

Donor Profile





Donor Profile

This chapter contains description in more detail of organ donors in Australia 2013 compared to 2012 (Fig 4.1). Key observations are the gender discrepancy for

DCD donors (where there are greater numbers of males than females). There is a preponderance of Caucasian donors, and the distribution of blood groups (largely O and A follows).

Figure 4.1

Demographics of Deceased Donors in Australia 2012 - 2013						
	2012			2013		
	DBD	DCD	Total	DBD	DCD	Total
Gender						
Male	144(52%)	57(74%)	201 (57%)	158(52%)	48(56%)	206 (53%)
Female	133(48%)	20(26%)	153 (43%)	147(48%)	38(44%)	185 (47%)
Age						
0-4	3(1%)		3 (1%)	6(2%)	2(2%)	8 (2%)
5-14	7(3%)	1(1%)	8 (2%)	7(2%)	3(3%)	10 (3%)
15-24	39(14%)	10(13%)	49 (14%)	44(14%)	13(15%)	57 (15%)
25-34	27(10%)	5(6%)	32 (9%)	35(11%)	9(10%)	44 (11%)
35-44	39(14%)	12(16%)	51 (14%)	40(13%)	9(10%)	49 (13%)
45-54	53(19%)	22(29%)	75 (21%)	54(18%)	16(19%)	70 (18%)
55-64	59(21%)	21(27%)	80 (23%)	56(18%)	23(27%)	79 (20%)
65-74	40(14%)	6(8%)	46 (13%)	45(15%)	11(13%)	56 (14%)
75+	10(4%)		10 (3%)	18(6%)		18 (5%)
BMI (kg/m2)						
Underweight (<18.5)	12(4%)	1(1%)	13 (4%)	18(6%)	5(6%)	23 (6%)
Normal (18.5-<25)	113(41%)	32(42%)	145 (41%)	109(36%)	32(37%)	141 (36%)
Overweight(25-<30)	97(35%)	20(26%)	117 (33%)	103(34%)	33(38%)	136 (35%)
Obese(>=30)	55(20%)	24(31%)	79 (22%)	75(25%)	15(17%)	90 (23%)
Unknown					1(1%)	1 (0%)
Blood Group						
A	107(39%)	34(44%)	141 (40%)	104(34%)	36(42%)	140 (36%)
AB	12(4%)	3(4%)	15 (4%)	7(2%)	2(2%)	9 (2%)
B	32(12%)	3(4%)	35 (10%)	39(13%)	5(6%)	44 (11%)
O	126(45%)	37(48%)	163 (46%)	155(51%)	43(50%)	198 (51%)
Racial Origin						
Caucasian	258(93%)	73(95%)	331 (94%)	265(87%)	80(93%)	345 (88%)
Aboriginal	3(1%)	1(1%)	4 (1%)	6(2%)	2(2%)	8 (2%)
Asian	9(3%)	1(1%)	10 (3%)	20(7%)	2(2%)	22 (6%)
Maori	4(1%)		4 (1%)	4(1%)		4 (1%)
Pacific Islander	1(0%)	1(1%)	2 (1%)	3(1%)		3 (1%)
Other	2(1%)	1(1%)	3 (1%)	7(2%)	2(2%)	9 (2%)
Cause of Death						
CVA	152(55%)	22(29%)	174 (49%)	152(50%)	26(30%)	178 (46%)
Trauma (road)	29(10%)	9(12%)	38 (11%)	36(12%)	9(10%)	45 (12%)
Trauma (non-road)	29(10%)	8(10%)	37 (10%)	36(12%)	6(7%)	42 (11%)
Hypoxia-Anoxia	51(18%)	31(40%)	82 (23%)	65(21%)	38(44%)	103 (26%)
Cerebral Tumour	1(0%)		1 (0%)	2(1%)		2 (1%)
Other	15(5%)	7(9%)	22 (6%)	14(5%)	7(8%)	21 (5%)

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In New Zealand in 2013 there were two DCD donors. There were a lower proportion of donors <25 years, compared with Australia, but similar proportion ≥65 years of age.

Figure 4.2

Demographics of Deceased Donors in New Zealand 2012 - 2013						
	2012			2013		
	DBD	DCD	Total	DBD	DCD	Total
NZ						
Gender						
Male	17(45%)		17 (45%)	12(35%)	1(50%)	13 (36%)
Female	21(55%)		21 (55%)	22(65%)	1(50%)	23 (64%)
Age						
0-4					1(50%)	1 (3%)
5-14	2(5%)		2 (5%)	1(3%)		1 (3%)
15-24	3(8%)		3 (8%)	1(3%)	1(50%)	2 (6%)
25-34	3(8%)		3 (8%)	5(15%)		5 (14%)
35-44	9(24%)		9 (24%)	6(18%)		6 (17%)
45-54	10(26%)		10 (26%)	11(32%)		11 (31%)
55-64	5(13%)		5 (13%)	4(12%)		4 (11%)
65-74	4(11%)		4 (11%)	5(15%)		5 (14%)
75+	2(5%)		2 (5%)	1(3%)		1 (3%)
BMI (kg/m2)						
Underweight (<18.5)				1(3%)		1 (3%)
Normal (18.5-<25)	19(50%)		19 (50%)	14(41%)	1(50%)	15 (42%)
Overweight(25-<30)	9(24%)		9 (24%)	15(44%)		15 (42%)
Obese(≥30)	10(26%)		10 (26%)	4(12%)		4 (11%)
Unknown					1(50%)	1 (3%)
Blood Group						
A	9(24%)		9 (24%)	14(41%)		14 (39%)
AB	2(5%)		2 (5%)			
B	5(13%)		5 (13%)	4(12%)	1(50%)	5 (14%)
O	22(58%)		22 (58%)	16(47%)	1(50%)	17 (47%)
Racial Origin						
Caucasian	28(74%)		28 (74%)	28(82%)	1(50%)	29 (81%)
Asian	3(8%)		3 (8%)	3(9%)		3 (8%)
Maori	6(16%)		6 (16%)	2(6%)	1(50%)	3 (8%)
Pacific Islander	1(3%)		1 (3%)			
Other				1(3%)		1 (3%)
Cause of Death						
CVA	15(39%)		15 (39%)	26(76%)		26 (72%)
Trauma (road)	4(11%)		4 (11%)	1(3%)		1 (3%)
Trauma (non-road)	6(16%)		6 (16%)	1(3%)	1(50%)	2 (6%)
Hypoxia-Anoxia	8(21%)		8 (21%)	5(15%)	1(50%)	6 (17%)
Other	5(13%)		5 (13%)	1(3%)		1 (3%)



