Experimental studies reporting distributions of dendritic spine shapes

All datasets in the table were used to generate Figures 1 and 2 of the main text. Highlighted entries (Table 1 of the main text) show control/wild type experiments used to generate Figures 3 – 6. Best fit values and the 95% confidence intervals for T_V and T_s are provided. Estimates of T_V in absolute terms were only performed on spine head volume or spine head area measurements. The original figure numbers and data legends are shown for every system. Abbreviations used in the "Brain area" column: TE – temporal, V – visual, A – auditory, S – somatosensory, M – motor, DG – dentate gyrus, BC – barrel cortex, Hipp. – hippocampus, FS – forelimb somatosensory cortex. Abbreviations used in the "Spine location" column: L – cortical layer, A – apical, B – basal. Abbreviations used in the "measurement" columns: ha – spine head area, hv – spine head volume, hd – spine head diameter, nl – spine neck length, sl –spine length.

#	Species	Brain area	Spine location	Age	Slice or culture	Spine number	Spine head measurement	T_V	Spine neck/length measurement	T_s	Reference
1	human	TE	L3 B	28,41 years	slice	2768	ha Fig 2B, Human Temporal	3.4 3.2-3.6	nl Fig 2C, Human Temporal	3.0 2.8-3.2	1
2	mouse	V1M/ V1B	L3 B	2 months	slice	1226	ha Fig 2B, Mouse Occipital	1.3 1.2-1.4	nl Fig 2C, Mouse Occipital	1.7 1.5-1.9	1-2
3	mouse	A1/S2	L3 B	2 months	slice	1306	ha Fig 2B, Mouse Temporal	1.5 1.3-1.6	nl Fig 2C, Mouse Temporal	2.0 1.8-2.1	1-2
4	mouse	M2	L3 B	2 months	slice	956	ha Fig 4A, M2	2.9 2.7-3.1	nl Fig 4B, M2	2.7 2.4-2.9	2
5	mouse	DG	Molecular layer	12-14 months	slice	443	hv Fig 3C, In Contact	0.63 0.46-0.79	nl Fig 3F, In Contact	1.8 1.6-2.1	3
6	mouse	DG	Molecular layer	12-14 months	slice	474	hv Fig 3C, Plaque	0.85 0.43-1.3	nl Fig 3F, Plaque	1.6 1.2-2.0	3
7	mouse	DG	Molecular layer	12-14 months	slice	9913	hv Fig 3C, Plaque-Free	0.70 0.56-0.84	nl Fig 3F, Plaque-Free	1.2 1.1-1.3	3
8	mouse	DG	Molecular layer	12-14 months	slice	10677	hv Fig 3C, Tg-	1.0	nl Fig 3F, Tg-	1.0	3
9	mouse	CA1	A	21 days	slice	1728	hd Fig 6C, Apical	-	-	-	4
10	mouse	CA1	B	21 days	slice	1042	hd Fig 6C, Basal	-	-	-	4
11	mouse	V1	L2/3 A	21 days	slice	973	hd Fig 6A, Apical	-	-	-	4
12	mouse	V1	L2/3 B	21 days	slice	895	hd Fig 6A, Basal	-	-	-	4
13	mouse	CA1	A	21 days	slice	~1000	hd Fig 9B, 100-150 um	-	-	-	4
