

SECTION 10

Eye and Tissue Donation

SUMMARY

Summarising the data on eye and tissue donation and transplant outcome in 2020. The data presented here is provided by Eye and Tissue Banks across Australia, in conjunction with data collected within the solid organ donation sector.

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Eye and Tissue Reporting

The collaboration between the Australian Organ and Tissue Authority (OTA), jurisdictional eye and tissue banks and the ANZOD Registry continues to strengthen the national reporting of tissue data. Reported datasets and analyses produced by the Registry inform the discussions held by health care professionals, policy makers, consumers and individual agencies to optimise every potential donation opportunity and to increase access to life-transforming transplantation for Australians - See more at: http://www.donatelife.gov.au/organ-and-tissue-authority-ota

Eye and Tissue Banks

Eye and tissue banks across Australia provide data for cardiovascular, musculoskeletal and skin tissue donations.

Musculoskeletal donations can be in the form of bone, tendon and ligaments and are utilised for knee and hip replacements, reconstructive orthopaedic surgery following trauma or disease and spinal deformities and can aid in prevention of limb loss following tumour removal. Just one musculoskeletal donation can aid many recipients and greatly improve their quality of life.

Cardiovascular tissue incorporates donations of heart valves, pericardium and thoracic aorta. Heart valves are necessary to regulate the flow of blood to and from the heart, whereas pericardium can be used during neurosurgery or, like the thoracic aorta, can also be used for vascular repair of defects or injury.

Donated skin contributes to saving lives and improving long term outcomes for patients who suffer severe burns. Donated skin is essential when a patient's own skin cannot be used for grafting. Using donated skin as a wound "dressing" helps reduce infection, fluid loss and pain, promotes wound healing and minimises scarring. Often recipients will require more than one donated graft for their wounds to heal. Skin grafts are also used to treat wounds resulting from trauma and serious infection.

Eye tissue donation can restore sight, prevent blindness, and dramatically change the quality of an individual's life. Donor tissue is also crucial to advancing research and developing surgical techniques. Eye banks in Australia provide data for eye donation including corneal and sclera tissue donations.

Tissue Donors

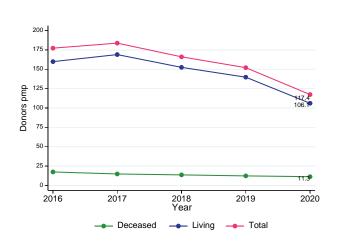
Table 10.1 summarises the number of tissue donors by donation pathway and jurisdiction from 2016 to 2020.

