



# SECTION 5

## Deceased Donor Kidney Donation

This section summarises kidney donation activity from deceased donors in 2023, compared with previous years. The rate of kidneys transplanted in 2023 was 27.5 pmp in Australia and 20.3 pmp in New Zealand.

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## EXECUTIVE SUMMARY

Every organ donor provides a precious opportunity for the chance of an improved quality of life and survival through transplantation. It is important to understand the donation and transplant outcomes including the specific organs consented for donation, the organs retrieved and whether they were transplanted or not (non-utilised). This section provides information about the outcomes for kidney donation and transplantation from deceased actual organ donors.

## SUGGESTED CITATION

H Opdam, C Davies, K Marshall, G Irish 28<sup>th</sup> Report, Section 5: Deceased Donor Kidney Donation. Australia and New Zealand Organ Donation Registry, Adelaide, Australia. 2024. Available at <https://www.anzdata.org.au/anzod/publications-2/annual-reports/>

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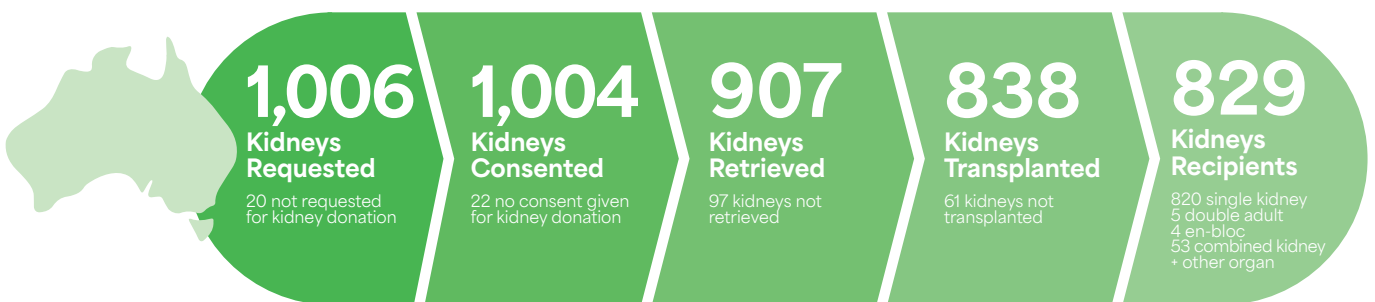
# KIDNEY DONATION

Of the 513 deceased actual organ donors in 2023 in Australia, in 502 (97.9%) there was consent for kidney donation. From these kidney donors, 907 kidneys were retrieved and transplanted into 829 recipients. Of the 829 kidney transplant recipients, there were 41 kidney/pancreas recipients, 5 double adult kidney recipients, 4 en-bloc kidney recipients, 7 combined single kidney-liver recipients, 3 combined kidney-heart transplant recipients, 1 combined single kidney-double lung transplant recipient and 1 combined kidney-pancreas-liver recipient.

There were 546 kidneys following donation after neurological determination of death (DNDD) donation and 292 kidneys following donation after circulatory determination of death (DCDD) in 2023, compared with 545 and 184 respectively in 2022.

There was an overall increase of 15.9% in the total number of kidney transplant recipients (829) in 2023 compared to the previous year (715); and an increase to 31.1 per million population (pmp) from 27.5 (pmp). Figure 5.1.1 shows the outcomes of requests for kidney donation in Australia.

