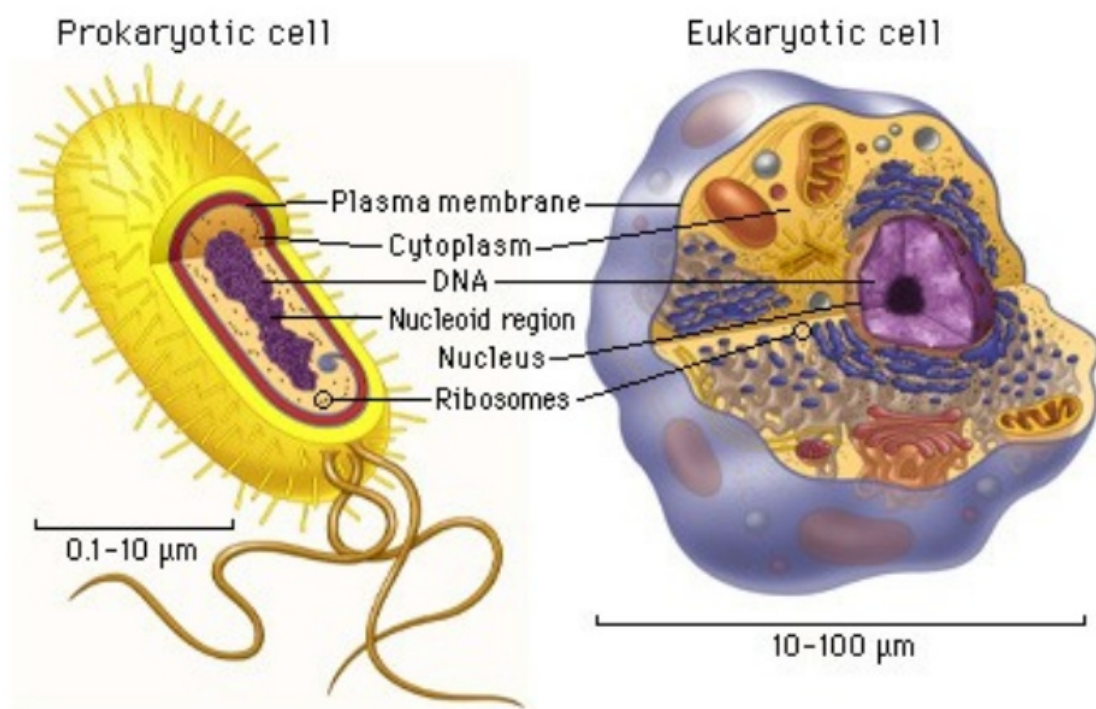


## Cell Membrane

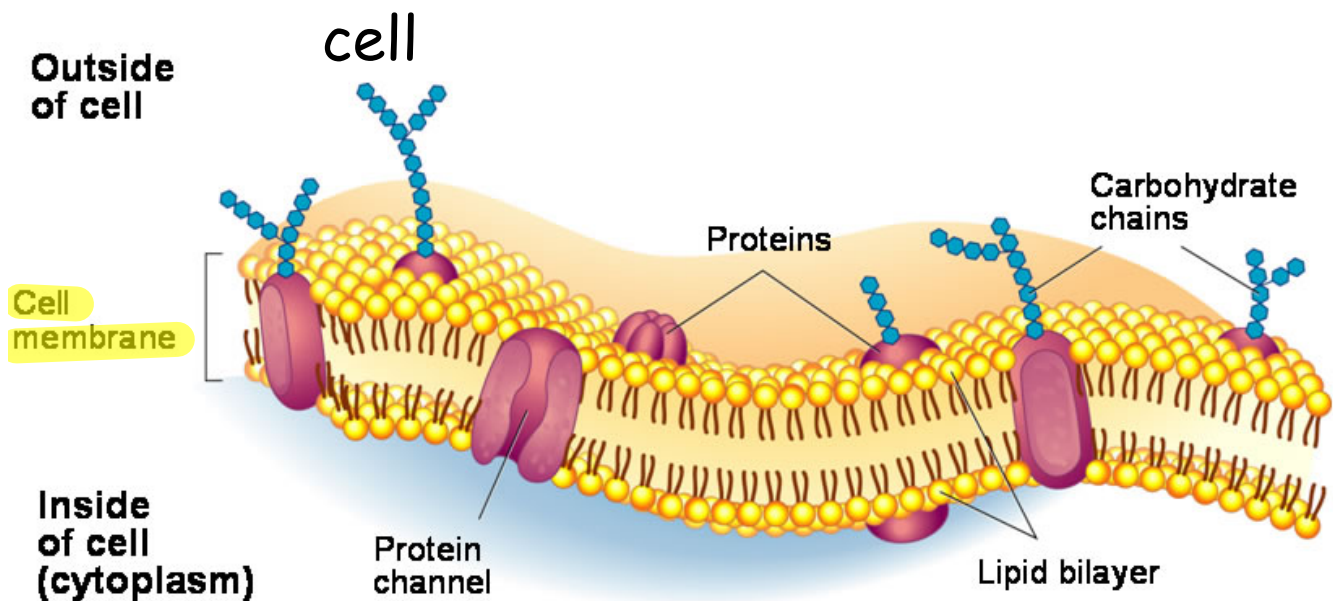
All cells have cell membranes!!!

