

# DEPRESSION

Clinical depression is a medical terminology. There is global consensus on what constitutes depression. There are 9 things to look for. You are said to be depressed if you have atleast 5 things for two weeks.

These things we are familiar with -

- ① A depressed feeling - sad, empty, helpless.
- ② Inability to feel pleasure / excitement.
- ③ Losing / gaining weight without trying to.
- ④ Sleep is altered - no sleep / more sleep
- ⑤ Slowing down - can't walk fast / run
- ⑥ Fatigue - loss of energy
- ⑦ Sense of guilt - worthlessness, I can do it but I can't.
- ⑧ Unable to concentrate / focus. They were good at focusing.
- ⑨ Suicidal thoughts / ideation / fantasies.

In the mental health spectrum, anxiety, panic and depression are separate disorders. You can have more than one.

Why should we talk about it?



It's common (1 in 10 people)

Genetics (family history, genes)

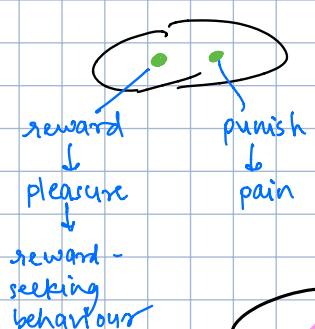
We don't understand it. Think about a patient with heart attack. There is chest pain and we believe it. There are triggers, high BP, blood test to prove.

In depression, there are symptoms and triggers as well but there is **NO TEST. SHOW ME THE PROOF!** Both heart attack and depression can kill you.

Related to the primitive brain instinct of  
**PLEASURE & PAIN !**

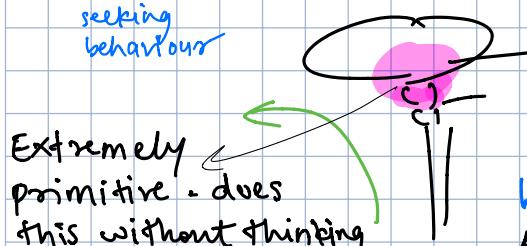


It is extremely important for the genes to make sure that the species survive! The genes have done all the hard work over millions of years to ensure survival.



In the brain of every organism, there are two parts for reward & punish.

For a species to survive - you need food & sex.

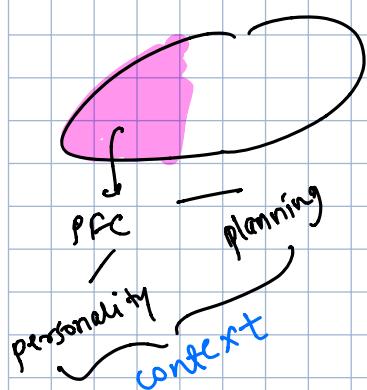


Limbic system (emotions)  
Brainstem (life)

Where does happiness come in?

Any emotion (pleasure or pain) that is evolved cannot be removed now. It can surely be upgraded but the base remains the same.

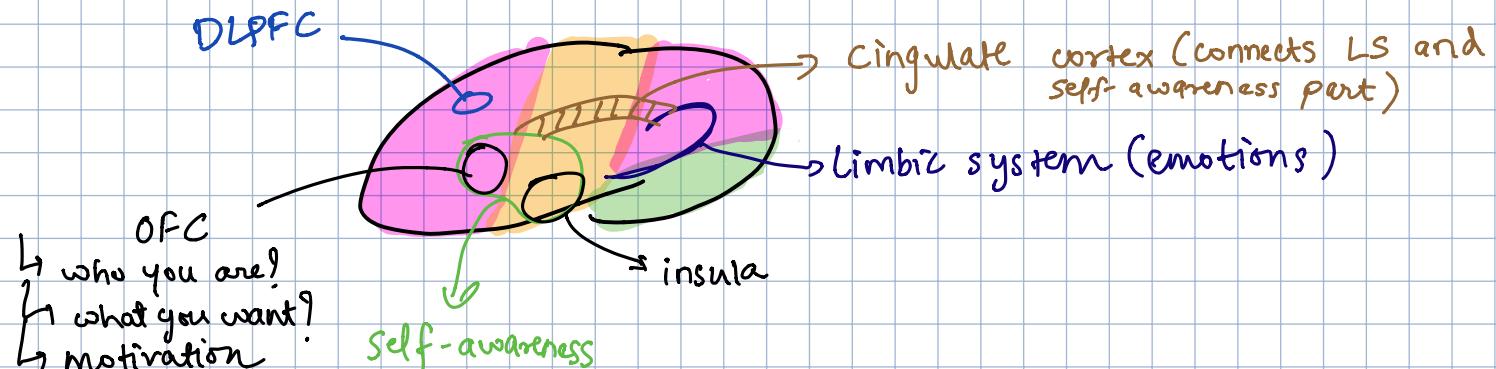
As your brain evolves, you are able to think more, you are able to give importance to certain things.



