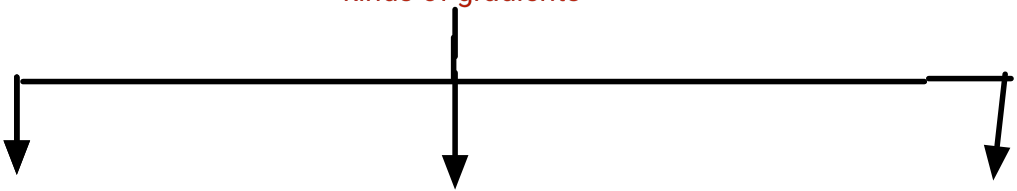
lecture (2) of physiology

organelles of the cell

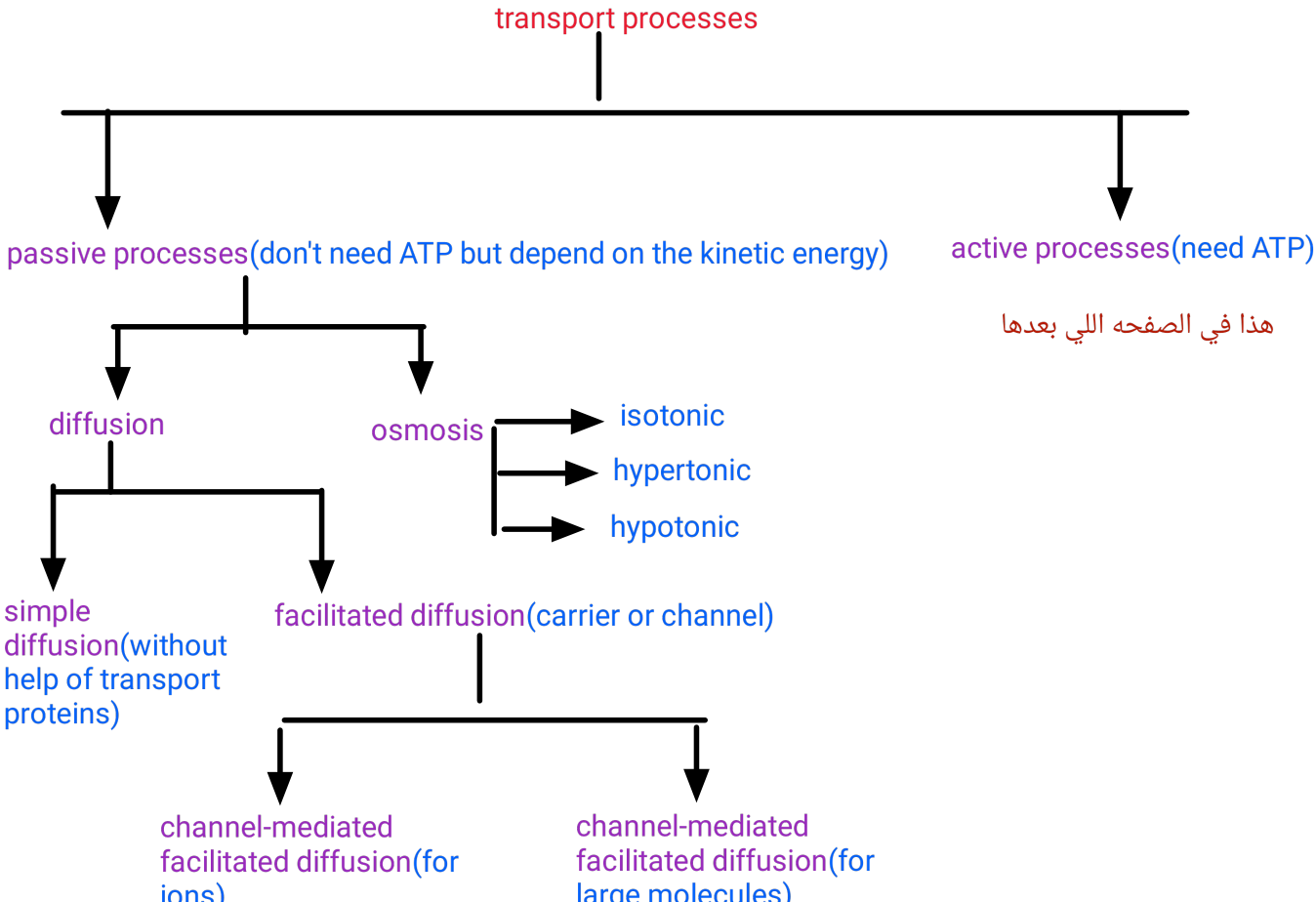
- centrosome (cell division)
- ribosomes (protein synthesis)
- golgi complex(modification in cis face and e exocytosis from trans face)
- lysosomes(digestive enzymes that digest substances, autophagy, autolysis and extracellular digestion)
- peroxisomes(they are detoxifications because they have oxidases such as catalase which decompose H202)
- proteasomes(have proteases , enzymes that cut the proteins to amino acids)
- endoplasmic reticulum (rough endoplasmic reticulum studded with ribosomes and its function is processing but smooth endoplasmic reticulum is responsible of storing and releasing of calcium ions.)
- mitochondria (ATP synthesis)
- Celia and flagella (movement) (Celia presents throughout all of the surface by the flagella just one) (Celia is always rotational movement but flagella is rotary movement in prokaryotic and bending movement in eukaryotic)
- nucleus (control center because it has the genetic materials or DNA , cellular activities, reduce ribosomes and nuclear pores control movement of substances)

