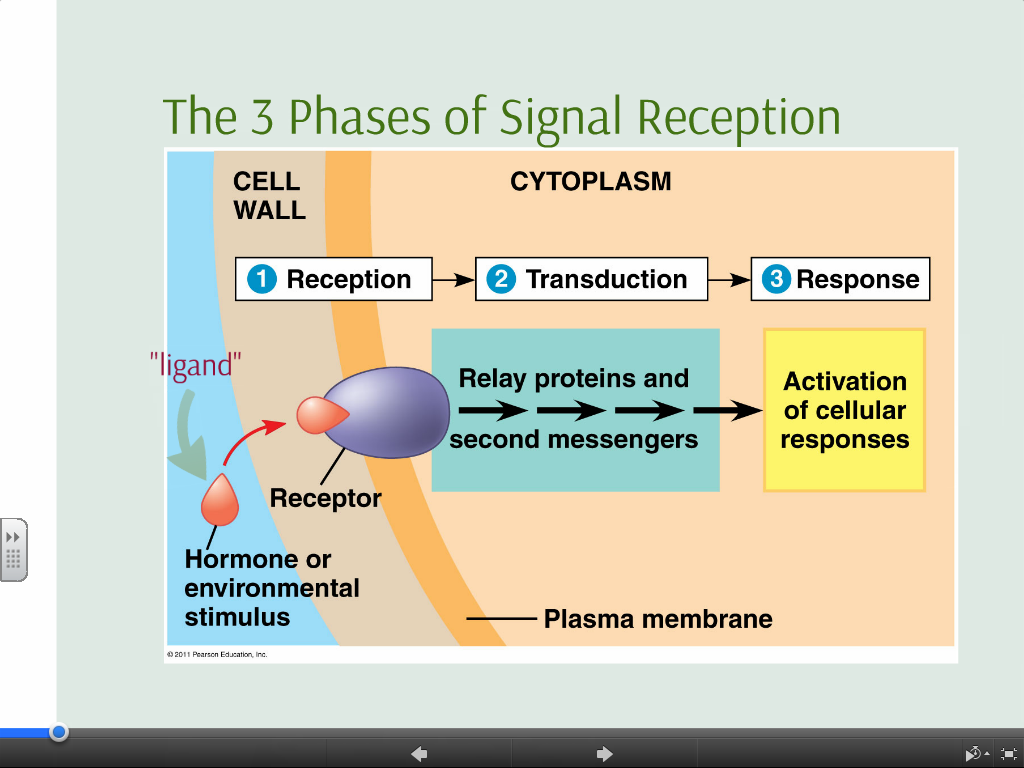
AP Bio 12 Prezi Notes: Cells #5 (Part1) Signaling Star:

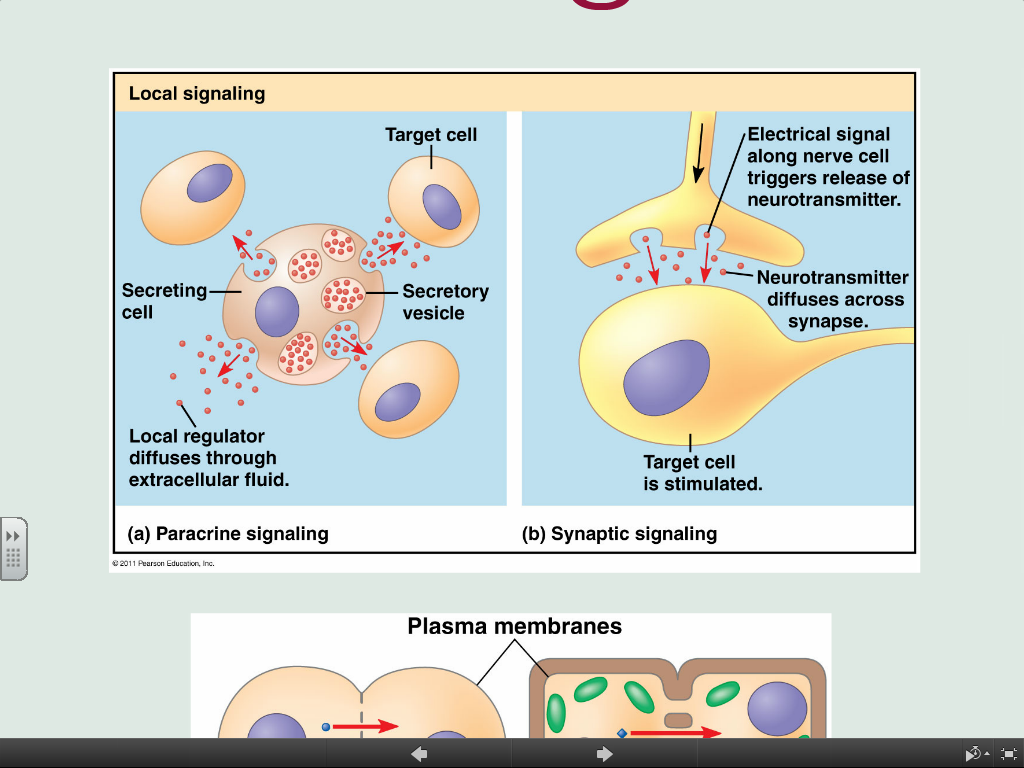
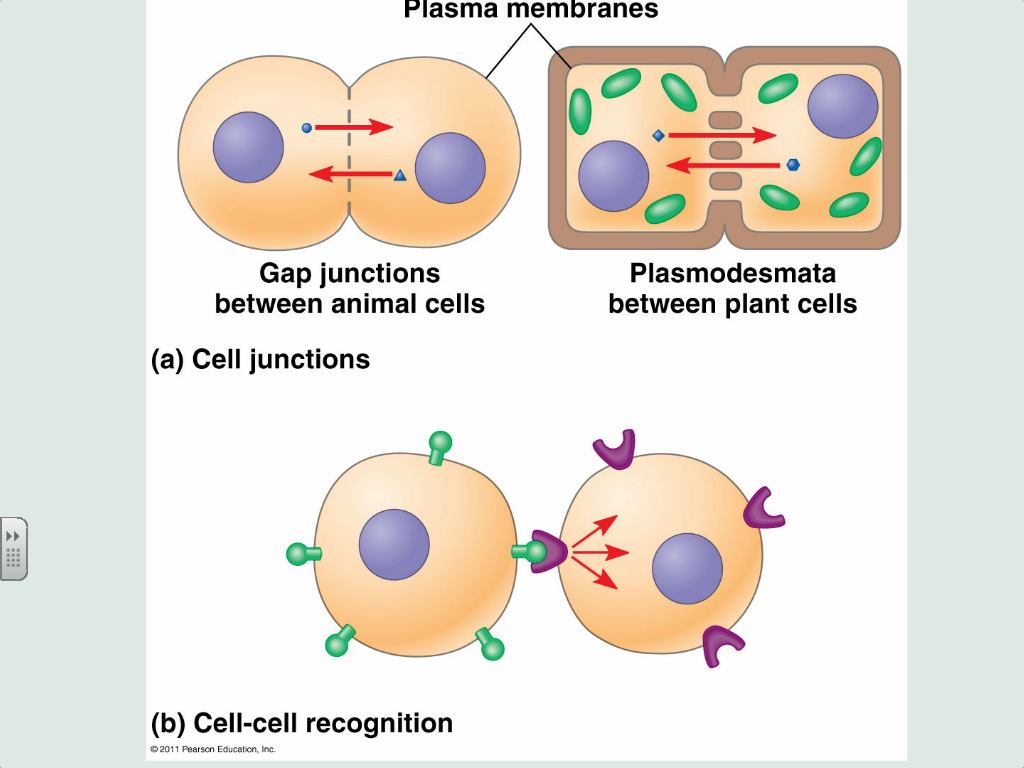
**Big Questions:**

