# Study Finds New Element To Corneal Transplant Success

Although it is already one of medicine's most successful transplant procedures, doctors continue to seek ways to improve corneal transplants. Now, for the first time, a team of German and British researchers have confirmed that failure and rejection of transplanted corneas are more likely in patients whose eyes exhibit abnormal vessel growth, called corneal neovascularization, prior to surgery.

The meta-analysis report appears in July *Ophthalmology*, the journal of the American Academy of Ophthalmology. The findings also suggest a new treatment approach that could improve transplant success rates. Claus Cursiefen, MD, and colleagues reviewed 19 studies involving nearly 24,500 corneal transplants (called “grafts”). The cornea is the eye's clear outer surface that provides much of the visual power.

“The presence of corneal neovascularization before surgery makes it about 30 percent more likely that the transplant will fail, and more than doubles the risk of graft rejection,” said Dr. Cursiefen. “We also found that the risks of failure and rejection rise with the extent of vascularization–the more extensive the corneal neovascularization, the higher the risks.”

These findings suggest that patients who have corneal neovascularization might benefit from treatment before transplant surgery with growth-inhibiting drugs (antiangiogenics) such as bevacizumab or ranibizumab, or with another type of drug that works at the level of gene transcription to discourage vessel growth. One such drug, GS101, is now in clinical trials. This preconditioning approach is worthy of thorough testing and assessment, the researchers say.

More than 40,000 transplant surgeries are performed annually in the United States to restore vision in people whose corneas have been damaged by injury or illness. It is, in fact, the most common form of tissue transplant. In patients whose corneas are non-vascular at the time of surgery, as many as 81 percent of transplants remain healthy at five-year follow up.

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