Harvard set to open stem cell center

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DR. OLE ISAASON
A director for the center of regeneration research at McLean Hospital

McLean Hospital lab manager Andrew Ferree and professor Ole Isacson (right) using a laser-activated cell sorting machine to research a cure for Parkinson's disease.

Research down to 'the final stretch'

Advances touted in cell therapy

BELMONT — Although many scientists caution that they are years from the point where sick people could be routinely cured using stem cells, the future seems less distant inside a modern brick building on the sprawling campus of McLean Hospital.

Dr. Ole Isacson, a director for the center of regeneration research at McLean Hospital, showed a visitor proof that cell therapy can work.

Several years ago, a Canadian surgeon transplanted cells from the brains of several aborted fetuses into the brain of a woman who suffered from severe Parkinson's disease.

The woman was able to move far better and take lower doses of her drugs. She died recently of an unrelated disease, and Isacson has a remarkable slide of her brain showing where the new cells had taken hold, replacing the dopamine-producing cells lost in Parkinson's.

Because the brain is less likely to reject foreign tissues than other parts of the body, doctors have already run a number of clinical trials that place cells in Parkinson's patients.

The results have been mixed. In one trial, doctors placed chunks of tissue from aborted fetuses in the brain, but some patients reacted badly as the cells began producing too much dopamine.

The great hurdle, said Isacson, is finding a good source of cells. Isacson, who will be part of the Harvard stem cell initiative, has published work that shows he can coax human embryonic stem cells to develop into the dopamine-producing cells that are needed for Parkinson's treatment.

More recently, in unpublished work, he has made progress in tagging these cells with a chemical so that a machine can sort them. He is using public funding, but this restricts him to using the government-approved cell lines.

It is not uncommon for people in his lab to be up until 1 or 2 in the morning next to a large gurgling blue box that can sort cells at 22,000 per second or faster, trying to fine-tune the process.

If he is successful, it would mean an unlimited supply of cells to test in Parkinson's patients. Within a few years, he said, he hopes to start a human clinical trial in Boston.

"It feels like the final stretch," said Isacson. "I don't think people realize how far along we are."

GARETH COOK