

Australian Government Australian Organ and Tissue Donation and Transplantation Authority





# Australian Donation and Transplantation Activity Report





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## Acknowledgement of Country

The Organ and Tissue Authority acknowledges Traditional Owners of Country throughout Australia and recognises the continuing connection to the land, waters and communities. We pay our respects to Aboriginal and Torres Strait Islander cultures, and to their Elders past and present.

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## We thank all the generous donors, and their families, who have transformed the lives of people needing a transplant through organ and tissue donation.

We also acknowledge the dedication and commitment of donation specialist staff and transplantation teams. Transplantation is only possible through the donation of organs and tissues, and its life-changing benefits would not be possible without this shared commitment.

# The national program

 For someone who is seriously ill, an organ or tissue transplant can mean the difference between life and death, being healthy or sick, seeing or being blind, or between being active and never walking again. Transplantation enables people to resume an active role in their family, workplace and community.

 One organ donor can save the lives of up to 7 people and help many more through eye and tissue donation.

2023

~1,800 people were on the waitlist for a transplant in Australia

# ~14,000

additional people on dialysis, many of whom could benefit from a kidney transplant

### Since the national program began in 2009

**06,417** 

deceased organ donors

# organ transplant recipients

## Figure 1: Deceased organ donation and transplant recipients 2000–2023

Transplant recipients Deceased organ donors 2,500 500 513 2.000 400 1,396 Average 200 donors per year, 2000–2008 300 1,000 247 200 799 100 Average 680 recipients per year, COVID-19 2000-2008 0 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2023

- The first 10 years (2009 2019) of the national program saw a 122% increase in deceased donation, resulting in an 81% increase in people receiving an organ transplant.
- Over 2 years (2020 and 2021), there was a 23% reduction in deceased donation activity due to the impacts of COVID-19 (from 2019).
- Over the past 2 years (2022 and 2023), there has been continued recovery in the sector. With a 13% increase in deceased donation (compared with 2022), the program is now only 6% down from pre-pandemic outcomes (from 2019).

# Chief Executive Officer's year in review

I am pleased to present the 2023 Australian Donation and Transplantation Activity Report, on behalf of the Australian Government's Organ and Tissue Donation and Transplantation Authority (OTA).

The report provides an annual snapshot of key data on organ, eye and tissue donation and transplantation – both deceased and living – as well as comparison and trend data from previous years. It also provides data on consent rates and registration rates in Australia.

Though outcomes varied across the states and territories, jurisdictions continued to recover from the impacts of COVID-19 in 2023. This resulted in the highest rates of deceased organ, eye and tissue donation and transplantation since 2019.

In 2023, the lives of 1,396 Australians changed when they received an organ transplant, thanks to the generosity of 513 deceased organ donors, and their families, who said yes to donation. This is a 13% increase in deceased organ donors, resulting in a 14% increase in the number of people receiving a transplant, compared with 2022 — with deceased organ donation rates now only 6% down on 2019 pre-COVID pandemic.

Additionally, there has been a 13% increase in living kidney donors, a 5% increase in deceased eye donors, and a 19% increase in deceased tissue donors who transformed the lives of Australians needing a transplant in 2023.

I sincerely thank all donors — and their family who said yes to donation — for giving others in need a second chance at life.

Navigating pressures on the health system, workforce and community are ongoing and we continue to work collaboratively with the DonateLife Network, transplant sector, eye and tissue sector, hospitals and the community.

In 2023, increasing the national consent rate remained challenging, with 55% of families saying yes to organ donation in hospital. This is only a 1% increase on 2022 and well below a high of 60% pre-pandemic. Increasing consent rates remains one of the key areas for future growth in donation in Australia. If Australia's consent rate increased to 70%, an additional 300 people would have access to a life-changing organ transplant.

To increase consent, building support in the community and optimising opportunities in hospitals are outlined in the OTA Strategy 2022-27.

There are 7.7 million people registered on the Australian Organ Donor Register (AODR), with around 180,000 more Australians registering in 2023. Despite 4 in 5 Australians supporting donation, only 36% of the eligible population are registered. To reach our goal of having 50% registered by 2027, more needs to be done to increase options for large-scale registration, including through drivers licences, and investing in public awareness campaigns. Registration and family discussion have a direct impact on consent with 80% of families saying yes to donation when their family member is on the AODR, dropping to 40% when families don't know.

I want to acknowledge the dedication of the OTA and DonateLife teams in delivering the national program, alongside colleagues in the clinical sector. It's a privilege to lead a national program that's purpose is to save and improve the lives of more Australians through organ and tissue donation and transplantation.



Lucinda Barry AM Chief Executive Officer 27 February 2024

# 2023 data at a glance

		Difference to 2022
$\bigcirc$	<b>513</b> Deceased organ donors	+13%
Deceased organ donation and transplantation	<b>1,396</b> Organ transplant recipients	+14%
	<b>55%</b> Families consented to donation	+1%
	<b>7.7 million</b> Eligible Australians are registered to be a donor	<b>+2</b> %
Living organ donation and transplantation	<b>253</b> Living kidney donors	+13%
	<b>555</b> Donors through the ANZKX program	+31%
Image: Constraint of the second system         Eye and tissue donation and transplantation	<b>1,546</b> Deceased eye donors	+5%
	<b>328</b> Deceased tissue donors	+19%
	<b>2,486</b> Corneal transplant recipients	+6%