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AGE AND GENDER DISTRIBUTION IN AUSTRALIA AND NEW ZEALAND

In Australia in 2013, 14.3% (56 donors) were 65-74 years of age and 4.6% (18 donors) were aged 75 years or older. The oldest donor was 79.8 years and the youngest 1 month old (Figure 4.9).

In New Zealand in 2013, 16.7% (6 donors) were 65 years or older. The age range was from 1.9-81.5 years of age.

The mean age for donors in Australia in 2013, was 46.2 years. The mean age in New Zealand was 47.3

The mean age of donors in 1989 was 32.4 years and the age range was between 16.5 months and 69.5 years.

Figure 4.3 - 4.8 shows donors according to age and gender in Australia and New Zealand for the years 2005-2007, 2008-2010 and 2011-2013.

Figure 4.3

Age and Gender of Deceased Donors
Australia 2005-2013

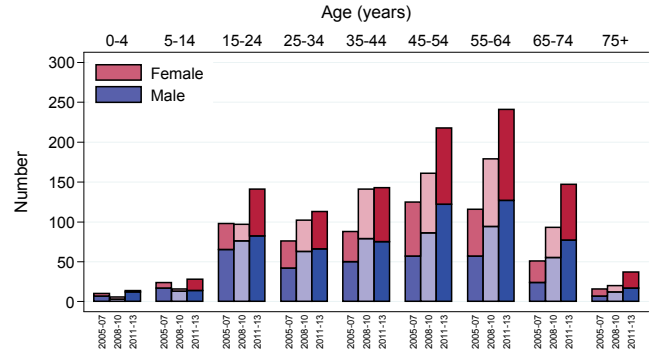


Figure 4.4

Age and Gender of Deceased Donors
New Zealand 2005-2013

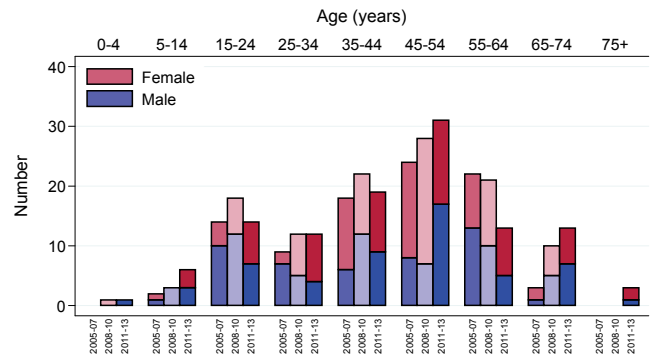


Figure 4.5

Age and Gender of Donors After Brain Death
Australia 2005-2013

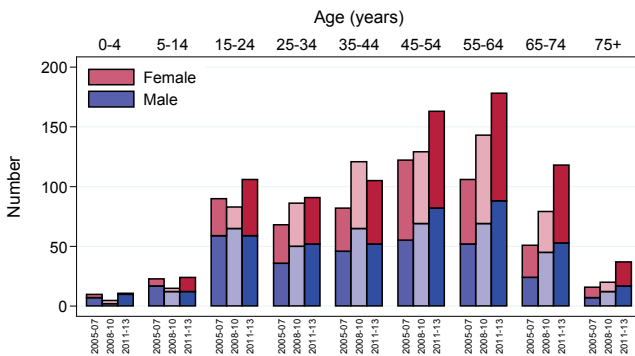


Figure 4.6

Age and Gender of Donors After Cardiac Death
Australia 2005-2013

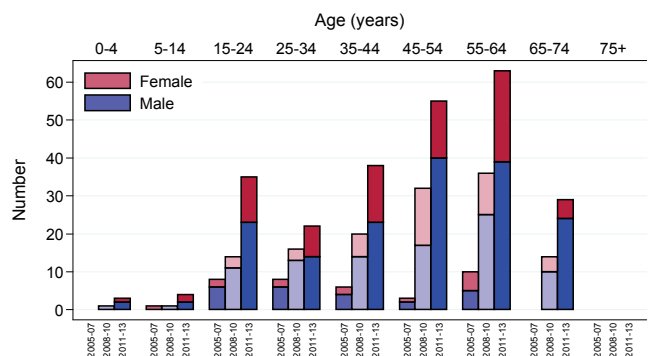


Figure 4.7

Age and Gender of Donors After Brain Death
New Zealand 2005-2013

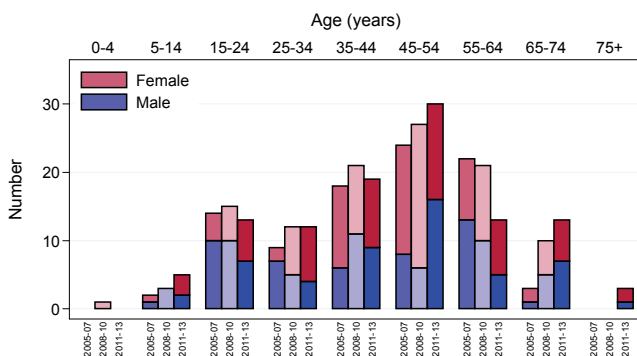
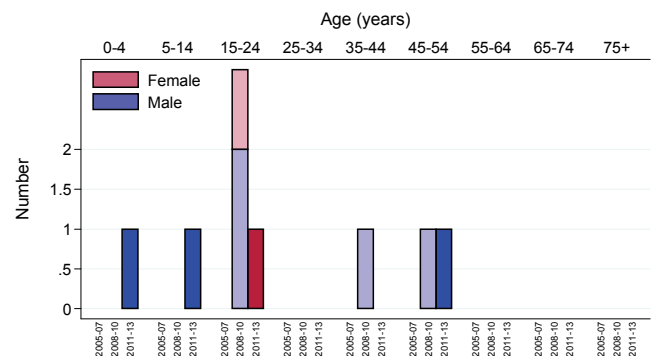