**Figure 5.1.1**  
**Outcomes of requests for kidney donation in Australia - 2023**

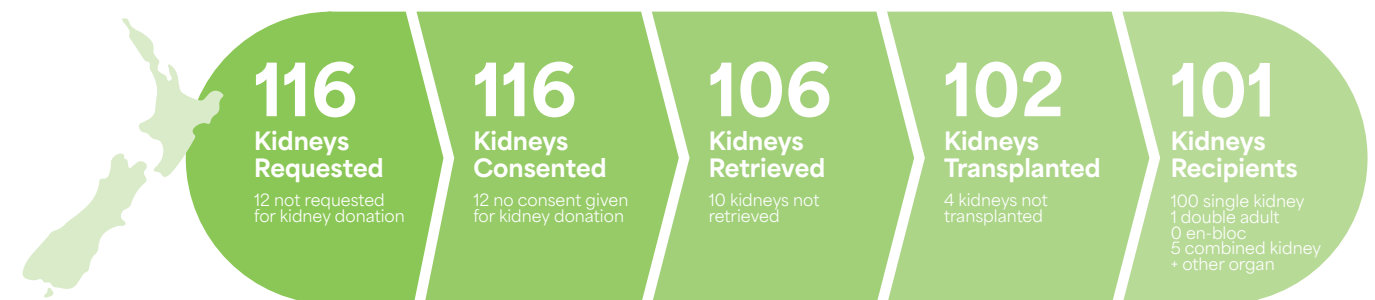


In New Zealand, there were 58 actual donors (90.6%) who consented to kidney donation. From these kidney donors, 106 kidneys were retrieved, of which 102 were transplanted into 101 recipients. There were 94 kidneys transplanted following DNDD and 8 kidneys transplanted following DCDD.

Of the 101 recipients, 3 received a combined kidney/pancreas and 2 a combined kidney/liver. There was 1 double adult kidney transplant and 0 en-bloc kidney transplants in 2023.

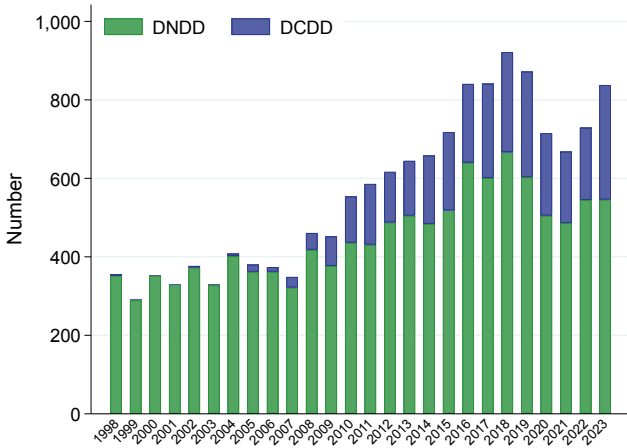
There was an overall decrease of 2.9% in the total number of kidney transplant recipients (101) in 2023 compared to the previous year (104); the rate of transplantation fell to 19.3 per million population in 2023 from 20.3 pmp in 2022. Figure 5.1.2 shows the outcomes of requests for kidney donation in New Zealand.

**Figure 5.1.2**  
**Outcomes of requests for kidney donation in New Zealand - 2023**

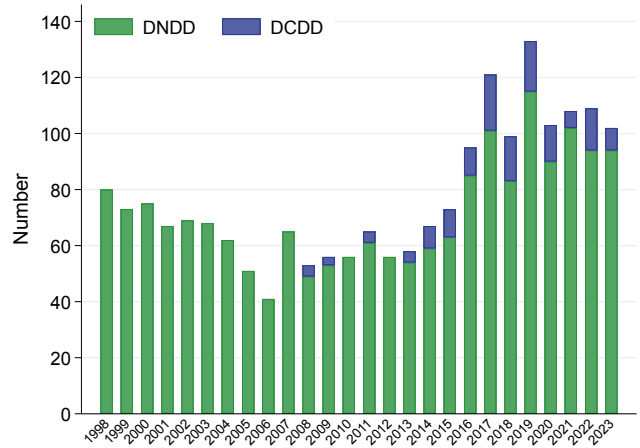


Figures 5.2 and 5.3 show the number of kidneys transplanted by the donation pathway and the number of kidney recipients by transplant region.

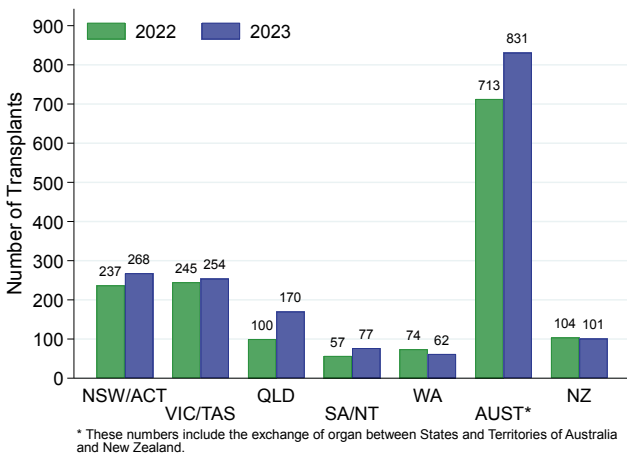
**Figure 5.2.1**  
**Kidneys Transplanted by Donation Pathway**  
**Australia 1998-2023**