## State and territory overview

	Deceased organ donors	Transplant recipients <sup>1</sup>	Consent rate	New registrations <sup>2</sup>
Australian Capital Territory	8	28	<b>56%</b>	3,955
New South Wales	142	392	<b>50%</b>	47,132
Northern Territory	3	8	<b>25%</b>	1,205
Queensland	105	308	<b>63</b> %	35,391
South Australia	49	116	<b>58%</b>	32,399
<b>Tasmania</b>	21	57	83%	3,632
Victoria	142	361	<b>54%</b>	40,454
Western Australia	43	126	53%	15,645
المح National	513	1,396	55%	179,813

1 Number of recipients from the donors in the relevant state.

2 New registrations on the Australian Organ Donor Register (AODR).

Part 1

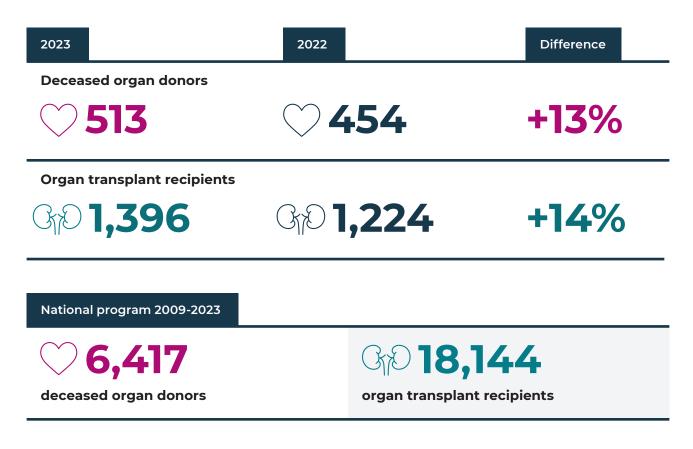
# Deceased organ donation and transplantation

Part 2: Living organ donation and transplantation

Part 3: Eye and tissue donation and transplantation

Additional information

## Deceased organ donation and transplantation



- In 2023 there was a 13% increase in deceased organ donors and a 14% increase in the number of people who received a transplant when compared to 2022.
- While outcomes did vary across Australia, there has been continued recovery from the impacts of COVID-19.

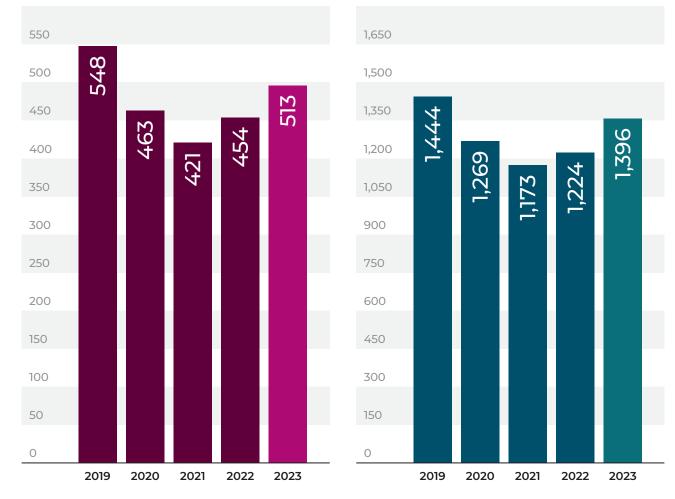
## Deceased organ donation and transplant recipients

- 2023 saw an increase in donation and transplantation rates compared with 2022.
- This result is the highest in terms of the number of organ donors and transplant recipients since the onset of COVID-19 in 2020.

# Figure 2: Deceased organ donors 2019–2023



# **Figure 3:** Transplant recipients from deceased donors 2019–2023



#### Notes

The number of transplant recipients from deceased donors in Australia includes a small number of recipients from New Zealand who were in urgent need of a life-saving transplant.

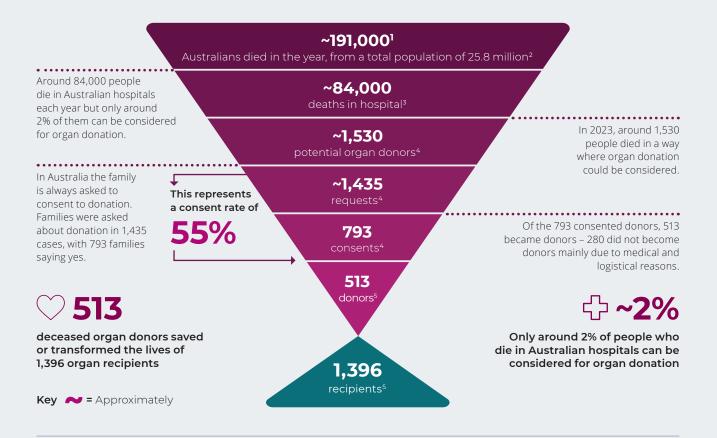
> 2019 was one of the highest years for both organ donors and transplant recipients, pre-COVID-19.

# **Organ donation process**

- Very few people can become an organ donor when they die.
- A person must die in a hospital in specific circumstances, in an ICU or ED, as organs need to be functioning well to be considered for transplantation.
- Only around 2% of people who die in Australian hospitals meet the criteria required to be an organ donor.
- In 2023, around 1,500 people (of the 84,000 people who died in Australian hospitals) died in a way where organ donation could be considered.