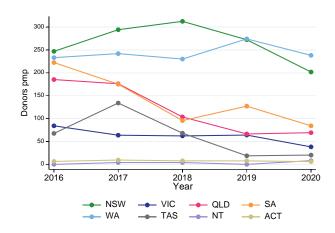
Donation Type	Jurisdiction	2016	2017	2018	2019	2020
	NSW	1737 (44.9%)	2139 (51.5%)	2303 (60.4%)	2054 (57.9%)	1528 (56.1%)
	VIC	407 (10.5%)	309 (7.4%)	323 (8.5%)	336 (9.5%)	175 (6.4%)
	QLD	731 (18.9%)	741 (17.8%)	419 (11%)	230 (6.5%)	256 (9.4%)
Living Depor	SA	376 (9.7%)	292 (7%)	155 (4.1%)	213 (6%)	138 (5.1%)
Living Donor	WA	583 (15.1%)	608 (14.6%)	578 (15.2%)	705 (19.9%)	619 (22.7%)
	TAS	33 (.9%)	67 (1.6%)	32 (.8%)	7 (.2%)	10 (.4%)
	NT	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	ACT	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Living Donor	AUS	3867 (100%)	4156 (100%)	3810 (100%)	3545 (100%)	2726 (100%)
	NSW	117 (27.8%)	109 (29.9%)	120 (35.4%)	86 (27.6%)	73 (25.3%)
	VIC	113 (26.8%)	94 (25.8%)	79 (23.3%)	86 (27.6%)	81 (28%)
	QLD	167 (39.7%)	127 (34.8%)	100 (29.5%)	108 (34.6%)	102 (35.3%)
Deceased Donor	SA	5 (1.2%)	10 (2.7%)	11 (3.2%)	10 (3.2%)	11 (3.8%)
Deceased Donoi	WA	13 (3.1%)	15 (4.1%)	19 (5.6%)	14 (4.5%)	15 (5.2%)
	TAS	2 (.5%)	3 (.8%)	4 (1.2%)	3 (1%)	1 (.3%)
	NT	0 (0%)	1 (.3%)	1 (.3%)	0 (0%)	2 (.7%)
	ACT	4 (1%)	6 (1.6%)	5 (1.5%)	5 (1.6%)	4 (1.4%)
Deceased Donor	AUS	421 (100%)	365 (100%)	339 (100%)	312 (100%)	289 (100%)
	NSW	1854 (43.2%)	2248 (49.7%)	2423 (58.4%)	2140 (55.5%)	1601 (53.1%)
	VIC	520 (12.1%)	403 (8.9%)	402 (9.7%)	422 (10.9%)	256 (8.5%)
	QLD	898 (20.9%)	868 (19.2%)	519 (12.5%)	338 (8.8%)	358 (11.9%)
Total Donors	SA	381 (8.9%)	302 (6.7%)	166 (4%)	223 (5.8%)	149 (4.9%)
	WA	596 (13.9%)	623 (13.8%)	597 (14.4%)	719 (18.6%)	634 (21%)
	TAS	35 (.8%)	70 (1.5%)	36 (.9%)	10 (.3%)	11 (.4%)
	NT	0 (0%)	1 (0%)	1 (0%)	0 (0%)	2 (.1%)
	ACT	4 (.1%)	6 (.1%)	5 (.1%)	5 (.1%)	4 (.1%)
Total Donors	AUS	4288 (100%)	4521 (100%)	4149 (100%)	3857 (100%)	3015 (100%)

 Table 10.1 Number of Tissue Donors by Donation Pathway and Jurisdiction 2016-2020

Figure 10.1 shows the tissue donors per million population (pmp) across each donation pathway from 2016 to 2020. Figure 10.2 shows the tissue donors (pmp) across each jurisdiction from 2016 to 2020.

Figure 10.1 - Tissue Donors (pmp) by Donation Pathway, 2016-2020





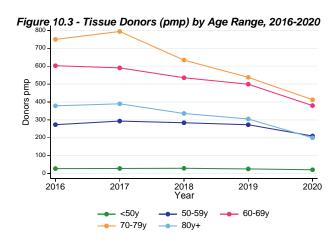
Tissue Donor Characteristics

Tissue donor characteristics are described in Table 10.2.

Donor Profile	2016	2017	2018	2019	2020
Gender					
Female	2164 (50.5%)	2302 (50.9%)	2100 (50.6%)	2012 (52.2%)	1493 (49.5%)
Male	2124 (49.5%)	2219 (49.1%)	2049 (49.4%)	1845 (47.8%)	1522 (50.5%)
Age					
<50y	445 (10.4%)	463 (10.2%)	486 (11.7%)	433 (11.2%)	356 (11.8%)
50-59y	826 (19.3%)	892 (19.7%)	868 (20.9%)	841 (21.8%)	654 (21.7%)
60-69y	1506 (35.1%)	1492 (33%)	1374 (33.1%)	1308 (33.9%)	1020 (33.8%)
70-79y	1156 (27%)	1299 (28.7%)	1089 (26.2%)	964 (25%)	774 (25.7%)
80y+	355 (8.3%)	375 (8.3%)	332 (8%)	311 (8.1%)	211 (7%)

Table 10.2 Donor Characteristics Profile, 2016-2020

Figure 10.3 shows the tissue donors (pmp), across age ranges from 2016 to 2020.



