The human brain is widely regarded as the most complex and influential organ in the human body. It governs all physiological functions and serves as the seat of our thoughts and consciousness. Although historical beliefs attributed the role of the mind's center to the heart, contemporary scientific understanding underscores the pivotal importance of the brain in this regard. In the words of Albert Einstein, "Religion without science is blind, science without religion is lame," emphasizing the value of a well-rounded and pragmatic approach to comprehending the world around us.

To tackle this issue, we need to delve into the brain's essential functions. Scientific studies have established that the brain comprises three primary components: the cerebrum, cerebellum, and brainstem. The cerebrum contains two cerebral hemispheres: the cortex (gray matter) and underlying white matter. Additionally, the cortex is divided into four lobes: the frontal lobe, parietal lobe, temporal lobe, and occipital lobe. Although there are numerous other aspects to consider, this analysis should suffice for our current purposes. Understanding the vital role of the brain is crucial. Referred to as the "command center of the human body's nervous system," the brain controls personality, movement, vision, breathing, sleep, emotions, memory, thoughts, hunger, temperature regulation, and other

essential bodily functions. A comprehensive grasp of the brain's anatomy and functions will enhance our comprehension.

"The brain is a remarkable and complex organ. Despite lacking muscular tissue, it encompasses blood vessels, nerves, neurons, and cells, with an average weight of about three pounds in adults. It comprises approximately 60 percent fat and 40 percent water, protein, carbohydrates, and salts. The brain communicates with the body via the spinal cord through billions of nerve cells. While it was traditionally believed that the human brain contains 100 billion neurons, contemporary scientists estimate the number to be around 86 billion. They also propose that each neuron is interconnected with roughly 1,000 other neurons, forming an intricate communication network" (E-book, – Mindfulness, and the Brain.) So, how does the brain work?

The cerebrum, which encompasses the cerebral cortex, is widely regarded as the foremost part of the brain. It plays a crucial role in regulating body temperature and facilitating various cognitive functions such as speech, judgment, emotion, problem-solving, learning, and reasoning. In contrast, the cerebellum, known as the 'little brain,' is responsible for coordinating balance and learned movements like walking. Its sensitivity to alcohol is well-documented, contributing to impaired balance and motor skills following alcohol consumption. Recent studies suggest that the cerebellum may also influence learning and decision-making processes.

Consequently, various brain exercises and training methods have emerged to enhance brain function, commonly referred to as 'rewiring the brain' or 'neuroplasticity.' Essentially, neuroplasticity denotes the brain's inherent capacity to establish new neural pathways.

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practicing yoga, Prānayāma, mindfulness exercises, and meditation. Journaling can also be beneficial.

According to a psychology programming project, sufficient sleep and stress management are crucial for maintaining cognitive health. Additionally, engaging in activities like games can help keep the brain active and alert, potentially identifying early signs of issues such as memory loss. These activities can also enhance language proficiency and brain training by enabling individuals to learn new things or review previous knowledge. As behavior psychologists put it, “We are all born to learn.” If you’re not inclined to engage in these activities, consider planting a tree, tending to flowers, or taking a nap for mental relief. These activities can benefit both you and society.

The activities to be performed serve various purposes, including brain rewiring or brain training benefits, as supported by scientific research. These activities aim to achieve the following:

1 Improve memory recall.

2 Enhance executive functions.

3 Increase cognitive functions and processing speed.

4 Enhance critical thinking skills.

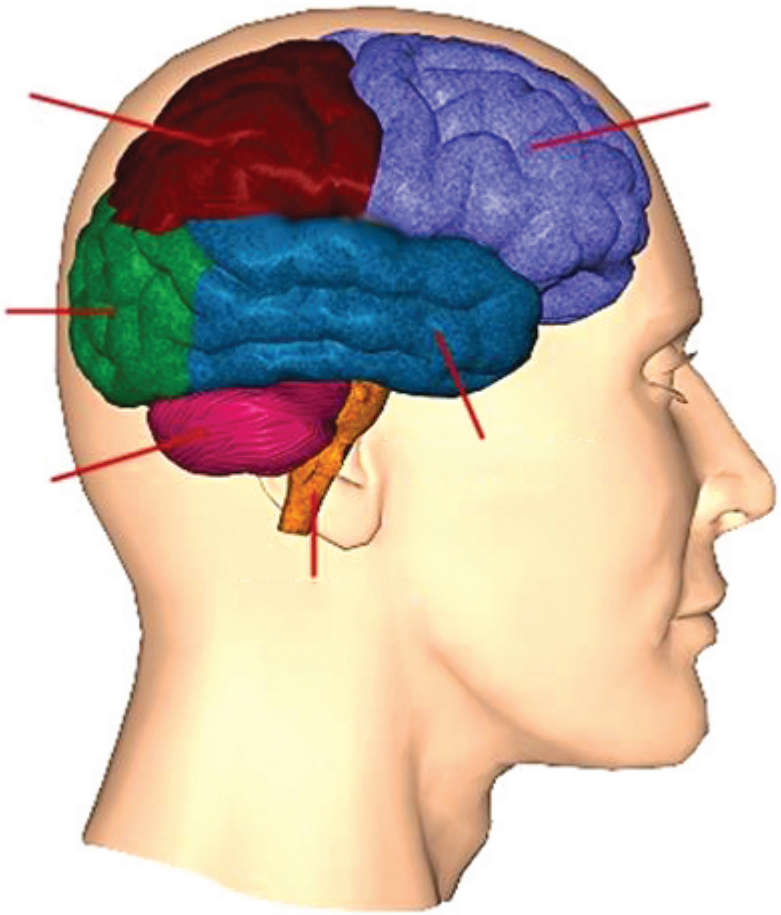
5 Improve focus and concentration.

6 Lower the risk of age-related cognitive decline.

It is important to note that stress is a prevalent issue worldwide, affecting individuals in both affluent and developing countries. The impact of stress on mental health can lead to a

range of conditions, including headache, fatigue, muscle tension or pain, chest pain, sleep problems, stomach upset, grumpiness, lack of motivation, restlessness, weakened immune system, high blood pressure, stroke, obesity, diabetes, anxiety, and depression.

Neuroscientists have conducted experiments and introduced mindful meditation as a primary solution to mental health challenges. They have researched the effectiveness of mindful meditation in treating various conditions and have observed positive outcomes. Their experiments have shed light on the significant impact of mindfulness meditation on individuals' overall well-being.



Neuroscientists have extensively researched Mindful Meditation for many years, employing advanced techniques such as functional magnetic resonance imaging (fMRI) and electroencephalography (EEG).

According to an e-book, “EEG studies of meditation have been conducted over numerous years, utilizing two primary approaches: investigating meditation states by analyzing the brain’s electrical activity during specific meditation practices, and examining enduring differences in the electrical brain activity of long-term meditation practitioners compared to individuals without meditation experience, to study meditation traits.”

It is interesting to note that meditation has been suggested to potentially slow down the aging process, according to neuroscientists and a growing body of evidence. The documented benefits of regular meditation include lower blood pressure, improved hearing and vision, reduced cholesterol levels, decreased stress, and alleviation of symptoms such as hyperactivity, insomnia, depression, and anxiety. Conversely, increasing benefits may involve improved blood circulation to the heart and brain, enhanced body balance, increased hemoglobin concentration, improved understanding and memory, heightened wisdom and creativity, and a strengthened immune system. If these claims seem implausible, a few weeks of meditation practice could provide firsthand insight into its effects. For a deeper understanding of the numerous benefits of ‘Vipassanā Meditation,’ consider exploring the upcoming edition of ‘Explore Sri Lanka’ magazine, which will offer insights into mental and physical well-being.

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How can we rewire our brains?

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