

An Overview of Brain Transplantation

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Perspective

A brain transplant, often known as a whole-body transplant, is a process that involves transplanting the brain of one creature into the body of another. It's not to be confused with head transplantation, which entails transplanting the full head to a new body rather than just the brain. A person with advanced organ failure may theoretically be given a new and functional body while retaining their original personality, memories and consciousness. Robert J. White, a neurosurgeon, grafted a monkey's head onto the decapitated body of another animal. EEG measurements later revealed that the brain was working correctly. The fact that the host's immune system did not attack the brain at initially was supposed to imply that it was an immunologically favoured organ, but the monkey died after nine days due to immunorejection. In many types of science fiction, brain transplants and comparable topics have been investigated.

Head transplantation was formerly thought to be the stuff of science fiction movies. Nonetheless, things have altered in recent years and a new age appears to have emerged. Due to the lack of fusing of the donor and recipient spinal cords, human cephalosomatic anastomosis and transplantation has never been accomplished. According to Canavero et al's charges, recent innovations (ultra-sharp neurosurgical blades, administration of fusogens, electrostimulation) can overcome this barrier, making such a difficult treatment doable and worth undertaking.

The purpose of the first human head transplant is to deliver a life-saving therapy to patients who are terminally sick and have no evidence of head or brain disease, in the absence of any other therapeutic options. As a result, a number of issues have arisen, including serious surgical, ethical, psychological and immunological issues. We hope that by critically analysing the existing relevant literature and expressing our opinion, this paper will provide a comprehensive overview of the first human head transplantation attempt and spark academic discussion and debate, thus acting as a fertiliser for observing and approaching this new frontier.

The brain is made up of several areas and cells. Neurons in the brain have specific tasks and when they are injured, they usually do not recover. Brain cell transplant has been utilised in humans for a variety of illnesses, including

Parkinson's disease, stroke, multiple sclerosis (MS), epilepsy, Alzheimer's disease and head trauma.

Parkinson's disease is a degenerative disorder in which neurons in the nigrostriatal area of the brain stop producing dopamine. Dopamine is a neurotransmitter that regulates the activity of muscles. These cells have been demonstrated to deteriorate with time, resulting in tremors and sluggish muscular motions. While medicine to replace dopamine's function has been beneficial in lowering Parkinson's disease symptoms, there have been experiments in which cells are transplanted into the brain to replace deteriorated cells—and the transplanted brain cells can create dopamine in certain cases [1-5].

Alzheimer's disease is a progressive degenerative illness that causes memory loss and behavioural abnormalities. Degeneration of the cells of the hippocampus, a brain area related with memory, characterises this illness, which normally starts after the age of 65. There are no drugs that can treat Alzheimer's disease, although some animal studies have attempted hippocampus cell transplantation. Another form of brain cell transplant, stem cell transplant, has been utilised in research trials as a therapy for brain cell damage in disorders including stroke, MS, head trauma and Parkinson's disease.

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