

Australian Corneal Graft Registry Annual Report 2026

1 The Database

The Australian Corneal Graft Registry (ACGR) was established in 1985 and has now been in continuous operation for 41 years. The following document summarises the data contained in the Registry database on 30th June 2026.

The database contains the following types of graft. The date range given for each graft type shows the years these have been registered with the ACGR.

- Penetrating Keratoplasty (PK): 1985 to 2026.
- Descemet's Stripping (Automated) Endothelial Keratoplasty (DS(A)EK): 2006* to 2026.
*Encompassing both manual (from 2006) and automated (from 2008) versions of the technique, as well as an ultra-thin variant (from 2012).
- Descemet's Membrane Endothelial Keratoplasty (DMEK): 2007 to 2026.
- Deep Anterior Lamellar Keratoplasty (DALK): 2000 to 2026.
- Traditional/Tectonic Lamellar Keratoplasty (TLK): 1985 to 2026.
- Corneal Allogenic Intrastromal Ring Segments (CAIRS): 2021 to 2026.
- Limbal/Stem Cell: 1987 to 2026.

Table 1 shows the number of grafts registered, and the percentage of registered grafts with follow-up provided, known to have failed, and known to have failed within the early post-operative period. Early failure was defined as grafts that failed within 92 days (3 months). Note that grafts performed in 2025 and 2026 will not yet have had follow-up requested.

Table 1 Overview of the Australian Corneal Graft Registry database at 30th June 2026

	Registered	Followed	Failed	Early Failure
PK	29975	83%	28%	2%
DS(A)EK	10096	75%	26%	6%
DMEK	7404	63%	17%	9%
DALK	2608	61%	9%	2%
TLK	1940	75%	22%	7%
Limbal	96	75%	39%	6%
CAIRS	353	27%	5%	1%
Total	52472	77%	25%	4%

Note: Percentage failed includes early failures

For further information on the Australian Corneal Graft Registry, visit <https://www.flinders.edu.au/fhmri/research/fhmri-eye-vision/corneal-graft-registry> or email miriam.keane@flinders.edu.au. The latest major report from the ACGR can be accessed at <https://doi.org/10.25957/vfa8-8r43>.

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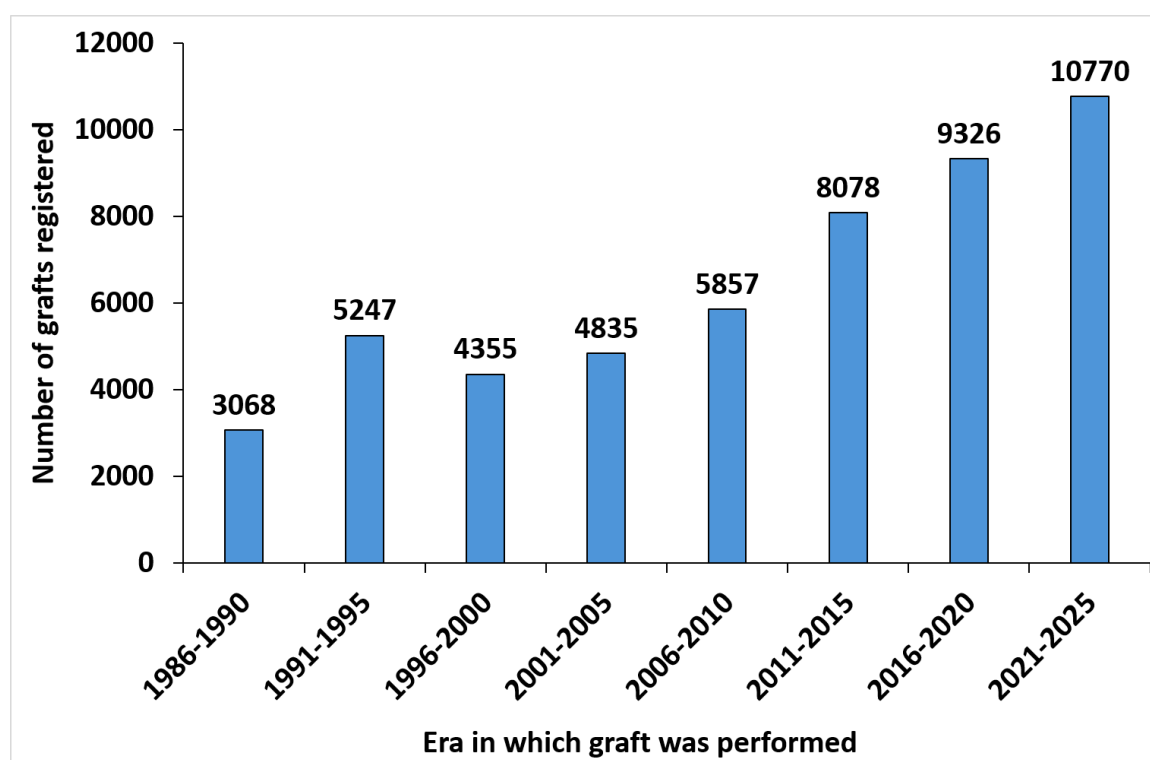
An annual follow-up request is sent to contributing surgeons in September. In some instances, the ACGR may be informed that the graft recipient is known to have died, or has been “lost to follow-up”, i.e., is no longer seen by the surgeon. Grafts lost to follow-up can be reactivated if the recipient is subsequently seen, e.g. for a contralateral or repeat graft. Linkage with the National Death Index is undertaken, where consent has been granted, to finalise records for deceased recipients. This is performed no more than once every 5 years, with the most recent linkage prior to the census date for this report completed in 2022. Table 2 shows the status of registered grafts in the database, including the number of each graft type for which follow-up information is still actively sought.

Table 2 Status of grafts in the Australian Corneal Graft Registry database at 30th June 2026

	PK	DS(A)EK	DMEK	DALK	TLK	Limbal	CAIRS	Total
Registered grafts	29975	10096	7404	2608	1940	96	353	52472
Failed graft	28%	26%	17%	9%	22%	39%	5%	25%
Lost without follow-up received	7%	5%	6%	19%	9%	13%	0%	7%
Lost post follow-up	23%	13%	11%	28%	26%	21%	6%	20%
Died without follow-up received	5%	3%	1%	<1%	9%	4%	0%	4%
Died with surviving followed graft	19%	10%	3%	2%	18%	12%	0%	14%
Active in database	18%	43%	62%	40%	17%	13%	89%	30%

Following the introduction of the new varieties of partial thickness endothelial grafts from 2006 onwards, there was a steady increase in the number of grafts registered annually, as shown in Figure 1. Grafts from 1985 and 2026 are excluded as registrations are not available for the full year

Figure 1 Number of grafts registered with the ACGR stratified by graft era, 1986 to 2025



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The annual number of registrations was stable, with small levels of fluctuation, over the seven years from 2016 to 2022 (Figure 2). The impact of restrictions placed on elective surgery due to COVID-19 may have influenced figures from 2020 to 2022. With these restrictions lifted, 2023 saw an increase of approximately 180 registrations, with a further increase of almost 300 in 2024. The number registered for 2025 has remained stable, with a small number of outstanding registrations still likely to occur. There has been a shift in the type of grafts being registered (Figure 2 and Table 3). Fewer PK registrations have coincided with increases in registrations of EK. In 2019, registrations of PK, DS(A)EK and DMEK were almost equal, with DMEK subsequently becoming the most registered graft type. While numbers for PK and DS(A)EK remained comparable in numbers in 2025 compared to 2019, the cohort of DMEK has had a 56% increase. In contrast the number of DALK has dropped by a third. The number of CAIRS procedures doubled each year from 2022 to 2024, remaining stable for 2025.