- Families were asked about donation in 1,435 cases.
- Of these, 793 families said yes to donation in hospital – representing a national consent rate of 55% – with 513 people becoming organ donors.
- With only a small number of potential donors, increasing consent is critical to increasing our donation rate.
- There are around 1,800 Australians waitlisted for a transplant and around 14,000 additional people on dialysis – many of whom could benefit from a kidney transplant.

### Figure 4: Australia's potential deceased organ donor population and transplantation outcomes 2023



1 Australian Bureau of Statistics. Causes of death, Australia, 2022 (Released 27/09/2023).

- 2 Australian Bureau of Statistics. National, state and territory Population, 30 June 2023 (Released 14/12/2023).
- 3 Australian Institute of Health and Welfare 2021. Admitted patient care 2020–21 (Released 31/05/2023).
- 4 DonateLife Audit, February 2024.

5 Deceased organ donation in Australia, Australia and New Zealand Organ Donation Registry, January 2024.

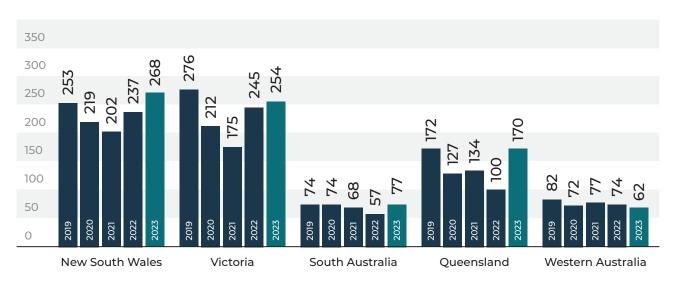
## Organ transplants from deceased donors by organ type

	2023	2022	Difference
Kidney	831	713	+17%
Liver	289	260	+11%
	164	142	+15%
Heart	129	117	+10%
Pancreas	48	47	+2%
Intestine	1	2	-50%

- 2023 saw an increase in the number of all organ types transplanted, except intestine.
- Kidneys make up more than half of organs transplanted, followed by livers, lungs and hearts. There were 118 more kidney transplants in 2023 (17% higher than 2022).
- There was an increase in liver (11%), lung (15%), heart (10%) and pancreas (2%) transplants.
- There was one intestine transplant in 2023 compared with two in 2022.

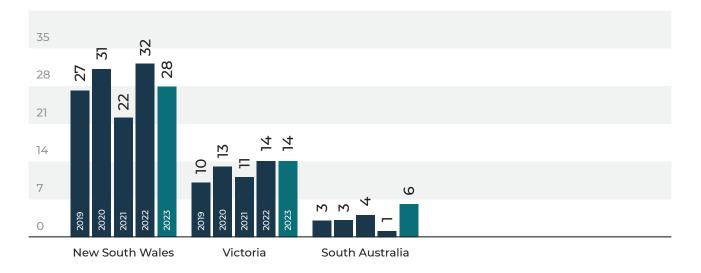
## Jurisdictional transplant activity by organ type

- In 2023 there was an increase in transplant activity across all organ types, with the exception of intestines, compared with 2022 outcomes.
- These outcomes indicate continued recovery in the transplant sector from the COVID-19 pandemic.



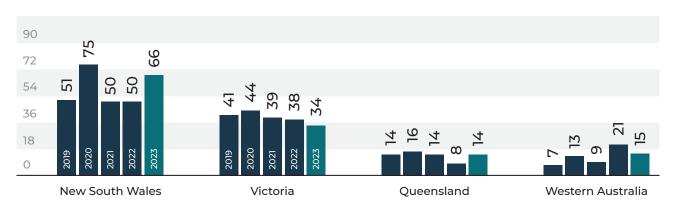
## Figure 5: Kidney transplants 2019–2023

#### Figure 6: Pancreas transplants 2019–2023



- Kidney transplant activity has returned to pre-COVID-19 pandemic numbers in NSW and SA, while Victoria and QLD had increases in kidney transplants over 2022.
- Pancreas transplants have increased on pre-COVID-19 pandemic numbers in NSW, Victoria and SA.

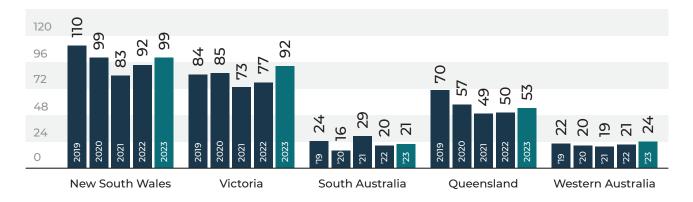
### Figure 7: Heart transplants 2019–2023



## Figure 8: Lung transplants 2019–2023

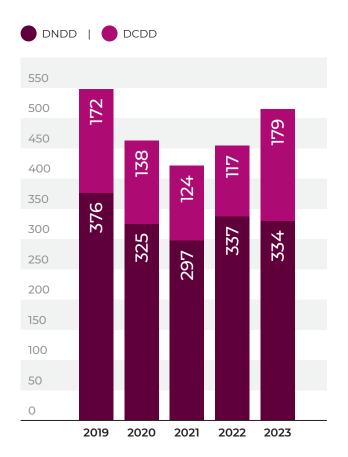


## Figure 9: Liver transplants 2019–2023



- From 2020 to 2023, heart transplant activity has varied. There was a high number of heart transplants in NSW in 2020 and 2023, and in WA in 2022. Heart transplants also increased in QLD in 2023 compared with 2022.
- Liver transplants have increased in all states compared to 2022, with Victoria and WA exceeding 2019 pre-COVID numbers.
- Lung transplants have shown some growth despite significant impacts from the COVID-19 pandemic due to ongoing risks to potential lung transplant recipients. Lung transplant numbers in 2023 represent a 39% increase in NSW, a 14% increase in Victoria and 20% increase in WA compared to 2022.