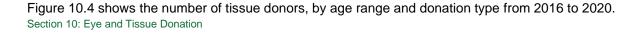
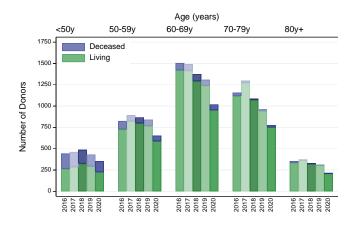


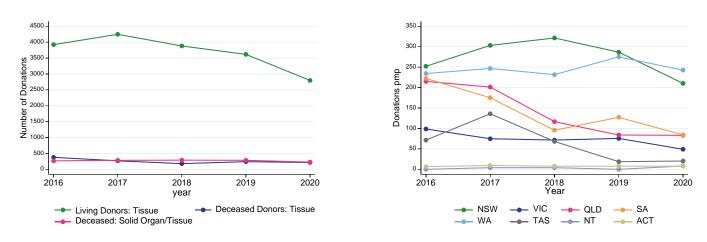
Figure 10.2 - Tissue Donors (pmp) by Jurisdiction, 2016-2020

Figure 10.4 - Number of Donors by Age Range and Donor Pathway, 2016-2020



Tissue Donation

Figure 10.5 - Donations by Donation Pathway: Overall Australia, 2016-2020



2016-2020

Figure 10.6 - Total Tissue Donations (pmp) by Jurisdiction,

Figure 10.7 - Tissue Donations (pmp) from Living Donors by Jurisdiction, 2016-2020

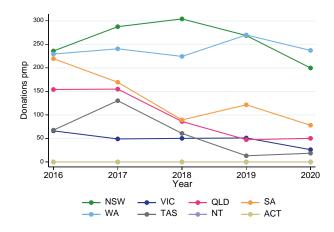


Table 10.3 shows the total number and percentage of tissue donations, by donation pathway and jurisdiction from 2016 to 2020.

Table 10.3 Number of Tissue Donations by Donor Type and Jurisdiction 2016-2020

Table 10.3 Number of Tissue DoDonation Type	Jurisdiction	2016	2017	2018	2019	2020
	NSW	1771 (45.2%)	2197 (51.7%)	2357 (60.7%)	2111 (58.4%)	1584 (56.6%)
	VIC	408 (10.4%)	309 (7.3%)	324 (8.3%)	336 (9.3%)	175 (6.3%)
	QLD	746 (19%)	763 (18%)	431 (11.1%)	241 (6.7%)	259 (9.3%)
Living Dener Denetions	SA	376 (9.6%)	292 (6.9%)	155 (4%)	213 (5.9%)	138 (4.9%)
Living Donor Donations	WA	586 (14.9%)	619 (14.6%)	582 (15%)	708 (19.6%)	631 (22.6%)
	TAS	35 (.9%)	68 (1.6%)	32 (.8%)	7 (.2%)	10 (.4%)
	NT	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	ACT	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Living Donor Donations	AUS	3922 (100%)	4248 (100%)	3881 (100%)	3616 (100%)	2797 (100%)
	NSW	122 (19%)	120 (21.9%)	135 (28.9%)	142 (27.1%)	84 (19%)
	VIC	201 (31.3%)	164 (29.9%)	139 (29.8%)	163 (31.1%)	153 (34.6%)
	QLD	296 (46%)	229 (41.7%)	153 (32.8%)	187 (35.7%)	171 (38.7%)
Deceased Donor	SA	5 (.8%)	10 (1.8%)	11 (2.4%)	10 (1.9%)	11 (2.5%)
Donations	WA	13 (2%)	16 (2.9%)	19 (4.1%)	14 (2.7%)	15 (3.4%)
	TAS	2 (.3%)	3 (.5%)	4 (.9%)	3 (.6%)	1 (.2%)
	NT	0 (0%)	1 (.2%)	1 (.2%)	0 (0%)	2 (.5%)
	ACT	4 (.6%)	6 (1.1%)	5 (1.1%)	5 (1%)	5 (1.1%)
Deceased Donor Donations	AUS	643 (100%)	549 (100%)	467 (100%)	524 (100%)	442 (100%)
	NSW	1893 (41.5%)	2317 (48.3%)	2492 (57.3%)	2253 (54.4%)	1668 (51.5%)
	VIC	609 (13.3%)	473 (9.9%)	463 (10.6%)	499 (12.1%)	328 (10.1%)
	QLD	1042 (22.8%)	992 (20.7%)	584 (13.4%)	428 (10.3%)	430 (13.3%)
Total Departies -	SA	381 (8.3%)	302 (6.3%)	166 (3.8%)	223 (5.4%)	149 (4.6%)
Total Donations	WA	599 (13.1%)	635 (13.2%)	601 (13.8%)	722 (17.4%)	646 (19.9%)
	TAS	37 (.8%)	71 (1.5%)	36 (.8%)	10 (.2%)	11 (.3%)
	NT	0 (0%)	1 (0%)	1 (0%)	0 (0%)	2 (.1%)
	АСТ	4 (.1%)	6 (.1%)	5 (.1%)	5 (.1%)	5 (.2%)
Total Donations	AUS	4565 (100%)	4797 (100%)	4348 (100%)	4140 (100%)	3239 (100%)

