

**Faculty of Medicine 2012**

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# *Physiology*

*Sheet*



**Price :**

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## Physiology Sheet

### The Brain

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Our **Brain** consists of three parts: Brain Stem, Limbic system and Cerebrum.

#### ***Brain stem: Self-preservation.***

The part of the brain that is responsible for respiration, Cardiovascular regulation and conscious level (sleeping and awareness).

It is the part of the brain that we cannot live without; it is also the most dangerous (hit on the back of the head-stem- cause losing all the functions above).

#### ***Limbic System (Diencephalon): Emotion.***

It is the emotional system, and more sophisticated than the brain stem, its functions are emotion, behavior and motivation.

This part is 13% larger in females; which explains why they are more emotional ( that doesn't mean that boys are not emotional :P).

Animals have a simple small limbic system!

#### ***Cerebrum: Intellectual task***

It is the part that's responsible for: Intelligence, decision-making, speech, thinking, memory and language formation.

It is not found in the lower animals!



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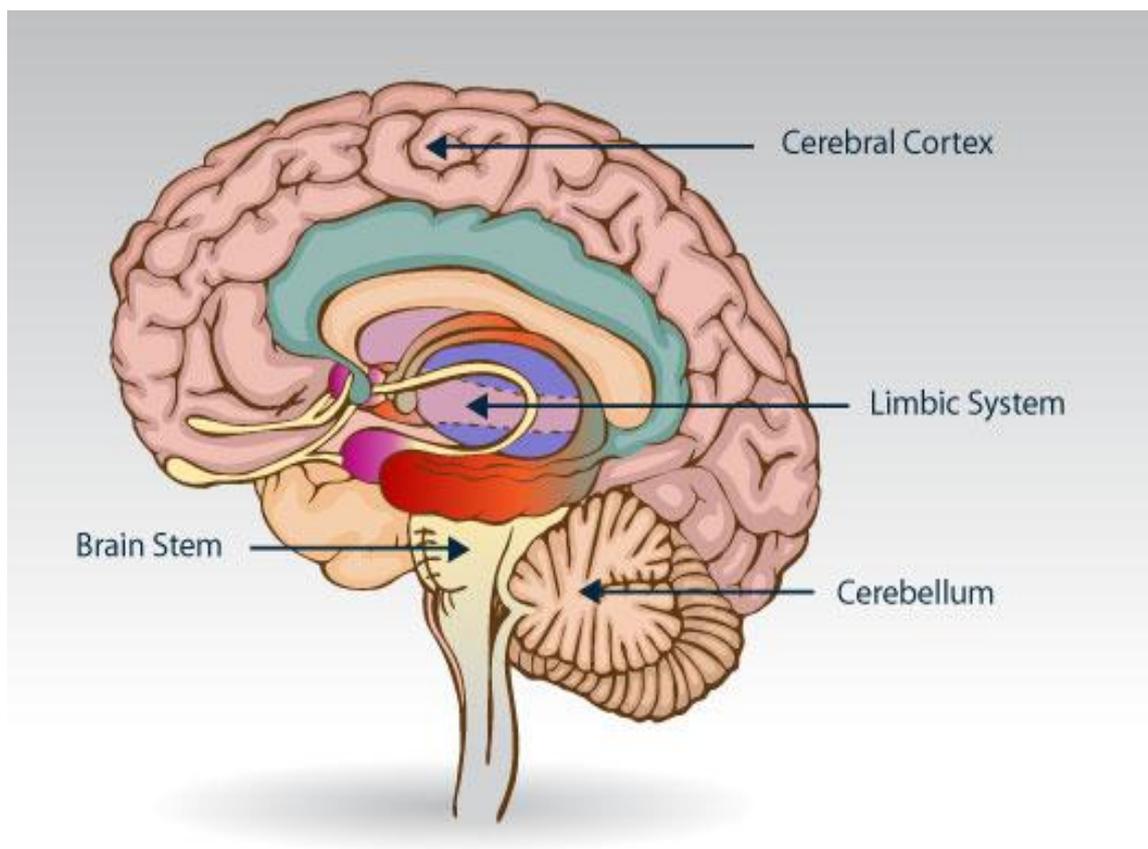
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Psychological disturbances are due to conflict between limbic system and cerebral cortex.

Medical students suffer from disturbances such as anxiety, depression and insomnia, and this is because the limbic system tells us that we want to do the things that we love (partying, going out...etc), but cerebral cortex tells you ( as an intelligent person) that you're a medical student; you have to stay home and study (logic, things that you must do).

These are the main parts (levels) of Brain, by studying them, we will get to know and diagnose so many disorders.



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#### ***Our Brain***

Brain composes of 100 billion Neurons and (3\*100) billion support cells (such a small area has that number of neurons shows the sophistication level of this organ).

Each Neuron receives 200-200000 inputs and gives a single output (axon) that then gives branches.

Brain utilizes 20% of total energy expenditure (only O<sub>2</sub> and glucose, that's why it's recommended to take any kind of sugar during long exams) .

Dinosaur: 1600 kg and its brain weighs 0.07 kg, which is 0.004% of its weight.

Human: 70 kg and the brain weighs 1.4 kg, which is 2% of the whole weight. (In average)

Brain as we mentioned is responsible for many functions, and in order for Neurons to communicate with each other there are two languages that brain uses which are Action Potential and Electro-tonic Potential and both are unconscious.

Good Luck

“Be the change that you wish to see in the world.”