



SECTION 10

Eye and Tissue Donation

SUMMARY

Summarising data on eye and tissue donation and transplant outcomes in 2022. The data presented here is provided by eye and tissue banks across Australia, in conjunction with data collected within the solid organ donation sector.

Contents

Eye and Tissue Reporting	3
Eye and Tissue Banks	3
Tissue Donors.....	3
Tissue Donor Characteristics	4
Tissue Donation	5
Type of Tissue Donation	8
Musculoskeletal Donation.....	8
Cardiovascular Donation	8
Skin Donation	9
Pancreas Islet Donation.....	9
Outcome of Tissue Donation.....	9
Outcome of Tissue Donation by Tissue Type.....	10
Eye Donors	11
Eye Donor Characteristics	13
Eye Donation Outcome	13

Suggested Citation

ANZOD Registry. 2023 Annual Report, Section 10: Eye and Tissue Donation and Outcome Data. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2023. Available at: www.anzdata.org.au

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 eye, cardiovascular, musculoskeletal and skin tissue donations.

Musculoskeletal donations can be in the form of bone, tendon and ligaments. They are utilised for knee and hip replacements, reconstructive orthopaedic surgery following trauma or disease, 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 2018 to 2022.

Table 10.1 Number of Tissue Donors by Donation Pathway and Jurisdiction 2018-2022

Donation Type	Jurisdiction	2018	2019	2020	2021	2022
Living Donor	NSW	2303 (60.4%)	2054 (57.9%)	1528 (56.1%)	1603 (53.5%)	1262 (51.1%)
	VIC	323 (8.5%)	336 (9.5%)	175 (6.4%)	182 (6.1%)	130 (5.3%)
	QLD	419 (11%)	230 (6.5%)	256 (9.4%)	341 (11.4%)	224 (9.1%)
	SA	155 (4.1%)	213 (6%)	138 (5.1%)	167 (5.6%)	150 (6.1%)
	WA	578 (15.2%)	705 (19.9%)	619 (22.7%)	701 (23.4%)	706 (28.6%)
	TAS	32 (.8%)	7 (.2%)	10 (.4%)	0 (0%)	0 (0%)
	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	3810 (100%)	3545 (100%)	2726 (100%)	2994 (100%)	2472 (100%)
Deceased Donor	NSW	117 (35.3%)	86 (27.6%)	73 (25.3%)	67 (21.4%)	105 (38%)
	VIC	77 (23.3%)	86 (27.6%)	81 (28%)	89 (28.4%)	60 (21.7%)
	QLD	100 (30.2%)	108 (34.6%)	102 (35.3%)	133 (42.5%)	83 (30.1%)
	SA	9 (2.7%)	10 (3.2%)	11 (3.8%)	12 (3.8%)	9 (3.3%)
	WA	19 (5.7%)	14 (4.5%)	15 (5.2%)	9 (2.9%)	12 (4.3%)
	TAS	4 (1.2%)	3 (1%)	1 (.3%)	2 (.6%)	4 (1.4%)

Deceased Donor	NT	1 (.3%)	0 (0%)	2 (.7%)	0 (0%)	0 (0%)
	ACT	4 (1.2%)	5 (1.6%)	4 (1.4%)	1 (.3%)	3 (1.1%)
Deceased Donor	AUS	331 (100%)	312 (100%)	289 (100%)	313 (100%)	276 (100%)
Total Donors	NSW	2420 (58.4%)	2140 (55.5%)	1601 (53.1%)	1670 (50.5%)	1367 (49.7%)
	VIC	400 (9.7%)	422 (10.9%)	256 (8.5%)	271 (8.2%)	190 (6.9%)
	QLD	519 (12.5%)	338 (8.8%)	358 (11.9%)	474 (14.3%)	307 (11.2%)
	SA	164 (4%)	223 (5.8%)	149 (4.9%)	179 (5.4%)	159 (5.8%)
	WA	597 (14.4%)	719 (18.6%)	634 (21%)	710 (21.5%)	718 (26.1%)
	TAS	36 (.9%)	10 (.3%)	11 (.4%)	2 (.1%)	4 (.1%)
	NT	1 (0%)	0 (0%)	2 (.1%)	0 (0%)	0 (0%)
	ACT	4 (.1%)	5 (.1%)	4 (.1%)	1 (0%)	3 (.1%)
	Total Donors	AUS	4141 (100%)	3857 (100%)	3015 (100%)	3307 (100%)

Figure 10.1 shows the tissue donors per million population (pmp) across each donation pathway from 2018 to 2022. Figure 10.2 shows the tissue donors (pmp) across each jurisdiction from 2018 to 2022.