Why do cells communicate?  
What does cellular communication look like?  
How is cellular communication utilized in unicellular and multicellular life?

**Theory: How Cells Communicate Signal Transduction**

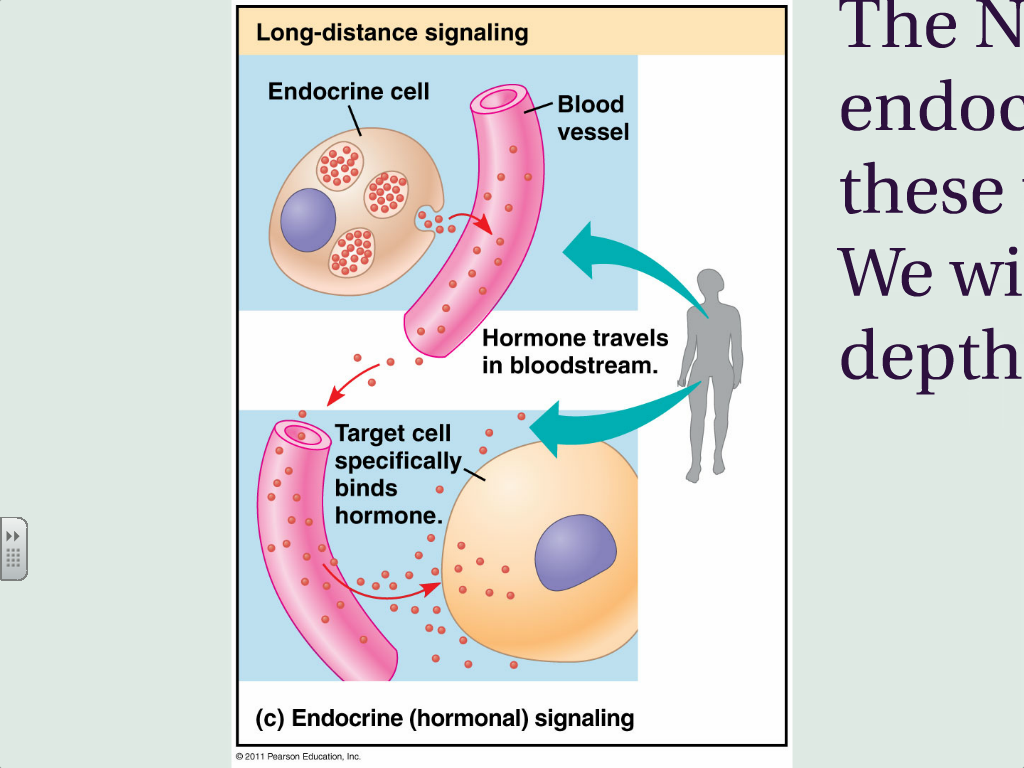


**How Signals Are Sent**



**Long Distance Signals**

The Nervous and endocrine systems handle these things in animals.