Figure 2 Number of grafts registered annually with the ACGR, by graft type, 2016 to 2025

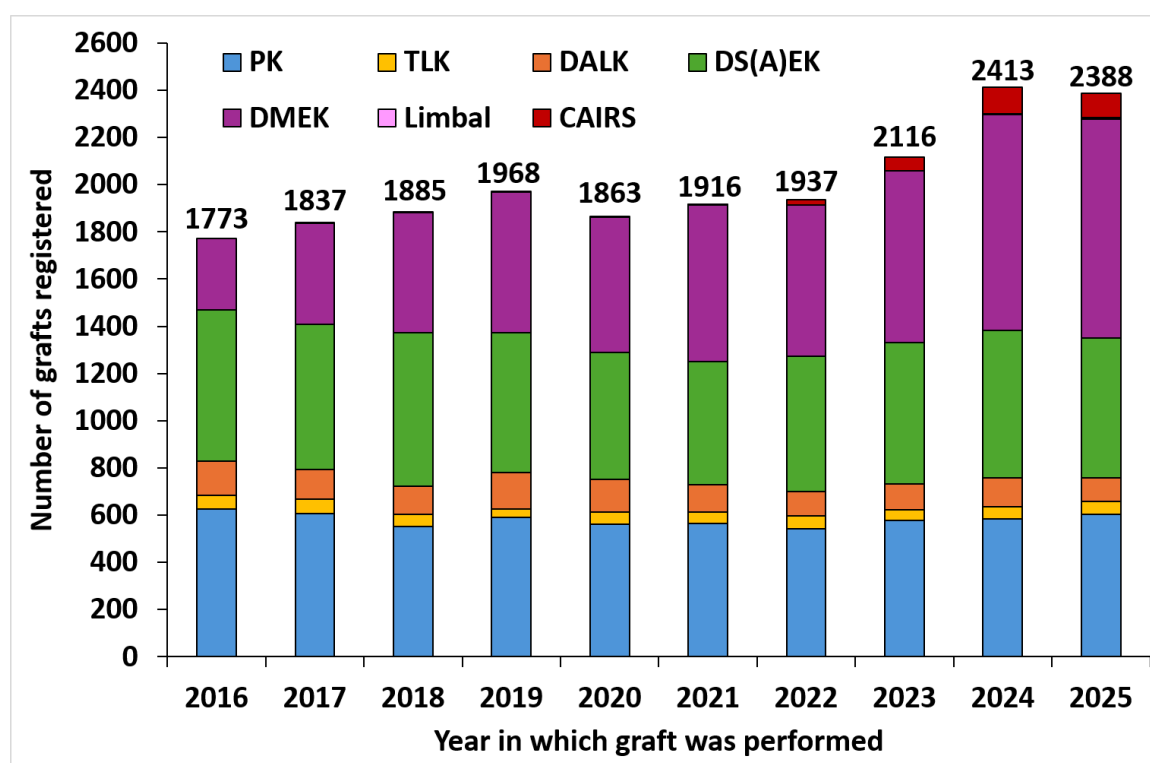


Table 3 Percentage of grafts registered annually with the ACGR, by graft type, 2016 to 2025

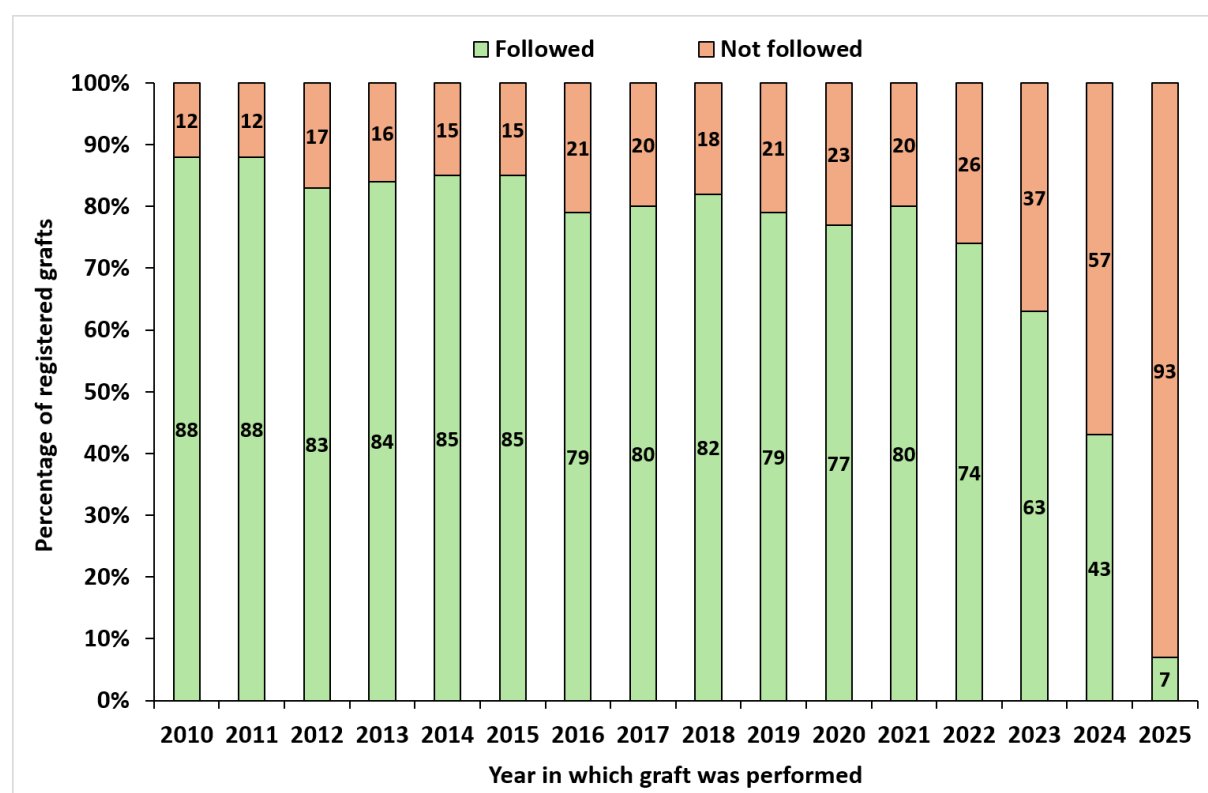
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PK	35%	33%	29%	30%	30%	29%	28%	27%	24%	25%
TLK	3%	3%	3%	2%	3%	3%	3%	2%	2%	2%
DALK	8%	7%	6%	8%	7%	6%	5%	5%	5%	4%
DS(A)EK	36%	34%	34%	30%	29%	27%	30%	28%	26%	25%
DMEK	17%	23%	27%	30%	31%	35%	33%	34%	38%	39%
Limbal	0%	<1%	<1%	<1%	<1%	<1%	0%	<1%	<1%	<1%
CAIRS	0%	0%	0%	0%	0%	<1%	1%	3%	5%	4%
Total	1773	1837	1885	1968	1863	1916	1937	2116	2413	2388

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The ACGR requests follow-up in September. The first follow-up request will occur the year following the graft, between 9 and 21 months after it is performed. Because of the delay in time to first follow-up, the percentage of grafts with follow-up is lowest, the more recently the graft was performed, as shown in Figure 3. Most grafts with follow-up in the first year post-graft will be failed grafts where the eye has been regrafted.

Three-quarters of grafts will have follow-up provided at least once by 5 years post-graft. A final request for first follow-up will be sent at 5-years post-graft, and if none is received, the graft will be recorded as lost to follow-up. From 5-years onwards, the proportion of grafts followed averages 85%.

Figure 3 Percentage of grafts with follow-up provided to the ACGR, stratified by year of graft



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2 Indication for Graft

The four most common indications for graft in the database are failed previous graft (26%), keratoconus (21%), Fuchs' endothelial dystrophy (21%), and endothelial failure/bullous keratopathy (16%). These account for 84% of grafts. Type of graft varies depending on the indication for graft. Table 4 shows the top three indications for first grafts for each type of graft, showing the variation across groups. Table 5 shows these data for the 10-year period from 2016 to 2025. Fuchs' endothelial dystrophy is now the most common indication for first graft, followed by endothelial failure/bullous keratopathy, and then keratoconus.