**Figure 5.2.2**  
**Kidneys Transplanted by Donation Pathway**  
**New Zealand 1998-2023**



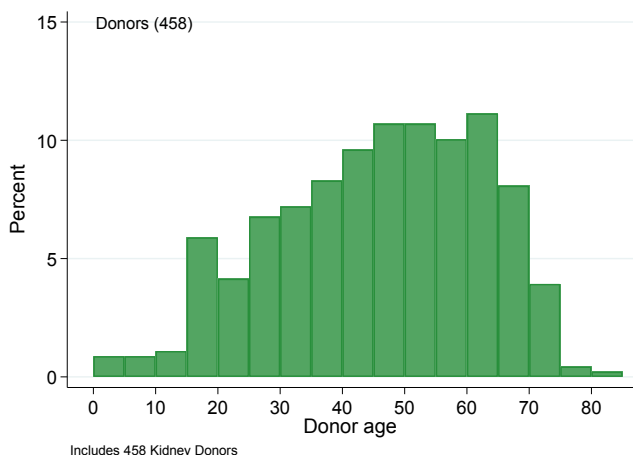
**Figure 5.3**  
**Deceased Donor Kidney Transplant Recipients\* by Transplant**  
**Region, Australia and New Zealand, 2022-2023**



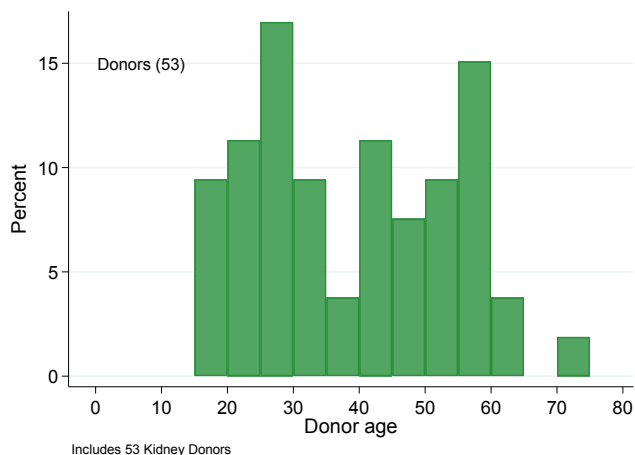
# AGE OF KIDNEY DONORS

The age distribution of donors providing retrieved kidneys for Australia and New Zealand is presented in Figure 5.4.

**Figure 5.4.1**  
**Age of Donors Providing Retrieved Kidneys**  
**Australia 2023**



**Figure 5.4.2**  
**Age of Donors Providing Retrieved Kidneys**  
**New Zealand 2023**



## DONOR KIDNEY FUNCTION

In 2023 in Australia, 104 donors (20%) had a terminal serum creatinine concentration of  $\geq 125$   $\mu\text{mol/L}$  (Table 5.1). In 2023 in New Zealand, 5 donors (8.6%) had a terminal serum creatinine concentration of  $\geq 125$   $\mu\text{mol/L}$ .

**Table 5.1**  
**Terminal Serum Creatinine Concentration 2019-2023**

Terminal Serum Creatinine ( $\mu\text{mol/L}$ )	Australia					New Zealand				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
0-99	70%	78%	77%	72%	70%	75%	72%	80%	81%	84%
100-124	7%	5%	6%	9%	9%	10%	17%	5%	6%	7%
125-149	5%	4%	3%	4%	4%	4%	5%	7%	3%	-
150-174	4%	2%	2%	2%	2%	3%	2%	2%	3%	3%
175-199	2%	2%	2%	2%	3%	1%	2%	-	2%	2%
200-224	2%	1%	2%	0%	2%	-	-	-	2%	2%
225-249	1%	2%	1%	1%	0%	1%	2%	2%	-	-
$\geq 250$	9%	7%	6%	10%	10%	4%	2%	5%	3%	2%

In Australia, 86 donors (17%) had a terminal serum urea concentration of  $\geq 9$  mmol/L and a creatinine concentration of  $\geq 125$   $\mu\text{mol/L}$ . In New Zealand, 2 donors (3%) had a terminal serum urea concentration of  $\geq 9$  mmol/L and a creatinine concentration of  $\geq 125$   $\mu\text{mol/L}$ .

## KIDNEYS NOT RETRIEVED

The reasons why kidneys were not retrieved for organ transplantation are presented in Table 5.2.