### Figure 10: Deceased organ donors by donation pathway 2019–2023



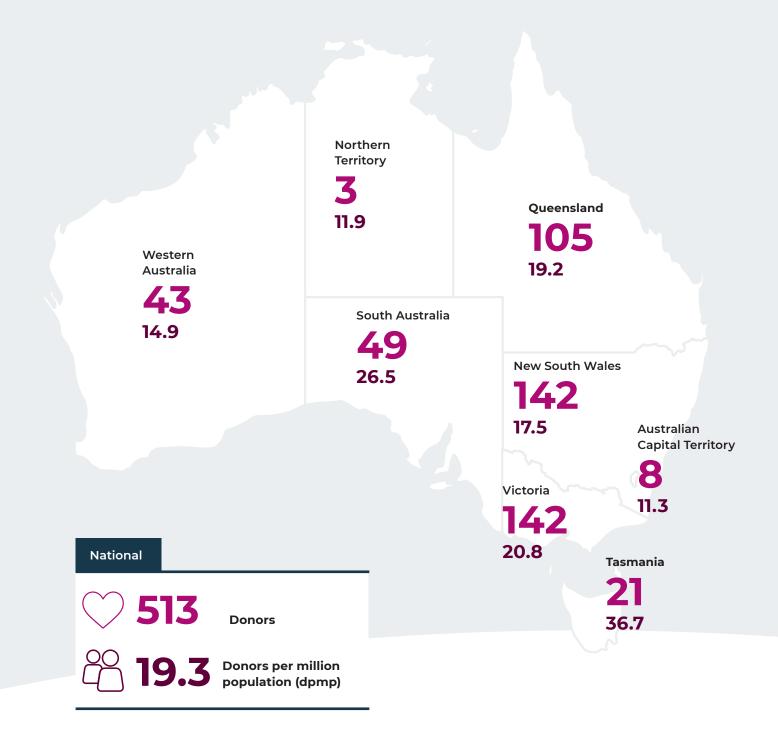
- There are 2 pathways to deceased donation:
  - donation after neurological determination of death (DNDD), and
  - donation after circulatory determination of death (DCDD).
- Most donors are from the DNDD pathway.
- In 2023, 334 deceased organ donors (65%) came from the DNDD pathway, with 179 (35%) from the DCDD pathway.
- There were 1% fewer donors from the DNDD pathway in 2023, while the number of donors from the DCDD pathway returned to pre-COVID-19 pandemic numbers. Typically, DCDD results in a lower number of organs medically suitable for transplantation compared with DNDD.





- The national donation target for deceased donation, established in 2009, is 25.0 donors per million population (dpmp).
- Australia's dpmp rate increased again in 2023. This is the highest since 2019, indicating ongoing recovery from COVID-19.
- The 513 deceased organ donors in 2023 resulted in a national donation rate of 19.3 dpmp, an increase on the rate in 2022 (17.5 dpmp).
- The transplantation rate was 52.4 transplant recipients per million population (trpmp) in 2023; an increase on 2022 (47.1 trpmp).

Figure 12: Deceased organ donors and donation rates by state and territory in 2023



 State and territory outcomes in 2023 continued to demonstrate variation, with donation rates ranging from 11.3 dpmp to 36.7 dpmp.

 Tasmania and South Australia exceeded the national target (25 dpmp) with a donation rate of 36.7 dpmp\* in Tasmania and 26.5 in South Australia.

\* The relatively small populations of the Northern Territory, the Australian Capital Territory and Tasmania can result in substantial fluctuations in outcomes and donation rates year-to-year.

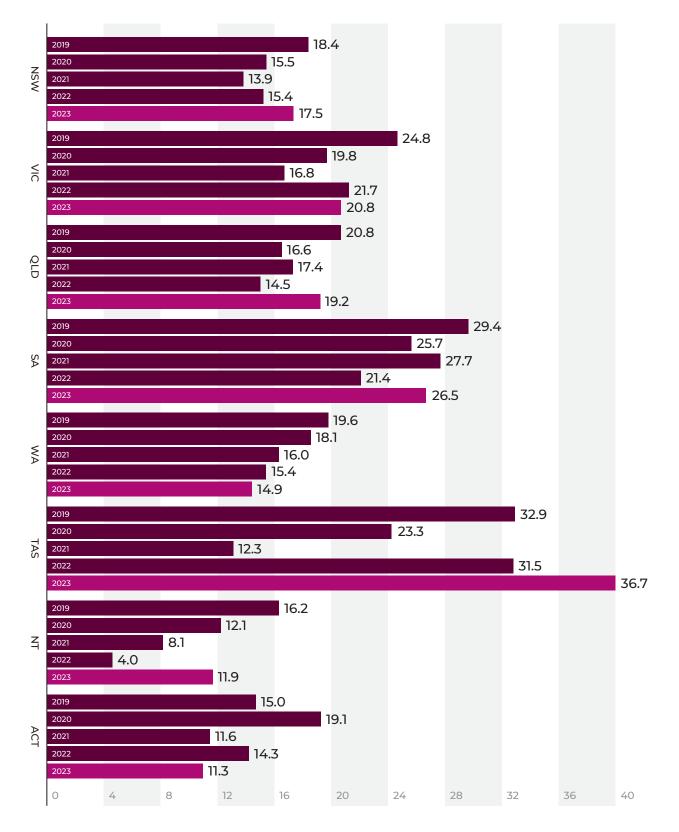


Figure 13: Deceased organ donation rates by state and territory 2019–2023

**Note:** The relatively small populations of the Northern Territory, the Australian Capital Territory and Tasmania can result in substantial fluctuations in outcomes and donation rates year-to-year.