Table 10.4 shows the breakdown of donation from living donors by tissue type and jurisdiction.

Jurisdiction	Musculoskeletal	Cardiovascular	Amnion	Total
NSW	1558	8	18	1584
VIC	174	1	0	175
QLD	259	0	0	259
SA	138	0	0	138
WA	631	0	0	631
TAS	10	0	0	10
NT	0	0	0	0
ACT	0	0	0	0
AUS	2770	9	18	2797

Table 10.4 Tissue Donations from Living Donors by Tissue Type and Jurisdiction, 2020

Figures 10.8 and 10.9 show the breakdown of deceased tissue only and solid organ and tissue donation, by jurisdiction, for the period 2016 to 2020.

Figure 10.8 - Tissue Donations from Deceased Donors by Jurisdiction, 2016-2020

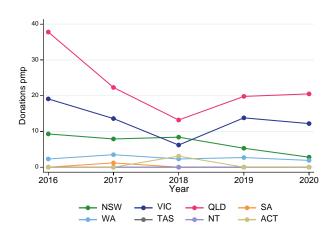


Figure 10.9 - Solid Organ and Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2016-2020

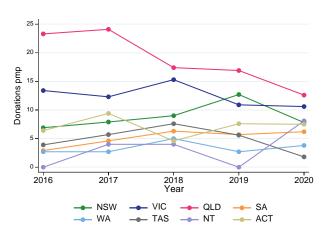


Table 10.5 shows the breakdown of donation from deceased donors by tissue type, donation sector and jurisdiction.

	Tis	sue Or	nly Sector	or Solid Organ/Tissue Sector Tissue Total								
State	ms	cv	skin	рі	ms	cv	skin	рі	ms	cv	skin	рі
NSW	16	5	1	0	17	37	6	2	33	42	7	2
VIC	20	25	37	0	24	24	21	2	44	49	58	2
QLD	52	0	54	0	22	20	21	2	74	20	75	2
SA	0	0	0	0	0	11	0	0	0	11	0	0
WA	5	0	0	0	10	0	0	0	15	0	0	0
TAS	0	0	0	0	0	1	0	0	0	1	0	0
NT	0	0	0	0	0	2	0	0	0	2	0	0
ACT	0	0	0	0	1	4	0	0	1	4	0	0
AUS	93	30	92	0	74	99	48	6	167	129	140	6

Table 10.5 Tissue Donations (pmp) from Deceased Donors by Jurisdiction and Donation Sector, 2020

ms = musculoskeletal tissue | cv = cardiovascular tissue | pi = pancreas islets

Type of Tissue Donation

Tissue Donations are reported by donation pathway for musculoskeletal, cardiovascular, skin and pancreas islet tissue.

Musculoskeletal Donation

Figures 10.10 and 10.11 show the number of musculoskeletal tissue donations by jurisdiction (2016 to 2020) from living and deceased donors.

Figure 10.10 - Musculoskeletal Tissue Donations (pmp) from Living Donors by Jurisdiction, 2016-2020

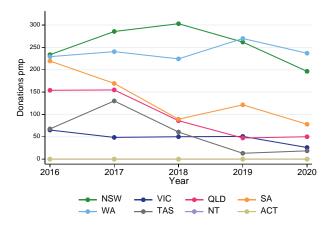
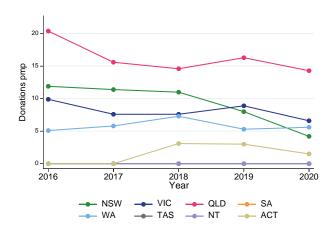


Figure 10.11 - Musculoskeletal Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2016-2020



Cardiovascular Donation

Figures 10.12 and 10.13 show the breakdown cardiovascular tissue donation by jurisdiction (2016 to 2020) from living and deceased donors.

