**Membrane Transport**

I. **Intracellular Fluid**– the liquid in the nucleus (nucleoplasm)

and the cytosol.

**Interstitial fluid** – fluid that surrounds the exterior of the cell

II. Plasma membrane is **selectively permeable** – some substances

pass through and others do not.

III. **Passive transport** – things that pass thru the membrane

without requiring ATP (energy)

 A. **Diffusion** - movement of a substance down its concen-

tration gradient (i.e. – from high to low concentration)

 1. **Simple diffusion** – solutes pass thru the bilipid membrane

 -Must be fat-soluble – fats, some vitamins, O2, and CO2, or

 -Very small – chlorine ions

 2. **Osmosis** – diffusion of water, must go thru protein pores.

 3. **Facilitated diffusion** – use a protein carrier to be get in

the cell. (glucose)

 B. **Filtration** – Fluids are pushed from areas of high pressure

(blood) to areas of low pressure (cells).

-Important in the kidneys.

-Not very selective.

IV. **Active Transport** - require energy (ATP) to move across the

membrane and are:

-either too big for pores,

-fat insoluble, or

-are going from low to high concentration.

A. **Solute pumping** – protein carriers that use ATP to pump

substances into or out of the cell against their concen-

tration gradient

 - examples are amino acids, some sugars, and ions such as

Na+ and K+ (important for nerve cells).

B. **Exocytosis**“out of the cell”– Cell wastes, hormones, mucus

are packaged in Golgi apparatus as a secretory vesicle.

1. Travels to plasma membranes, fuses, and contents are

“spit out”

C. **Endocytosis** “into the cell” - forms membrane around

 something to make a vesicle which fuses with lysosome in

cytoplasm and is digested

 1. **Phagocytosis** “cell eating” – white blood cells have

cytoplasmic extensions called **pseudopods** that engulf

bacteria

 2. **Pinocytosis** “cell drinking” – pit forms in plasma

membrane containing fluids w/ dissolved solutes.

-Common in cells that absorb things

- small intestine and the kidneys