## **Consent rates**

- In Australia, families of potential donors are always asked to consent to their family member becoming a donor in hospital.
- The national consent rate was 55%, a 1% increase from 2022 (54%). 793 families said yes to donation in 2023.
- Increasing the number of families saying yes to donation is critical to further growth in donation.
- In 2023, of the 793 consented donors, 513 proceeded to donation. 280 did not proceed to donation, mainly due to medical and logistical reasons.

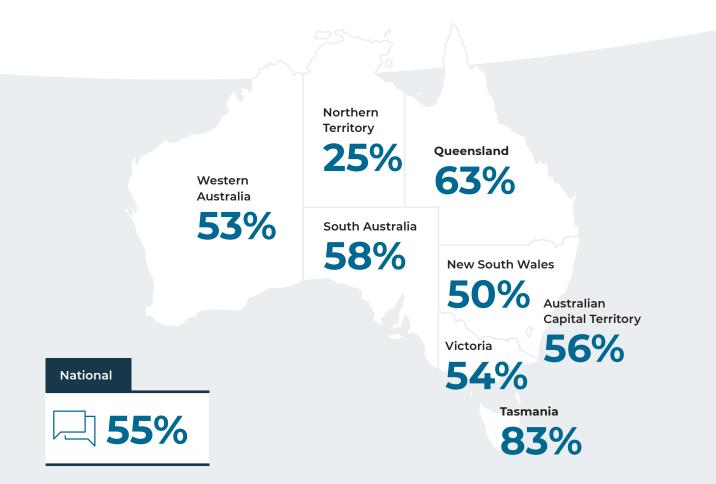
**55%** 

of families agreed to donation when asked in 2023

### Figure 14: Consented donors



### Figure 15: Consent rates by state and territory in 2023



## Deceased organ donation and transplant recipients

Figure 16: The importance of involving a donation specialist nurse in discussions with families

\$ 5	/10	-	t for donation when they donation specialist nurse
<b>2</b>	/10	-	t for donation when there cialist nurse involved
2023	2022	Difference	
84%	80%	+4%	A donation specialist nurse was involved in 84% of family conversations about donation compared with 80% in 2022

- There are around 260 donation specialist nurses, doctors and support staff covering around 95 hospitals across Australia.
- The donation specialists work with hospital critical care teams to ensure that, when appropriate, the opportunity for organ donation is offered to families.
- Key factors to increasing consent are having donation raised by a donation specialist nurse and providing families with high-quality information and care during the donation process.
- In 2023, 54% of Australian families agreed to donate when they were supported by a donation specialist nurse. This dropped to 23% when there was no donation specialist nurse involved.

## The impact of registration on consent

- In 2023, 80% of families agreed to donation when their family member was registered to donate on the Australian Organ Donor Register (AODR).
- Consent for donation was given in 62% of cases when the family knew their family member wanted to be a donor.
- Consent dropped with only 43% of families agreeing to donation when their family member was not registered, and the family was unaware if they wanted to be a donor.
- While 4 in 5 Australians support organ and tissue donation, only about 1 in 3 (36%) are registered to be a donor on the AODR.

- South Australia has the highest registration rate (73%) of the eligible Australian population (aged 16 or over).
- South Australia is the only state where people can register to be a donor via their drivers licence.
- Consideration of organ and tissue donation comes at an intensely emotional time for families, usually associated with the unexpected death of their family member.
- When donation is a possibility, it helps when families know if they wanted to be a donor.



families gave consent for donation when their family member was a registered donor



families gave consent for donation when they knew their family member wanted to be a donor ×) 4/10

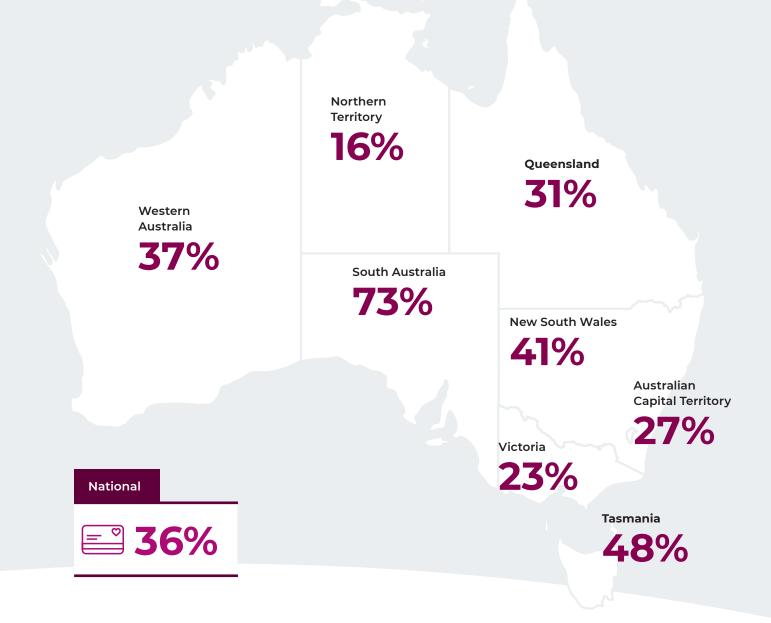
families gave consent for donation when their family member was not registered and the family was not aware

## Registration rates

2023	2022	Difference
New registrations	New registrations	
179,813	208,861	-14%

- In 2023, there were 179,813 new registrations on the AODR, 14% fewer than 2022 (208,861).
- There are close to 7.7 million people registered on the AODR, a 2% increase compared to 2022. This is 36% of the eligible Australian population (aged 16 or over).