Table 4 Indication for graft, 1985 to 2026, stratified by type of graft

	PK	TLK	DALK	DS(A)EK	DMEK	Limbal	CAIRS	Total
Failed previous graft	30%	16%	4%	27%	20%	11%	5%	26%
Keratoconus	29%	6%	73%	0%	0%	1%	90%	21%
Fuchs' endothelial dystrophy	7%	0%	0%	40%	64%	0%	0%	21%
Endothelial failure/bullous keratopathy	16%	<1%	<1%	30%	13%	1%	0%	16%
Trauma	3%	3%	<1%	2%	<1%	22%	0%	2%
Herpetic eye disease	3%	5%	3%	<1%	<1%	2%	0%	2%
Non-herpetic infection	3%	4%	4%	<1%	<1%	4%	0%	2%
Corneal ulcers/perforations	2%	12%	1%	<1%	0%	3%	0%	2%
Corneal degenerations	<1%	5%	3%	<1%	<1%	3%	3%	<1%
Beta-radiation	<1%	13%	<1%	0%	0%	4%	0%	<1%
Pterygium	<1%	11%	<1%	0%	0%	2%	0%	<1%
Congenital abnormalities	<1%	<1%	<1%	<1%	<1%	10%	0%	<1%
LASIK	<1%	<1%	<1%	0%	0%	0%	3%	<1%
Other	7%	23%	9%	1%	1%	35%	0%	5%
Total	29975	1940	2608	10096	7404	96	353	52472

Table 5 Indication for graft, 2016 to 2025, stratified by type of graft

	PK	TLK	DALK	DS(A)EK	DMEK	CAIRS	Total
Failed previous graft	51%	18%	5%	32%	19%	4%	31%
Fuchs' endothelial dystrophy	1%	0%	0%	34%	66%	0%	31%
Endothelial failure/bullous keratopathy	4%	0%	<1%	30%	13%	0%	14%
Keratoconus	23%	5%	70%	0%	0%	90%	12%
Trauma	3%	2%	<1%	2%	<1%	0%	2%
Non-herpetic infections	5%	5%	4%	<1%	<1%	0%	2%
Corneal ulcers/perforations	3%	20%	2%	<1%	<1%	0%	2%
Herpetic eye disease	3%	7%	3%	<1%	<1%	0%	1%
Corneal degenerations	1%	7%	3%	<1%	<1%	2%	<1%
Other corneal dystrophies	1%	<1%	4%	<1%	<1%	0%	<1%
Glaucoma	0%	9%	0%	<1%	0%	0%	<1%
Beta-radiation	0%	8%	<1%	0%	0%	0%	<1%
LASIK	<1%	0%	1%	0%	0%	3%	<1%
Other	7%	24%	10%	1%	1%	0%	4%
Total	5805	512	1233	5948	6280	300	20078

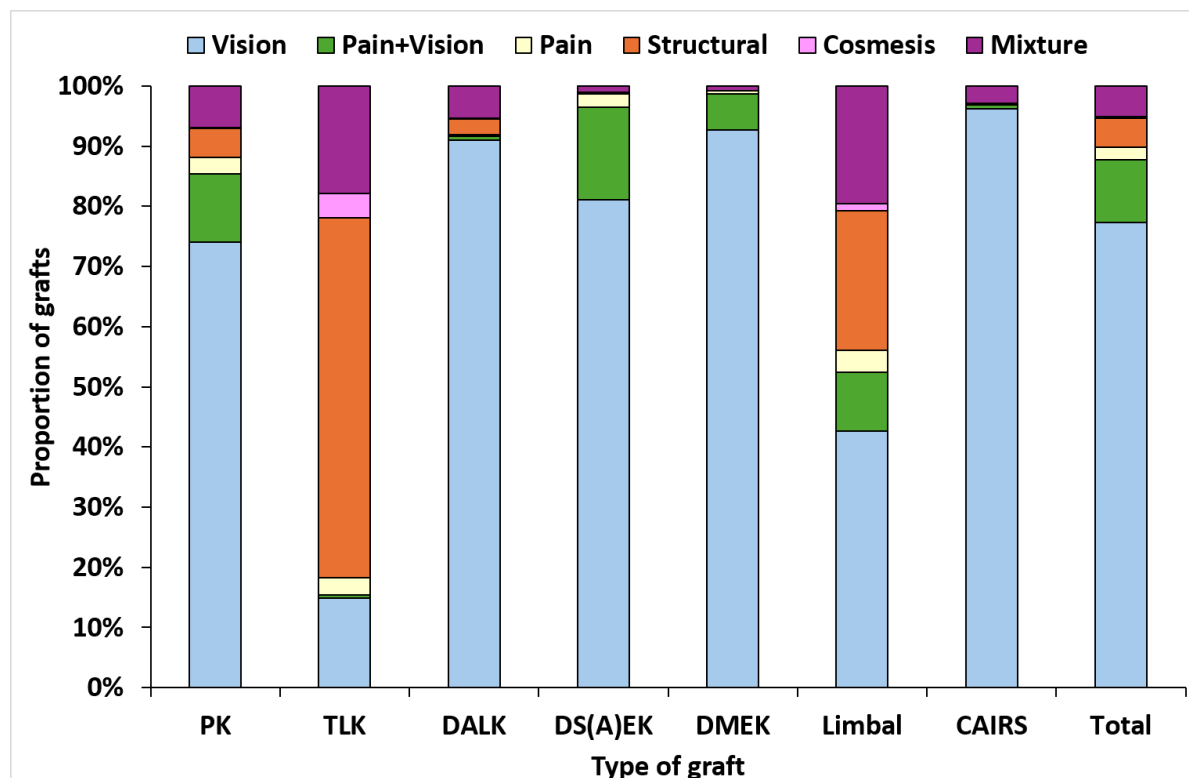
Note: Excludes limbal grafts as n<20.

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3 Desired Outcome from Graft

Surgeons are asked to report the desired outcome from corneal transplantation. They can select any applicable answers from the following options: relief of pain, visual rehabilitation, structural repair, cosmesis. The desired outcome has been provided for 89% of grafts. The most common desired outcome is visual rehabilitation, at 92%. In one-sixth of cases, this is in conjunction with another desired outcome, most often pain relief. The desired outcome varies depending on type of graft, as shown in Figure 4.

Figure 4 Desired outcome from graft, 1985 to 2026, stratified by type of graft, excluding unspecified



Desired outcome from graft was provided for 71% of grafts performed prior to 2001, and for >95% of grafts from 2001 onwards (Table 6). The proportion performed solely for visual rehabilitation has increased, to four in five grafts performed from 2021 to 2025. In contrast, the proportion performed for pain, either individually or in conjunction with other desired outcomes, has more than halved in twenty years.

Table 6 Desired outcome from graft, 2001 to 2025, stratified by era of graft

	Vision	Vision + Pain	Pain	Structural	Cosmesis	Other Mix*	Not specified	Total
1985-1999	50%	9%	4%	4%	<1%	3%	29%	12849
2001-2005	68%	15%	2%	7%	<1%	6%	3%	4835
2006-2010	71%	13%	2%	5%	<1%	6%	4%	5857
2011-2015	74%	11%	1%	4%	<1%	5%	5%	8078
2016-2020	76%	7%	1%	4%	<1%	4%	7%	9326
2021-2025	81%	6%	<1%	4%	<1%	4%	4%	10770
Total	69%	9%	2%	4%	<1%	5%	11%	51715

