

Pioneering stem cell team fights blindness

STEM cells from human embryos are being used in a revolutionary technique that could save the sight of millions.

Cultivated in a laboratory, the cells are injected directly into the eye to replace others damaged by macular degeneration, one of the most common causes of blindness in the over-60s.

The 15-minute procedure, carried out under local anaesthetic, is being put on trial using a small number of patients in the US and Israel. Larger trials are

planned. Professor Benjamin Reubinoff, a tissue regeneration expert at the Hadasah University Medical Centre in Jerusalem, who helped develop the technique, said: "At present people with age-related macular degeneration slowly lose their sight and there is nothing anyone can do to stop it. This discovery is offering real hope where none exists."

The procedure has been developed to help those with the "dry" form of the disease, which affects approximately 600,000 people in the UK and millions worldwide. About 90 per cent of patients with macular degeneration have the dry form, for which there is currently no approved therapy.

The team has been able to modify stem cells to make them able to repair visual or light-collecting cells, essential for good sight. Known as retinal pigment epithelium cells, they convert light into vision.

The embryos used in the trial are spare embryos no longer needed by couples undergoing fertility treatment.

The pioneering procedure wouldn't

EXCLUSIVE

By **Lucy Johnston** HEALTH EDITOR

restore sight that has been lost completely but the team believe it will stop or slow the progression of the disease.

The first trials have been carried out to evaluate safety but researchers will also look at whether vision has been saved in the patients.

Before human trials started Israeli

researchers were able to establish that embryonic stem cells were able to restore vision in rats with a genetic disorder similar to macular degeneration that also causes blindness.

What is not clear yet is whether one shot of the embryonic stem cells would be enough to restore and maintain sight.

Researchers will be looking at whether patients would need regular top-up injections to maintain the effect.

Professor Reubinoff is working with two companies, Bitome, from America, and Cell Cure Neurosciences in Israel, to obtain international licences to carry out the treatment,

He said: "The use of stem cells in eye disease has huge potential and we believe this technique could prevent severe loss of vision for millions.

Charles Irving, chief executive of Cell Cure Neurosciences, said: "Our goal is to enable, for the first time, transplantation with the new stem cells so we can save the photoreceptors that haven't already died and stop the progression of the disease."

'This discovery is offering real hope where none exists for people with macular degeneration'