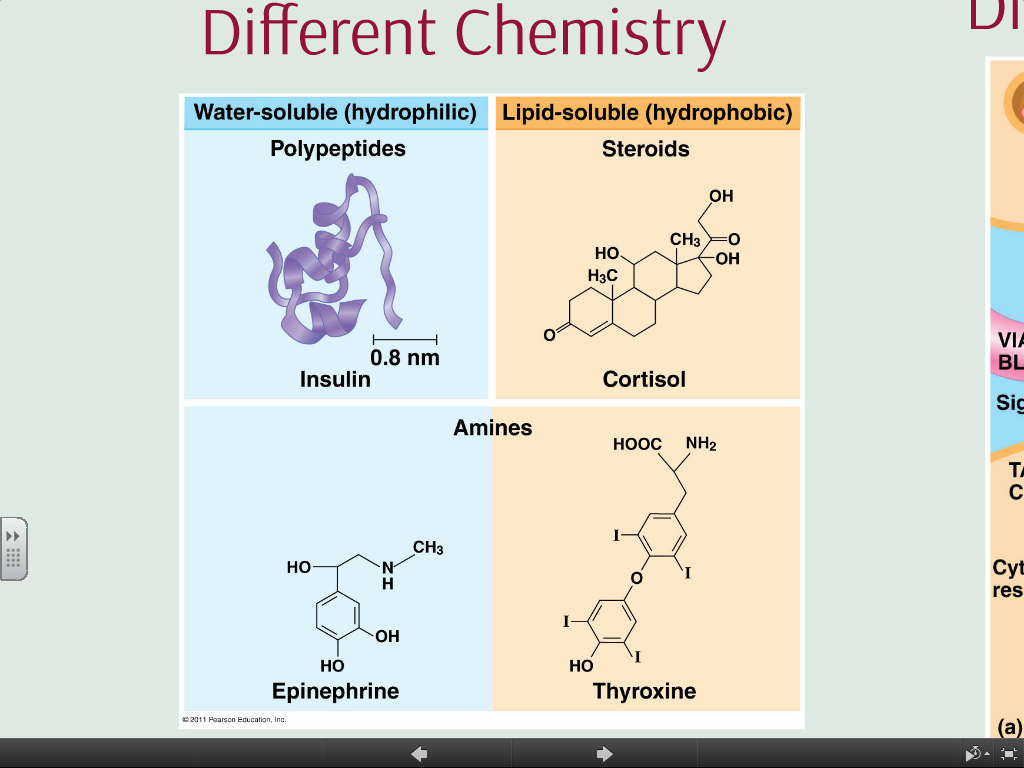
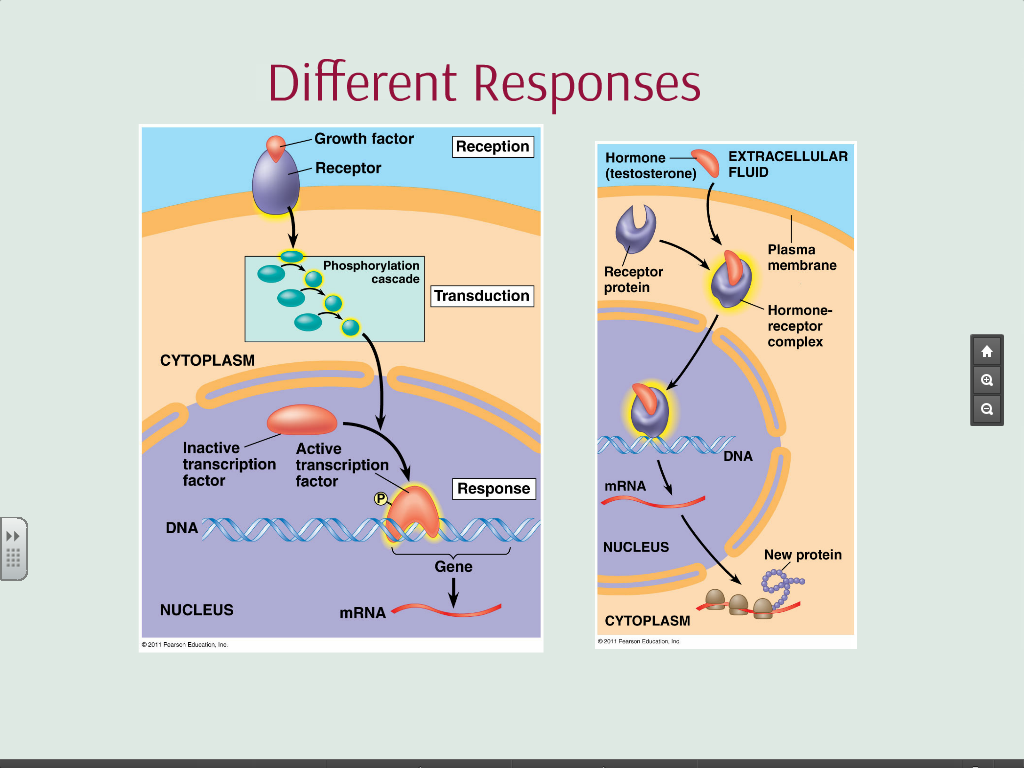
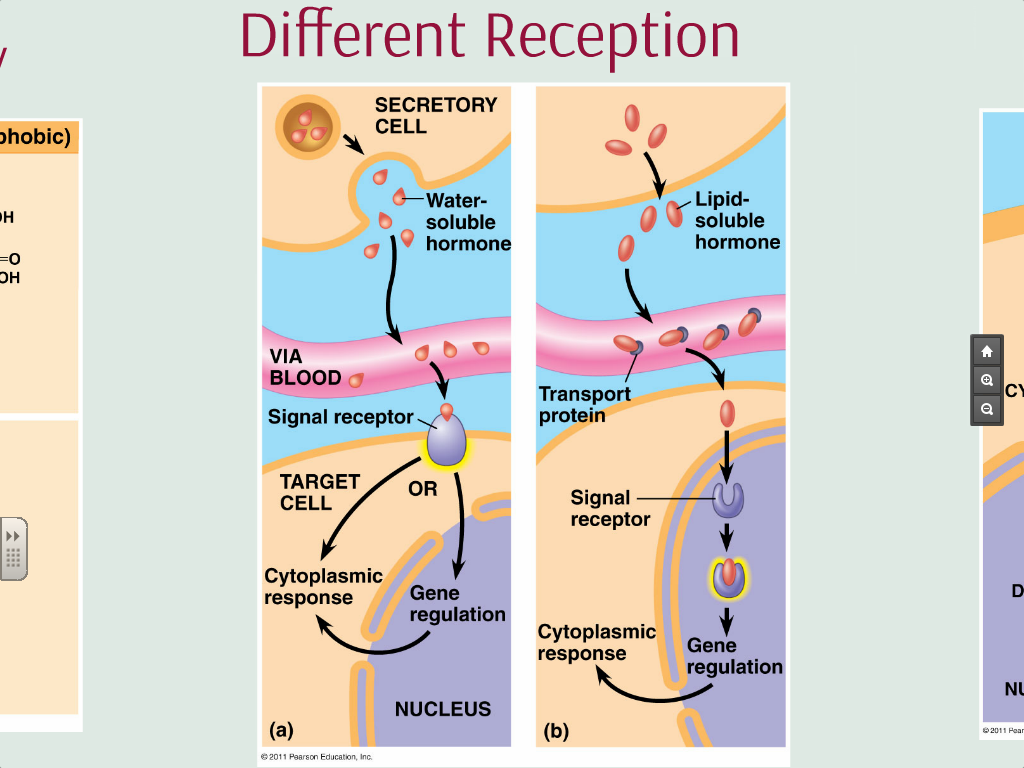