14	mouse	CA1	A	21 days	slice	~1000	hd Fig 9B, 150-200 um	-	-	-	4
15	mouse	CA1	A	21 days	slice	~1000	hd Fig 9B, 200-250 um	-	-	-	4
16	mouse	CA1	A	21 days	slice	~1000	hd Fig 9B, 250-300 um	-	-	-	4
17	mouse	CA1	B	21 days	slice	~1000	hd Fig 9D, 40-80 um	-	-	-	4
18	mouse	CA1	B	21 days	slice	~1000	hd Fig 9D, 80-120 um	-	-	-	4
19	mouse	CA1	B	21 days	slice	~1000	hd Fig 9D, 120-160 um	-	-	-	4
20	monkey	V1	L3 B	adult	slice	233	-	-	sl Fig 4E, V1	5.0 3.9-6.1	5
21	monkey	V2	L3 B	adult	slice	190	-	-	sl Fig 4E, V2	2.3 1.3-3.3	5
22	monkey	V4	L3 B	adult	slice	239	-	-	sl	2.1	5

									Fig 4E, V4	1.6-2.5	
23	monkey	7a	L3 B	adult	slice	257	-	-	sl Fig 4E, 7a	2.7 2.0-3.5	5
24	mouse	V1,S1	L5 A	4 days	slice	117	-	-	sl Fig 9D, control	2.5 2.1-2.8	6
25	mouse	V1,S1	L5 A	4 days	slice	136	-	-	sl Fig 9D, glutamate	3.5 2.7-4.3	6
26	mouse	V1,S1	L5 AB	2-3 days	slice	297	-	-	sl Fig 7B, P2-P3	3.7 3.2-4.3	6
27	mouse	V1,S1	L5 AB	4-7 days	slice	336	-	-	sl Fig 7B, P4-P7	2.6 1.9-3.3	6
28	mouse	V1,S1	L5 AB	8-12 days	slice	375	-	-	sl Fig 7B, P8-P12	2.2 1.7-2.6	6
29	mouse	CA1	B	8-11 weeks	slice	564	hd Fig 2B, Arc(+)	-	-	-	7
30	mouse	CA1	B	8-11 weeks	slice	1513	hd Fig 2B, Arc(-)	-	-	-	7
31	mouse	CA1	B	8-11 weeks	slice	1081	hd Fig 2B, HC Arc(-)	-	-	-	7
32	mouse	CA1	B	8-11 weeks	slice	350	hd Fig 2D, Arc(+)	-	-	-	7
33	mouse	CA1	B	8-11 weeks	slice	1283	hd Fig 2D, Arc(-)	-	-	-	7
34	mouse	CA1	B	8-11 weeks	slice	851	hd Fig 2D, HC Arc(-)	-	-	-	7
35	mouse	FS	L2/3,5 A	>3 months	slice	1257	-	-	sl Fig 2D, 24h	3.1 2.7-3.5	8
36	mouse	FS	L2/3,5 A	>3 months	slice	945	-	-	sl Fig 2D, 2h	3.2 2.9-3.5	8
37	mouse	FS	L2/3,5 A	>3 months	slice	1463	-	-	sl Fig 2D, 6h	3.2 2.9-3.4	8
38	mouse	FS	L2/3,5 A	>3 months	slice	1588	-	-	sl Fig 2D, control	2.6 2.4-2.8	8
39	rat	CA1	-	17-23 days	organotypic culture	202	hv Fig 8D, NMDAR inhibition (11 days)	0.61 0.45-0.77	-	-	9
40	rat	CA1	-	17-23 days	organotypic culture	293	hv Fig 8B, NMDAR inhibition (3 days)	0.87 0.66-1.1	-	-	9
41	rat	CA1	-	17-23 days	organotypic culture	283	hv Fig 8A, Control	0.92 0.68-1.2	-	-	9
42	rat	BC	L2/3 AB	34-45 days	slice	598	-	-	sl Fig 3B	2.7 2.6-2.9	10
43	mouse	CA1	A	2 months	slice	355	hd Fig 5E, +/+	-	-	-	11
44	mouse	CA1	A	2 months	slice	355	hd Fig 5E, k/k	-	-	-	11
45	mouse	CA1	A	21 days	slice	365	hd Fig 6C, +/+	-	-	-	11
46	mouse	CA1	A	21 days	slice	365	hd Fig 6C, k/k	-	-	-	11
