

Researchers advance the science behind treating patients with corneal blindness

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Researchers in the Cedars-Sinai Board of Governors Regenerative Medicine Institute have devised a novel way to generate transplantable corneal stem cells that may eventually benefit patients suffering from life-altering forms of blindness.

Scientists used human corneal cells to generate [pluripotent stem cells](#) that have a capacity to become virtually any body cell. Then, putting these cells on natural scaffolds, researcher's facilitated differentiation of these stem cells back to corneal cells.

"Our research shows that cells derived from corneal stem cells are attractive candidates for generating corneal cells in the laboratory," said Alexander Ljubimov, PhD, director of the Eye Program at the Board of Governors Regenerative Medicine Institute and principal investigator on this research study.

This research, published in the journal *Stem Cells Translational Medicine*, marks an important first step toward creating a bank of corneal stem cells that may potentially benefit patients who suffer from many forms of [corneal blindness](#). The group is now working to optimize the process with National Institutes of Health funding.

Corneal deficiencies may have genetic or inflammatory roots or be caused by injuries, like burns to the skin in occupational accidents. They result in damage or death of [stem cells](#) that renew the outermost part of the cornea. If left untreated, they often cause compromised vision or

blindness.

Over 150,000 Americans and more than 3 million individuals worldwide are affected by corneal blindness.

Provided by Cedars-Sinai Medical Center

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