

Macular Degeneration: Stem Cells Restore Sight in Small Study

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Doctors in the UK say they have taken an important step towards treating a common form of blindness – wet age-related macular degeneration (AMD).

Results of a study published in the journal *Nature Biotechnology* describe how stem cell therapy can restore sight.

Douglas Waters from Croydon, London, was one of 2 people who received the treatment at Moorfields Eye Hospital.

Mr Waters, who is 86, developed severe wet AMD in July 2015 and received the treatment 3 months later in his right eye. He says: "In the months before the operation my sight was really poor and I couldn't see anything out of my right eye. I was struggling to see things clearly, even when up-close.

"After the surgery, my eyesight improved to the point where I can now read the newspaper and help my wife out with the gardening." The team behind the trials caution that further research is needed before this method could be considered for routine clinical approval.

Loss of Central Vision

People with AMD experience a loss of central vision, making reading and recognising people's faces difficult. It currently affects more than 600,000 people in the UK, and numbers are expected to rise with an ageing population.

Wet AMD occurs when abnormal blood vessels form underneath the macula – the section of the retina that allows detailed, central vision – and damage its cells.

Wet AMD is more serious than dry AMD, which is more common and caused by cells in the macula being damaged by a deposit of fatty protein.

Transplanted Patch

The pioneering treatment involved implanting an engineered patch of retinal pigment from epithelium cells under the retina to replace those that are damaged.

The patients, including a woman in her 60s who also had wet AMD, were monitored for 12 months and reported improvements to their vision. Before the procedure neither were able to read, but they went on to read at 60 to 80 words per minute with normal reading glasses.

'This Gives Real Hope'

Commenting on the trial in a statement, Dr Carmel Toomes, associate professor at the Leeds Institutes of Molecular Medicine, says: "These results give the many patients out there who suffer from AMD and other retinal degenerations real hope that stem cells replacement therapy may be a reality in the near future.

"While this is only a very early clinical trial, the results are positive and show that the technology is moving along. In the right direction."

The study was carried out for the London Project to Cure Blindness, a partnership between Moorfields Eye Hospital NHS Foundation Trust, the University College London (UCL) Institute of Ophthalmology, and the National Institute for Health Research (NIHR).

SOURCES:

Phase 1 clinical study of an embryonic stem cell–derived retinal pigment epithelium patch in age-related macular degeneration, da Cruz L et al, Nature Biotechnology

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