Figure 17: Percentage of population aged 16 and over registered on the AODR in 2023



## Figure 18: New registrations by state and territory 2019-2023

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
2023	47,132	40,454	35,391	32,399	15,645	3,632	1,205	3,955	179,813
2022	54,769	47,545	44,165	27,435	23,885	4,448	1,634	4,980	208,861
2021	110,331	88,278	73,736	31,244	26,362	7,516	2,616	9,864	349,947
2020	45,683	47,274	39,814	27,857	16,474	3,602	1,352	4,600	186,656
2019	54,025	55,974	48,878	32,175	19,612	4,723	1,519	4,735	221,641

Part 1: Deceased organ donation and transplantation

Part 2

# Living organ donation and transplantation

Part 3: Eye and tissue donation and transplantation

Additional information

## Living organ donation and transplantation



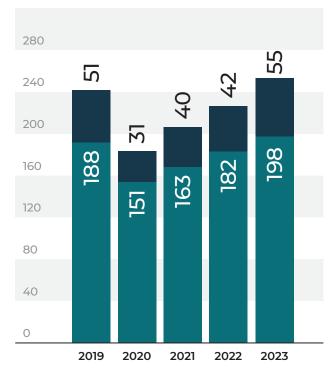
- A living organ donor is someone who donates a kidney, or on rare occasions part of their liver, to another person. Receiving an organ from a living donor offers an alternative to the national transplant waitlist for an organ from a deceased donor.
- There were 253 living kidney donors in 2023. This result is 13% higher than the 2022 outcome of 224, and also surpassed the 2019 outcome of 239 donors by 6%. This outcome, and the trend over the last 4 years, indicates full recovery from the impacts of the COVID-19 pandemic.
- Living kidney donation and transplantation is most often directly from a relative or close friend (directed donation).
- For some patients who are eligible for a kidney transplant, and have a living donor who is willing but unable to donate directly because of an incompatible blood or tissue type, donation and transplantation is facilitated through the Australian and New Zealand Paired Kidney Exchange (ANZKX) program.
- The 253 living kidney donors in 2023 included 55 through the ANZKX program, a 31% increase over 2022 (42) and the highest number of donors since the commencement of the ANZKX program.

Figure 20: Living kidney donation by state in 2023

There were no living liver donors in 2023.

## Figure 19: Living kidney donors 2019–2023



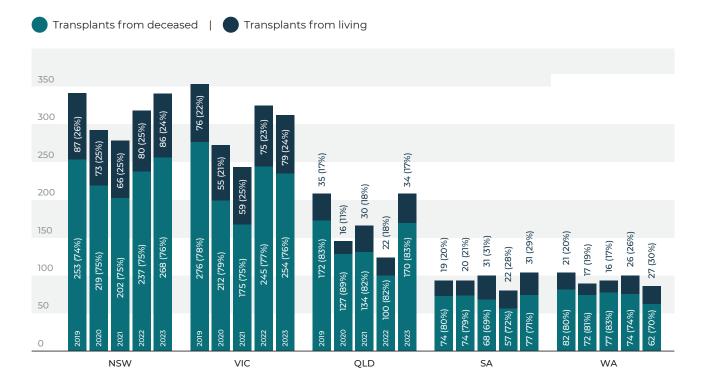


**Note:** The AKX (now ANZKX) program commenced in 2010. The above figures reflect the number of donors in Australia facilitated through the ANZKX program.



Note: Living donations from ACT, NT and TAS take place in other states.

# **Figure 21:** Kidney transplants from living and deceased donors by state of transplantation 2019–2023



- The proportion of kidney transplants from living donors has varied over the last 4 years. While there was a reduction in 2020, there was a return to, or an increase on 2019 levels in most states by 2021.
- There continues to be variation across states with transplants from living donors accounting for 17% to 30% of total kidney transplants.