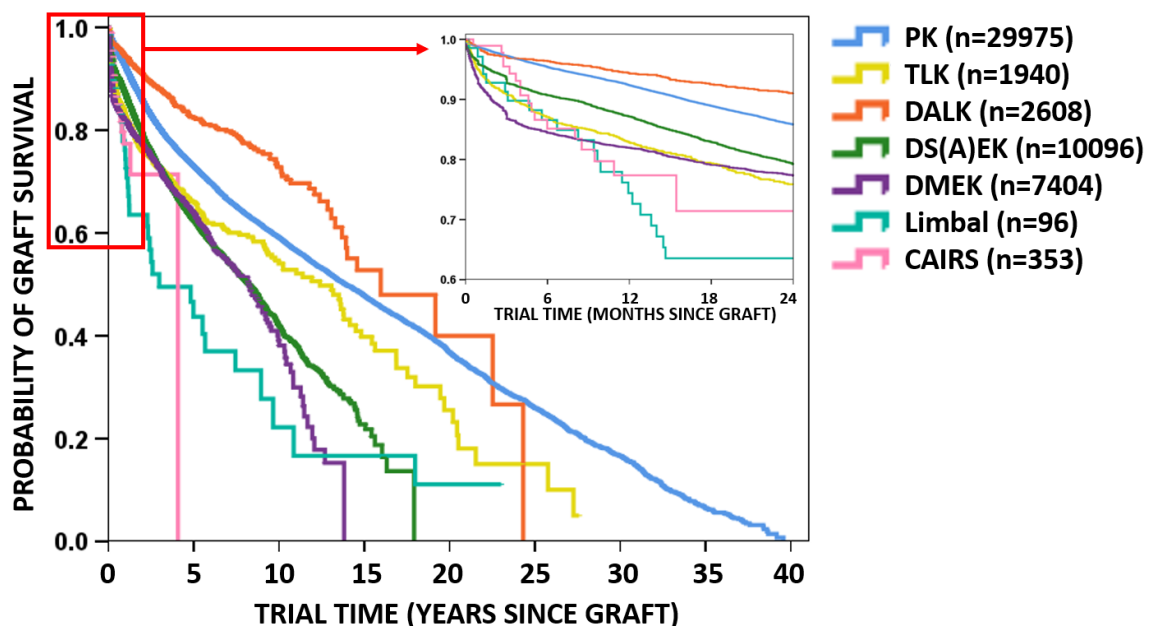
*May also include pain and/or vision.

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4 Graft Survival

Surgeons report graft survival to the date they last saw the patient, rather than at standardised time-points, and this is calculated in terms of days since graft. Grafts for which follow-up information has not yet been received are assumed to be surviving at one day post-graft. The survival of registered grafts is assessed using Kaplan-Meier survival curves. The number at risk tables show how many grafts have been followed in each group, at each time point. The survival probability tables extend to the point where a minimum of 20 grafts have follow-up data available. Survival of all grafts, stratified by type of graft, is shown in Figure 5.

Figure 5 Survival of all grafts registered from 1985 to 2026, stratified by type of graft



Number at risk	6 Months	1 Year	2 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years	35 Years
PK	22541	20742	15948	9009	4360	2368	1319	676	310	62
TLK	1081	914	635	299	90	33	11	3	NA	NA
DALK	1494	1367	971	425	125	17	5	NA	NA	NA
DS(A)EK	6315	5618	4231	2031	454	26	NA	NA	NA	NA
DMEK	3531	2948	1920	554	40	NA	NA	NA	NA	NA
Limbal	53	42	30	15	4	3	2	NA	NA	NA
CAIRS	58	26	1	NA	NA	NA	NA	NA	NA	NA

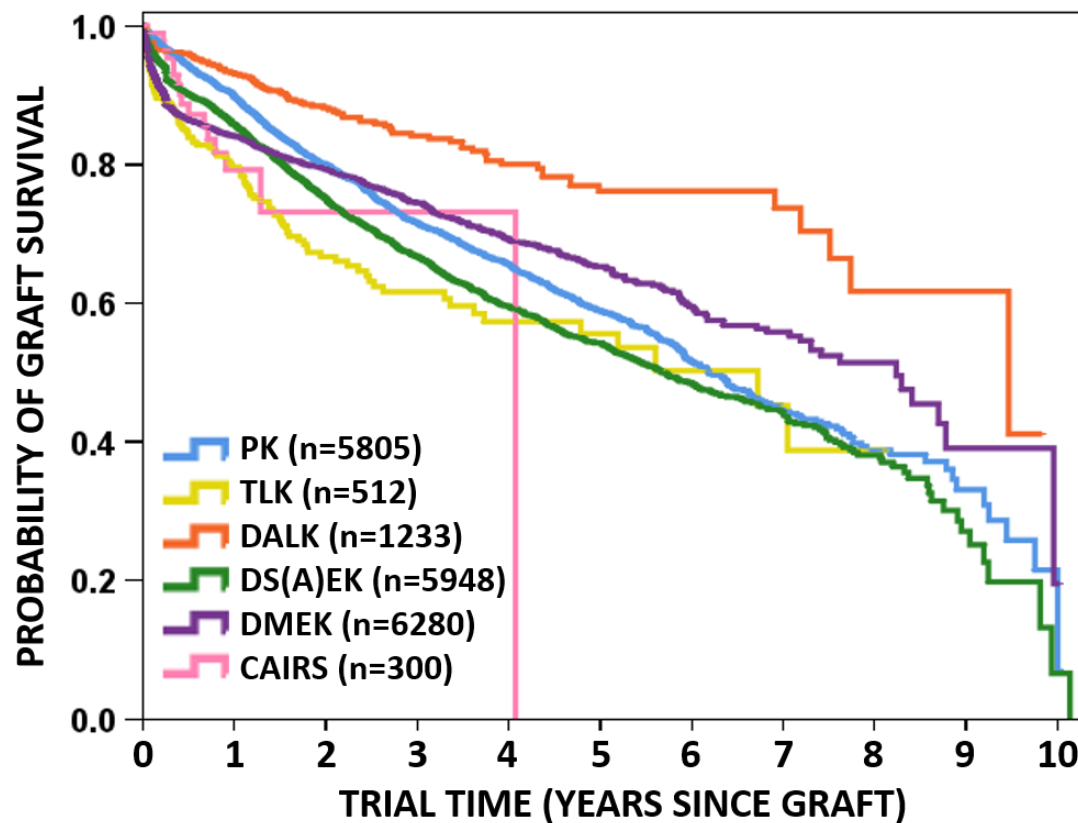
Survival probability	6 Months	1 Year	2 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years	35 Years
PK	0.95	0.92	0.86	0.73	0.59	0.48	0.37	0.26	0.17	0.07
TLK	0.87	0.83	0.76	0.66	0.54	0.40	NA	NA	NA	NA
DALK	0.96	0.94	0.91	0.82	0.73	NA	NA	NA	NA	NA
DS(A)EK	0.91	0.87	0.79	0.62	0.42	0.23	NA	NA	NA	NA
DMEK	0.85	0.82	0.77	0.64	0.39	NA	NA	NA	NA	NA
Limbal	0.87	0.74	0.64	NA	NA	NA	NA	NA	NA	NA
CAIRS	0.85	0.77	NA	NA	NA	NA	NA	NA	NA	NA

Note: NA=Not Applicable, no followed grafts for number at risk, <20 followed grafts for survival probability.

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As shown earlier in Figure 3, the different era in which each type of graft has been performed affects the likelihood that follow-up information will have been received. Figure 6 and the associated tables show the survival of grafts performed in the ten-year period from 2016 to 2025, stratified by type of graft. Limbal grafts are excluded from this analysis as fewer than 20 were performed during this time period.

