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# Encapsulated cell therapy could be new way to fight glaucoma

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An experimental drug, consisting of cells manufactured and implanted in the eye to stimulate optic nerve growth and activity, could be an entirely new way of fighting glaucoma, according to BrightFocus Foundation.

BrightFocus is helping fund a recently launched, Phase 2 [or mid-level] clinical trial designed to test the new treatment. The trial will be led by Jeffrey Goldberg, MD, PhD, chair of ophthalmology and director of the Byers Eye Institute at Stanford University. BrightFocus had previously funded Phase 1 of this trial.

"BrightFocus is proud to invest in research that may translate scientific discoveries into a new treatment for glaucoma," said BrightFocus President and CEO Stacy Haller. "We applaud Dr. Goldberg for his bold, innovative ideas and his dedication to improving sight for millions around the world."

Labeled NT-501 encapsulated cell therapy (or NT-501 ECT), the experimental glaucoma treatment consists of a capsule filled with human cells that have been genetically modified to secrete ciliary neurotrophic factor (CNTF), which promotes nerve growth and activity. The capsule, implanted into the eye, releases a steady stream of those growth factors to protect the optic nerve. Subjects will be followed for two years to see if there is any change in vision.

Glaucoma, which progressively damages central vision, is the number one cause of irreversible vision loss in the world. In the past, glaucoma research and treatments tended to focus on the damage caused by increased pressure inside the eye (intraocular pressure or IOP). In the innovative NT-501 ECT treatment, developed by Neurotech, the focus is on CNTF growth factors that may help the eyes' retinal ganglion cells (RGCs)--which are part of the optic nerve and carry light signals to the brain--resist damage.

Dr. Goldberg said his hypothesis is that NT-501 ECT might stop further loss of RGCs and vision (neuroprotection) or may improve existing vision (neuroenhancement), or possibly both. "It will be an enormous step forward if either of these can be demonstrated," Goldberg said. "We have no approved treatments that address the degeneration of the RGCs or their axons, so this is a huge unmet need."

The treatment has been previously tested in [age-related macular degeneration](#) and in an inherited form of macular degeneration known as retinitis pigmentosa, with no serious adverse effects to date. Being able to deliver growth factors, "directly to the eye, without significant exposure to the rest of the body, is a significant advantage of the NT-501 implant approach," Goldberg said.

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Source:  
BrightFocus Foundation

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