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## The Challenge of Retinal Transplantation

*Author: Peep V. Algvere, M.D., Ph.D., Relya Zivojnovic Award*

Since several retinal diseases and dystrophies exhibit apoptotic cell death of photoreceptors and/or RPE cells, transplantation of young and healthy cells has been most desirable to replace the diseased tissue. A remarkable achievement was the first successful grafting of RPE cells to the RCS-rat showing for the first time that the grafted cells survived and rescued photoreceptors for a period of time.

There has been a rapid development in most areas of transplantation. These include the microsurgical technique, grafting of single cells or sheets of cells, photoreceptor and RPE complexes, translocation of peripheral autologous grafts of RPE or RPE and choroid to the subretinal space. In addition, the use of techniques with recombinant virus containing specific DNA, and the complicated research on stem cell transplantation are most promising features for the future.