Figure 6 Survival of all grafts registered from 2016 to 2025, stratified by type of graft



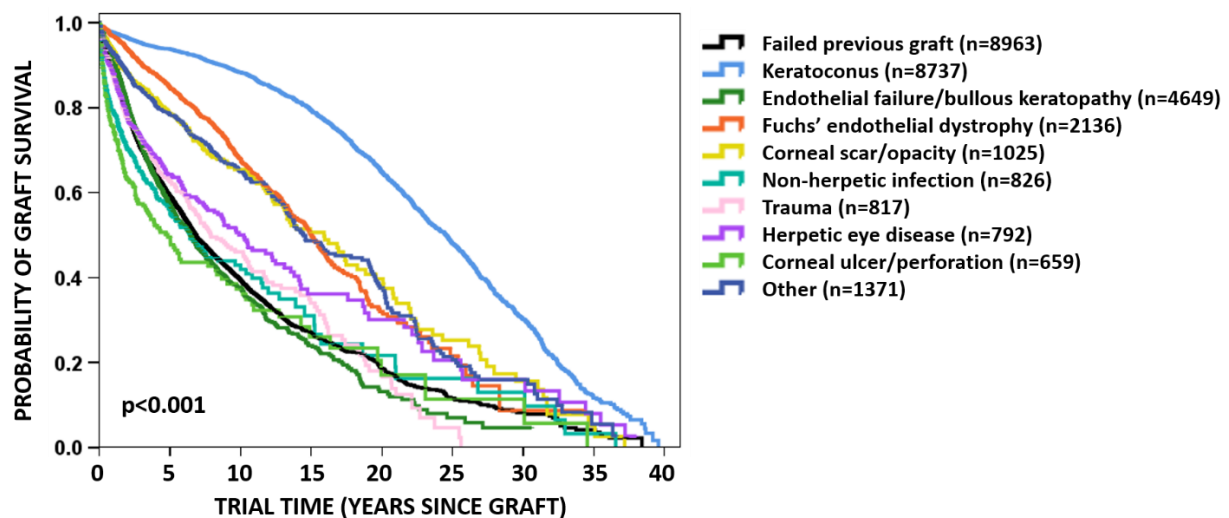
Number at risk	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
PK	3061	2017	1330	925	611	357	179	71	18	1
TLK	188	105	71	44	28	11	8	1	1	NA
DALK	502	340	217	154	99	61	28	9	3	NA
DS(A)EK	2815	1896	1347	934	638	382	197	77	17	1
DMEK	2577	1624	1016	636	364	190	99	33	9	1
CAIRS	26	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survival probability	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years
PK	0.90	0.80	0.72	0.66	0.59	0.52	0.45	0.39
TLK	0.80	0.67	0.62	0.57	0.56	NA	NA	NA
DALK	0.93	0.88	0.84	0.80	0.76	0.76	0.74	NA
DS(A)EK	0.86	0.75	0.67	0.60	0.54	0.49	0.44	0.38
DMEK	0.84	0.79	0.74	0.69	0.65	0.60	0.56	0.51
CAIRS	0.77	NA	NA	NA	NA	NA	NA	NA

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One of the major factors affecting graft survival has consistently been found to be indication for graft. The following analyses show the survival for each individual type of graft, stratified by the indications for graft, for each type of graft. Grafts where an underlying condition is known to have led to endothelial failure or perforation, are categorised according to the original condition. Grafts for scarring from historic infection without current recurrence, are categorised as scar/opacity, along with instances where a reason for the scar was not given.

Figure 7 Survival of PK performed from 1985 to 2026, stratified by indication for graft



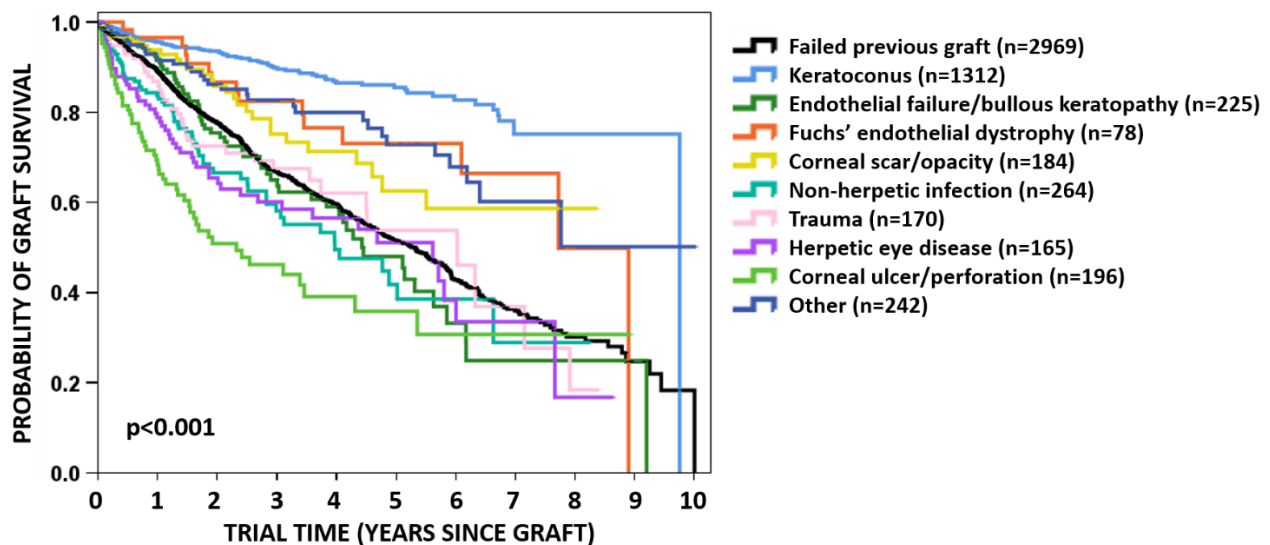
Number at risk	1 Year	2 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years	35 Years
Failed previous graft	5847	4410	2274	861	347	164	61	23	7
Keratoconus	6617	5355	3469	2152	1456	929	530	246	47
Endothelial failure/BK	3106	2158	893	265	81	24	7	1	NA
Fuchs' endothelial dystrophy	1731	1476	980	471	206	55	12	1	NA
Corneal scar/opacity	711	534	299	124	63	36	20	9	2
Non-herpetic infection	414	281	128	42	15	8	5	4	1
Trauma	524	391	198	81	38	13	2	NA	NA
Herpetic eye disease	523	381	189	87	32	19	9	6	3
Corneal ulcer/perforation	291	190	83	30	11	5	2	2	NA
Other	978	775	497	247	119	66	28	18	2

Survival probability	1 Year	2 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years	35 Years
Failed previous graft	0.89	0.79	0.59	0.40	0.27	0.19	0.12	0.08	NA
Keratoconus	0.98	0.96	0.94	0.88	0.79	0.65	0.48	0.30	0.12
Endothelial failure/BK	0.92	0.81	0.57	0.38	0.24	0.13	NA	NA	NA
Fuchs' endothelial dystrophy	0.97	0.94	0.85	0.68	0.50	0.32	NA	NA	NA
Corneal scar/opacity	0.93	0.88	0.79	0.65	0.51	0.40	0.25	NA	NA
Non-herpetic infection	0.79	0.70	0.56	0.43	NA	NA	NA	NA	NA
Trauma	0.88	0.78	0.63	0.46	0.34	NA	NA	NA	NA
Herpetic eye disease	0.88	0.78	0.64	0.50	0.36	NA	NA	NA	NA
Corneal ulcer/perforation	0.75	0.63	0.50	0.37	NA	NA	NA	NA	NA
Other	0.93	0.88	0.78	0.65	0.49	0.38	0.21	NA	NA

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As shown in tables 4 and 5, the indications reported for PKs have changed in recent years. Figure 8, and its related tables, present the results for PK performed from 2016 to 2025.

Figure 8 Survival of PK performed from 2016 to 2025, stratified by indication for graft