Figure 4.8

Age and Gender of Donors After Cardiac Death
New Zealand 2005-2013





Donor Profile

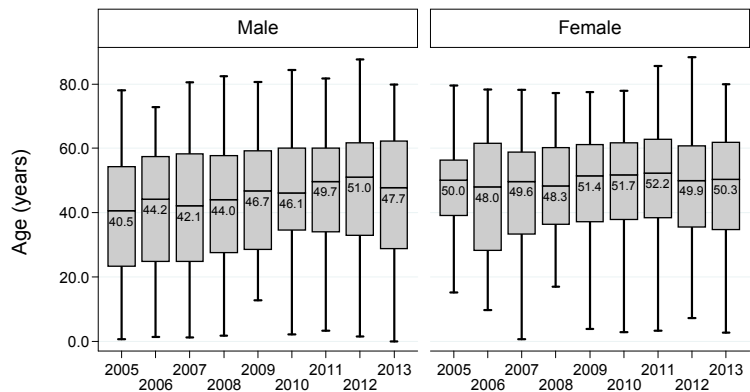
AUSTRALIA

The mean age for Australia in 2013 was 46.2. In the larger Australian States mean age ranged from 38.1 years in Western Australia to 51.9 years in Victoria. If the smaller States and Territories are included the range was 35.7 years in Northern Territory to 51.9 years in Victoria.

The median age for the larger Australian States in 2013 ranged from 45.8 years in Queensland to 55.9 years in Victoria. If the smaller States and Territories are included the range was 35.5 years in Northern Territory to 55.9 years in the South Australia.

The median age for Australia in 2013 was 49.9 years.

Figure 4.9 Age of Male and Female Donors 2005-2013 Australia

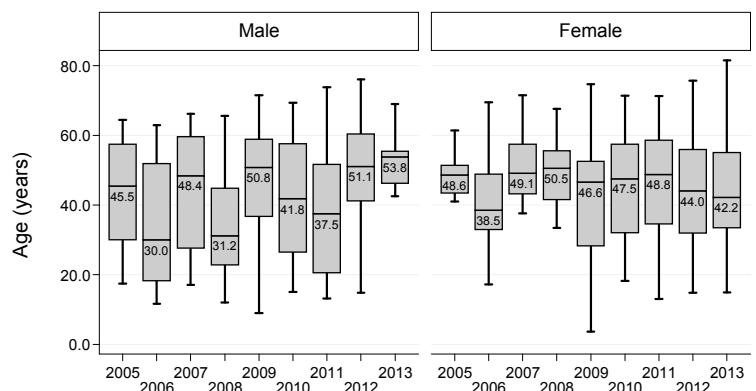


NEW ZEALAND

For New Zealand the mean age was 47.3 years.

The median age increased for New Zealand from 49.2 years in 2012 to 51.4 years in 2013. There was one donor aged 75 years or over (down from two in 2012) and one donor aged less than 5 years.

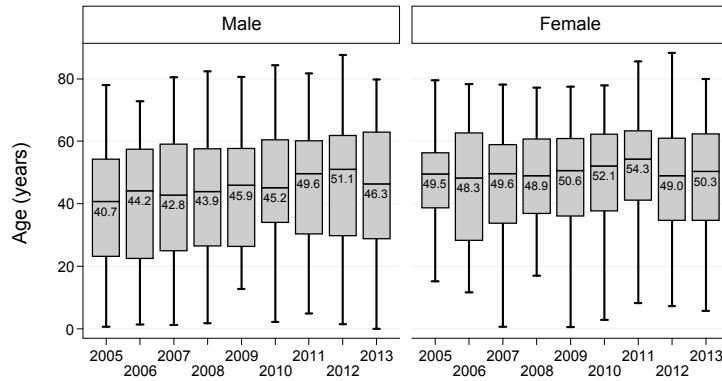
Figure 4.10 Age of Male and Female Donors 2005-2013 New Zealand





Donor Profile

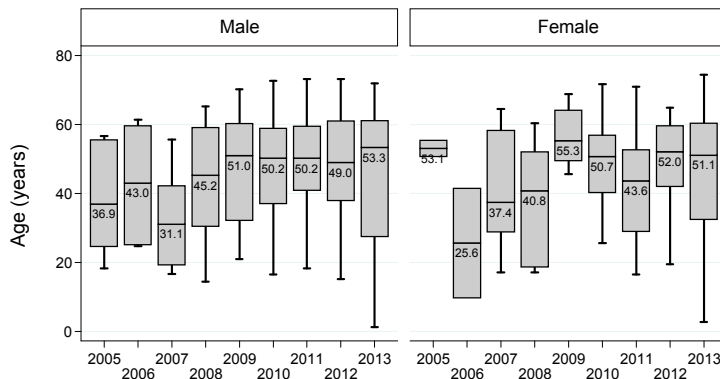
Figure 4.11 Age of Male and Female Donors After Brain Death 2005-2013
Australia



Age and gender of donors by donor type is shown per year from 2005 - 2013 in Figures 4.11 to 4.13.

