

# Lazarus trial to take first step in bringing humans 'back from the dead'

Scientists will attempt to regenerate nervous system in brain-dead patients after winning ethical approval

By Sarah Knapton SCIENCE EDITOR

SCIENTISTS seeking to bring the brains of the dead back to life have won approval for a groundbreaking trial.

A biotech company has been granted ethical permission to find 20 patients who have been declared clinically dead from a brain injury, to test, with their families' consent, whether parts of their central nervous system can be regenerated.

Researchers will inject the patients' brains with stem cells and amino acids, as well as using lasers and nerve stimulation techniques which have been shown to bring people out of comas.

The patients will have been certified dead and only kept alive through life support. The treatment will run over

six weeks and they will be monitored for several months using brain imaging equipment to look for signs of regeneration, particularly in the lowest region of the brain stem, which controls independent breathing and heartbeat.

The team from Bioquark, a US company, believes the stem cells may be able to restart life – in a similar process to that seen in salamanders, which can regrow entire limbs and regenerate parts of their brains after injury.

Ira Pastor, the chief executive, said: "This represents the first trial of its kind and another step towards the eventual reversal of death in our lifetime."

The ReAnima Project has now received approval from the National Institutes of Health in the US and plans to start recruiting patients immediately.

Its first trial, to prove the idea can work, will take place at Anupam Hospital in Rudrapur, Uttarakhand, India. The company also has permission from the Indian authorities. Dr Pastor added: "It is a long-term vision of ours that a

full recovery in such patients is a possibility, although that is not the focus of this first study – but it is a bridge to that eventuality."

Brain stem death occurs when a person no longer has any brain stem functions, and has permanently lost the potential for consciousness and the capacity to breathe.

But with life support, the body can often still circulate blood, digest food, grow, heal wounds, and deliver a baby. Recent studies have suggested that some electrical activity continues.

The study should help in developing new treatments for coma, vegetative states and degenerative conditions including Alzheimer's and Parkinson's disease, said Dr Sergei Paylian, Bioquark's founder.

Dr Dean Burnett, a neuroscientist at Cardiff University, said: "The idea that brain death could be easily reversed seems very far-fetched... Saving individual parts might be helpful but it's a long way from resurrecting a whole working brain."