### Two Basic Types of Cells

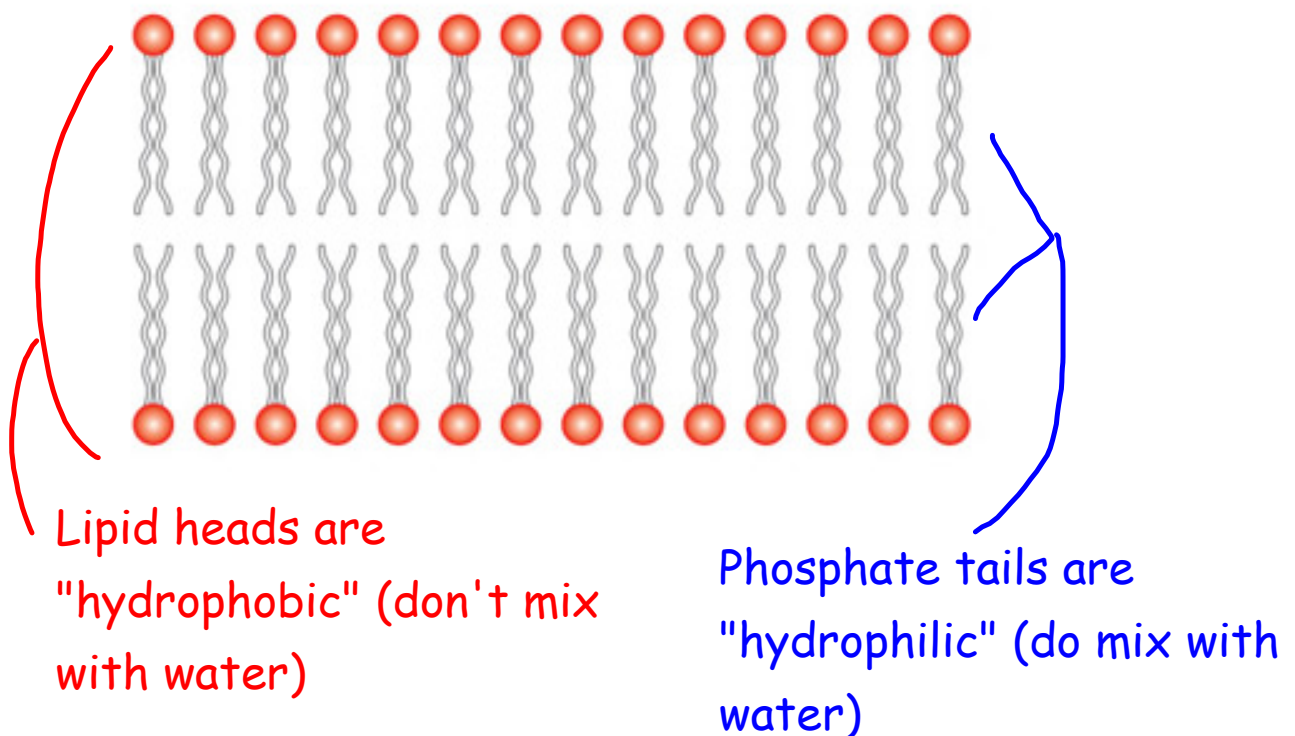


## Cell Membrane

**Function:** Regulates materials entering and leaving cell; protects and supports cell



Cell membrane is made of a "phospholipid bilayer"



This structure keeps the inside of the cell separate from the outside and makes the membrane

"semi-permeable" (only certain stuff gets in or out)

## Passive Transport (2 Types)

1. Diffusion

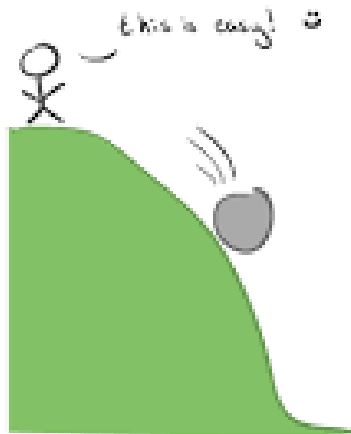
2. Facilitated Diffusion

a. Osmosis: An Example of Facilitated Diffusion





Passive Transport does **NOT** require cellular energy to move materials across cell membrane!

