

Supplemental information

Supplementary Table 1. Neuropathological characteristics of all included donors.

Case	Group	Gender	Age of death	Cause of death	PMD	Braak	Amyloid	pH liquor
1	ECT	Male	55	Suicide	>12:00	1	n/a	n/a
2	ECT	Male	73	Cachexia / dehydration	5:15	2	B	6.38
3	ECT	Female	100	Natural death	5:50	2	B	6.40
4	ECT	Female	47	Legal euthanasia due to severe MDD	6:05	0	O	n/a
5	ECT	Male	60	Cachexia	5:00	n/a	n/a	6.20
6	ECT	Male	58	Legal euthanasia due to chronic MDD	4:30	1	n/a	6.80
7	ECT	Female	45	Legal euthanasia due to multiple psychiatric disorders	7:30	1	O	6.93
8	ECT	Female	46	Legal euthanasia due to treatment-resistant bipolar disorder	5:45	1	A	n/a
9	ECT	Female	23	Legal euthanasia due to multiple psychiatric disorders	8:35	0	O	n/a
10	ECT	Male	48	Legal euthanasia due to refractory MDD	12:45	1	A	6.76
11	ECT	Male	75	Legal euthanasia due to progressive MS	9:05	n/a	n/a	n/a
12	ECT	Male	21	Legal euthanasia due to multiple psychiatric disorders	8:55	0	O	6.73
13	DC	Female	75	Acute abdomen	4:00	1	n/a	n/a
14	DC	Female	62	Cachexia by gall bladder carcinoma	5:00	1	O	6.11
15	DC	Male	72	Dehydration and cachexia. Lithium intoxication.	4:35	1	A	6.40
16	DC	Female	66	Legal euthanasia due to multiple psychiatric disorders	7:55	1	O	n/a

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17	DC	Male	64	Infection, dehydration, cachexia	8:05	0	O	6.37
18	DC	Female	58	Renal insufficiency, termination dialysis	7:20	0	O	5.61
19	DC	Male	38	Legal euthanasia due to physical and mental impairments	6:15	0	O	6.79
20	DC	Female	70	Terminal kidney failure	6:00	2	n/a	6.95
21	DC	Male	74	Respiratory insufficiency, metastatic prostate cancer	5:30	4	n/a	6.18
22	DC	Female	90	Myocardial infarction	6:40	2	n/a	6.51
23	HC	Female	61	Legal euthanasia due to ovary carcinoma	6:50	0	O	6.50
24	HC	Female	73	Respiratory failure after acute subdural hematoma with cerebral entrapment	6:40	1	A	n/a
25	HC	Female	50	Metastasized large cell bronchocarcinoma	4:10	1	O	6.98
26	HC	Female	84	Myelodysplasia	6:55	1	O	n/a
27	HC	Female	60	Infection from unknown causes	7:30	1	A	6.8
28	HC	Male	51	Suicide by refusing food and water	7:45	0	O	7.05
29	HC	Male	55	Legal euthanasia due to esophageal cancer	7:30	0	O	6.88
30	HC	Male	102	Ileus	5:00	3	A	6.64
31	HC	Male	96	Urinary tract infection	4:10	4	B	6.09
32	HC	Female	60	Legal euthanasia due to metastatic mammary carcinoma	5:30	0	O	7.07
33	HC	Female	68	Metastatic pancreatic cancer	3:30	0	n/a	7.37
34	HC	Male	68	Myocardial infarction	<12	0	O	n/a
35	HC	Female	70	Myocardial infarction	<10	3	A	n/a
36	HC	Male	53	Dissection aorta	<12	3	A	n/a

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37	HC	Male	82	Myocardial infarction	<12	3	B	n/a
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The Braak stage is a score for Alzheimer's disease pathology referring to tau pathology (1) (0=no pathology up to 6=severe pathology), amyloid stands for amyloid pathology (O=no amyloid deposits; A, B, and C represent increasing amyloid deposits). Abbreviations: PMD=post-mortem delay (in hours); ECT=donors who received electroconvulsive therapy; DC=control donors with an established depressive disorder; HC=neurologically and psychiatrically healthy control donors; n/a=not available.

Supplementary Table 2. Linear regression analyses of the association between ECT-related characteristics and expression of doublecortin (DCX), Stathmin 1 (STMN1), and Ki-67.

	DCX		STMN1		Ki-67	
	GCL	SGZ	GCL	SGZ	GCL	SGZ
Remission status	$\beta=0.31$, SE=0.37, p=0.442	$\beta=0.18$, SE=1.60, p=0.914	$\beta=-0.49$, SE=0.48, p=0.377	$\beta=-0.05$, SE=0.37, p=0.897	$\beta=-0.004$, SE=0.01, p=0.765	$\beta=-0.07$, SE=0.04, p=0.141
Number of ECT sessions	$\beta=0.002$, SE=0.01, p=0.881	$\beta=0.01$, SE=0.06, p=0.927	$\beta=-0.01$, SE=0.02, p=0.635	$\beta=0.001$, SE=0.01, p=0.937	$B<-0.001$, SE<0.001, p=0.407	$B=0.001$, SE=0.001, p=0.515
Time interval between last ECT and death	$\beta=-0.02$, SE=0.03, p=0.551	$\beta=-0.06$, SE=0.12, p=0.657	$\beta=-0.01$, SE=0.03, p=0.718	$\beta=0.01$, SE=0.02, p=0.640	$B<-0.001$, SE=0.001, p=0.723	$\beta=-0.01$, SE=0.002, p=0.091

Only the results of the linear regression analyses with remission status as independent variable are displayed, since the results without remission status were similar. Abbreviations: ECT=electroconvulsive therapy; GCL=granule cell layer; SGZ=subgranular zone.

Supplementary Figure 1.

DCX immunoreactivity throughout the granule layer in a healthy control donor (HC; A), a control donor with a depressive disorder (DC; B), and a donor who received electroconvulsive therapy during life (ECT; C). Scale bar = 500 μ m.

References

1. Braak H, Braak E. Neuropathological staging of Alzheimer-related changes. *Acta Neuropathol.* 1991;82(4):239-59.