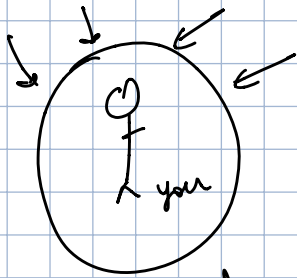


MEMORY

→ Nervous system and the immune system of the body have memory.

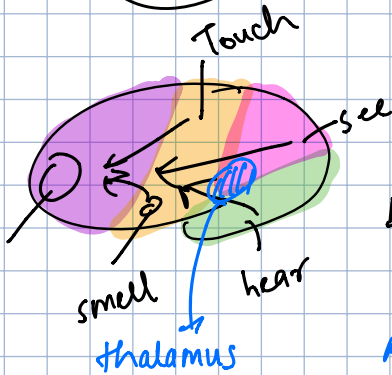
Why do we need memory? Why do we need to remember?

- connect one moment to next
- connect one day to another



Environment

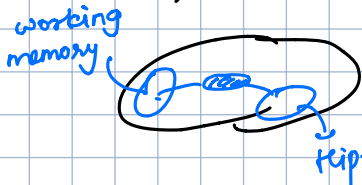
From the moment you are born to death, you are constantly surrounded by **INPUTS**.
Inputs are important for memory.



While reality is a smooth uninterrupted experience for you, the things that you see, touch, smell, feel, hear all go in different parts of the brain. **Thalamus** is responsible for segregating information.

Thalamus = Traffic Cop.
All these things get sent to PFC in frontal lobe.

In the frontal lobe, there is short-term memory or **working memory**.



Hippocampus is where long-term memory is stored.

→ RAM (short term memory)
→ HDD (long term memory)

The theory is that short term memory becomes long term during **SLEEP**.
Just like your brain remembers big things, many important small things are remembered by your immune system.

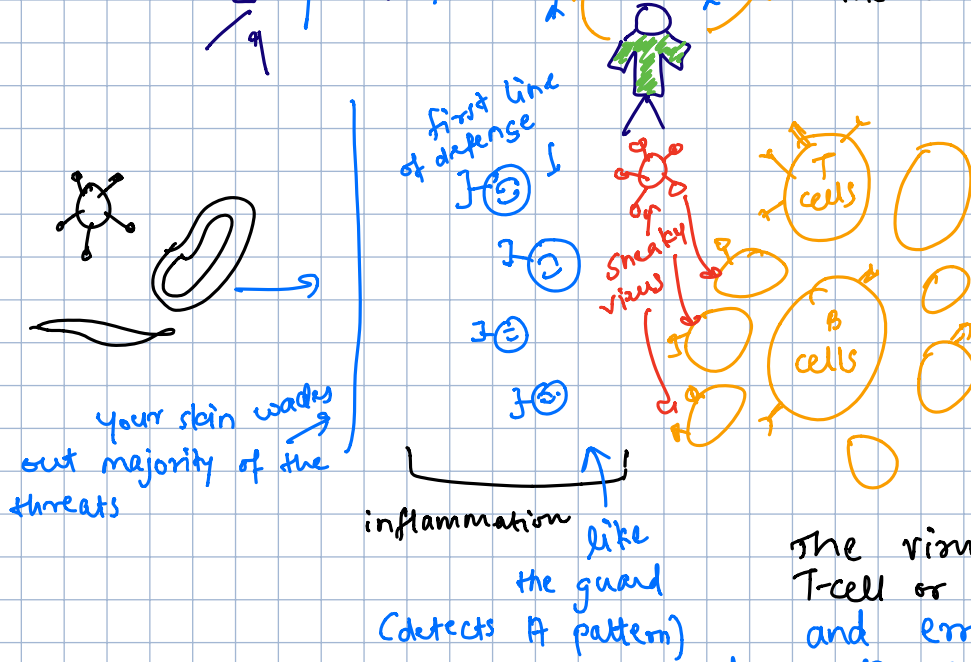
Immune System - It protects the body from something that lives off of it or within it. It is not protecting the body from something large and operating outside.

Restaurant Example - I want to open a restaurant



- Hire a guard to detect **A Pattern** (detect xrd, metallic objects)

- Hire a bouncer to mingle with the crowd and identify **A CULPRIT**.



T cells and B-cells are our bouncers. They have receptors of different shapes. Our body has 10^{10} receptors. Just by these many numbers of receptors, by sheer probability, our body can identify a virus which it has never seen before.

The virus tries to fit itself on T-cell or B-cell receptor by trial and error. These B-cells start cloning to create an army against that virus and kill it.

After cloning itself, it creates a memory B-cell, which remembers the receptors of the virus and the next time the virus comes in, the memory B cell will remember and tackle it.

Problems with memory

- forget
- Confuse (Auto-immune diseases)

↳ when you confuse your body cells with a virus.

VACCINATION - ex. of telling a child not to go into a stranger's car. you are telling her of this experience and educating her of this harmful pattern.