**Table 5.2**  
**Reasons for Kidney Not Retrieved in 2023**

Reason	Australia	New Zealand
Intraoperative assessment	17	0
Post WCRS did not die in timeframe	2	0
Cardiac arrest prior to WCRS/X- Clamp	0	0
Surgical retrieval injury	0	0
Declined in offer process	37	10
Organ not offered - pathway	0	0
Organ not offered - age of donor	4	0
Organ not offered - not medically suitable	36	0
No consent from Coroner	0	0
Family withdrew consent	1	0
<b>Total</b>	<b>97</b>	<b>10</b>

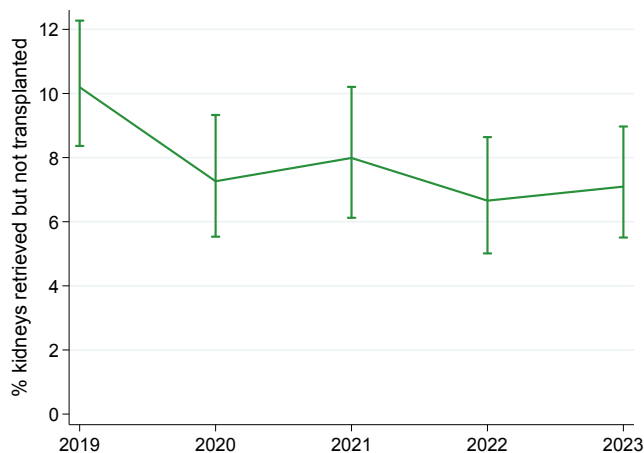
WCRS - Withdrawal of cardio-respiratory support

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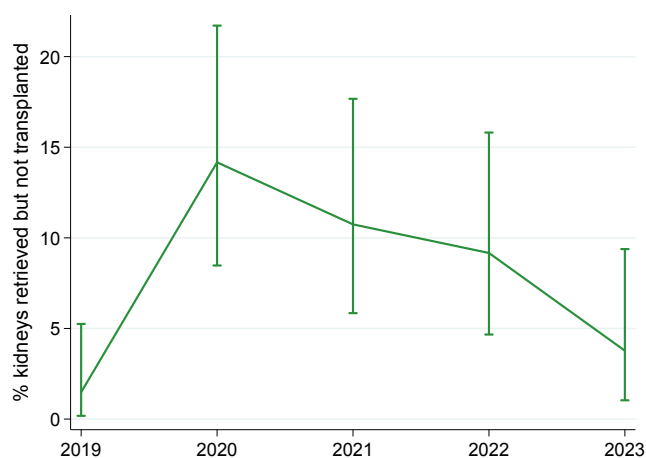
# KIDNEYS RETRIEVED AND NOT UTILISED FOR TRANSPLANTATION

Figure 5.5 shows the non-utilisation rate of retrieved kidneys – the proportion of kidneys that were retrieved for the purpose of organ transplantation, but not ultimately transplanted into a recipient (either due to an absence of suitable recipients, or the kidney being found to be medically or surgically unsuitable after retrieval).

**Figure 5.5.1**  
**Non-utilisation Rate of Retrieved Kidneys - Australia 2019-2023**



**Figure 5.5.2**  
**Non-utilisation Rate of Retrieved Kidneys - New Zealand 2019-2023**



The reasons why kidneys were not utilised for organ transplantation are presented in Table 5.3.

**Table 5.3**  
**Reasons Kidneys Retrieved & Not Utilised for Transplantation, 2021-2023**

Country	Reason	2021	2022	2023
Australia	Intraoperative assessment	27	16	22
	Assessment at transplant unit	20	21	28
	Surgical retrieval injury	3	2	4
	Other	6	9	7
	<b>Total</b>	<b>56</b>	<b>48</b>	<b>61</b>
New Zealand	Intraoperative assessment	6	7	4
	Assessment at transplant unit	4	2	0
	Surgical retrieval injury	0	0	0
	Other	3	2	0
	<b>Total</b>	<b>13</b>	<b>11</b>	<b>4</b>



# OUTCOME OF KIDNEY DONATION

Kidneys are counted as separate organs. The information relating to the request for kidney donation refers only to those patients who became kidney organ donors. If consent for donation for transplantation was sought and not obtained the Registry has no record of these potential donors. The difference between a request and a consent is a known objection by the donor or family refusal for a specific organ to be donated for transplantation. Organ donation for the purpose of research is excluded when calculating a specific organ's non-utilisation rate for transplantation.

