

## Case 4: Brain Reanimation

“Brain death” is a term used to describe the condition of persons who have fallen into an unresponsive coma. It is defined as an irreversible loss of all brain function including the brainstem. Characteristics include coma, absence of brainstem reflexes, and apnea. Persons considered to be brain dead are also determined to be legally and clinically dead with the death certificate reflecting the date in which brain death was declared, not the date patients are removed from life support. But what counts as an irreversible loss of brain function may soon change.

Dr. Ira Pastor, the CEO of Bioquark, a biomedical startup, has proposed brain reanimation (reversal of brain death) via the introduction of stem cells into the central nervous system in addition to other therapies such as nerve stimulation. Some doctors believe an injection of a proprietary peptide blend, BQ-A, into the clinically deceased person’s central nervous system will regrow neurons which had been damaged during trauma and/or death, facilitating repair and reanimation of the brain, technically, bringing the patient back to life. Dr. Pastor’s research is based on non-human species which have the ability to regenerate neurons, essentially repairing damage the organism sustained. Dr. Pastor believes the same processes can work in humans and he is committed to finding a way to do so.

Brain-dead patients are a primary source of donated organs (e.g., heart, liver, kidneys, lungs, pancreas, and small intestines) and tissue (e.g., corneas, skin, veins, heart valves, tendons, ligaments, and bones). A single donor is capable of saving up to eight lives via organ donation and can enhance the wellbeing and livelihood of up to one hundred people via tissue donation. According to the Organ Procurement and Transplant Network (part of the US Department of Health and Human Services), there are approximately 6,600 donors for the more than 117,000 persons on the organ donation waiting list. On average, ten people are added to the waiting list every day, and twenty-two people die each day waiting for a compatible organ.

Human reanimation trials have yet to start so there is no way of knowing if this novel treatment will actually work. Dr. Pastor has approval to conduct experimental trials in India on twenty brain-dead persons and is expecting to start the experiment within five years. Thus far, scientists have been unable to successfully revive a brain-dead patient. But being able to do so would be a major scientific breakthrough, save lives, and would surely bestow a great deal of attention and accolades to the researchers who made it happen.

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