Figure 10.1 - Tissue Donors (pmp) by Donation Pathway, 2018-2022

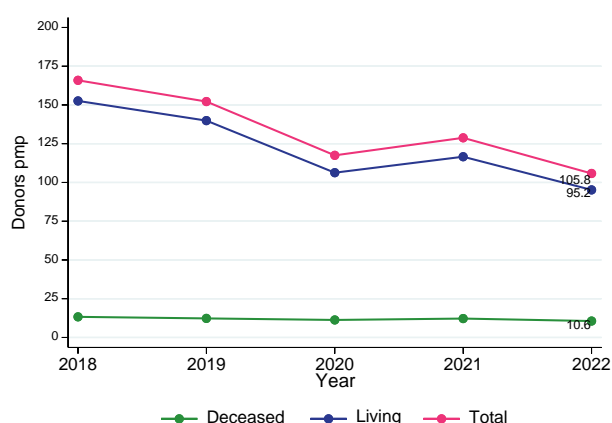
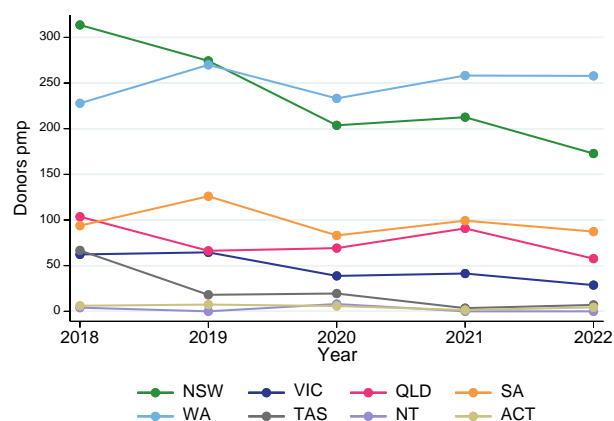


Figure 10.2 - Tissue Donors (pmp) by Jurisdiction, 2018-2022



Tissue Donor Characteristics

Tissue donor characteristics between 2018 and 2022 are described in Table 10.2.

Table 10.2 Donor Characteristics Profile, 2018-2022

Donor Profile	2018	2019	2020	2021	2022
Gender					
Female	2097 (50.6%)	2012 (52.2%)	1493 (49.5%)	1740 (52.6%)	1379 (50.2%)
Male	2044 (49.4%)	1845 (47.8%)	1522 (50.5%)	1567 (47.4%)	1369 (49.8%)
Age					
<50y	485 (11.7%)	433 (11.2%)	356 (11.8%)	410 (12.4%)	330 (12%)
50-59y	863 (20.8%)	841 (21.8%)	654 (21.7%)	673 (20.4%)	568 (20.7%)
60-69y	1372 (33.1%)	1308 (33.9%)	1020 (33.8%)	1164 (35.2%)	934 (34%)
70-79y	1089 (26.3%)	964 (25%)	774 (25.7%)	811 (24.5%)	701 (25.5%)
80y+	332 (8%)	311 (8.1%)	211 (7%)	249 (7.5%)	215 (7.8%)

Figure 10.3 shows the tissue donors (pmp), across age ranges from 2018 to 2022.

Figure 10.3 - Tissue Donors (pmp) by Age Range, 2018-2022

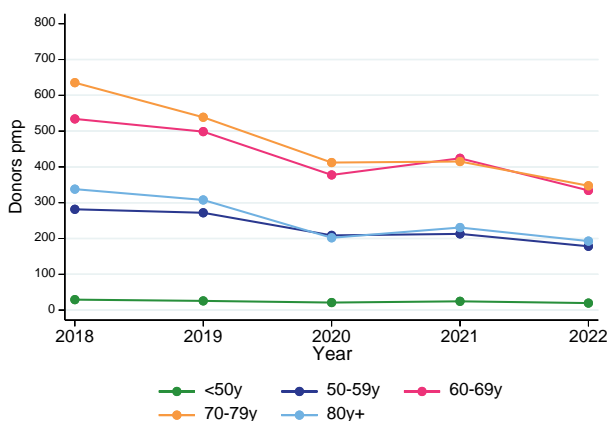
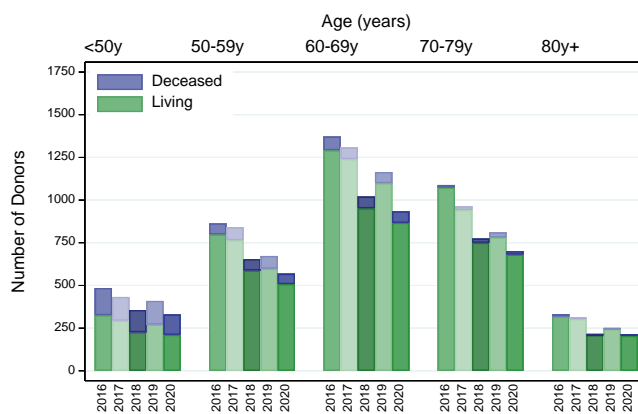


Figure 10.4 shows the number of tissue donors, by age range and donation type from 2018 to 2022.