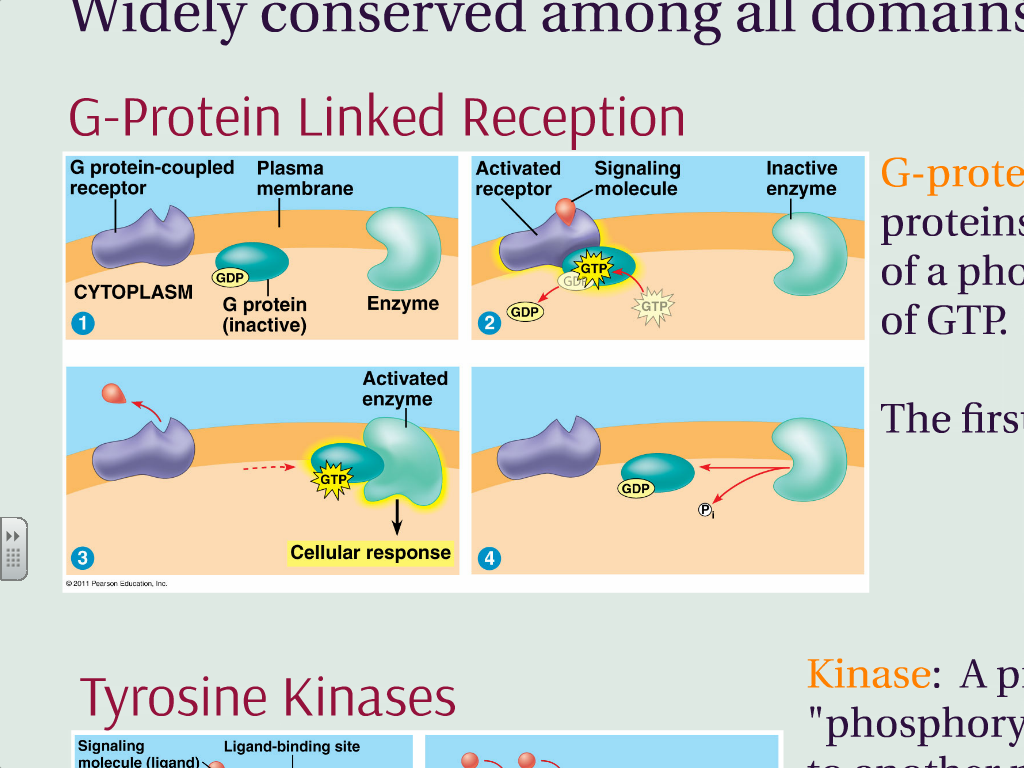
**Other Signals**

Pretty much any chemical or energy source could serve as a biological signal...though most are biologically created molecules

**How Signals Are Received**

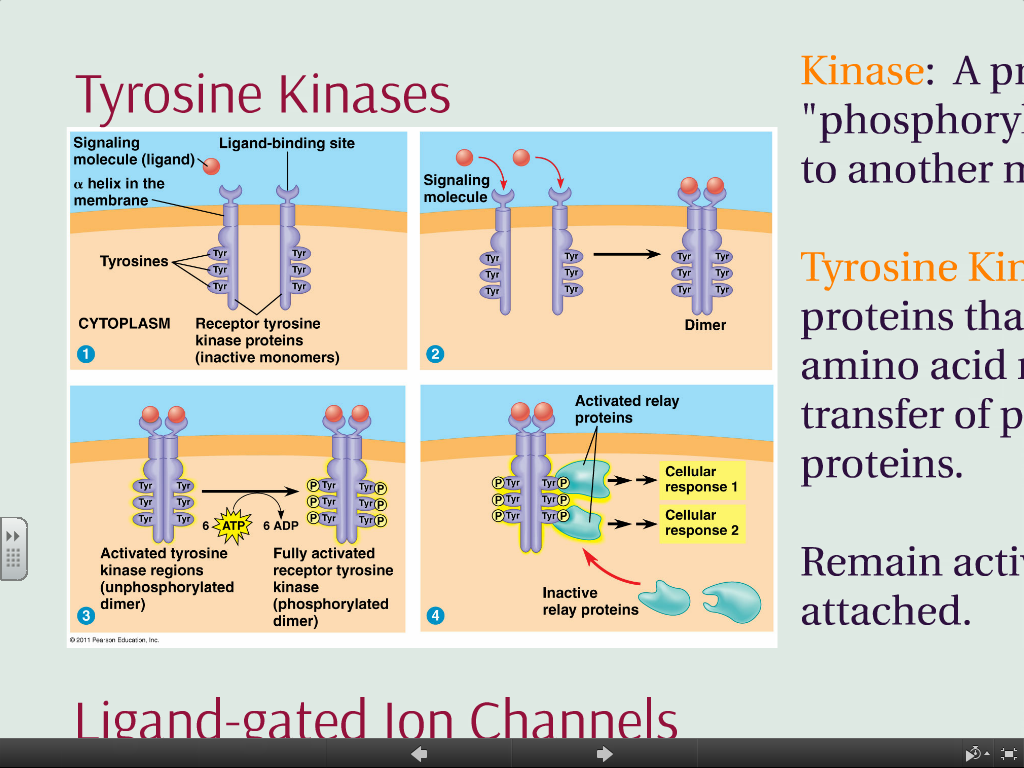
Different \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Different \_\_\_\_\_\_\_\_\_\_ Different \_\_\_\_\_\_\_\_\_\_\_\_

**Signaling Pathways**

Widely conserved among all domains, why?