PFC will make you like one kind of pizza over another. Your pleasure centres don't really care. PFC adds this as your personality trait and decides that you like this kind of pizza. It will override/modulate your pleasure centre.

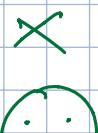
want  
↓  
pleasure  
like  
↓  
happiness.  
↓  
conditional in nature

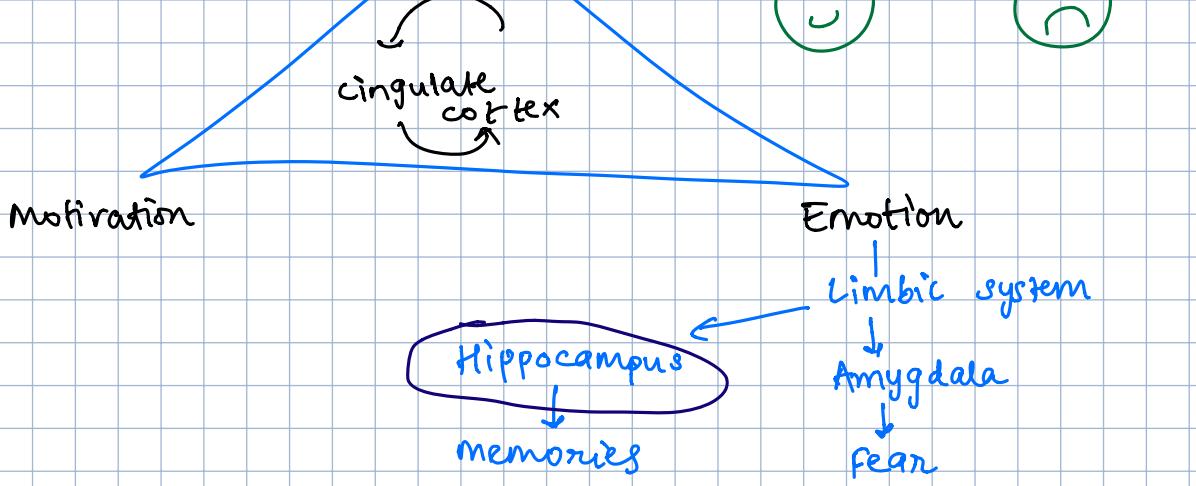
Understanding depression is understanding happiness because the brain circuit is the same.



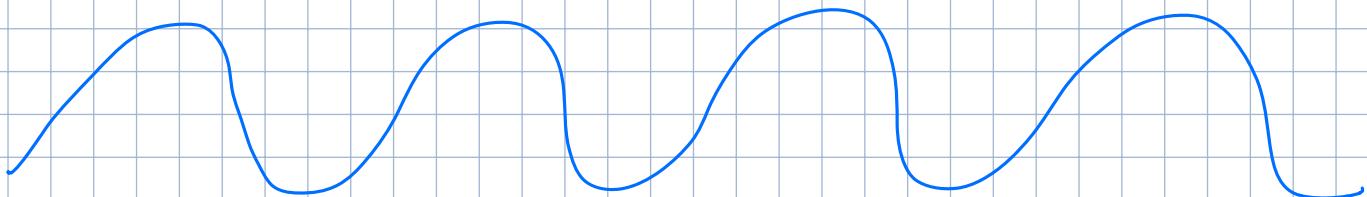
- ① DLPFC - dorsolateral prefrontal cortex  
executive - plan, sequence, arrange, keep memory
- ② OFC + insula  
↳ decides your motivation
- ③ Limbic system  
↳ decides your emotions

coffee-making example.