Figure 10.4 - Number of Donors by Age Range and Donor Pathway, 2018-2022



Tissue Donation

Figure 10.5 - Donations by Donation Pathway: Overall Australia, 2018-2022

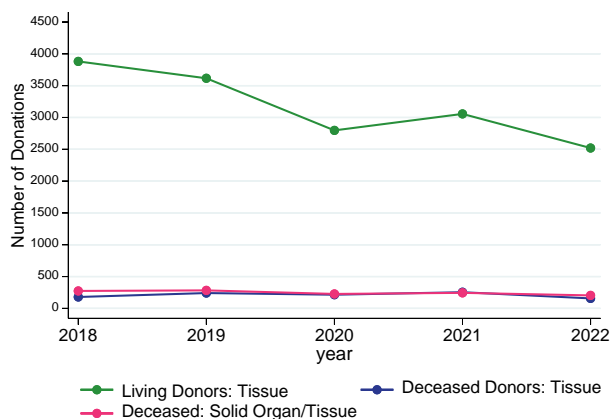


Figure 10.6 - Total Tissue Donations (pmp) by Jurisdiction, 2018-2022

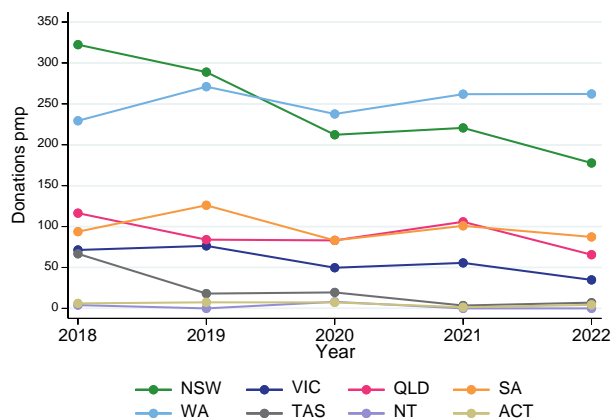


Table 10.3 shows the total number and percentage of tissue donations, by donation pathway and jurisdiction from 2018 to 2022.

Table 10.3 Number of Tissue Donations by Donor Type and Jurisdiction 2018-2022

Donation Type	Jurisdiction	2018	2019	2020	2021	2022
Living Donor Donations	NSW	2357 (60.7%)	2111 (58.4%)	1584 (56.6%)	1650 (54%)	1298 (51.5%)
	VIC	324 (8.3%)	336 (9.3%)	175 (6.3%)	182 (6%)	130 (5.2%)
	QLD	431 (11.1%)	241 (6.7%)	259 (9.3%)	345 (11.3%)	224 (8.9%)
	SA	155 (4%)	213 (5.9%)	138 (4.9%)	168 (5.5%)	150 (6%)
	WA	582 (15%)	708 (19.6%)	631 (22.6%)	711 (23.3%)	718 (28.5%)
	TAS	32 (.8%)	7 (.2%)	10 (.4%)	0 (0%)	0 (0%)
	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	3881 (100%)	3616 (100%)	2797 (100%)	3056 (100%)	2520 (100%)
Deceased Donor Donations	NSW	130 (28.7%)	142 (27.1%)	84 (19%)	83 (16.7%)	108 (29.9%)
	VIC	134 (29.6%)	163 (31.1%)	153 (34.6%)	182 (36.5%)	100 (27.7%)
	QLD	152 (33.6%)	187 (35.7%)	171 (38.7%)	207 (41.6%)	125 (34.6%)
	SA	9 (2%)	10 (1.9%)	11 (2.5%)	14 (2.8%)	9 (2.5%)
	WA	19 (4.2%)	14 (2.7%)	15 (3.4%)	9 (1.8%)	12 (3.3%)
	TAS	4 (.9%)	3 (.6%)	1 (.2%)	2 (.4%)	4 (1.1%)
	NT	1 (.2%)	0 (0%)	2 (.5%)	0 (0%)	0 (0%)
	ACT	4 (.9%)	5 (1%)	5 (1.1%)	1 (.2%)	3 (.8%)
Deceased Donor Donations	AUS	453 (100%)	524 (100%)	442 (100%)	498 (100%)	361 (100%)
Total Donations	NSW	2487 (57.4%)	2253 (54.4%)	1668 (51.5%)	1733 (48.8%)	1406 (48.8%)
	VIC	458 (10.6%)	499 (12.1%)	328 (10.1%)	364 (10.2%)	230 (8%)
	QLD	583 (13.5%)	428 (10.3%)	430 (13.3%)	552 (15.5%)	349 (12.1%)
	SA	164 (3.8%)	223 (5.4%)	149 (4.6%)	182 (5.1%)	159 (5.5%)
	WA	601 (13.9%)	722 (17.4%)	646 (19.9%)	720 (20.3%)	730 (25.3%)
	TAS	36 (.8%)	10 (.2%)	11 (.3%)	2 (.1%)	4 (.1%)
	NT	1 (0%)	0 (0%)	2 (.1%)	0 (0%)	0 (0%)
	ACT	4 (.1%)	5 (.1%)	5 (.2%)	1 (0%)	3 (.1%)
Total Donations	AUS	4334 (100%)	4140 (100%)	3239 (100%)	3554 (100%)	2881 (100%)

Figure 10.7 - Tissue Donations (pmp) from Living Donors by Jurisdiction, 2018-2022

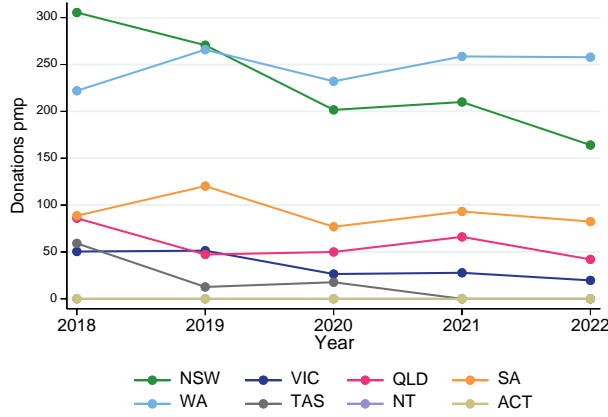


Table 10.4 shows the breakdown of donation from living donors by tissue type and jurisdiction.