**G-Protein Linked Reception**

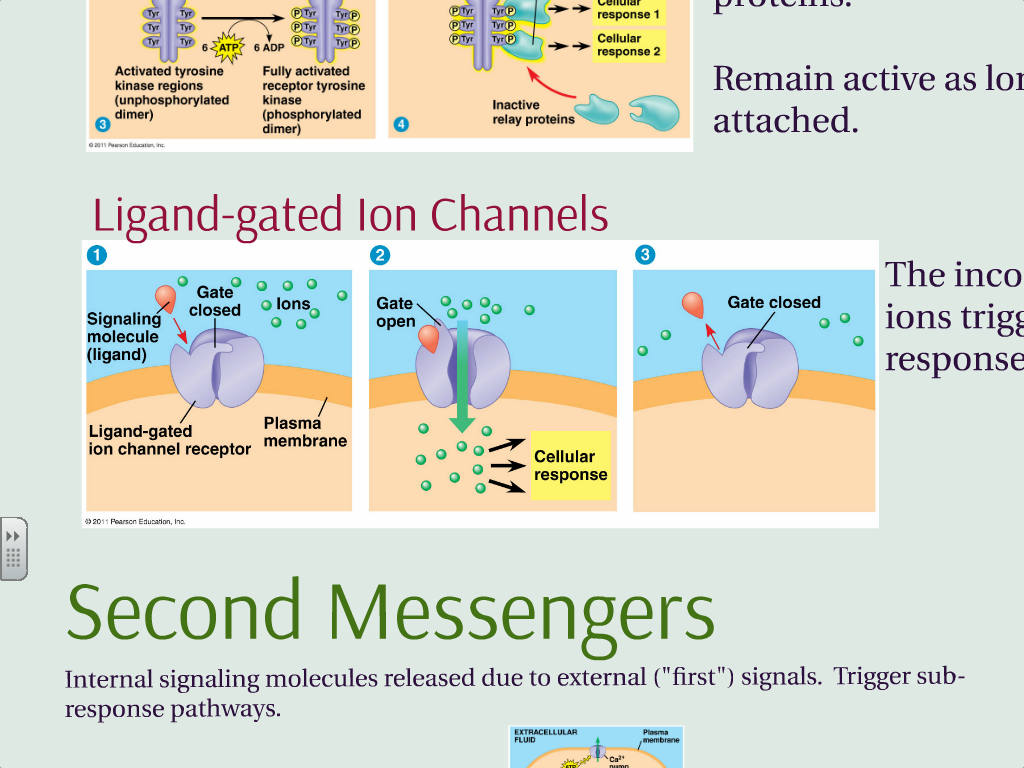
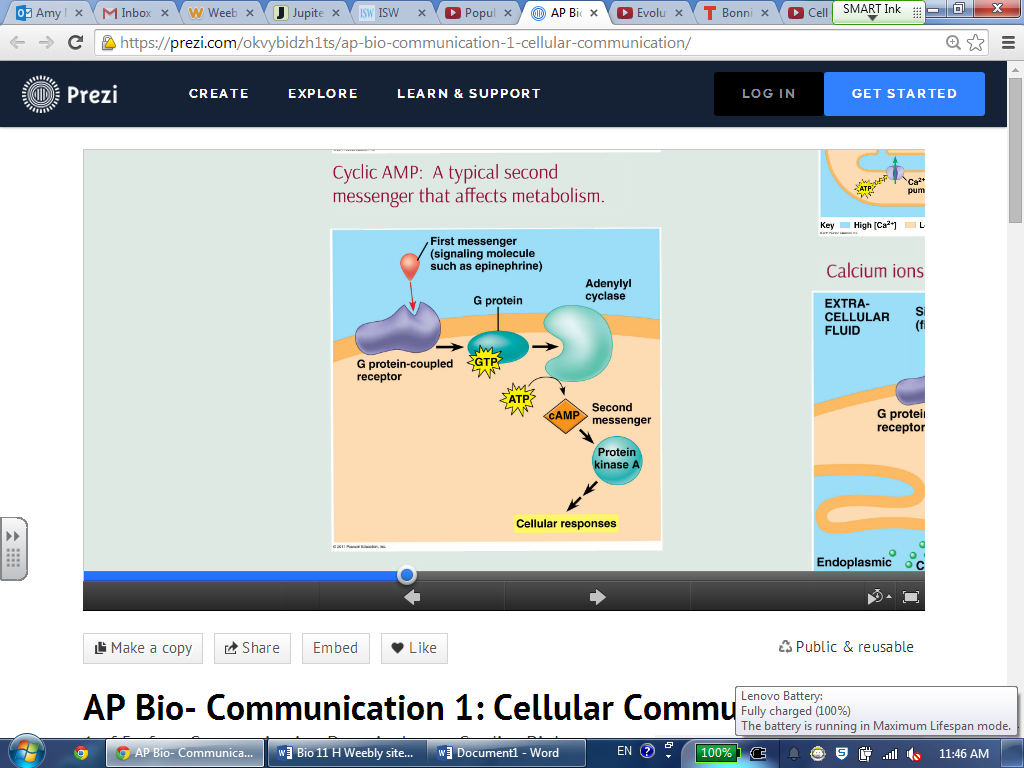
**Tyrosine Kinases**

Kinase:

Tyrosine kinases:

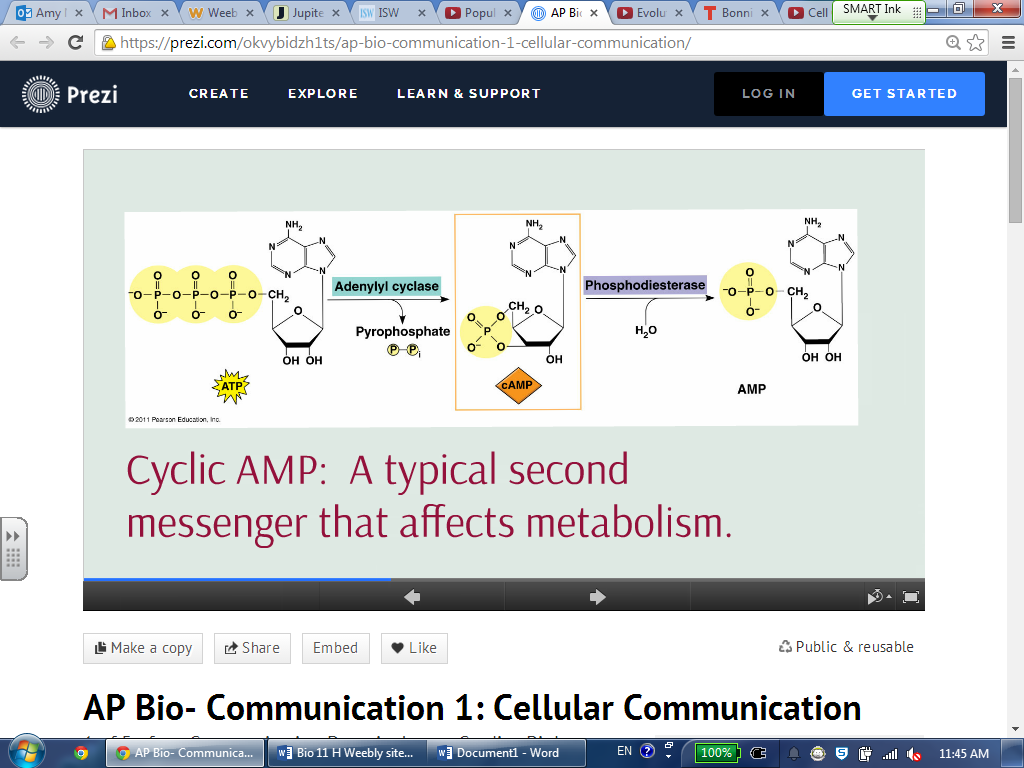
Remain active as long as ligand is attached