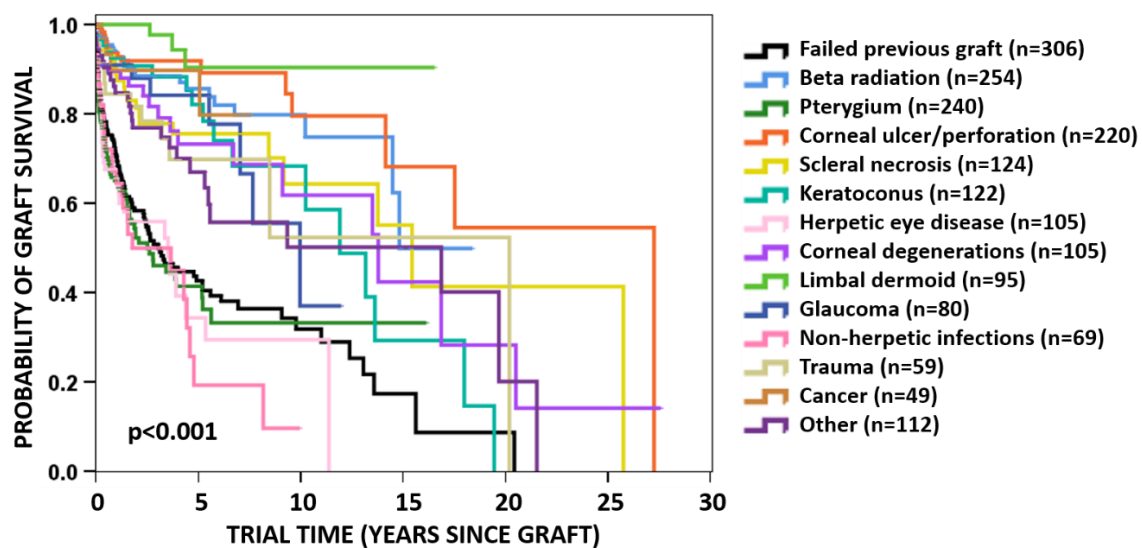


Number at risk	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
Failed previous graft	1578	1049	688	476	316	181	92	36	10	2
Keratoconus	714	494	315	229	155	96	49	21	6	NA
Endothelial failure/BK	128	80	49	34	19	8	2	2	1	NA
Fuchs' endothelial dystrophy	54	42	35	22	16	12	6	1	NA	NA
Corneal scar/opacity	97	67	43	29	19	9	4	1	NA	NA
Non-herpetic infection	124	64	43	26	13	7	3	1	NA	NA
Trauma	86	50	37	18	11	7	4	2	NA	NA
Herpetic eye disease	85	53	37	29	16	8	5	1	NA	NA
Corneal ulcer/perforation	65	36	24	13	8	4	4	1	NA	NA
Other	130	82	63	49	38	25	10	5	1	1

Survival probability	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years
Failed previous graft	0.89	0.78	0.67	0.60	0.52	0.43	0.36	0.30
Keratoconus	0.96	0.94	0.90	0.87	0.86	0.83	0.75	0.75
Endothelial failure/BK	0.92	0.75	0.65	0.59	NA	NA	NA	NA
Fuchs' endothelial dystrophy	0.97	0.87	0.82	0.77	NA	NA	NA	NA
Corneal scar/opacity	0.94	0.86	0.75	0.71	NA	NA	NA	NA
Non-herpetic infection	0.84	0.67	0.63	0.50	NA	NA	NA	NA
Trauma	0.87	0.73	0.68	NA	NA	NA	NA	NA
Herpetic eye disease	0.79	0.65	0.60	0.57	NA	NA	NA	NA
Corneal ulcer/perforation	0.68	0.51	0.46	NA	NA	NA	NA	NA
Other	0.92	0.86	0.83	0.80	0.73	0.68	NA	NA

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Figure 9 Survival of TLK performed from 1985 to 2026, stratified by indication for graft

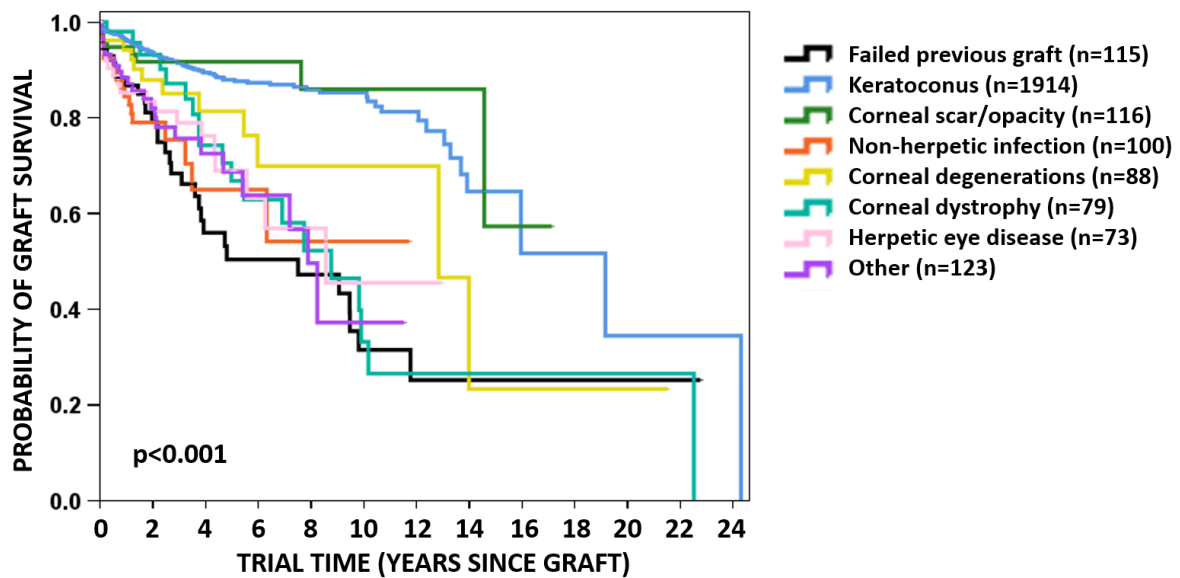


Number at Risk	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years
Failed previous graft	131	87	61	48	42	33	22	18	17
Beta radiation	134	94	77	66	50	41	36	28	18
Pterygium	82	48	33	26	16	10	9	7	4
Corneal ulcer/perforation	115	77	60	45	36	30	26	23	19
Scleral necrosis	63	47	39	29	24	21	18	14	12
Keratoconus	57	42	36	30	23	15	10	8	7
Herpetic eye disease	36	22	16	8	7	5	4	4	3
Corneal degeneration	61	41	32	26	22	16	15	13	11
Limbal dermoid	62	46	39	28	22	17	13	10	8
Glaucoma	34	29	20	16	14	8	7	5	4
Non-herpetic infection	25	14	11	7	3	2	2	2	1
Trauma	33	28	23	14	10	6	6	5	3
Cancer	22	15	11	9	9	4	1	NA	NA
Other	59	45	37	28	21	13	12	11	11

Survival probability	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years
Failed previous graft	0.71	0.58	0.51	0.46	0.43	0.39	NA	NA
Beta radiation	0.93	0.88	0.88	0.88	0.86	0.82	0.80	0.80
Pterygium	0.65	0.52	0.46	0.41	NA	NA	NA	NA
Corneal ulcer/perforation	0.94	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Scleral necrosis	0.89	0.81	0.78	0.76	0.76	0.76	NA	NA
Keratoconus	0.92	0.91	0.88	0.88	0.82	NA	NA	NA
Herpetic eye disease	0.66	0.56	NA	NA	NA	NA	NA	NA
Corneal degeneration	0.90	0.86	0.82	0.76	0.73	NA	NA	NA
Limbal dermoid	1.00	1.00	0.98	0.94	0.90	NA	NA	NA
Glaucoma	0.91	0.88	0.84	NA	NA	NA	NA	NA
Non-herpetic infection	0.65	NA	NA	NA	NA	NA	NA	NA
Trauma	0.85	0.82	0.78	NA	NA	NA	NA	NA
Cancer	0.90	NA	NA	NA	NA	NA	NA	NA
Other	0.85	0.77	0.77	0.70	0.67	NA	NA	NA

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Figure 10 Survival of DALK performed from 2000 to 2026, stratified by indication for graft