Figure 10.12 - Cardiovascular Tissue Donations (pmp) from Living Donors by Jurisdiction, 2016-2020

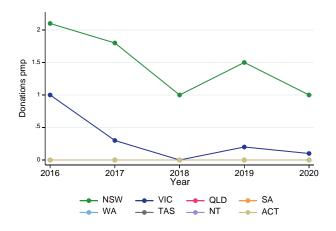
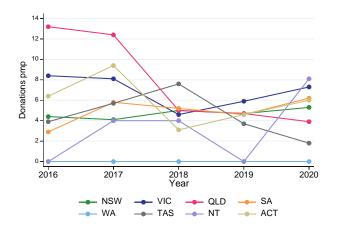


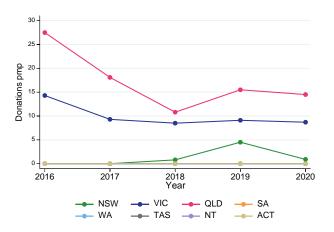
Figure 10.13 - Cardiovascular Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2016-2020



Skin Donation

Figure 10.14 shows the breakdown of skin donations by jurisdiction from 2016 to 2020.

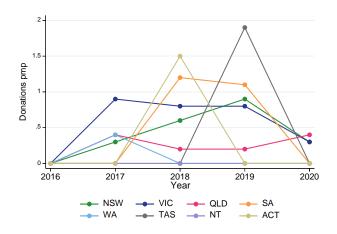




Pancreas Islet Donation

Figure 10.15 shows the breakdown of pancreas islet donations by jurisdiction from 2016 to 2020.





Outcome of Tissue Donation

Musculoskeletal, cardiovascular and skin tissue donated for the purpose of transplantation can be stored for a period of time before a transplant occurs. Therefore, the numbers reported for grafts and recipients of tissue, in this section, represent transplantation outcomes for the reporting period only, not the outcome of donations for the reporting period.

A tissue transplant recipient can receive one or more tissue grafts in one or more transplant events. Tissue transplantation counts are reported by tissue banks as the number of notified transplants and notified recipients from tissue retrieved by that tissue bank.

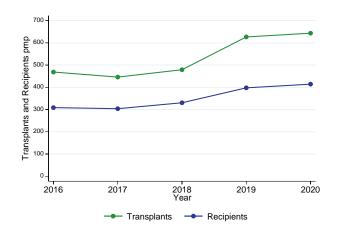
Table 10.6 shows the overall number of notified^{1,2} tissue transplants (grafts) and recipients for 2016-2020.

Table 10.6 Notified Tissue Transplants and Recipients, 2016-2020

	2016	2017	2018	2019	2020
Transplants	11338	10973	11969	15895	16527
Recipients	7468	7474	8258	10086	10640

Figure 10.16 shows the number of notified^{1,2} tissue transplants (grafts) and recipients per million population for 2016-2020.

Figure 10.16 - Notified Tissue Transplants and Recipients (pmp), 2015-2020



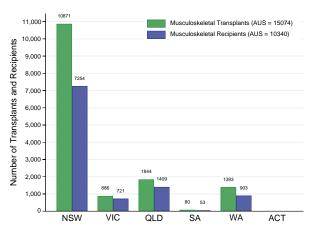
¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of.' ² Notified tissue recipient is defined as the 'Number of recipients notified to the bank, who receive one or more graft implants during a single transplant event'.

Outcome of Tissue Donation by Tissue Type

The following graphs represent the outcome of tissue donation by tissue type and the number of recipients who received tissue graft transplant by tissue type. (Figures 10.17 to Figure 10.20)

Figure 10.17 shows the number of notified^{1,2} musculoskeletal tissue transplants and recipients by jurisdiction for 2020.