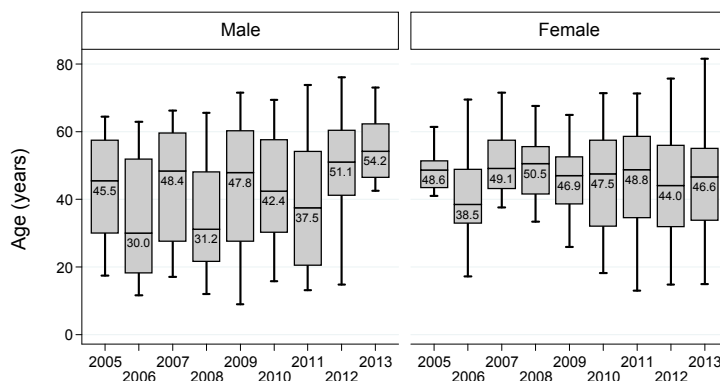


Figure 4.12 Age of Male and Female Donors After Cardiac Death 2005-2013
Australia



Figures 4.14 to 4.21 display donor age by donor type in each State.

Figure 4.13 Age of Male and Female Donors After Brain Death 2005-2013
New Zealand



Donor Profile



Figure 4.14 Age of Deceased Donors 2005-2013 Queensland

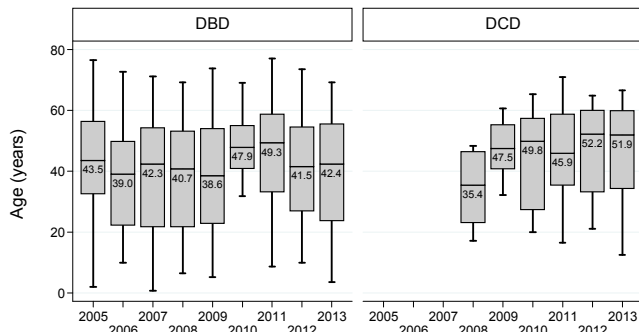


Figure 4.15 Age of Deceased Donors 2005-2013 Northern Territory

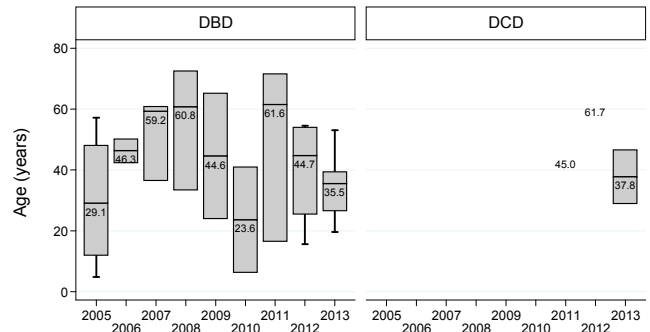


Figure 4.16 Age of Deceased Donors 2005-2013 Victoria

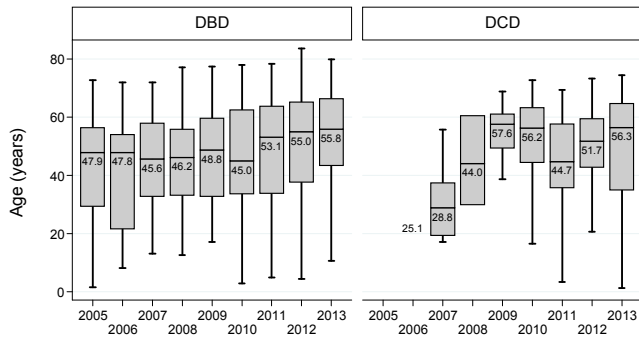


Figure 4.17 Age of Deceased Donors 2005-2013 New South Wales

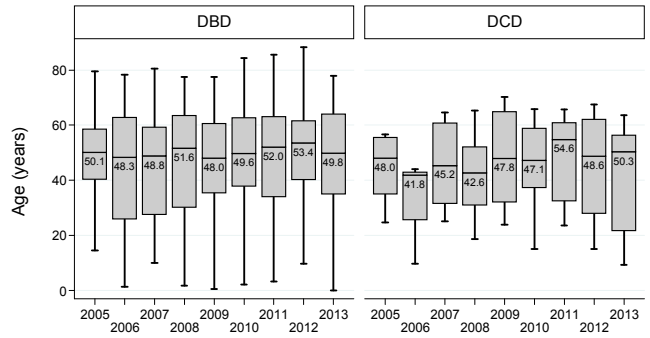


Figure 4.18 Age of Deceased Donors 2005-2013 Tasmania

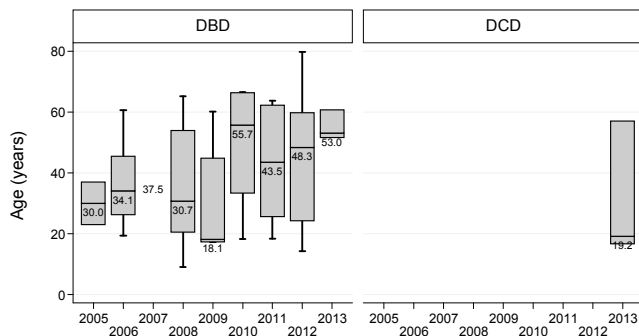


Figure 4.19 Age of Deceased Donors 2005-2013 Australian Capital Territory

