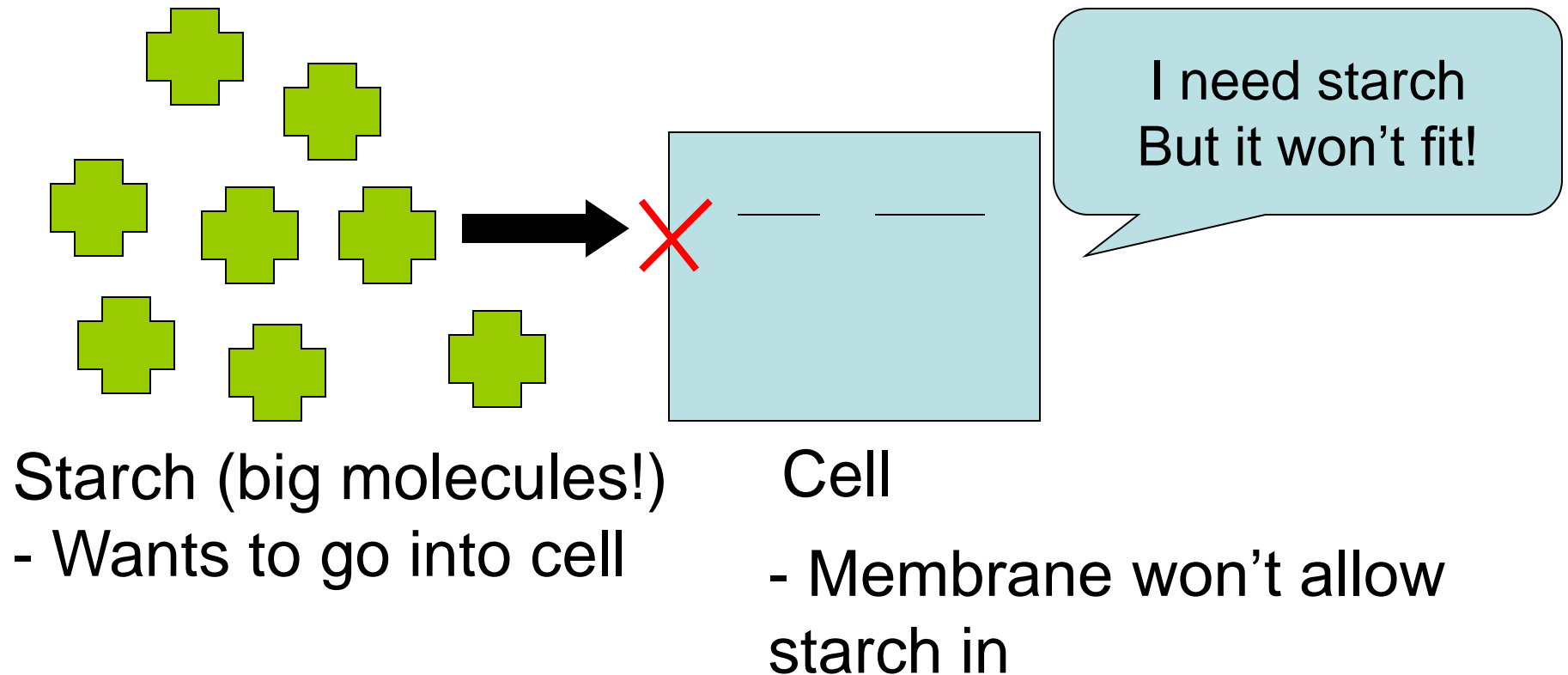
Osmosis

- No energy required!
- Happens naturally (no extra help needed)



Can **ANYTHING** get into cells easily?

Cell membranes are **selectively permeable** – they stop some things from getting into or out of cells.



How do BIG molecules get into cells?

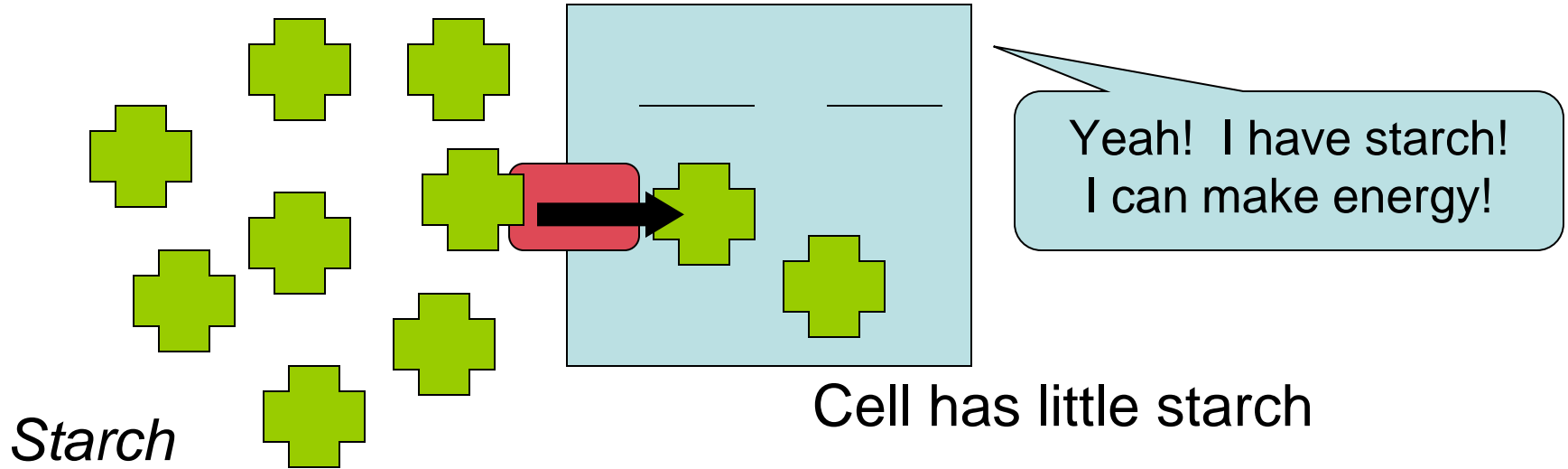
-- With *help*!

- **Facilitated diffusion:**

large molecules move from a high concentration to a low concentration through a protein channel in the membrane.

➤ No Energy Required!

Facilitated Diffusion



 = **Transport proteins** are in cell membranes; also called a *protein channel*.

These proteins act like a door that some big molecules can fit through!