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## Disease hope as brain cells are grown in the lab

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**Robin McKie, science editor**  
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Scientists have discovered how to grow human brain cells in the laboratory. They have isolated neurones from several key areas of the cortex and plan to transplant them into patients suffering from epilepsy and strokes, as well as Parkinson's and Alzheimer's diseases.

Transplants of human brain cells have already been demonstrated in clinical trials. However, each requires neurones that have been taken from at least six aborted foetuses. Scientists believe their breakthrough research has solved this crucial problem of supply.

'We could satisfy the demands of every Parkinson's patient in Europe and the United States with cells grown in one small laboratory,' said Dr George Foster, of Cardiff University. 'That's the immense potential of this technology.'

The technique employed by the group - based at Cardiff and Sheffield universities - involves the immortalisation of brain cells in culture dishes. Neurones are bathed in chemicals that switches on a gene that keeps the cells dividing indefinitely. The end result is an abundant supply of human neurones. 'Other groups have managed to grow rat and mouse brain cells in the laboratory,' said Dr Brad Stringer of Sheffield University. 'We were the first to succeed with human neurones.'

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The human cells isolated come from the striatum, cortex, hippocampus and brain stem. When neurones die in these areas, they produce, respectively: the fatal Huntington's disease; Alzheimer's; strokes and epilepsy; and Parkinson's disease. 'That means we now have a supply of specialised brain cells that could be used to replace the cells lost in these conditions,' said Foster.

The group has taken out a string of patents to protect their technologies and have launched their own biotechnology company, CellFactors.

'We have also developed a parallel technique for growing bone cells - called human hypertrophic chondrocytes - in the laboratory,' added company chief executive Dr Iain Cubitt.

The firm has launched pre-clinical brain cell trials, at the Institute of Psychiatry, London, on stroke victims, and intends to begin clinical trials on transplants for Parkinson's disease patients by the end of next year.





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