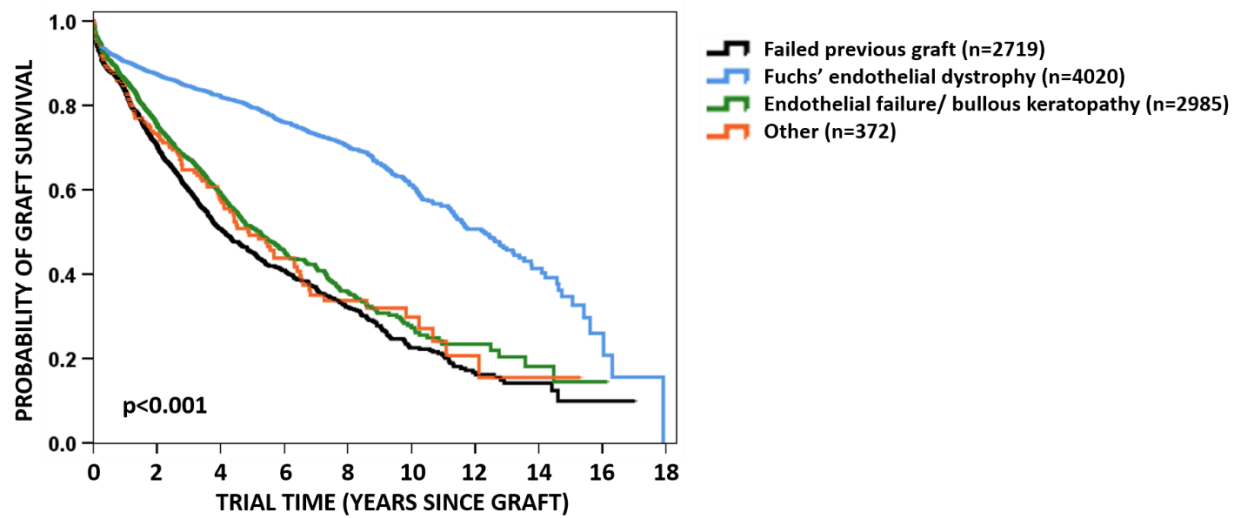


Number at risk	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	8 Years	10 Years	12 Years	14 Years
Failed previous graft	53	39	31	22	18	18	15	8	4	3
Keratoconus	992	694	500	387	307	246	152	91	45	18
Corneal scar/opacity	66	57	39	31	26	21	15	9	4	3
Non-herpetic infection	49	29	15	10	8	6	3	1	NA	NA
Corneal degenerations	47	34	28	22	17	11	7	5	3	1
Corneal dystrophy	45	33	27	22	18	16	9	5	3	2
Herpetic eye disease	48	42	33	28	15	10	5	4	2	NA
Other	67	43	32	22	16	9	6	2	NA	NA

Survival probability	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	8 Years	10 Years	12 Years
Failed previous graft	0.87	0.79	0.68	0.56	NA	NA	NA	NA	NA
Keratoconus	0.96	0.94	0.92	0.89	0.88	0.87	0.86	0.85	0.81
Corneal scar/opacity	0.95	0.92	0.92	0.92	0.92	0.92	NA	NA	NA
Non-herpetic infection	0.84	0.79	NA	NA	NA	NA	NA	NA	NA
Corneal degenerations	0.94	0.88	0.85	0.81	NA	NA	NA	NA	NA
Corneal dystrophy	0.98	0.93	0.87	0.74	NA	NA	NA	NA	NA
Herpetic eye disease	0.85	0.83	0.79	0.76	NA	NA	NA	NA	NA
Other	0.88	0.82	0.76	0.73	NA	NA	NA	NA	NA

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Figure 11 Survival of DS(A)EK performed from 2006 to 2026, stratified by indication for graft

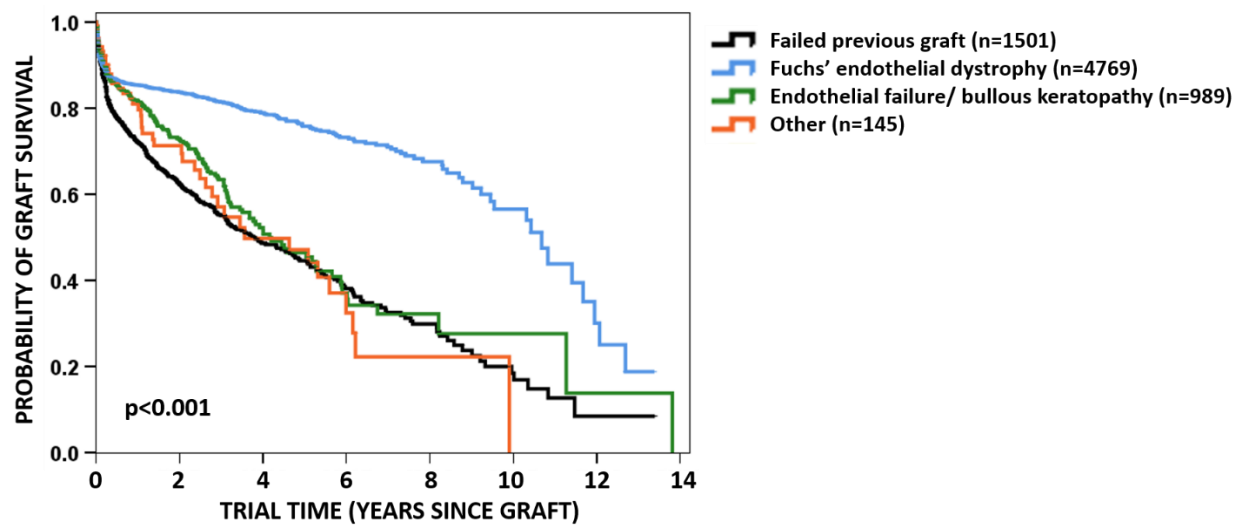


Number at risk	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	8 Years	10 Years	12 Years	14 Years
Failed previous graft	1439	989	702	489	368	268	150	74	32	10
Fuchs' endothelial dystrophy	2493	2065	1746	1472	1220	959	583	315	135	44
Endothelial failure/bullous keratopathy	1490	1040	733	529	384	276	121	51	19	8
Other	196	137	105	78	59	46	23	14	4	1

Survival probability	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	8 Years	10 Years	12 Years	14 Years
Failed previous graft	0.84	0.71	0.60	0.51	0.45	0.41	0.32	0.23	0.17	NA
Fuchs' endothelial dystrophy	0.90	0.87	0.85	0.82	0.80	0.76	0.70	0.61	0.51	0.41
Endothelial failure/bullous keratopathy	0.86	0.75	0.67	0.59	0.51	0.46	0.36	0.28	NA	NA
Other	0.83	0.73	0.65	0.58	0.49	0.44	0.34	NA	NA	NA

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Figure 12 Survival of DMEK performed from 2007 to 2026, stratified by indication for graft



Number at risk	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	8 Years	10 Years
Failed previous graft	588	382	271	186	124	88	34	12
Fuchs' endothelial dystrophy	1939	1273	833	571	368	223	88	25
Endothelial failure/bullous keratopathy	361	225	129	70	46	26	8	3
Other	60	40	24	19	16	7	2	NA

Survival probability	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	8 Years	10 Years
Failed previous graft	0.72	0.63	0.55	0.49	0.45	0.38	0.30	NA
Fuchs' endothelial dystrophy	0.85	0.84	0.81	0.79	0.76	0.73	0.68	0.57
Endothelial failure/bullous keratopathy	0.82	0.73	0.63	0.52	0.47	0.37	NA	NA
Other	0.81	0.71	0.57	NA	NA	NA	NA	NA

