

New type of artificial corneal implant that integrates directly into the eye wall

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Prof. Irit Bahar and Dr. Gilad Litvin, together with the first-in-human KPro patient and his daughter, the moment his sight returned. Credit: CorNeat Vision

A team of doctors and researchers at CorNeat, an Israel ophthalmic medical device company, has developed and implanted into a patient a new type of artificial cornea that integrates directly into the eye wall. Members of the CorNeat team announced on their web page the successful implantation of their device, called the KPro, into a 78-year-old male patient last week.

The cornea is the clear front part of the eye, covering and protecting the

iris and pupil. When the cornea is damaged beyond repair due to disease or injury, it results in blindness. Current treatment generally involves transplanting a healthy cornea from a donor. Unfortunately, there are far fewer donors than people needing new corneas, so medical researchers have been looking to create artificial corneas. To date, such efforts have generally involved the need for [human tissue](#) to support the connection between the artificial device and human eye parts. In this new effort, the researchers have developed a new kind of cornea that does not require the use of any tissue—instead, it has a skirt that is made of a material that allows infiltration by fibroblasts and collagen. The research team claims full integration of the cornea skirt can be achieved within a few weeks of surgery.

The artificial cornea looks very much like a flying saucer from science fiction movies. It has a clear middle section that serves as the cornea; surrounding the clear section is the white skirt—the researchers have not revealed what it is made of for patent reasons. The KPro comes as a kit that includes the artificial cornea encased in a protective box and the tools a surgeon would need to implant the cornea in a patient. The procedure for doing so involves removal of the epithelium that covers the cornea, marking where the new cornea should go, removing the old cornea and then suturing the new artificial one in place.

The patient with the new artificial cornea was reportedly able to make out the faces of family members and read numbers on a chart the day after his surgery.

More information: [www.prnewswire.co.uk/news-releases-866070880.html](http://www.prnewswire.co.uk/news-releases/medical-xpress-866070880.html)

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