Table 10.4 Tissue Donations from Living Donors by Tissue Type and Jurisdiction, 2022

Jurisdiction	Musculoskeletal	Cardiovascular	Amnion	Total
NSW	1263	14	21	1298
VIC	129	1	0	130
QLD	224	0	0	224
SA	150	0	0	150
WA	718	0	0	718
TAS	0	0	0	0
NT	0	0	0	0
ACT	0	0	0	0
AUS	2484	15	21	2520

Figures 10.8 and 10.9 show the breakdown of deceased tissue only and solid organ and tissue donation, by jurisdiction, for the period 2018 to 2022.

Figure 10.8 - Tissue Donations from Deceased Donors by Jurisdiction, 2018-2022

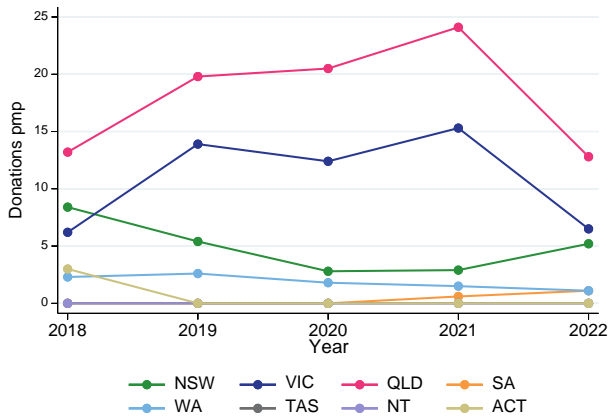


Figure 10.9 - Solid Organ and Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2018-2022

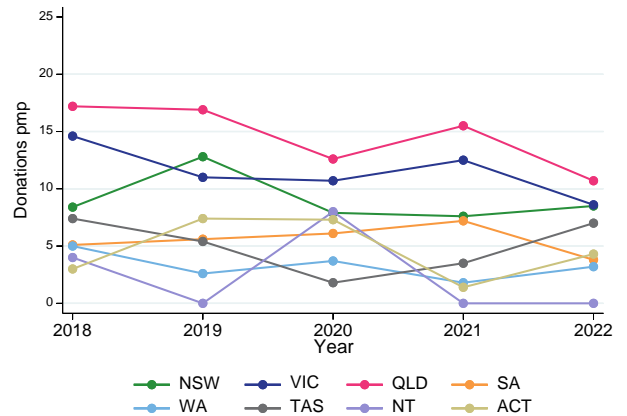


Table 10.5 shows the breakdown of donation from deceased donors by tissue type, donation sector and jurisdiction.

Table 10.5 Tissue Donations (pmp) from Deceased Donors by Jurisdiction and Donation Sector, 2022

State	Tissue Only Sector				Solid Organ/Tissue Sector				Tissue Total			
	ms	cv	skin	pi	ms	cv	skin	pi	ms	cv	skin	pi
NSW	35	6	0	0	28	37	0	2	63	43	0	2
VIC	15	8	20	0	21	12	22	2	36	20	42	2
QLD	40	1	27	0	23	24	10	0	63	25	37	0
SA	0	2	0	0	0	6	0	1	0	8	0	1
WA	3	0	0	0	9	0	0	0	12	0	0	0
TAS	0	0	0	0	0	2	0	2	0	2	0	2
NT	0	0	0	0	0	0	0	0	0	0	0	0
ACT	0	0	0	0	0	3	0	0	0	3	0	0
AUS	93	17	47	0	81	84	32	7	174	101	79	7

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 (2018 to 2022) from living and deceased donors.

Figure 10.10 - Musculoskeletal Tissue Donations (pmp) from Living Donors by Jurisdiction, 2018-2022

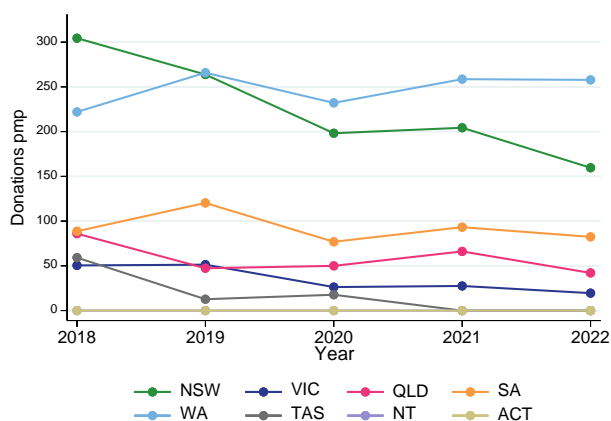
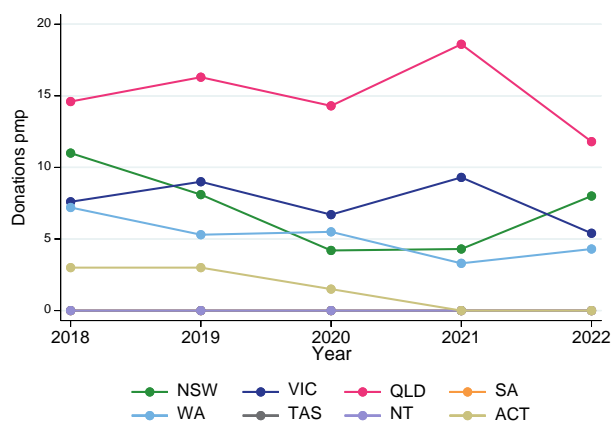


Figure 10.11 - Musculoskeletal Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2018-2022



Cardiovascular Donation

Figures 10.12 and 10.13 show the breakdown cardiovascular tissue donation by jurisdiction (2018 to 2022) from living and deceased donors.

