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Stem cells may not help fight off Parkinson's

By [Lisa Greene](#), Times Staff Writer

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TAMPA — Fifteen years later, scientists are still learning from a woman who risked her life to be part of a controversial experiment to treat Parkinson's disease with fetal cells implanted in her brain.

The woman died last year, and an autopsy surprised scientists. The transplanted cells showed unmistakable signs of Parkinson's. That means the disease is able to spread inside the brain, migrating from the woman's own cells to the transplanted ones.

It also raises questions about whether stem cell transplants could become the best treatment for Parkinson's, because the disease might spread to affect the new cells.

The study was published online Sunday in the journal *Nature Medicine*. It's the latest result from a controversial trial with surgeries performed at the University of South Florida by Dr. Thomas Freeman, medical director of the Center of Excellence for Aging and Brain Repair.

"We have learned a lot about Parkinson's itself," Freeman said. "This type of trial is a road map for how to make stem cell therapies, when they become available, even better."

Parkinson's affects part of the brain that controls movement. Brain cells that produce a chemical called dopamine die or don't work properly. People with Parkinson's may have uncontrolled movement, such as trembling, or difficulty moving, with stiffness, slowness and poor balance.

The study transplanted brain cells of aborted fetuses into the brains of Parkinson's patients. The woman in the most recent study was 61 when she underwent surgery in 1993. She had had Parkinson's for 22 years.

After surgery, she had fewer motor control problems and needed less medicine until 2004, when her health again began to decline.

Unlike later patients of Freeman, this woman knew she had surgery. In the later research, Freeman did "sham" surgery on some patients, drilling holes part way into their skulls. He then did real transplants on other patients, but neither they nor their doctors knew which were which.

Some patients improved after the treatment, but some got worse. Overall, it didn't show a benefit. Future research in this area would likely be with stem cells, rather than fetal cells, scientists say. Although embryonic stem cells get the most attention, stem cells come from many places in the body. They can transform themselves into almost any type of cell.

Still, the latest results may help researchers learn more about what causes Parkinson's.

"There's something in the brain of a Parkinson's patient that is chronically there, and that is killing the cells of Parkinson's patients," said Jeffrey H. Kordower, neurological sciences professor at Rush University Medical Center, the study's lead author.

It also shows that genetics has a limited influence on Parkinson's, since the transplanted cells don't share the same genes as the original ones.

The results also argue against another theory. Some scientists have theorized there is one original event that happens to Parkinson's patients, something that kills dopamine-producing brain cells, but doesn't show until years later, as the brain ages and naturally produces less dopamine.

Since the damage seems to keep spreading, that theory seems less likely, Freeman said.

Researchers acknowledged that the results might show limits on stem-cell transplants, if those cells can be damaged.

But Freeman said he thinks stem cell transplants still hold promise for Parkinson's. After all, this patient did well for a decade, he said.

"The possibility exists of a repeat transplant 10 to 12 years later," he said. "Expecting long-term efficacy forever may be overly optimistic. But meaningful benefit for a decade may be realistic."

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