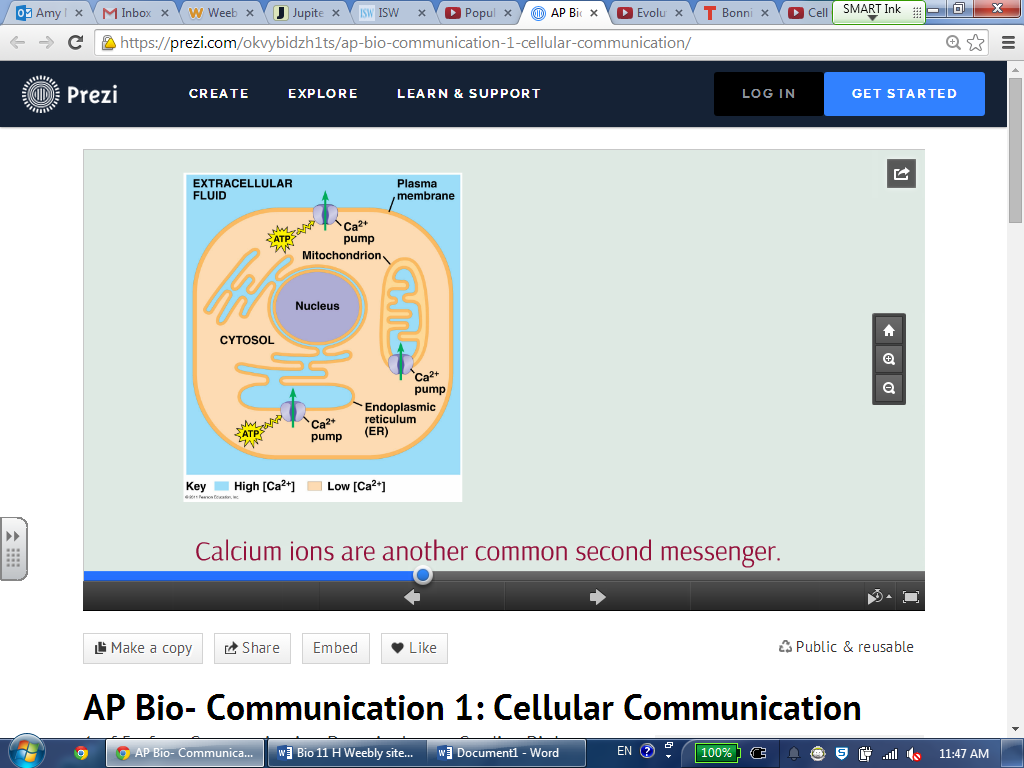
**Ligand gated ion channels**



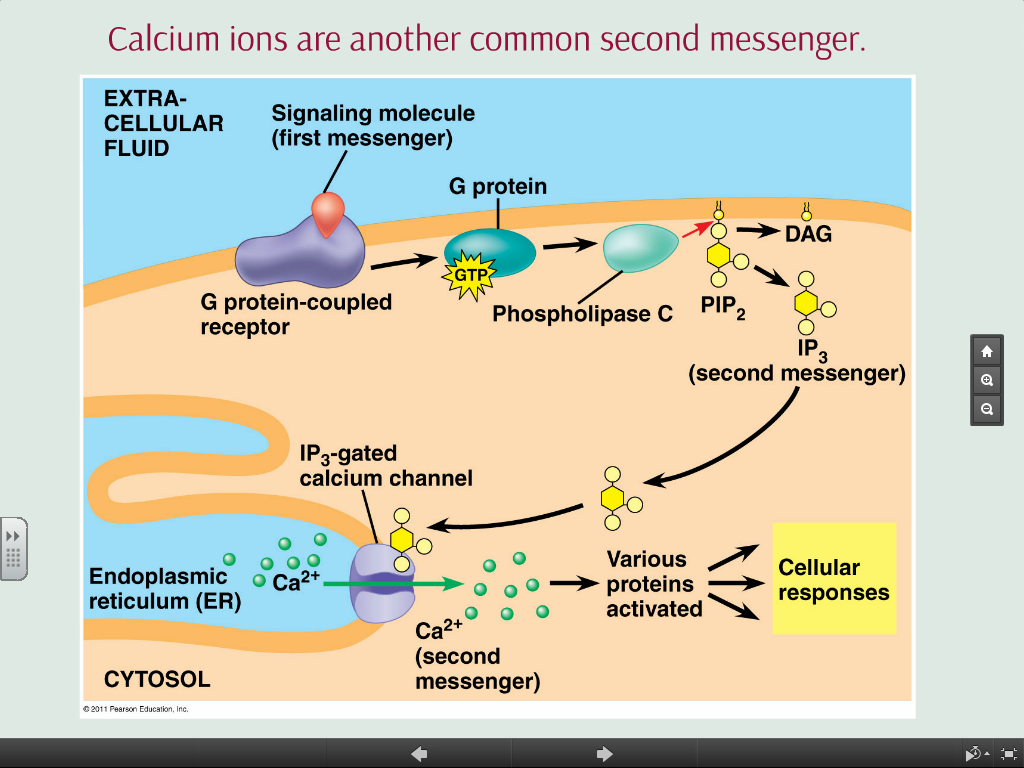
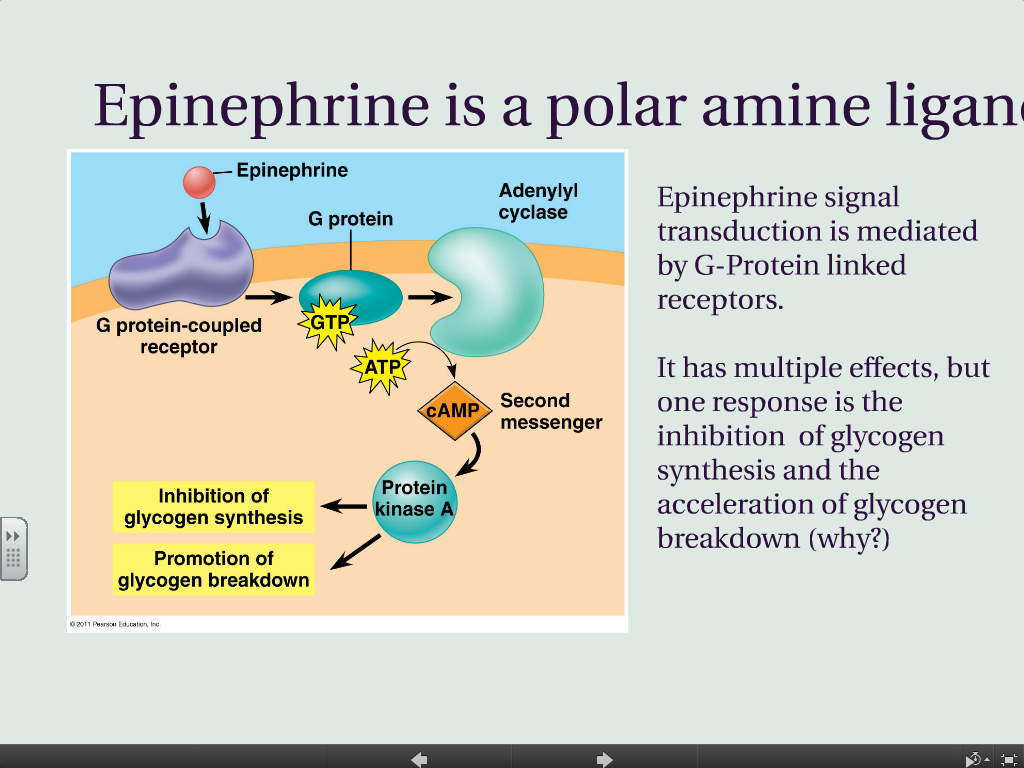
**Second Messengers**