Figure 10.12 - Cardiovascular Tissue Donations (pmp) from Living Donors by Jurisdiction, 2018-2022

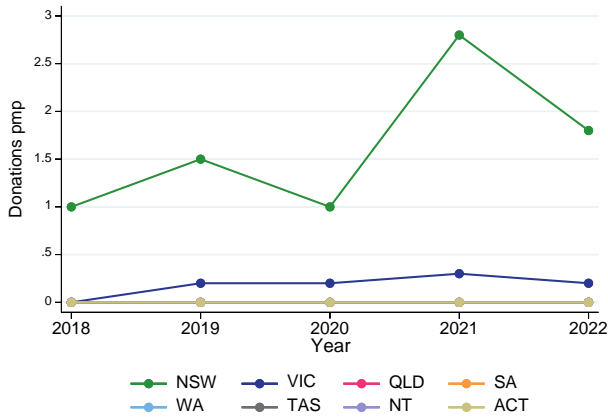
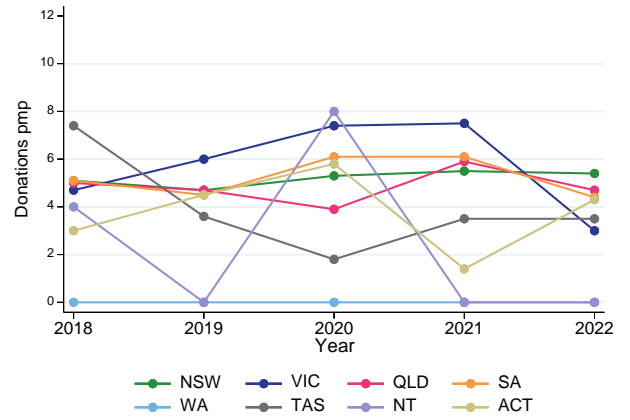


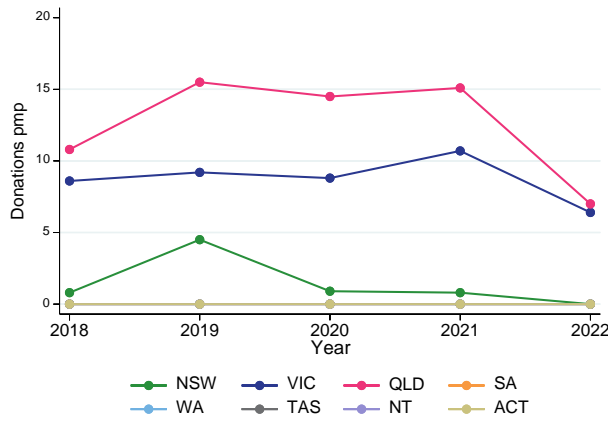
Figure 10.13 - Cardiovascular Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2018-2022



Skin Donation

Figure 10.14 shows the breakdown of skin donations by jurisdiction from 2018 to 2022.

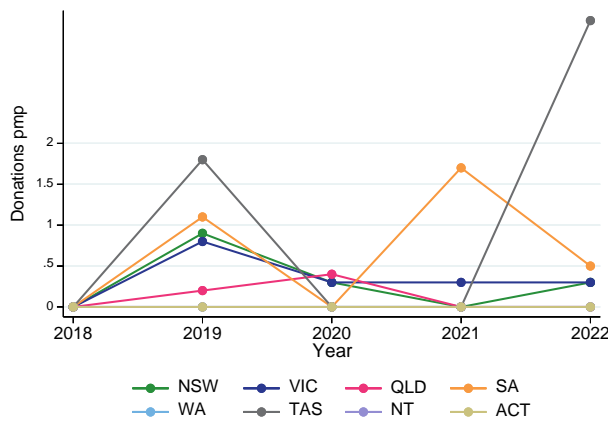
Figure 10.14 - Skin Tissue Donations (pmp) from Deceased Donors by Jurisdiction, 2018-2022



Pancreas Islet Donation

Figure 10.15 shows the breakdown of pancreas islet donations by jurisdiction from 2018 to 2022.

Figure 10.15 - Pancreas Islet Donations (pmp) from Deceased Donors by Jurisdiction, 2018-2022



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.

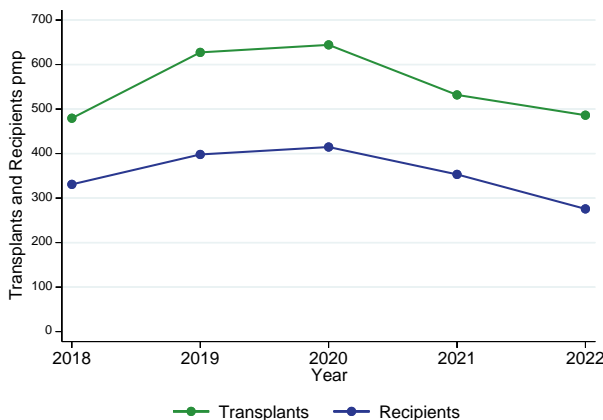
Table 10.6 shows the overall number of notified^{1,2} tissue transplants (grafts) and recipients for 2018-2022.

Table 10.6 Notified Tissue Transplants and Recipients, 2018-2022

	2018	2019	2020	2021	2022
Transplants	11969	15895	16527	13660	12631
Recipients	8258	10086	10640	9072	7163

Figure 10.16 shows the number of notified^{1,2} tissue transplants (grafts) and recipients per million population for 2018-2022.