The outcome of kidney donation activity in Australia and New Zealand throughout the donation process is presented in table 5.4.

**Table 5.4.1**  
**Outcome of Request for Kidney Donation in Australia, 2019-2023**

Outcome of Request	2019	2020	2021	2022	2023
Total Donors	548	463	421	454	513
Kidneys Requested for Donation	1076	888	817	892	1006
Kidneys Not Requested for Donation	20	38	25	16	20
Kidneys with Consent Given	1072	878	809	890	1004
Kidneys with Consent Not Given	4	10	8	2	2
Kidneys Retrieved	974	771	726	782	907
Kidneys Not Retrieved	98	107	83	108	97
Kidneys Transplanted	872	715	668	729	838
Left Kidney Transplanted	423	349	322	354	415
Right Kidney Transplanted	419	344	322	347	405
Double/En-Bloc Kidney Transplanted	30	22	24	28	18
Total Kidneys Not Used for Transplantation	102	56	58	53	69
Left Kidney Not Used	43	27	25	21	28
Right Kidney Not Used	48	25	29	27	33
Double/En-bloc Kidney Not Used	8	4	2	0	0
Kidneys Used for Research*	3	0	0	0	0
Kidneys Retrieved for Research**	0	0	0	1	5
Kidneys Retrieved for Transplantation and Used for Research***	0	0	2	4	3
Recipients Transplanted	857	704	656	715	829
Double Adult Kidney Procedures	9	6	7	12	5
En-bloc Kidney Procedures	6	5	5	2	4
Kidney Non-Utilisation Rate	10.2%	7.3%	8.0%	6.7%	7.1%
Kidney Utilisation Rate	89.8%	92.7%	92.0%	93.3%	92.9%

\*Primary/Secondary Intention not recorded prior to Nov 2020

\*\*Use for research primary intention of retrieval

\*\*\*Use for research secondary intention of retrieval

**Table 5.4.2**  
**Outcome of Request for Kidney Donation in New Zealand, 2019-2023**

Outcome of Request	2019	2020	2021	2022	2023
<b>Total Donors</b>	<b>74</b>	<b>64</b>	<b>66</b>	<b>63</b>	<b>64</b>
Kidneys Requested for Donation	142	126	128	124	116
Kidneys Not Requested for Donation	6	2	4	2	12
<b>Kidneys with Consent Given</b>	<b>142</b>	<b>126</b>	<b>128</b>	<b>124</b>	<b>116</b>
Kidneys with Consent Not Given	0	0	0	0	0
<b>Kidneys Retrieved</b>	<b>135</b>	<b>120</b>	<b>121</b>	<b>120</b>	<b>106</b>
Kidneys Not Retrieved	7	6	7	4	10
<b>Kidneys Transplanted</b>	<b>133</b>	<b>103</b>	<b>108</b>	<b>109</b>	<b>102</b>
Left Kidney Transplanted	64	48	50	50	50
Right Kidney Transplanted	63	49	46	49	50
Double/En-bloc Kidney Transplanted	6	6	12	10	2
<b>Total Kidneys Not Used for Transplantation</b>	<b>2</b>	<b>17</b>	<b>13</b>	<b>11</b>	<b>4</b>
Left Kidney Not Used	0	8	5	4	2
Right Kidney Not Used	0	7	8	5	2
Double/En-Bloc Kidney Not Used	2	2	0	2	0
Kidneys Used for Research*	0	0	0	0	0
Kidneys Retrieved for Research**	0	0	0	0	0
Kidneys Retrieved for Transplantation and Used for Research***	0	0	0	0	0
<b>Recipients Transplanted</b>	<b>130</b>	<b>100</b>	<b>102</b>	<b>104</b>	<b>101</b>
Double Adult Kidney Procedures	3	3	1	4	1
En-Bloc Kidney Procedures	0	0	5	1	0
<b>Kidney Non-Utilisation Rate</b>	<b>1.5%</b>	<b>14.2%</b>	<b>10.7%</b>	<b>9.2%</b>	<b>3.8%</b>
<b>Kidney Utilisation Rate</b>	<b>98.5%</b>	<b>85.8%</b>	<b>89.3%</b>	<b>90.8%</b>	<b>96.2%</b>

\*Primary/Secondary Intention not recorded prior to Nov 2020

\*\*Use for research primary intention of retrieval

\*\*\*Use for research secondary intention of retrieval



# SECTION 5

Deceased Donor Kidney Donation