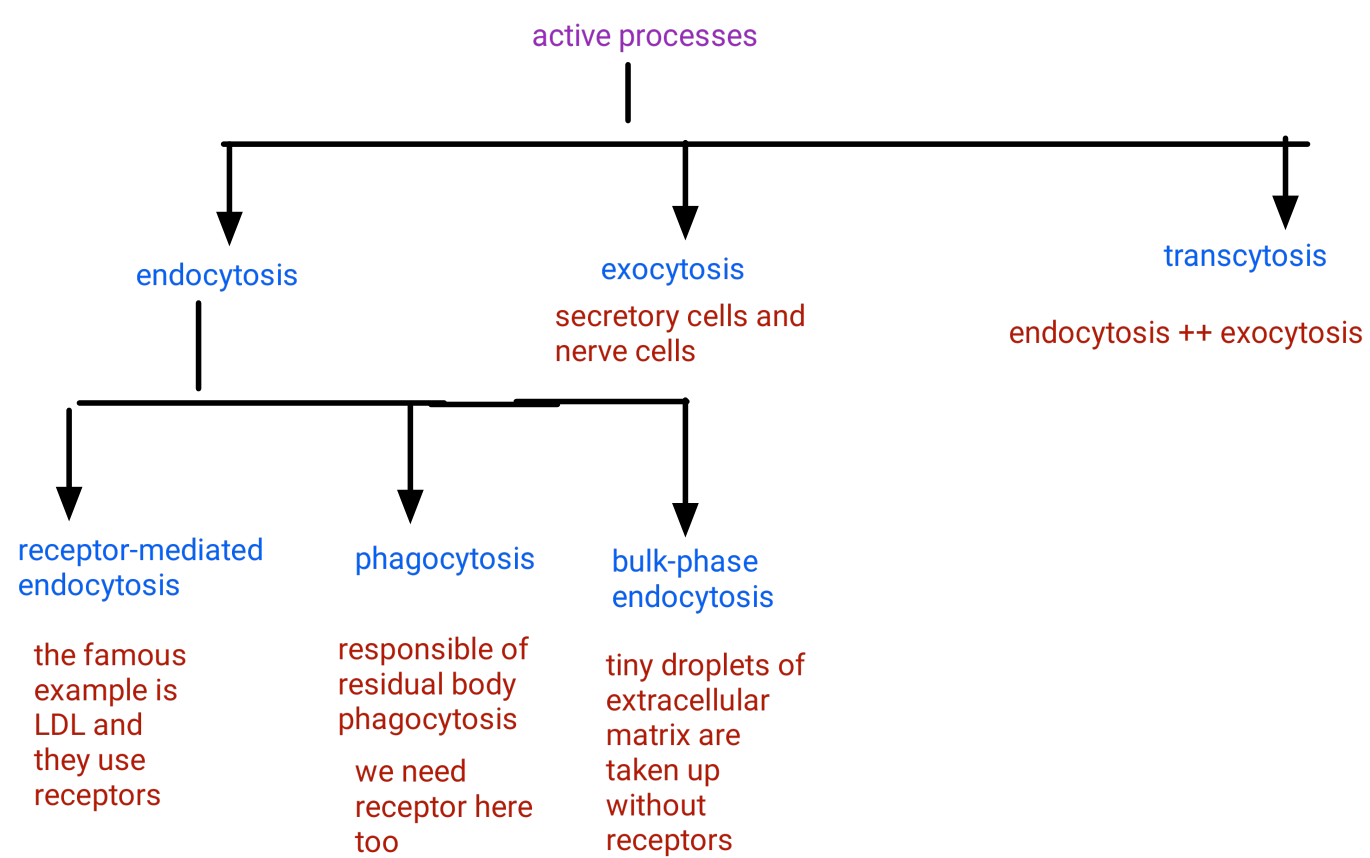


the difference of the concentration of a chemical from want a place to another , a substance will move downhill

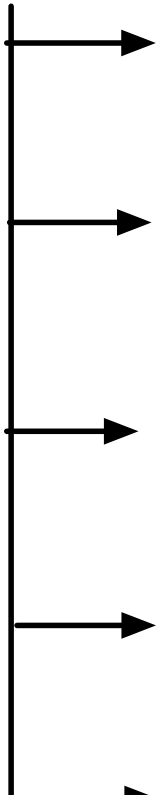
the difference in distribution of positively or negatively charged between the two sides of the plasma membrane

the combined influence of the concentration gradient and electrical gradient


transport processes
passive processes(don't need ATP but depend on the kinetic energy)
active processes(need ATP)
هذا في الصفحه اللي بعدها
diffusion
osmosis
isotonic
hypertonic
hypotonic
simple diffusion(without help of transport proteins)
facilitated diffusion(carrier or channel)
channel-mediated facilitated diffusion(for ions)
channel-mediated facilitated diffusion(for large molecules)


active processes
endocytosis
exocytosis
secretory cells and nerve cells
transcytosis
endocytosis ++ exocytosis
receptor-mediated endocytosis
the famous example is LDL and they use receptors
phagocytosis
responsible of residual body phagocytosis
we need receptor here too
bulk-phase endocytosis
tiny droplets of extracellular matrix are taken up without receptors

factors influence the diffusion



steepness of the concentration gradient(علاقة طردية)

temperature(علاقة طردية)

mass of the diffusion substance(علاقه عكسيه)

surface area(علاقه طرديه)

diffusion distance(علاقه عكسيه)