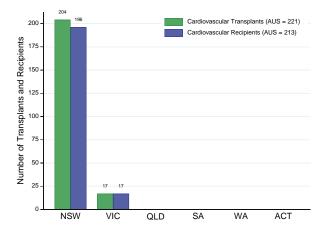
Figure 10.17 - Number of Notified Musculoskeletal Transplants and Recipients by Jurisdiction, 2020



¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of'. ² Notified tissue recipient is defined as the 'Number of recipients notified to the bank, who receive one or more graft implants during a single transplant event'.

Figure 10.18 shows the number of notified^{1,2} cardiovascular tissue transplants and recipients by jurisdiction for 2020.

Figure 10.18 - Number of Notified Cardiovascular Transplants and Recipients by Jurisdiction, 2020



¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of'. ² Notified tissue recipient is defined as the 'Number of recipients notified to the bank, who receive one or more graft implants during a single transplant event'.

Figure 10.19 shows the number of notified^{1,2} skin tissue transplants and recipients by jurisdiction for 2020.

Figure 10.19 - Number of Notified Skin Tissue Transplants and Recipients by Jurisdiction, 2020



¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of'. ² Notified tissue recipient is defined as the 'Number of recipients notified to the bank, who receive one or more graft implants during a single transplant event'.

In Australia, there are three pancreas islets transplanting units (Westmead in New South Wales, Monash in Victoria and Royal Adelaide Hospital in South Australia). Figure 10.20 shows the number of notified^{1,2} pancreas islet transplants and recipients by jurisdiction for 2020.





¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of'. ² Notified tissue recipient is defined as the 'Number of recipients notified to the bank, who receive one or more graft implants during a single transplant event'.

Eye Donors

The total numbers reported in this section may include duplicate counts of donors that are also multi-organ and tissue donors or multi-tissue donors, where the donor coordination was performed by another donation agency. Where there is no eye bank in a jurisdiction, eye donation is managed from a satellite jurisdiction. This data is sourced from Australian eye banks in conjunction with EBAANZ.

Table 10.7 shows the total number of eye donors by jurisdiction from 2016 to 2020.

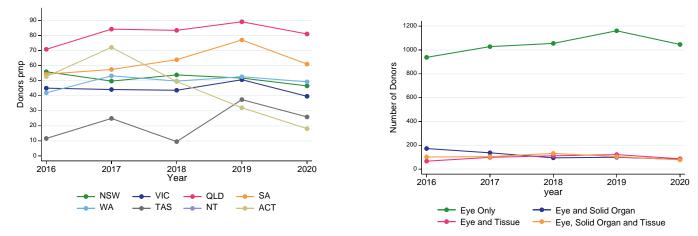
Table 10.7 Number of Eye Donors by Jurisdiction 2016-2020								
State	2016	2017	2018	2019	2020			
NSW	420	380	417	406	369			
VIC	278	279	282	334	265			
QLD	343	415	418	454	419			
SA	93	99	111	135	108			
WA	107	137	129	138	131			
TAS	6	13	5	20	14			
NT	0	0	0	0	0			
ACT	33	46	32	21	12			
AUS	1280	1369	1394	1508	1318			

Table 10.7 shows the total number of eye donors by jurisdiction from 2010 to 2

Figure 10.21 represents the number of eye donors from each Australian jurisdiction for the reporting period 2016 to 2020. Figure 10.22 represents the number of eye donors by donation pathway from 2016 to 2020



Figure 10.22 - Number of Eye Donors by Donation Pathway, Australia, 2016-2020



Figures 10.23 to Figure 10.26 represent the number of donors by donor type and jurisdiction, for 2020.