Figure 10.16 - Notified Tissue Transplants and Recipients (pmp), 2015-2022



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 2022. Figure 10.18 shows the number of notified^{1,2} cardiovascular tissue transplants and recipients by jurisdiction for 2022.

Figure 10.17 - Number of Notified Musculoskeletal Transplants and Recipients by Jurisdiction, 2022

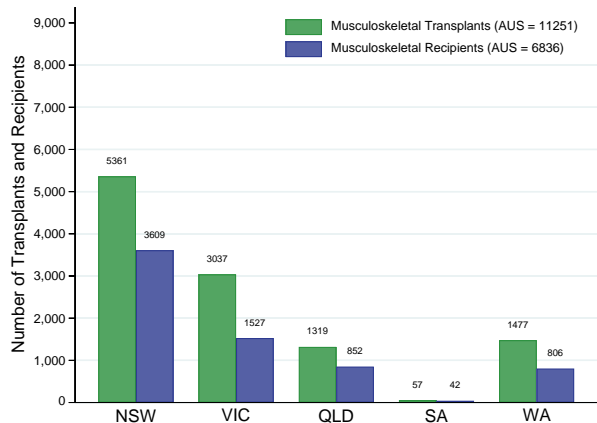
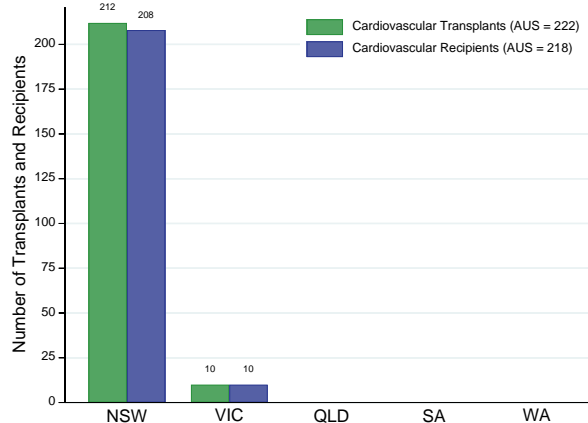


Figure 10.18 - Number of Notified Cardiovascular Transplants and Recipients by Jurisdiction, 2022

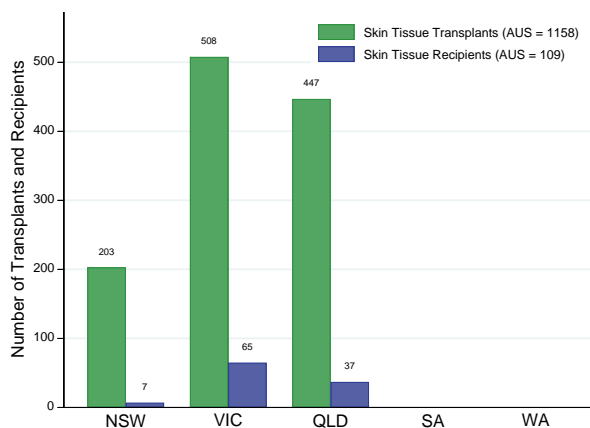


¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of.'

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 2022.

Figure 10.19 - Number of Notified Skin Tissue Transplants and Recipients by Jurisdiction, 2022

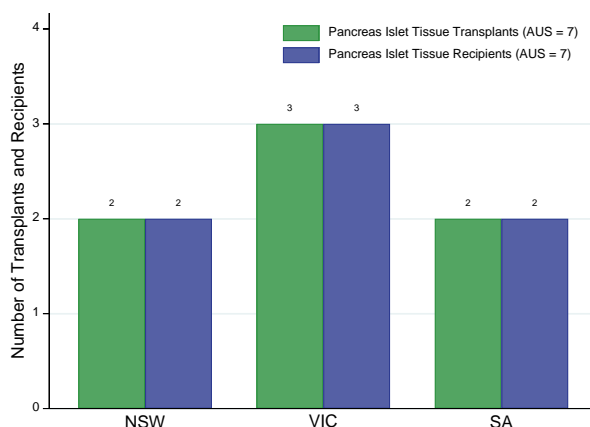


¹ Notified tissue transplant is defined as the 'Number of grafts implanted into recipients, that banks have been notified of'.

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 2022.

Figure 10.20 - Number of Pancreas Islet Tissue Transplants and Recipients by Jurisdiction, 2022



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 provided from Australian eye banks. Table 10.7 shows the total number of eye donors by jurisdiction from 2018 to 2022.

Table 10.7 Number of Eye Donors by Jurisdiction 2018-2022

State	2018	2019	2020	2021	2022
NSW	417	406	369	383	407
VIC	282	334	265	300	263
QLD	418	454	419	479	485
SA	111	135	108	147	138
WA	129	138	131	135	160
TAS	5	20	14	16	15
NT	0	0	0	0	0

ACT	32	21	3	12	9
AUS	1394	1508	1309	1472	1477

Figure 10.21 represents the number of eye donors from each Australian jurisdiction for the reporting period 2018 to 2022. Figure 10.22 represents the number of eye donors by donation pathway from 2018 to 2022.