Part 1: Deceased organ donation and transplantation

Part 2: Living organ donation and transplantation

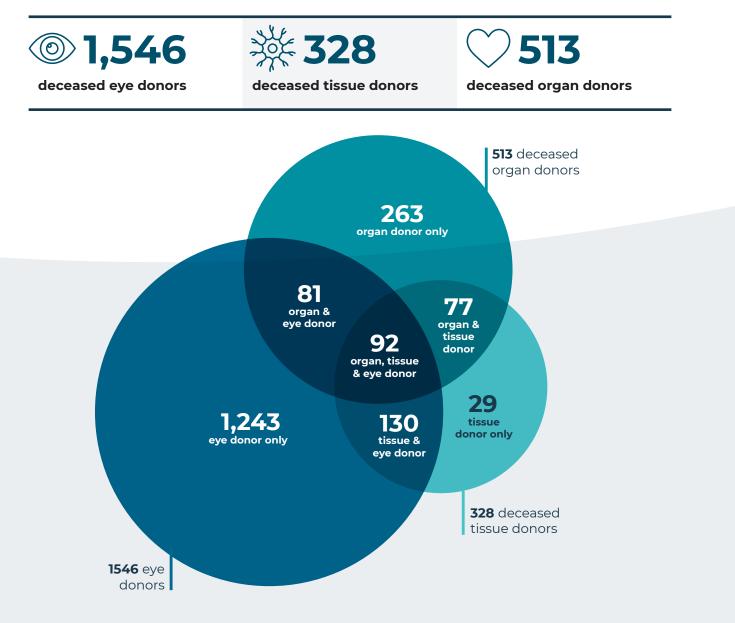
Part 3

Eye and tissue donation and transplantation

Additional information

## Deceased eye and tissue donors

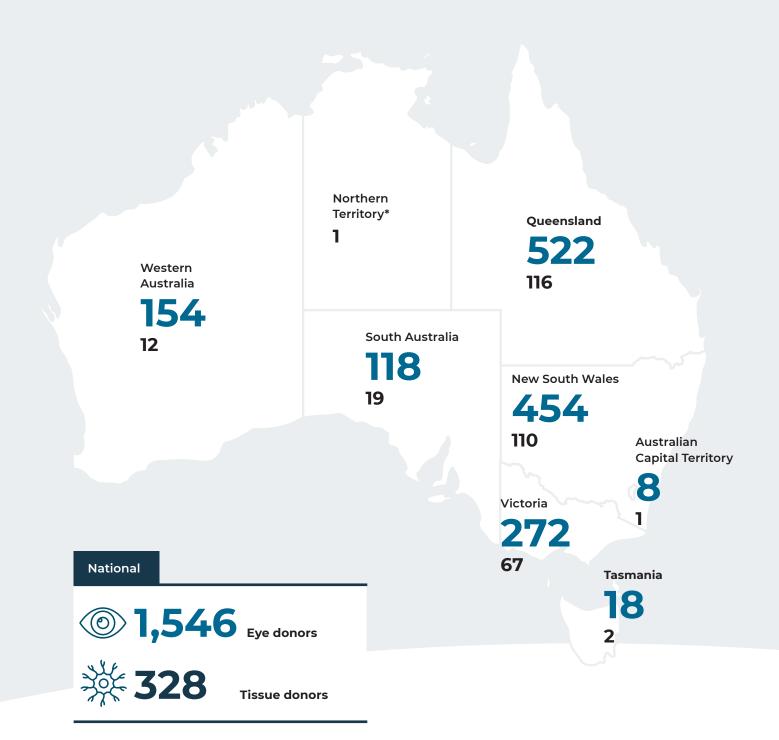
- Each year the lives of thousands of Australians are saved and transformed through the transplantation of donated tissues, including eye tissue.
- The tissues that can be transplanted include heart valves and other heart tissue (cardiovascular tissue), bone and tendons and ligaments (musculoskeletal tissue), skin, pancreas islets, and parts of the eye such as the cornea and sclera.
- Unlike organs, many more people can become eye and tissue donors as these can be donated following death outside of hospital, and tissue can be stored for longer periods of time.
- Tissue banks across Australia collect tissue from deceased and living donors, process and store these tissues and then distribute them to clinicians for transplantation and other surgical uses.
- Eye and tissue donation activity decreased in 2020 due the impacts of the pandemic on the sector, however outcomes show strong signs of recovery in subsequent years.
- Of the 513 deceased organ donors in 2023, 250 also donated eye and/or other tissue.
- People can donate any combination of organs, eyes and tissue.



### Figure 22: Overlap of deceased organ, eye and tissue donors in 2023



Figure 23: Deceased eye and tissue donors by state and territory in 2023



\* Eye donation is not undertaken in the Northern Territory.

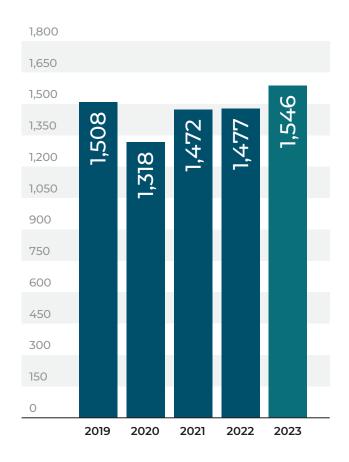
## Eye donation and transplantation



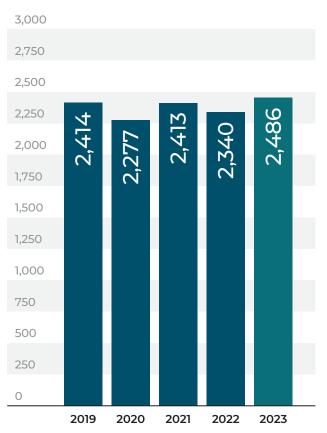
- In 2023 there were 1,546 deceased eye donors. This is a 5% increase in the number of eye donors compared with 2022 (1,477).
- ► There were 2,486 corneal transplants in 2023, a 6% increase compared with 2022 (2,340).

Figure 24: Deceased eye donors 2019–2023

- Since 2009, more than 31,000 Australians have received a corneal transplant.
- For the most part, donation meets demand in this sector. Eye donation and transplantation have increased steadily over the last four years and are above pre-pandemic levels.