Figure 10.23 - Eye Donors only (pmp) by Jurisdiction, 2016-2020

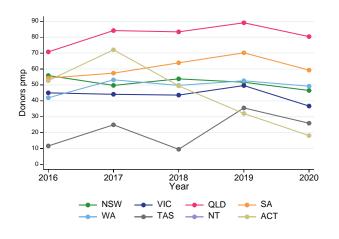


Figure 10.25 - Eye and Solid Organ Donors (pmp) by Jurisdiction, 2016-2020

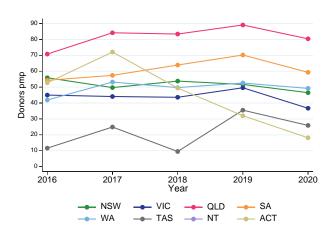


Figure 10.24 - Eye and Tissue Donors (pmp) by Jurisdiction, 2016-2020

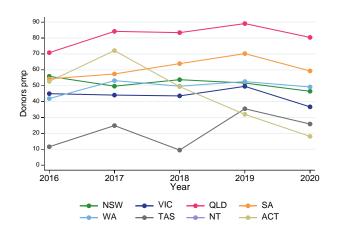
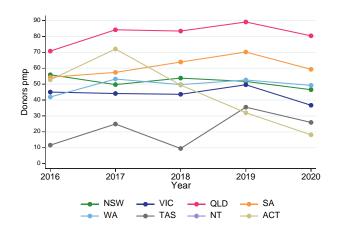


Figure 10.26 - Eye, Tissue and Solid Organ Donors (pmp) by Jurisdiction, 2016-2020



Eye Donor Characteristics

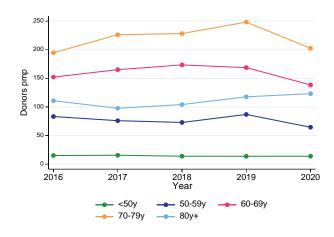
Eye donor characteristics are described in Table 10.8.

Donor Profile	2016	2017	2018	2019	2020
Gender					
Female	492 (38.4%)	536 (39.2%)	568 (40.7%)	585 (38.8%)	538 (40.8%)
Male	788 (61.6%)	833 (60.8%)	826 (59.3%)	923 (61.2%)	780 (59.2%)
Age					
<50y	244 (19.1%)	257 (18.8%)	231 (16.6%)	233 (15.5%)	235 (17.8%)
50-59y	252 (19.7%)	231 (16.9%)	223 (16%)	268 (17.8%)	201 (15.3%)
60-69y	380 (29.7%)	417 (30.5%)	445 (31.9%)	442 (29.3%)	372 (28.2%)
70-79y	300 (23.4%)	370 (27%)	392 (28.1%)	445 (29.5%)	380 (28.8%)
80y+	104 (8.1%)	94 (6.9%)	103 (7.4%)	120 (8%)	130 (9.9%)

Table 10.8 Donor Characteristics Profile, 2016-2020

Figure 10.27 shows the eye donors (pmp), across age ranges from 2016 to 2020.

Figure 10.27 - Eye Donors (pmp) by Age Range, 2016-2020



Eye Donation Outcome

Figures 10.28 and Figure 10.29 show the number of notified corneal transplants and sclera units transplanted by jurisdiction for 2016-2020.

Table 10.9 shows the total number of corneas and sclera units transplanted by jurisdiction from 2016 to 2020.

Table 10.9 Number of Corneas and Sclera Units transplanted by Jurisdiction 2016-2020									
Eye Tissue Type	Jurisdiction	2016	2017	2018	2019	2020			
	NSW	696	655	692	727	666			
	VIC	379	411	429	455	384			
	QLD	603	654	707	730	734			
Comoo Transulantad	SA	137	151	144	192	166			
Corneas Transplanted	WA	222	249	223	253	270			
	TAS	26	32	21	38	33			
	NT	3	2	7	1	5			
	ACT	19	21	14	18	19			
Corneas Transplanted	AUS	2085	2175	2237	2414	2277			
	NSW	243	297	272	273	257			
	VIC	192	204	205	244	221			
	QLD	106	107	118	173	128			
Salara Unita Trananlanta d	SA	40	44	40	75	60			
Sclera Units Transplanted	WA	107	123	161	137	132			
	TAS	17	24	14	22	29			
	NT	0	0	0	3	31			
	ACT	11	13	9	8	12			
Sclera Units Transplanted	AUS	716	812	819	935	870			

Figure 10.28 - Corneas Transplanted (pmp) by Jurisdiction, 2016-2020

Figure 10.29 - Sclera Units Transplanted (pmp) by Jurisdiction, 2016-2020

