



# CORNEAL GRAFT REGISTRY



**INSTITUTION NAME:** Flinders University

**CATEGORIES:** Health, Science

**TITLE:** How capturing practice can drive research and innovation

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Transplant surgery is difficult at the best of times but research at the Australian Corneal Graft Registry is helping to reduce the risk of rejection and improve the outcomes of corneal graft surgery every day. Opened in 1985 the Corneal Graft Registry is an Australia-wide registry of human corneal transplant surgeries.

The Registry has over 30,000 transplantation records and contains over 7 million data points, collecting information on all aspects of the process beginning with basic demographic information on the donor and recipient through the transplant surgery itself and renewed every year with updates on the outcome, survival of the graft, visual outcomes and any ongoing treatments or care requirements. In Australia alone over 1600 corneal graft surgeries are performed annually. This astonishing and continuous record of such a large number of transplants allows researchers to identify factors that feature in the histories, circumstances and profiles of grafts that have failed that may not have been visible in smaller data sets or shorter studies.

Created as a research data source for clinical practitioners, the Corneal Graft Registry has enabled research that has yielded significant impact in the lives of many Australians every year. One of these changes is the availability of corneas for donation. In 1985 (the outset of the collection of information for the registry) there were significant restrictions on the age of corneal donors. Donors were required to be over the age of 5 and under the age of 60 in addition to fitting a number of additional health requirements. These restrictions limited the number of corneas donated, which in turn had the inevitable consequence of a long waiting list for surgery. Thanks to the longitudinal nature and



wealth of information on both donor and recipient provided in the registry, researchers have been able to demonstrate that the effect of donor age on the success and longevity of the graft is almost negligible. This has allowed the upper age restriction on corneal donation to be lifted, with the effect of vastly increasing the number of cornea donated and therewith grafts able to be conducted. The waiting lists that characterised corneal surgery at the commencement of the Registry are now, thanks to the information it has collected and maintained, a thing of the past.

The wealth of information in the graft registry has also enabled significant innovation in clinical practice. One of the many sets of information collected is surgical technique employed in each graft recorded in the registry. Analysing the data sets the registry provides surgeons and care teams to match surgical technique to be employed with the particular circumstances and context of each patient, giving each surgery the optimal chance of success.

The Registry has enabled many problems, hitherto invisible, to be brought to the fore that will no-doubt shape research for many years to come. For example, data shows that corneas sourced locally make more successful grafts than those which are airfreighted prior to transplantation.

The de-identified and amalgamated analyses provided by the Australian Corneal Graft Registry are invaluable source of data accessible to anybody with internet access, anywhere at any time. The annual reports of the Registry are available online at the Flinders Academic Commons and are downloaded many thousands of times a year across the world. As a result of the success of the Registry's work, Registry Scientific Director, Professor Keryn Williams is often asked to provide the Australian Corneal Graft Registry model to others looking to establish their own corneal graft registries.

**Related Media:**

<https://www.flinders.edu.au/medicine/sites/ophthalmology/clinical/the-australian-corneal-graft-registry.cfm>

<http://www.flinders.edu.au/people/Keryn.Williams>