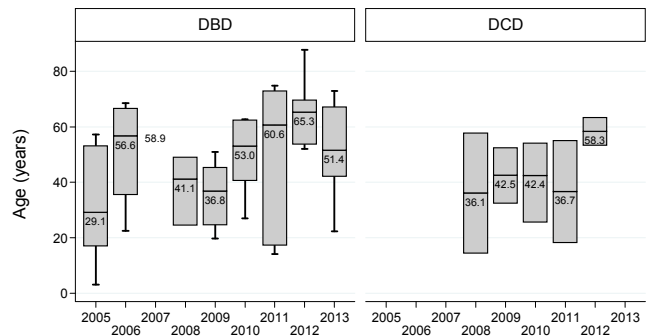


Figure 4.20 Age of Deceased Donors 2005-2013 South Australia

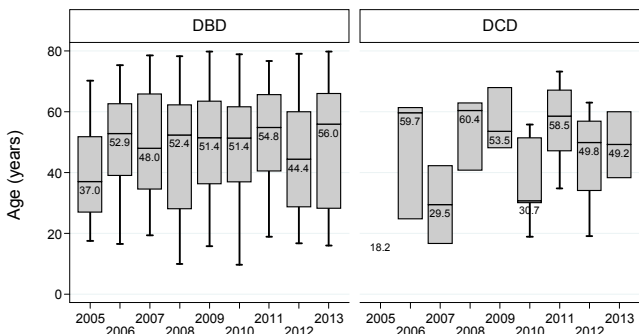
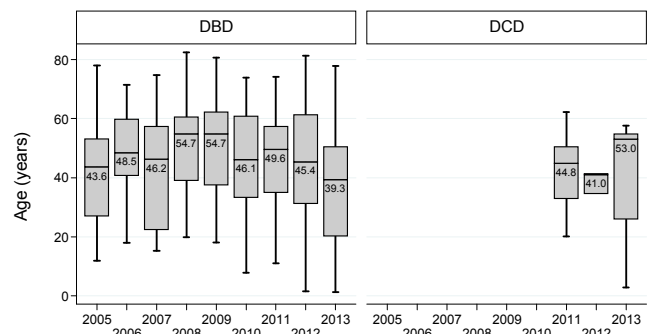


Figure 4.21 Age of Deceased Donors 2005-2013 Western Australia





Donor Profile

Donor gender in each State, Australia and New Zealand is shown in three year cohorts in Figures 4.22 to 4.25. Figures 4.23 to 4.25 also shows the gender distribution, taking into account the assessment criteria for donors.

Standard and extended criteria for donor suitability exist for each organ type, as specified by the Transplantation Society of Australia and New Zealand, *Organ Transplantation from Deceased Donors: Consensus Statement on Eligibility Criteria and Allocation Protocols*. <http://www.tsanz.com.au/organallocationprotocols/>

Figure 4.22

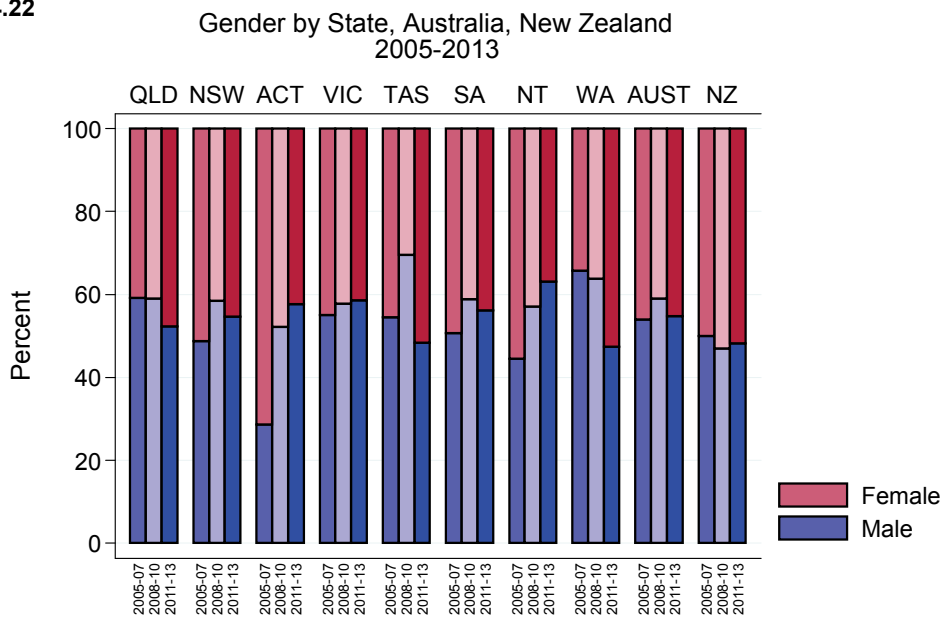
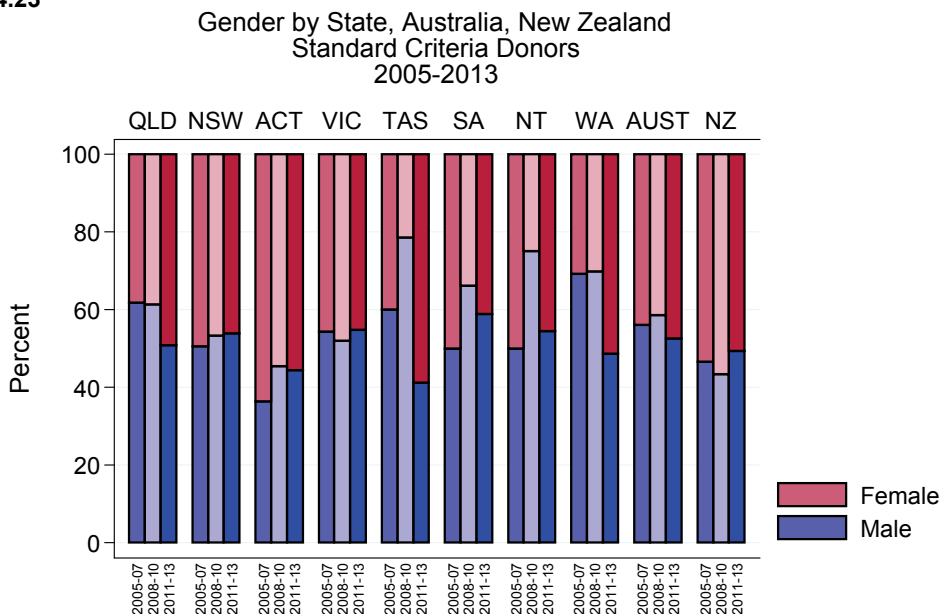