Figure 10.21 - Eye Donors (pmp) by Jurisdiction, 2018-2022

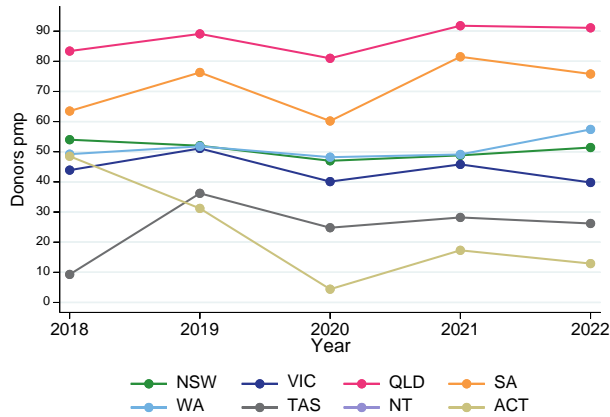
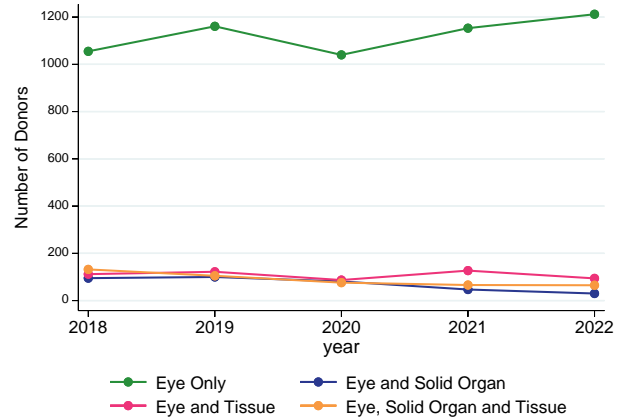


Figure 10.22 - Number of Eye Donors by Donation Pathway, Australia, 2018-2022



Figures 10.23 to Figure 10.26 represent the number of donors by donor type and jurisdiction, for 2022.

Figure 10.23 - Eye Donors only (pmp) by Jurisdiction, 2018-2022

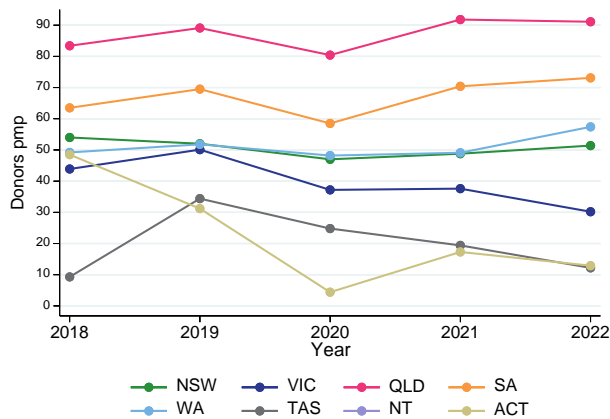


Figure 10.24 - Eye and Tissue Donors (pmp) by Jurisdiction, 2018-2022

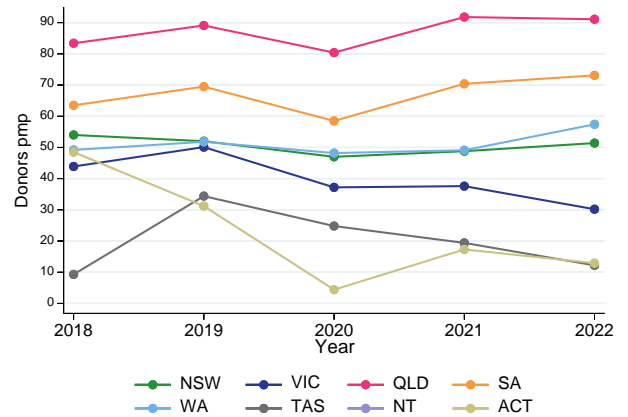


Figure 10.25 - Eye and Solid Organ Donors (pmp) by Jurisdiction, 2018-2022

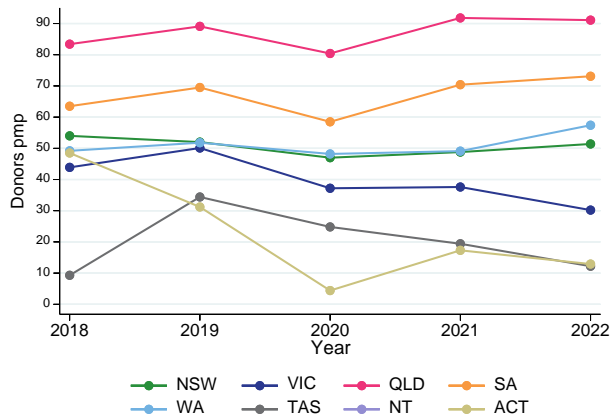
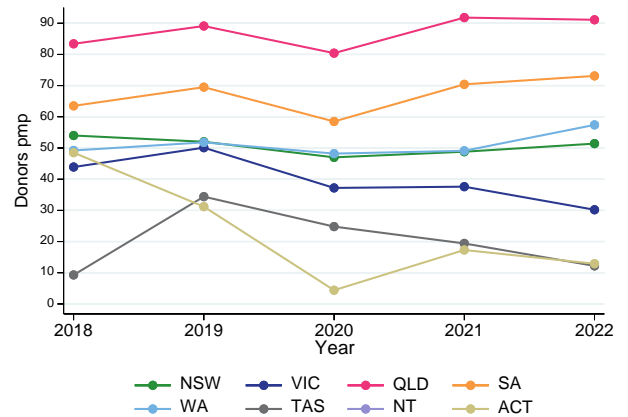


Figure 10.26 - Eye, Tissue and Solid Organ Donors (pmp) by Jurisdiction, 2018-2022



