

## Two patients in Scotland get stem cell transplants to treat blindness

May 22 2012, by Bob Yirka

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(Medical Xpress) -- Two people in Scotland have received stem cell transplants into their eyes in a clinical trial that is aimed at restoring vision in people that suffer some degree of blindness due to damage to the cornea. One of the patients has agreed to have their name released; Sylvia Paton, of Edinburgh. She suffers from a hereditary disease called aniridia which causes incomplete formation of the iris and leads to damage to the cornea. In Mrs. Paton's case, the condition led to having no iris at all in one eye and just ten percent vision, along with a heightened sensitivity to light. She received the transplant in February (performed by Dr. Ashish Agrawal) but neither she nor her team of doctors will know how effective the treatment has been for many more months.

The cornea is the clear coating that covers the outside of the eyeball. Current treatment for those that suffer irreversible damage to it either

from disease or injury relies on cornea transplants from deceased donors. The new treatment called corneal epithelial stem cell transplantation uses stem cells grown by the Scottish National Blood Transfusion Service (SNBTS). In the procedure, dead material is removed from the cornea (along with a cataract in Mrs. Paton's case) and the stem cells are placed onto the remaining edges of the existing healthy cells. From there, the stem cells slowly grow into a fully formed cornea, hence the long wait to find out how effective the treatment has been.

In Mrs. Paton's case, her doctors can't be sure how much improvement in vision she will have even if the cornea grows perfectly as it's not known how well the rest of her eyes work.

The stem cell transplantation treatment has been developed by Scottish specialists over a period of several years with the culmination being the current clinical trial which involves a total of ten patients, eight of which have not yet had the procedure. In addition to the ten who will receive the transplants, another group of ten patients with similar conditions will receive traditional treatment to serve as a control group. The researchers expect it will take up to 12 months for patients to grow a new cornea from the stem cells, but if successful, the new treatment will likely revolutionize the treatment of blindness due to problems with the cornea, which is second only to cataracts as a cause of [blindness](#), with about 20 million people affected worldwide.

**More information:** [Press release](#)

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