Figure 4.23

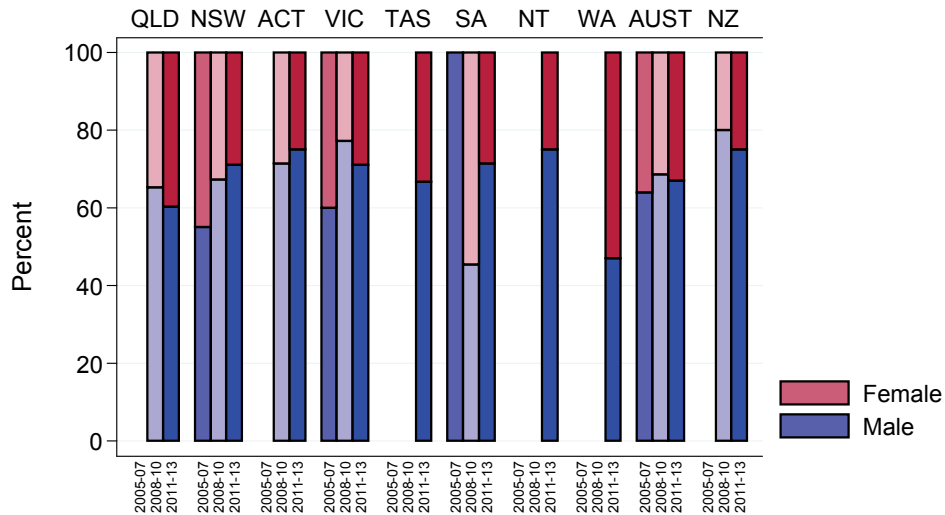


Standard criteria relate to donor characteristics associated with the best outcomes after transplantation; for example, age less than 50 years and no comorbidities.

Donor Profile

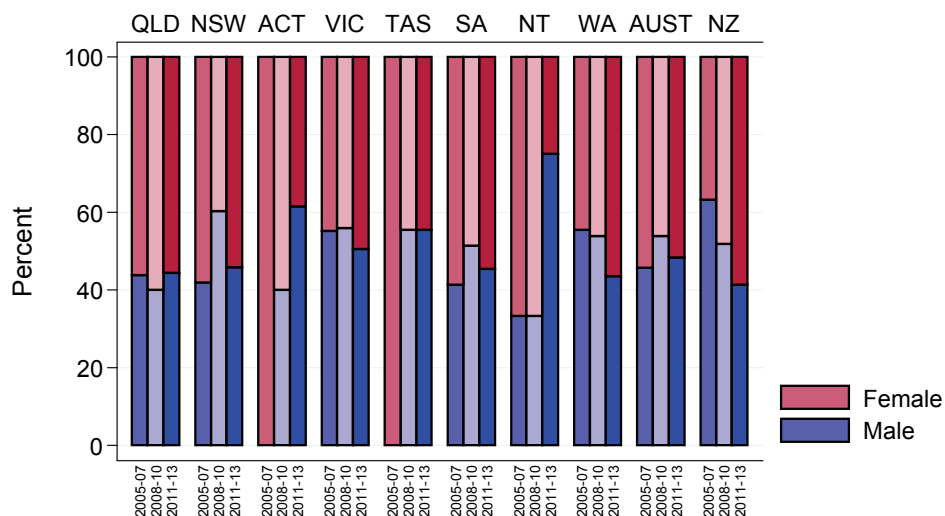


Figure 4.24 Gender by State, Australia, New Zealand Donors After Cardiac Death 2005-2013



Donation after circulatory death (DCD), relates to 'irreversible cessation of the circulation criterion' (also known as non-heart-beating donation (NHBD)). Further details regarding the identification and management of donation after cardiac death are provided in a separate document, *National Protocol for Donation after Cardiac Death*, issued by the Australian Organ and Tissue Authority in 2010.

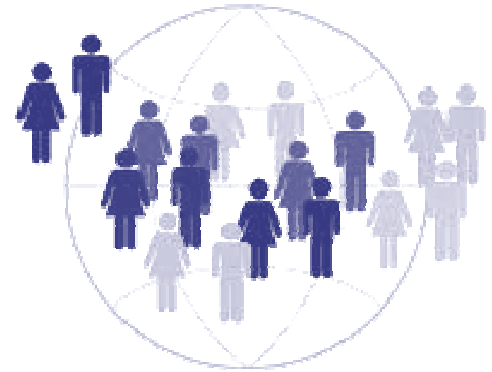
Figure 4.25 Gender by State, Australia, New Zealand Expanded Criteria Donors 2005-2013



In order to increase the availability of donor organs, expanded eligibility criteria have been developed that include extended criteria for donation. These are donor characteristics that are associated with increased short and/or long-term morbidity and mortality after transplantation; for example, longer ischaemic time, comorbidities and age greater than 65 years.



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The ethnic origin of donors has remained stable over the past 5 year, both in Australia and in New Zealand.

Figure 4.26

Ethnic Origin of Donors 2009 - 2013						
Donor racial/ ethnic origin	Australia			New Zealand		
	2011	2012	2013	2011	2012	2013
Caucasian	322 (96%)	331 (94%)	345 (88%)	30 (79%)	28 (74%)	29 (81%)
Aboriginal	3 (1%)	4 (1%)	8 (2%)	-	-	-
Asian	9 (3%)	10 (3%)	22 (6%)	1 (3%)	3 (8%)	3 (8%)
Maori	-	4 (1%)	4 (1%)	3 (8%)	6 (16%)	3 (8%)
Pacific Islander	1 (0%)	2 (1%)	3 (1%)	4 (11%)	1 (3%)	-
Other	2 (1%)	3 (1%)	9 (2%)	-	-	1 (3%)

The reporting of donor's religious denomination has also remained stable over the past 5 year, with both Australia and New Zealand recording higher numbers not reported or "unknown".