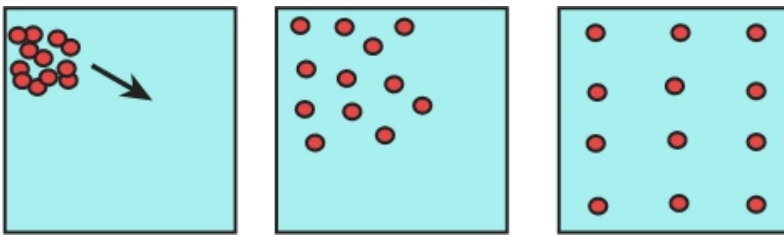


Passive Transport



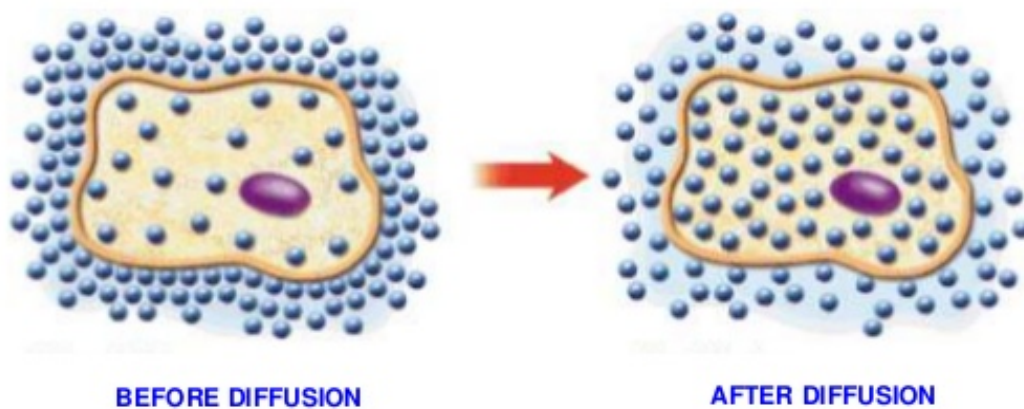
Active Transport

## Diffusion



Particles (solute) moves from areas of **high** concentration to areas of **low** concentration until equilibrium is reached

## Diffusion Across Cell Membranes



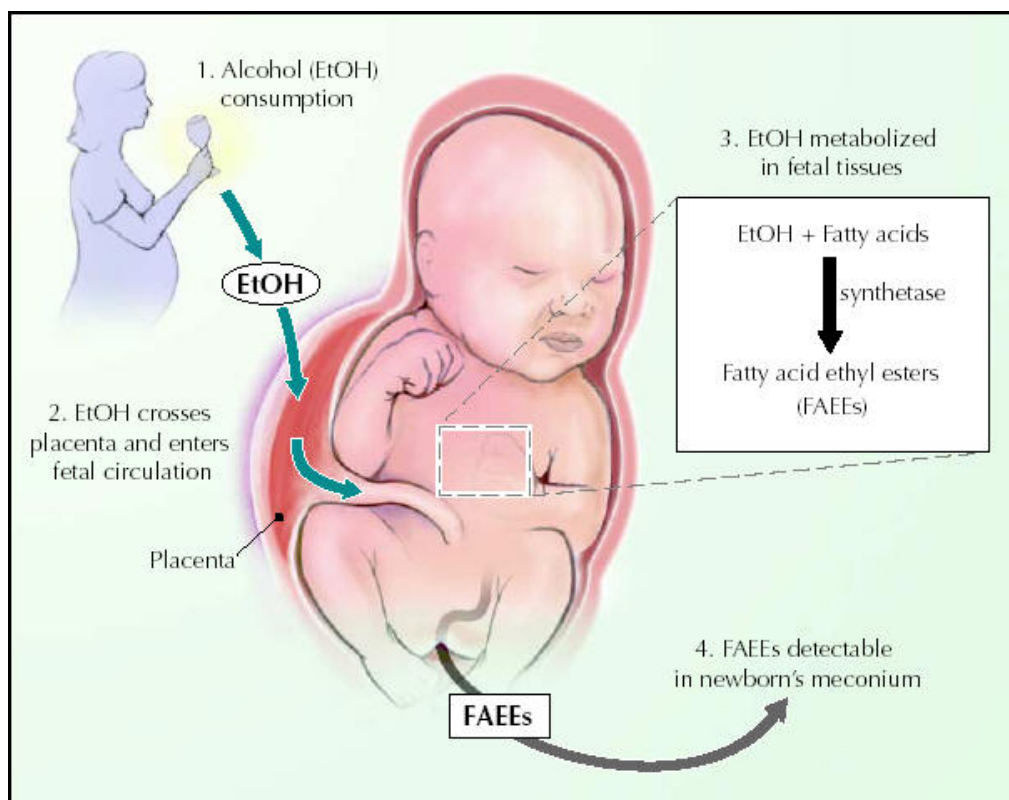
Small hydrophobic stuff can do this!

