

The Central Nervous System (CNS)

Not many things in the universe can compare to the brain. It weighs approximately 1.3kg, and consist of about 30 billion neurons and five to ten times that number of glial (supporting) cells. Remember, all of this fits into a gray and white gelatinous structure roughly the size of your two fists held next to one another.

Basically everything that happens to you, happens inside the brain. When you hear, see, taste, touch, feel, think, perform and action, moods, hunger, everything happens inside the brain.

Even while asleep, the brain handles so much traffic it would crash the world's telephone networks.

The amount of information entering the brain every second from the outside is truly staggering. How does the brain cope with all the information. The brain simply ignores what is not important or relevant at that moment, and focuses on what is important. For instance, if you want to read a good book and listen to music at the same time, you might after some time realize you cannot remember hearing the music, because you were engrossed in your book.

Of course, if something dangerous would happen, the brain would immediately jump into action to protect you, initiating whatever reaction is necessary to avoid injury. This event will also be stored in your memory to warn you in the future of possible danger.

The brain is the master controller for the entire body, keeping all the bodily functions in check. Take breathing for example. Sensors in the body inform the brain that carbon dioxide levels is rising in the blood, the brain instructs the body to breathe deeper, faster. The muscles in the chest need to be regulated to expand and contract in concert with the breathing...

The brain demands a lot to keep functioning. Even though it is only roughly two percent of your body weight, it requires about 20 percent of the oxygen

you inhale, and a fifth of the blood the heart pumps. A constant supply of blood, oxygen and glucose is essential for the brain's survival.

Even though science has been able to learn a lot about the brain, the brain is still pretty much unexplored. It is almost like a planet in space that is too far to reach with our technology today, and we can only make out the outlines of the land masses and topography of the planet.

The brain's capabilities is so vast, we have only begun to tap into its magnificent powers. For example, the networking in the brain is baffling, each of the brain's approximately 30 billion nerve cells connect with other nerve cells – their connection with each other is done via what is called dendrites. Dendrites are almost like the roots of a tree, long tentacles that originate at the nerve cell, and reach out to neighboring nerve cells. The amazing part is that each nerve cell can have tens of thousands of dendrites reaching out to other nerve cells. But wait, this is not all, no dendrite reaching out to another nerve cell touches the nerve cell.

Communication between the nerve cells via dendrites happen with electrical impulses. The signals between nerve cells get sent at speeds of approximately 225 miles per hour. After a dendrite has fired off a signal, it takes the dendrite about 1/2000 of a second to recharge itself for the next signal to be sent.

The brain is protected in a skull approximately 6 millimeter thick (at the top), with a watery fluid all around to cushion bumps, and a membrane covering the brain acting as gatekeeper.

Unlike other cells of the body, nerve cells do not get replaced by new ones when old ones die or get damaged. Luckily, we are born with so many nerve cells, even the 1000 or so that die each day does not affect the brain's performance. However, if enough dies, toward old age, the sense of smell may diminish, sight could get worse, taste will not be as acute, hearing will fade, remembering numbers or names will not come with the same ease as before. Still, the important functions will still be taken care of.

Because of the astounding networking between neurons, the brain has the capability to form new pathways to restore functions that may have been lost due to injury or disease.

Like the rest of the body, the brain also has threats for its survival. Tumors can cause a variety of problems, stroke is a major problem with varying severity, and brain injury (from accidents, bumps on the head).

Today we see the Neanderthal's brain as primitive. In a few thousand years from now, when man looks back, our brain today may look equally primitive because of the amazing potential of our brain. Let us keep improving ourselves by developing the capacity of this wonder of wonders. Our brain.

Resource:

I am Joe's Body – J.D. Ratcliff
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Resource:

www.wikipedia.org