Happiness is like a wave -



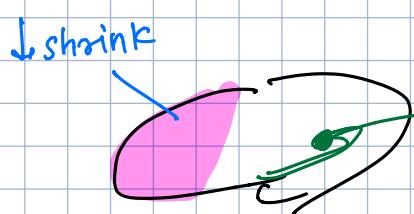
Stopping a dopamine pathway is perceived by your brain as a threat. Vice versa also true, stopping a threat make your brain happy.

In Depression, for some reason, your brain starts sensing the punishment more and perceives it as a threat. Certain changes start happening in your brain.

- DLPFC starts shrinking.

↓ concentration  
↓ planning  
↑ apathy

Threat

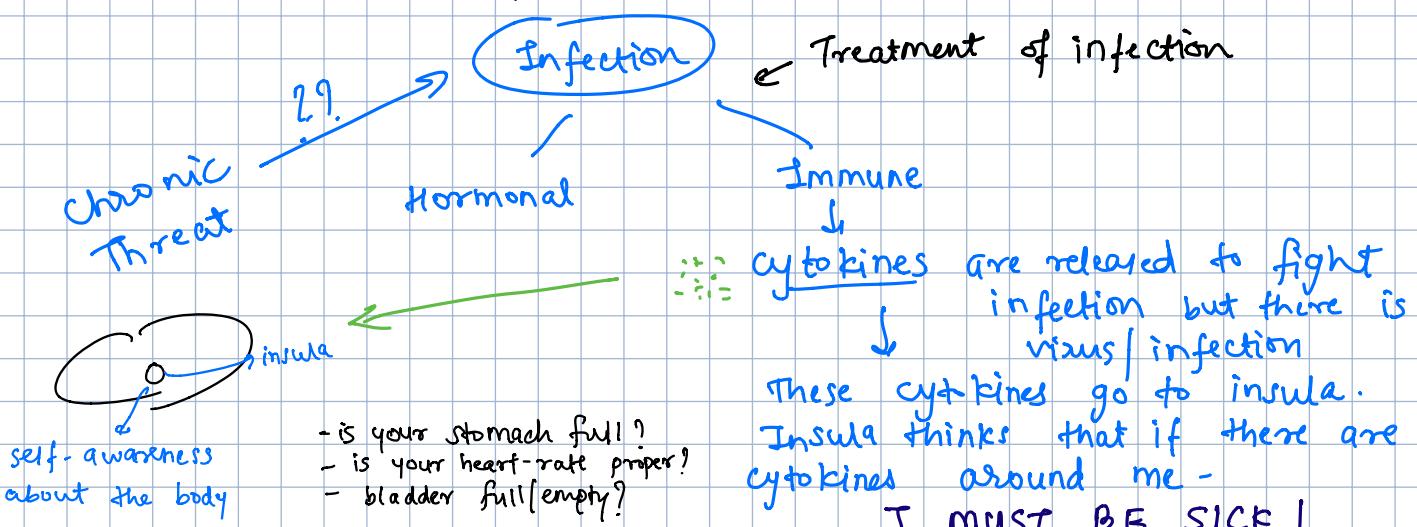


Hippocampus also starts shrinking

↓ memory and chronic depression can lead to dementia.

What is a common biological threat we face? Infection.

In chronic threat or depression, your brain thinks maybe there is an infection going on. It starts acting like there is an infection.



↓  
And it starts acting as if it's sick.

- bedridden
- loss of interest
- loss of appetite
- fatigue
- body ache

There is nothing wrong with your physical body (infection), your brain is sick and it's not visible.

your motivation is gone → tells DLPFC to not do anything which was anyway shrinking.

It is a constant loop and extremely paralyzing.

If you aware of what is happening, can you break the loop/pattern?

↳ This is a recognized form of therapy, cognitive behavioral therapy (CBT) you do certain things with your mind/thoughts, that will break the loop.

You need someone to guide and tell you 'it is going to be alright'.  
Beating depression is healing your brain.

It's not as simple as "GET OVER IT".

### TREATMENT OF DEPRESSION

#### Pharmacological

Drugs that increase  
Norepinephrine ↑  
Serotonin ↑  
Dopamine ↑

#### Non-pharma

CBT, meditation, Yoga to help you gain control of the loop.