47	rat	CA1	A	14-17 days	organotypic culture	472	-	-	sl Fig 7C, EYFP	1.5 1.3-1.7	12
48	rat	CA1	A	14-17 days	organotypic culture	474	-	-	sl Fig 8C, shRNA-CTL	2.0 1.5-2.4	12
49	rat	CA1	A	14-17 days	organotypic culture	486	-	-	sl Fig 8C, shRNA- STAU1/sh1+Stau155	1.8 1.4-2.3	12
50	rat	CA1	A	14-17 days	organotypic culture	478	-	-	sl Fig 8C, shRNA-STAU1/sh1	2.4 2.2-2.6	12
51	rat	CA1	A	14-17 days	organotypic culture	592	-	-	sl Fig 7C, siRNA-CTL	2.0 1.7-2.2	12

52	rat	CA1	A	14-17 days	organotypic culture	605	-	-	sl Fig 7C, siRNA-STAU1	3.0 2.3-3.6	12
53	rat	M1	L1 A	8-10 weeks	slice	1476	hd Fig 3F, Trained	-	-	-	13
54	rat	M1	L1 A	8-10 weeks	slice	1174	hd Fig 3F, Untrained	-	-	-	13
55	rat	M1	L1 A	8-10 weeks	slice	1659	hd Fig 2F, Trained	-	-	-	13
56	rat	M1	L1 A	8-10 weeks	slice	1432	hd Fig 2F, Untrained	-	-	-	13
57	mouse	CA1	A	adult	slice	7797	hd Fig 4D, Shank -/-	-	sl Fig 4C, Shank -/-	0.80 0.70-0.90	14
58	mouse	CA1	A	adult	slice	9210	hd Fig 4D, wild-type (+/+)	-	sl Fig 4C, wild-type (+/+)	0.90 0.75-0.99	14
59	mouse	BC	L2/3 B	10 days	slice	183	hd Fig 3D, P10 Knockout	-	-	-	15
60	mouse	BC	L2/3 B	10 days	slice	197	hd Fig 3D, P10 Wild type	-	-	-	15
61	mouse	BC	L2/3 B	15 days	slice	261	hd Fig 3D, P15 Knockout	-	-	-	15
62	mouse	BC	L2/3 B	15 days	slice	458	hd Fig 3D, P15 Wild type	-	-	-	15
63	mouse	BC	L2/3 B	20 days	slice	633	hd Fig 3D, P20 Knockout	-	-	-	15
64	mouse	BC	L2/3 B	20 days	slice	642	hd Fig 3D, P20 Wild type	-	-	-	15
65	mouse	CA1	A	23-25 days	slice	~1200	-	-	sl Fig 9B, A3-Fc	1.2 1.1-1.3	16
66	mouse	CA1	A	23-25 days	slice	~1200	-	-	sl Fig 9B, b1-Ab/A3-Fc	1.8 1.6-1.9	16
67	mouse	CA1	A	23-25 days	slice	~1200	-	-	sl Fig 9B, b1-Ab/Fc	1.8 1.6-2.0	16
68	mouse	CA1	A	23-25 days	slice	~1200	-	-	sl Fig 9B, Fc	1.7 1.6-1.9	16
69	mouse	CA1	A	~1 month	organotypic culture	~1500	-	-	sl Fig 8C, RAD	2.5 2.3-2.6	16
70	mouse	CA1	A	~1 month	organotypic culture	~1500	-	-	sl Fig 8C, RGD	1.6 1.3-1.8	16
71	monkey	46	L3 AB	22 years	slice	4898	hd Fig 4A,B, Aged OVX+E	-	nl Fig C, Aged OVX+E	2.2 1.7-2.7	17
72	monkey	46	L3 AB	22 years	slice	4495	hd Fig A,B, Aged OVX+Veh	-	nl Fig C, Aged OVX+Veh	2.2 1.6-2.7	17
73	monkey	46	L3 AB	10 years	slice	~2800	hd Fig A,B, Young OVX+E	-	nl Fig C, Young OVX+E	2.2 1.0-3.4	17
74	monkey	46	L3 AB	10 years	slice	~2800	hd Fig A,B, Young OVX+Veh	-	nl Fig C, Young OVX+Veh	2.1 1.1-3.1	17
75	rat	M	L2/3 B	adult	slice	1437	hd Fig 3A, 28D	-	sl Fig 4A, 28D	4.5 3.7-5.2	18
