

## World stem cell scientists look to Japanese human trial with hope

"It's awesome, it's amazing, I'm thrilled, I've been waiting for this," says Jeanne Loring, a stem-cell biologist at the Scripps Research Institute in La Jolla, California.

She is one of several researchers around the world to welcome the news that a Japanese woman with visual impairment had become the first person to receive a therapy derived from stem cells known as induced pluripotent stem (iPS) cells.

A lot rides on this trial. If the procedure proves safe, it could soften the stance of regulatory bodies in other nations towards human trials of iPS cells, and it could pave the way for treatments for other conditions, such as Parkinson's disease and diabetes. It could also cement Japan, recently plagued by a stem-cell scandal, as a frontrunner in iPS-cell research.

Pioneered in 2006 by Shinya Yamanaka, now director of the Center for iPS Cell Research and Applications at Kyoto University, iPS cells are created by inserting certain genes into the DNA of adult cells to reprogram the cells back to an embryonic-like state. The cells can then be turned into almost any tissue type, much as embryonic stem cells can. But because iPS cells can be derived from a patient's own tissue, the hope is that they will dodge some of the controversial aspects and safety concerns of those derived from embryos.

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