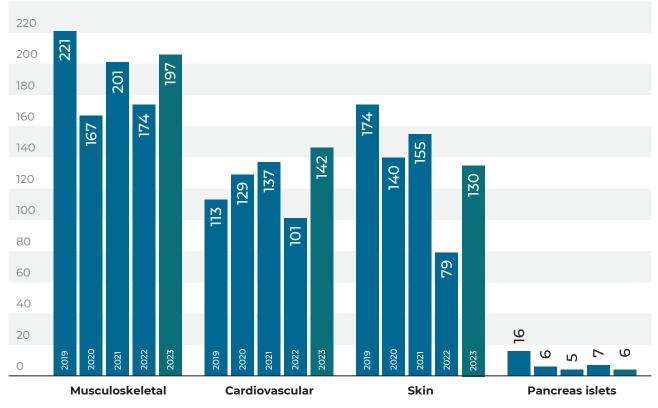
## Figure 25: Corneal transplants 2019–2023



## **Tissue donation and transplantation**



- In 2023 there were a total of 3,286 tissue donors, which is a 20% increase compared with 2022 (2,748) but still 15% below pre-pandemic levels in 2019 (3,857).
- The number of deceased tissue donors increased by 19% to 328 donors compared with 276 in 2022.
- Deceased tissue donor outcomes have varied since the first year of the pandemic when there was a 7% decrease in donors. The 2023 outcome is 5% higher than 2019 levels and the highest outcome since 2018, showing signs of recovery in the sector.

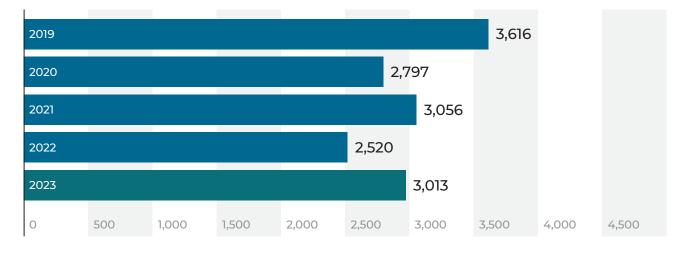


## Figure 26: Deceased tissue donations 2019–2023

Note: National tissue donation and transplantation data was first reported in 2013.

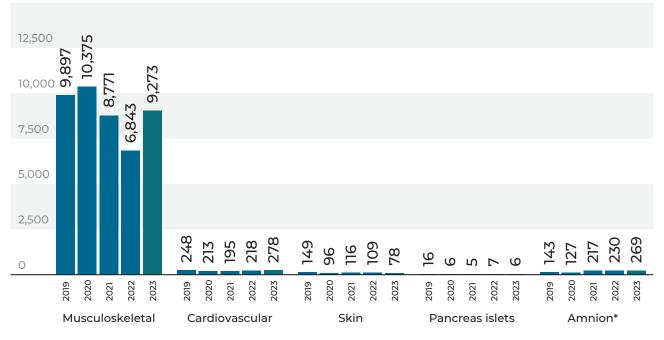
- The 328 deceased tissue donors in 2023 resulted in 475 tissue donations (some donated multiple tissues). This represents a 32% increase in tissue donation compared with 2022 (361).
- There were 197 musculoskeletal, 142 cardiovascular, 130 skin and 6 pancreas islets deceased tissue donations in 2023.

### Figure 27: Living tissue donations 2019–2023



- The 2,958 living tissue donors in 2023 resulted in 3,013 living tissue donations. This was predominantly from patients undergoing hip joint replacement surgery who donate their femoral head, and also women post birth who donate the amnion (part of the placenta). The number of living tissue donations is 20% higher than 2022 (2,520).
- The pandemic impacted elective surgeries including joint replacement surgery which resulted in a decrease in living tissue donations.
- While the number of living tissue donations is increasing, the number of donations in 2023 is still 17% below pre-pandemic levels (3,616).





\*Amnion transplants commenced in 2019.

- In 2023 there were 9,904 reported tissue transplant recipients from both living and deceased donors. This is a 34% increase on 2022 (7,407).
- Tissue transplant recipients included 9,273 of musculoskeletal tissue, 278 of cardiovascular tissue, 269 of amnion tissue, 78 of skin tissue and 6 pancreas islets in 2023.

# Acronyms

ANZDATA	Australia and New Zealand Dialysis and Transplant Registry
ANZKX	Australian and New Zealand Paired Kidney Exchange program
ANZOD	Australia and New Zealand Organ Donation Registry
AODR	Australian Organ Donor Register
DNDD	Donation after neurological determination of death
DCDD	Donation after circulatory determination of death
dpmp	Donors per million population
ED	Emergency Department
ICU	Intensive Care Unit
trpmp	Transplant recipients per million population

# References

#### Deceased organ donation and transplantation

Australia and New Zealand Organ Donation (ANZOD) Registry (January 2024) Australian Bureau of Statistics. Causes of death, Australia, 2022 (Released 29/09/2023). Australian Bureau of Statistics. National, state and territory Population, 30 June 2022 (Released 16/12/2023). Australian Institute of Health and Welfare 2021. Admitted patient care 2020–21 (Released 03/06/2023). DonateLife Audit, February 2023. Deceased organ donation in Australia, Australia and New Zealand Organ Donation Registry, January 2024.

#### Living kidney donation

Australia and New Zealand Dialysis and Transplant (ANZDATA) Registry (January 2024)

#### Australian Organ Donor Register

Services Australia (January 2024)

#### **Consent data**

Australian Organ and Tissue Donation and Transplantation Authority DonateLife Audit (February 2024)

## Need help?

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Published 27 February 2024

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