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**Breakthrough for stem cell research**

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Two separate teams made the brain cell breakthrough

By BBC News Online's Ivan Noble

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A major breakthrough in stem cell research has been announced that makes treatments for degenerative brain diseases like Alzheimer's and Parkinson's look more feasible.

Two separate teams of scientists have succeeded in making stem cells originally derived from human embryos turn into brain cells.

“  
**It is an important step**

Su-Chun Zhang”

Researchers currently believe it may be possible to transplant such newly-created brain cells into brain disease sufferers.

The announcement shows that at least the first stage of this procedure is possible.

**Double success**

"It is an important step because the first step is to get stem cells to become specialised cells," Su-Chun Zhang, of the Waisman Center at the University of Wisconsin, US, told BBC News Online.

"We've got them to become specialised brain cells," he said.



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Dr Zhang is the lead author of a paper in the journal Nature Biotechnology describing the work done at the Waisman Center.

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Another successful attempt to generate brain cells is reported in the same journal at the same time by Benjamin E Reubinoff, of Hadassah University Hospital in Jerusalem, Israel, and his colleagues.

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Dr Zhang said his team was able to encourage stem cells to generate brain cells in laboratory culture dishes.

### **Directed growth**

When they then transplanted the brand new human brain cells into young mice they found that the cells continued to develop.

They are now trying to cultivate more sophisticated cells, closer to the kind that would be needed for any medical use.

"The cells we grew are called neuroprecursors.

"What we are doing now is to try to direct these neuroprecursors to further generate specialised cells, for example dopamine neurons for Parkinson's disease... or glia cells for multiple sclerosis," Dr Zhang said.

### **Controversy**

The cells in Dr Zhang's experiment came from an established cell line.

Such lines are maintained for research work and are descended from cells originally taken from a human embryo not long after fertilisation.

Work in the field is seen as controversial because some groups object to the destruction of human embryos however early in their development.

Most controversial is the idea of therapeutic cloning, which would involve the creation of human embryos by cloning and their subsequent disposal once stem cells are removed.

This approach would permit the creation of cells more likely to be accepted by a patient's immune system.

However, critics argue that development of such techniques would aid anyone wanting to use cloning to create live human beings.

Proponents of research on embryos argue that unless studies like those published on Friday are carried out, time will be lost in the search for treatments for distressing, incurable and fatal conditions.

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