Figure 4.27

Religious Denomination of Donors 2009 - 2013										
Donor Religion	Australia					New Zealand				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Christian	58 (23%)	99 (32%)	108 (32%)	108 (31%)	121 (31%)	1 (2%)	3 (7%)	7 (18%)	5 (13%)	3 (8%)
Jewish	1 (0%)	1 (0%)	-	-	3 (1%)	-	-	-	-	-
Orthodox	2 (1%)	-	3 (1%)	2 (1%)	1 (0%)	-	-	-	-	-
Muslims	1 (0%)	-	-	1 (0%)	2 (1%)	-	-	-	-	-
Buddhist	3 (1%)	1 (0%)	1 (0%)	4 (1%)	1 (0%)	-	-	-	-	-
Hindu	-	2 (1%)	-	2 (1%)	-	-	-	-	-	1 (3%)
No religion	-	-	-	-	4 (1%)	-	-	-	-	-
Other	35 (14%)	64 (21%)	75 (22%)	59 (17%)	77 (20%)	-	-	-	-	-
Unknown	147 (60%)	142 (46%)	150 (45%)	178 (50%)	182 (47%)	42 (98%)	38 (93%)	31 (82%)	33 (87%)	32 (89%)



DONOR WEIGHT

The allocation of heart, lungs and livers are based in part on the matching of recipient and donor size and weight. In 2013 there were 15 donors in Australia and two donors in New Zealand who weighed less than 40 kilograms.

Figure 4.28

		Donor Weight 2009 - 2013										Total
		Kilograms										
		0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	
Australia	2009	2	2	0	3	11	45	56	56	35	37	247
	2010	2	5	4	2	20	43	62	70	53	48	309
	2011	3	4	1	6	31	59	73	74	48	38	337
	2012	2	4	0	7	23	73	70	85	44	46	354
	2013	10	2	3	7	24	62	95	90	53	45	391
New Zealand	2009	0	2	0	1	7	7	11	6	8	1	43
	2010	1	0	0	1	2	6	14	8	4	5	41
	2011	0	0	0	2	1	11	7	9	4	4	38
	2012	0	0	0	0	6	5	10	5	8	4	38
	2013	1	0	1	0	3	9	11	4	5	2	36

The distribution of BMI (body mass index) of donors in Australia and New Zealand for the period 2009 - 2013 are shown in Figures 4.29 and 4.30.

Figure 4.29

BMI of Donors, Australia 2009-2013

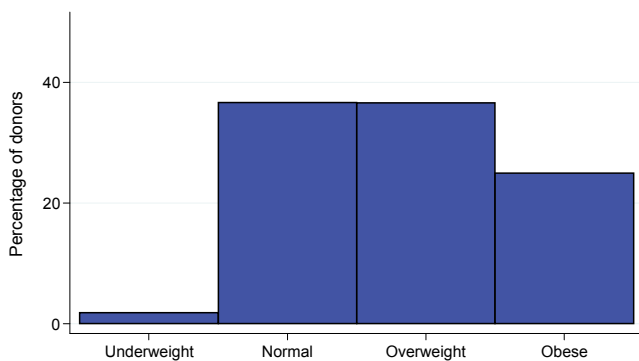
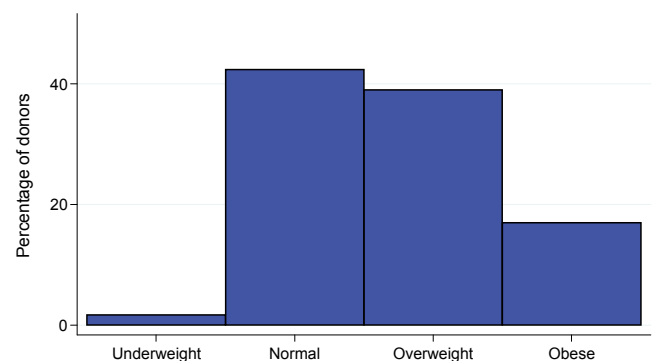


Figure 4.30

BMI of Donors, New Zealand 2009-2013





MEDICAL CONDITION OF DONORS

Figure 4.31

Medical Condition of Donors by Australian States 2013 (2012)											
Donor Type	Medical Condition	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
DBD	Diabetes Type I	0 (2)	1 (0)	0 (0)	1 (1)	0 (1)	2 (1)	0 (0)	0 (0)	4 (5)	0 (1)
	Diabetes Type II	2 (3)	6 (12)	1 (3)	7 (2)	0 (2)	2 (1)	0 (0)	2 (1)	20 (24)	3 (1)
	Hypertension	5 (13)	26 (25)	1 (5)	22 (18)	2 (3)	10 (5)	0 (1)	7 (6)	73 (76)	5 (11)
	Smoking-Current	27 (34)	31 (25)	2 (2)	30 (21)	3 (3)	13 (6)	2 (2)	21 (12)	129 (105)	6 (17)
	Cancer	3 (3)	4 (2)	1 (0)	1 (2)	0 (0)	0 (1)	0 (0)	4 (2)	13 (10)	1 (0)
DCD	Diabetes Type I	0 (0)	0 (1)	0 (0)	2 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (1)	0 (0)
	Diabetes Type II	0 (0)	0 (1)	0 (0)	3 (4)	0 (0)	0 (0)	0 (0)	0 (0)	3 (5)	0 (0)
	Hypertension	5 (5)	1 (3)	0 (0)	13 (7)	0 (0)	1 (2)	0 (0)	3 (0)	23 (17)	0 (0)
	Smoking-Current	9 (8)	7 (4)	0 (0)	12 (13)	1 (0)	0 (1)	1 (0)	1 (1)	31 (27)	1 (0)
	Cancer	1 (0)	1 (1)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (1)	0 (0)

DIABETES

There were 29 donors with Diabetes in Australia in 2013. Six donors with Type 1 and 23 with Type 2 diabetes; there were three Type 2 diabetic donor in New Zealand.