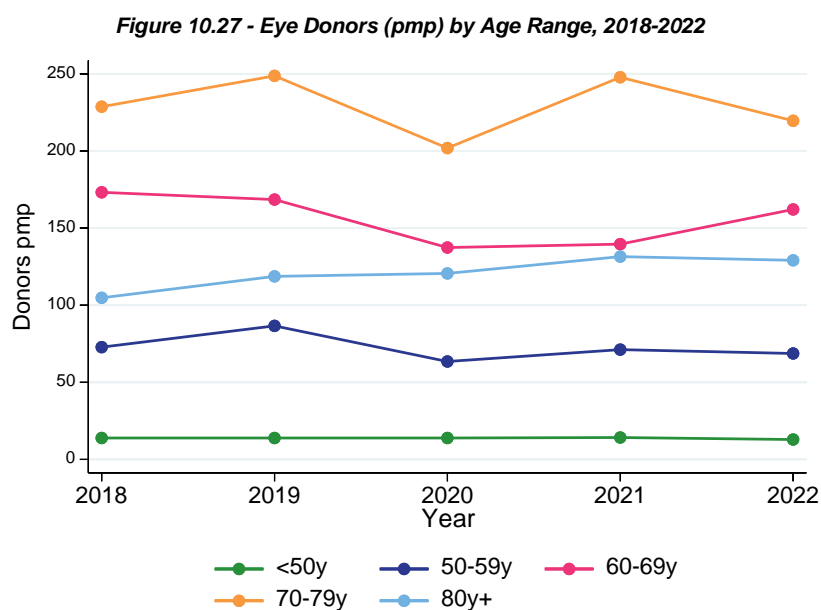
Eye Donor Characteristics

Eye donor characteristics are described in Table 10.8.

Table 10.8 Donor Characteristics Profile, 2018-2022

Donor Profile	2018	2019	2020	2021	2022
Gender					
Female	568 (40.7%)	585 (38.8%)	534 (40.8%)	607 (41.2%)	624 (42.2%)
Male	826 (59.3%)	923 (61.2%)	775 (59.2%)	865 (58.8%)	853 (57.8%)
Age					
<50y	231 (16.6%)	233 (15.5%)	234 (17.9%)	238 (16.2%)	218 (14.8%)
50-59y	223 (16%)	268 (17.8%)	199 (15.2%)	225 (15.3%)	219 (14.8%)
60-69y	445 (31.9%)	442 (29.3%)	371 (28.3%)	383 (26%)	453 (30.7%)
70-79y	392 (28.1%)	445 (29.5%)	379 (29%)	484 (32.9%)	443 (30%)
80y+	103 (7.4%)	120 (8%)	126 (9.6%)	142 (9.6%)	144 (9.7%)

Figure 10.27 shows the eye donors (pmp), across age ranges from 2018 to 2022.



Eye Donation Outcome

Figures 10.28 and Figure 10.29 show the number of notified corneal transplants and sclera units transplanted by jurisdiction for 2018-2022. Table 10.9 shows the total number of corneas and sclera units transplanted by jurisdiction from 2018 to 2022.

Table 10.9 Number of Corneas and Sclera Units transplanted by Jurisdiction 2018-2022

Eye Tissue Type	Jurisdiction	2018	2019	2020	2021	2022
Corneas Transplanted	NSW	692	727	666	654	707
Corneas Transplanted	VIC	429	455	384	424	355
Corneas Transplanted	QLD	707	730	734	806	741
Corneas Transplanted	SA	144	192	166	190	208
Corneas Transplanted	WA	223	253	270	257	282
Corneas Transplanted	TAS	21	38	33	57	26
Corneas Transplanted	NT	7	1	5	3	6
Corneas Transplanted	ACT	14	18	19	22	15
Corneas Transplanted	AUS	2237	2414	2277	2413	2340
Sclera Units Transplanted	NSW	272	273	257	240	283
Sclera Units Transplanted	VIC	205	244	221	242	241
Sclera Units Transplanted	QLD	118	173	128	170	161
Sclera Units Transplanted	SA	40	75	60	56	35
Sclera Units Transplanted	WA	161	137	132	139	109
Sclera Units Transplanted	TAS	14	22	29	26	21
Sclera Units Transplanted	NT	0	3	31	0	0
Sclera Units Transplanted	ACT	9	8	12	10	3
Sclera Units Transplanted	AUS	819	935	870	883	853

Figure 10.28 - Corneas Transplanted (pmp) by Jurisdiction, 2018-2022

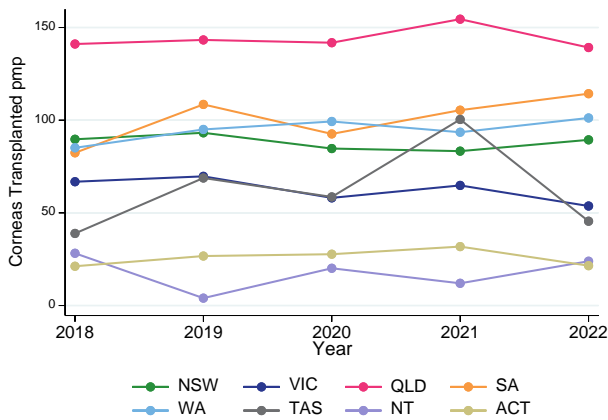


Figure 10.29 - Sclera Units Transplanted (pmp) by Jurisdiction, 2018-2022