1. Cyclic AMP:





1. Calcium ions:

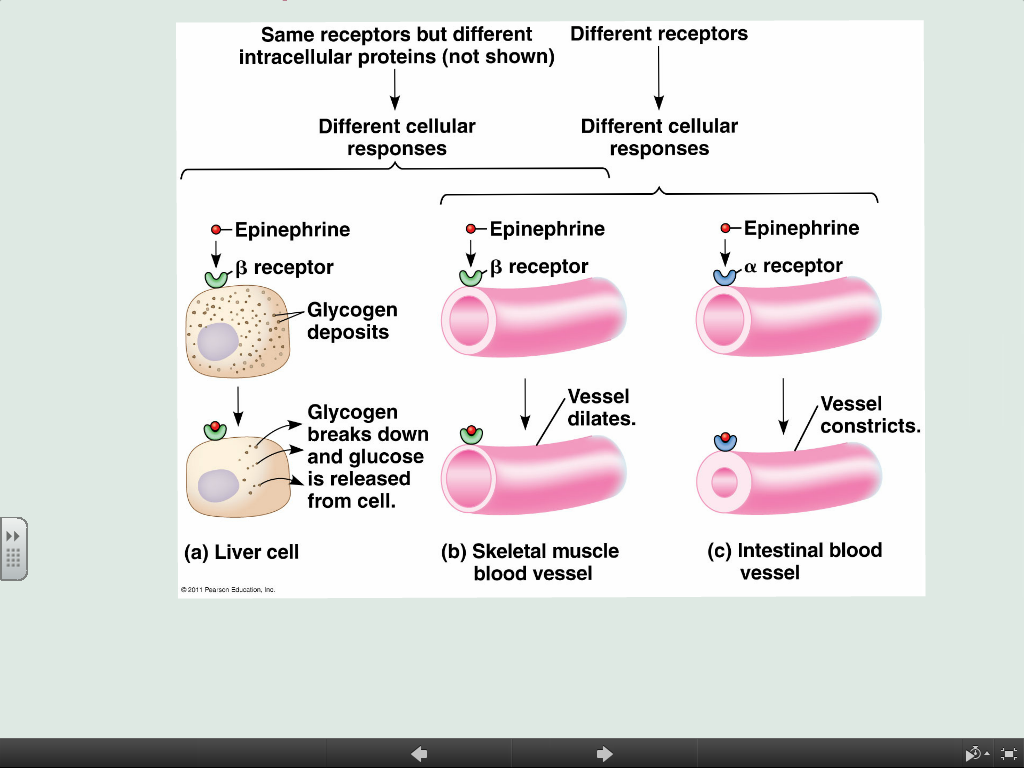


**Epinephrine:**

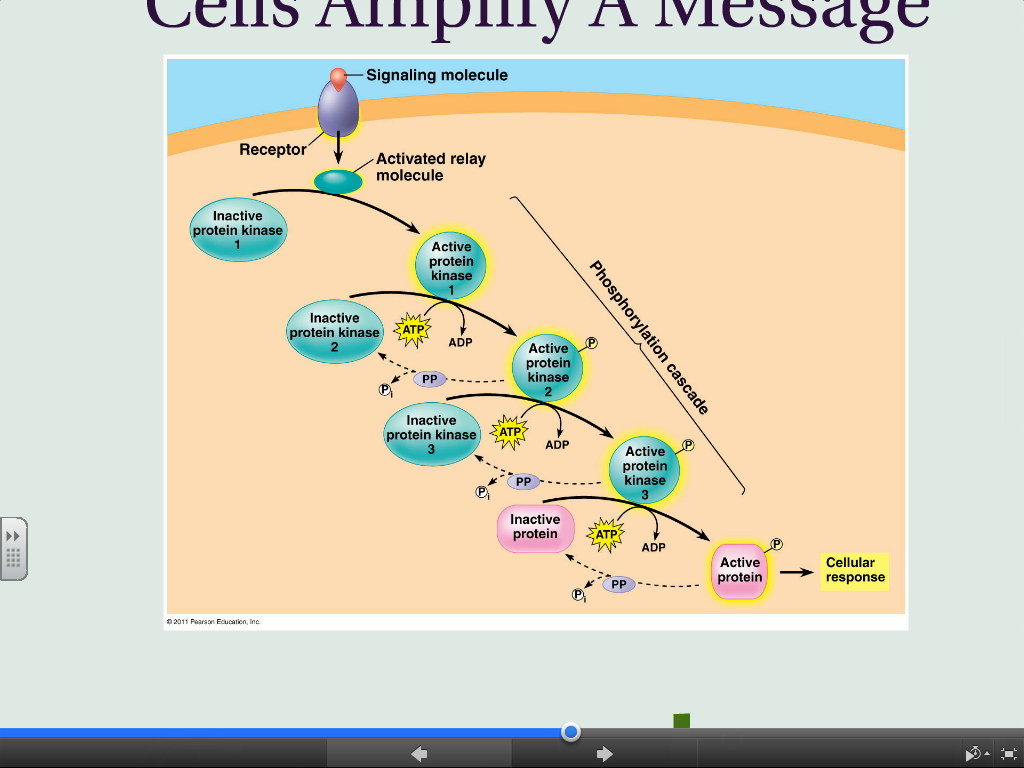
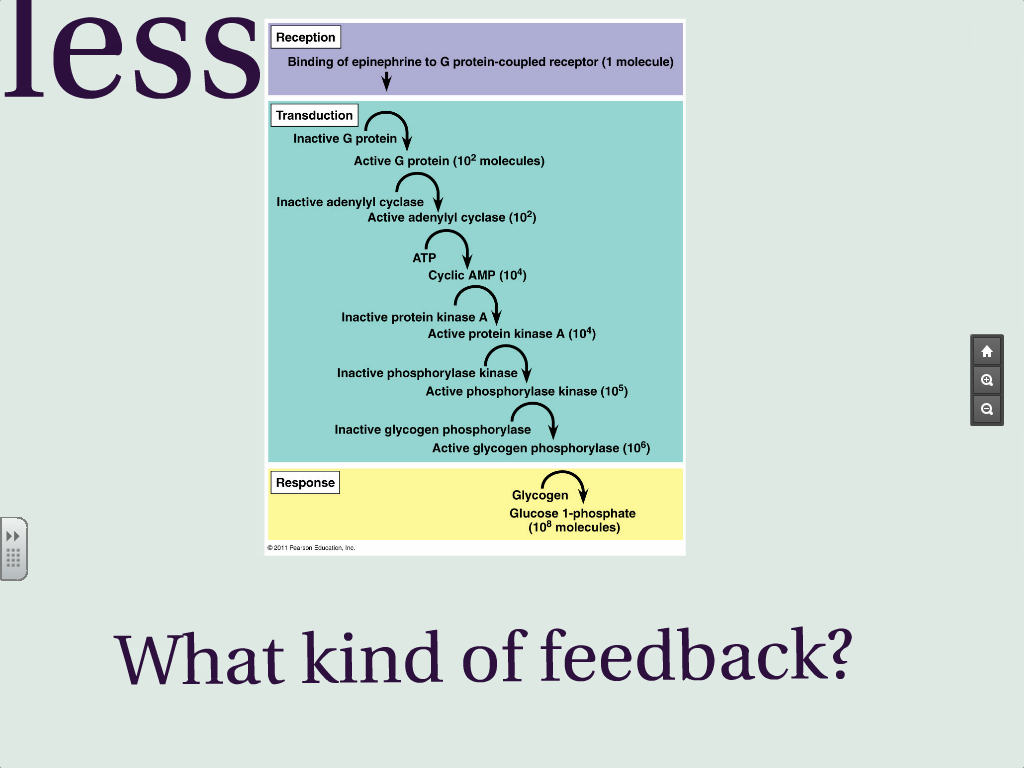
* Aka "Adrenaline"
* A common hormone in vertebrates.
* Involved in short term stress ("fight or flight") response.
* Is a polar amine ligand
* Epinephrine signal transduction is mediated by G-Protein linked receptors.
* It has multiple effects, but one response is the inhibition of glycogen synthesis

and the acceleration of glycogen breakdown (why?)

The ligand isn't important. The response is!



**Amplification: more for less**



What kind of feedback?

**Complication:**

A "Branching" Network