In Australia, there were three diabetic Type 2 donors who did not have organs retrieved (two due to disease in organ and the other due to no suitable recipient). The 23 Type 2 donors (including three DCD donors) provided 26 kidneys, nine livers, 6 double lungs, 22 corneas, one sets of heart valves, two bone donations and three tissue donation. The six diabetic Type 1 donors in Australia (including two DCD donors) that provided eight kidneys, four livers, two heart, four double lung, eight cornea and one set of heart valves.

In New Zealand, four kidneys, two livers, one heart, one double lungs, four corneas and one tissue donation arose from the three diabetic type 2 donors, totalling thirteen donations of organ and tissue.

HYPERTENSION

A past history of hypertension was recorded in 25% (96 donors) in Australia and 14% (5 donors) in New Zealand in 2013 (Figure 4.31). Included in the 96 donors for Australia were 23 DCD donors with a past history of hypertension.

These donors provided Australia with 140 kidneys, 41 livers, four split livers, five hearts, one heart/lung, 34 double lungs, 107 corneas, 15 sets of heart valves, 14 bone donations and 12 tissue donations. Three of the 96 donors did not provide any organs; one due to disease in organ and two due to no suitable recipient.

In New Zealand, 5 donors provided 10 kidneys, three livers, three hearts, three double lungs and two corneas.

Donor Profile



SMOKING

In 2013, 41% (160) of Australian donors were recorded as current smokers while in New Zealand, 19% (7 donors) were reported as current smokers.

CANCER IN DONOR

In Australia, 16 donors had a history of cancer prior to donation.

Australia (16 donors)

- * Eight previously diagnosed with squamous cell carcinomas (6 cervical , one on the skin of the hand)
- * Two adenocarcinoma - one pituitary, one prostate
- * One astrocytoma of the left cerebral hemisphere
- * One with previously diagnosed leukemia
- * Four reported as having cancer of unknown type or site

There were 30 kidneys, 11 livers and two split livers, three hearts, eight double lungs, one pancreas, 15 corneas and one bone donation from these 16 donors. Three were DCD donors.

New Zealand

In New Zealand, one donor (DBD) in 2013 had a history of previous cancer of thyroid origin. Three organs were transplanted from this donor.



VIROLOGY SCREENING

Figure 4.32

Cytomegalovirus (CMV) Status of Donors 2008 - 2013												
	Australia						New Zealand					
	2008	2009	2010	2011	2012	2013	2008	2009	2010	2011	2012	2013
Positive	167	144	191	214	225	242	15	19	23	21	30	21
Negative	92	103	118	123	129	148	16	24	18	17	8	15
Total	259	247	309	337	354	390	31	43	41	38	38	36

Figure 4.33

Epstein-Barr Virus (EBV) Status of Donors 2008 - 2013												
	Australia						New Zealand					
	2008	2009	2010	2011	2012	2013	2008	2009	2010	2011	2012	2013
Positive	179	157	198	293	321	356	28	37	33	27	33	27
Negative	18	14	14	28	33	33	3	3	2	4	1	4
Not done	62	76	97	16	0	2	0	3	6	7	4	0
Total	259	247	309	337	354	391	31	43	41	38	38	31

Not all Australian States require organ donors to be tested for EBV

HEPATITIS C ANTIBODY

There were fourteen Hepatitis C positive donors, thirteen in Australia and one in New Zealand in 2013.

Of those positive donors in Australia, twelve were DBD donors. There were four kidneys donated four livers, 1 heart and 2 double lungs donated.

The positive donors in New Zealand was a DBD donors, who donated a liver.

There was only one donor who was positive for both HCV and HBV core antibodies, and this donor provided a liver transplanted as a whole.

Figure 4.34

Hepatitis C Antibody Status of Donors 2008 - 2013												
	Australia						New Zealand					
	2008	2009	2010	2011	2012	2013	2008	2009	2010	2011	2012	2013
Positive	5	5	2	7	5	13	1	0	0	1	2	1
Negative	254	242	307	330	349	378	30	43	41	37	36	35
Total	259	247	309	337	354	391	31	43	41	38	38	36



Donor Profile

HEPATITIS B CORE ANTIBODY

The Registry commenced collection of Hepatitis B core antibody results in 1998.

A positive result was recorded for 4% (17) of Australian donors and 6% (2) of New Zealand donors in 2013.

Of those positive donors in Australia, all were DBDs. These 17 donors, provided 22 kidneys, nine whole

livers, one split liver, one heart, four double lungs, eight corneas, three cardiovascular tissue, one musculoskeletal and skin tissue.

Of the two positive Hepatitis B donors in New Zealand, there were no kidneys, two whole livers, two corneas, and one skin tissue donation.

Figure 4.35

Hepatitis B Core Antibody Status of Donors 2008 - 2013												
	Australia						New Zealand					
	2008	2009	2010	2011	2012	2013	2008	2009	2010	2011	2012	2013
Positive	16	13	20	11	15	17	2	5	2	5	8	2
Negative	243	234	289	326	339	374	29	38	39	33	30	34
Total	259	247	309	337	354	391	31	43	41	38	38	36

HEPATITIS B SURFACE ANTIGEN

Since 1993, all donors in Australia and New Zealand have been negative for Hepatitis B surface antigen, excepting one donor in 2004 who was not tested.





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