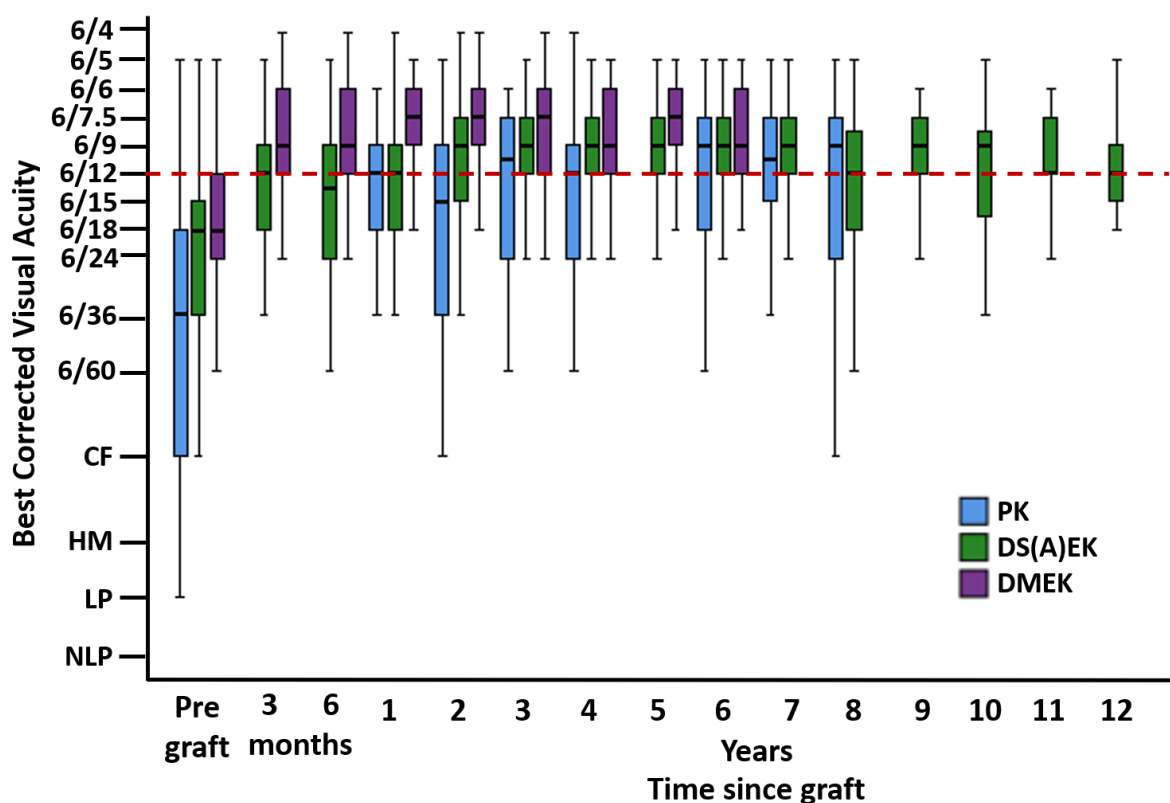
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5 Visual Acuity

The most commonly reported desired outcome of corneal transplantation is improvement in vision. To be successful, a graft must therefore firstly survive, and then secondly provide a level of visual acuity that is adequate for the recipient's needs. Data from the ACGR chart the visual outcomes in grafts at various time points post-graft.

Figure 13 and Figure 14 show the BCVA in the grafted eye at various time points, for first grafts performed for Fuchs' endothelial dystrophy and keratoconus, respectively. These data are for grafts performed in the last 20 years and include data for **surviving** grafts at each time point. They are stratified by graft type, with box plots presented for groups with data available for 20 or more grafts. The box indicates the interquartile range (middle 50%) of values, with the central line showing the median value. Functional vision of 6/12 is indicated by the red dashed line. The accompanying tables indicate the number of grafts for which data were available at each time point, with analyses performed where at least 20 grafts had data provided. Improvements in BCVA were found in surviving grafts, for all graft types, for both indications for graft.

Figure 13 BCVA at various time points pre- and post-graft, in surviving grafts performed for Fuchs' endothelial dystrophy from 2006 to 2025, stratified by type of graft

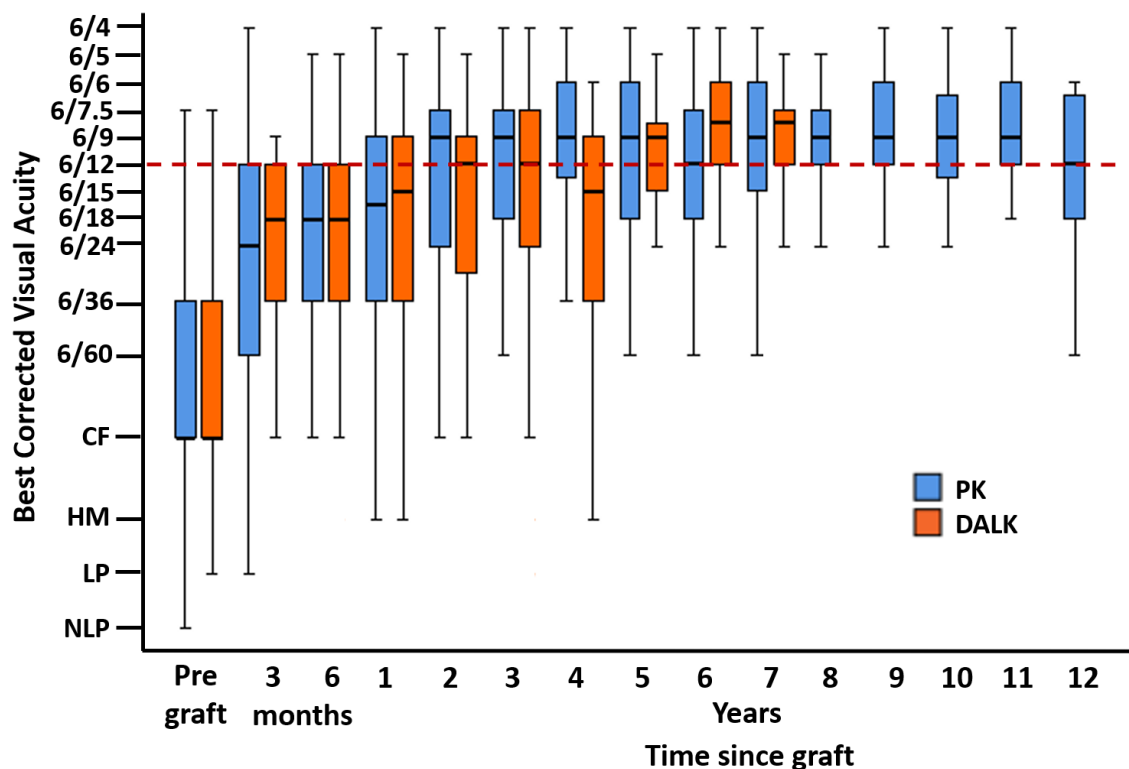


	Pre	3m	6m	1	2	3	4	5	6	7	8	9	10	11	12
PK	585	10	8	40	59	32	25	19	26	22	23	9	13	10	14
DS(A)EK	3705	169	206	355	279	226	142	144	117	104	72	50	39	26	21
DMEK	4343	244	263	470	252	164	98	70	32	19	11	9	4	1	0

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For Fuchs endothelial dystrophy, the *pre-graft* BCVA varied significantly across graft types, with DMEK performed in eyes with significantly better vision than either PK or DS(A)EK, and DS(A)EK in eyes with better vision than PK (all $p < 0.001$). Functional vision (6/12) was achieved in a majority of eyes with **surviving** grafts at 3 months for both EK groups, while eyes that underwent PK achieved this level at 1 year post-graft. However, the median BCVA dropped back below this level at 6 months post-graft for DS(A)EK and 2 years post-graft for PK, before improving again. Aside from these two instances, median BCVA was 6/12 or better in surviving grafts, at yearly intervals up to 6 years post graft for DMEK, 8 years for PK, and 12 years for DS(A)EK. Post-graft BCVA was significantly better ($p < 0.001$) in eyes with surviving DMEK than in those with surviving DS(A)EK up to 5 years post-graft, or surviving PK up to 3 years post-graft. At 2 years post-graft, BCVA in eyes with surviving DS(A)EK was significantly better than in those with surviving PK ($p < 0.001$).

Figure 14 BCVA at various time points pre- and post-graft, in surviving grafts performed for keratoconus from 2006 to 2025, stratified by type of graft



	Pre	3m	6m	1	2	3	4	5	6	7	8	9	10	11	12
PK	3244	74	57	350	269	169	119	115	70	67	44	51	28	30	20
DALK	1718	21	59	156	107	62	40	32	30	30	13	8	4	4	6

Pre-graft visual acuity was significantly poorer in eyes that underwent PK ($p < 0.001$). Median post-graft BCVA achievement reached functional vision by 2 years post-graft for both PK and DALK performed for keratoconus. This was maintained to 12 years for PK and 7 years for DALK. The post-graft BCVA was significantly better following PK compared to DALK at 2 years ($p = 0.014$), and 4 years ($p = 0.002$) post graft.