Lakshmi Sharma Diffusion - Cell membranes and Transport

Ex:  $O_2$ ,  $CO_2$ , ions, ethanol

The placenta (where fetus gets nutrients) is also covered by a semi-permeable membrane

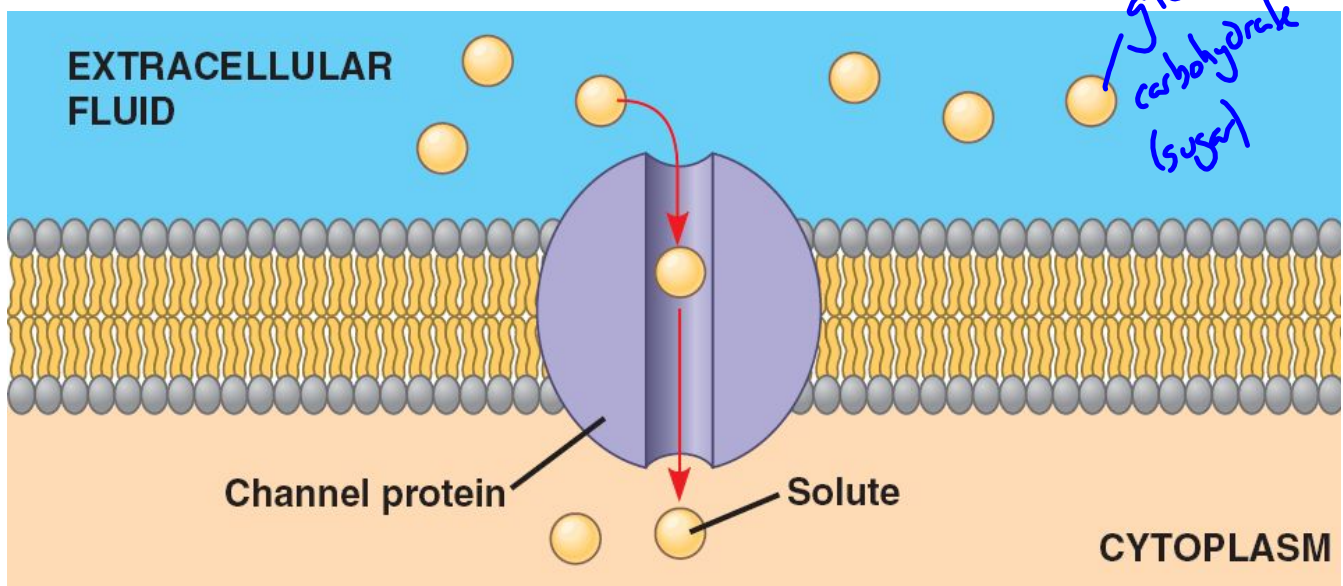
This is how a fetus can be exposed to alcohol if the mother drinks while she is pregnant.





## Facilitated Diffusion

Diffusion across the cell membrane with the help of channel proteins.



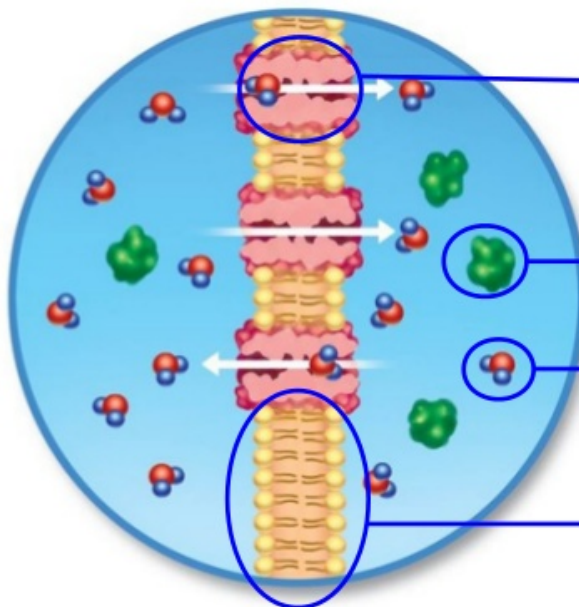
## Osmosis

The facilitated diffusion of WATER across the cell membrane through special protein channels called "aquaporins"

prefix means  
- aqua water

suffix means  
- porins pores, holes

### Passive Transport: Osmosis



aqua  
porins

glucose

water

phospholipid bilayer

## SALT SUCKS!

Water moves towards higher concentration of salt

(solute). *alot* *concentration* *same.*

Hypertonic      Isotonic      Hypotonic