76	rat	M	L2/3 B	adult	slice	1834	hd Fig 3A, 7D	-	sl Fig 4A, 7D	3.8 3.0-4.5	18
77	rat	M	L2/3 B	adult	slice	1866	hd Fig 3A, CTR	-	sl Fig 4A, CTR	3.6 3.1-4.1	18
78	rat	M	L5/6 B	adult	slice	696	hd Fig 3C, 28D	-	sl Fig 4C, 28D	4.6 3.8-5.4	18
79	rat	M	L5/6 B	adult	slice	1638	hd Fig 3C, 7D	-	sl Fig 4C, 7D	3.8 3.3-4.3	18
80	rat	M	L5/6 B	adult	slice	1346	hd Fig 3C, CTR	-	sl Fig 4C, CTR	3.8 3.3-4.3	18
81	rat	V1	L3 B	30 days	slice	1203	hd Fig 5F, DR+LE	-	sl Fig 5C, DR+LE	3.1 2.6-3.6	19
82	rat	V1	L3 B	30 days	slice	1202	hd Fig 5F, DR	-	sl Fig 5C, DR	2.9 2.6-3.2	19

83	rat	V1	L3 B	30 days	slice	1419	hd Fig 5F, LR	-	sl Fig 5C, LR	3.5 3.0-4.0	19
84	rat	CA1	B	12 days	organotypic culture	2011	-	-	sl Fig 4A, antisense	2.3 2.0-2.6	20
85	rat	CA1	B	12 days	organotypic culture	1533	-	-	sl Fig 3C, Con	2.6 2.2-3.0	20
86	rat	CA1	B	12 days	organotypic culture	1083	-	-	sl Fig 4B, GFP	2.8 2.4-3.1	20
87	rat	CA1	B	12 days	organotypic culture	1328	-	-	sl Fig 6B, OPHN1	2.5 2.3-2.8	20
88	rat	CA1	B	12 days	organotypic culture	2805	-	-	sl Fig 3C, Ophn #1	2.3 2.0-2.6	20
89	rat	CA1	B	12 days	organotypic culture	3170	-	-	sl Fig 3D, Ophn #2	2.6 2.3-3.0	20
90	rat	CA1	B	12 days	organotypic culture	2508	-	-	sl Fig 4B, Vector	2.9 2.7-3.1	20
91	rat	Hipp.	-	-	dissociated culture	4000	hd Fig 3F, Bgal	-	sl Fig 3G, Bgal	3.3 2.8-3.8	21
92	rat	Hipp.	-	-	dissociated culture	4000	hd Fig 3F, NTAhelix	-	sl Fig 3G, NTAhelix	4.5 4.2-4.8	21
93	rat	Hipp.	-	-	dissociated culture	4000	hd Fig 3F, NTApro	-	sl Fig 3G, NTApro	4.1 3.6-4.6	21
94	rat	Hipp.	-	-	dissociated culture	4000	hd Fig 3F, NTAtandem	-	sl Fig 3G, NTAtandem	5.2 4.8-5.7	21
95	rat	Hipp.	-	-	dissociated culture	4000	hd Fig 3F, WT	-	sl Fig 3G, WT	4.8 4.2-5.4	21
96	mouse	CA1	A	adult	slice	~3250	-	-	sl Fig 3G, wild type (+/+)	0.90 0.74-1.1	22
97	mouse	CA1	A	adult	slice	~3250	-	-	sl Fig 3G, synaptopodin-deficient (-/-)	0.91 0.80-1.0	22
98	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 2D, DIV18GFP	-	sl Fig 4D, DIV18GFP	2.2 1.9-2.5	23
99	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 4C, 1-1440	-	sl Fig 4D, 1-1440	2.4 1.7-3.1	23
100	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 4C, 481-840	-	sl Fig 4D, 481-840	0.89 0.65-1.1	23
101	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 4C, dSP	-	sl Fig 4D, dSP	1.9 1.4-2.3	23
102	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 5C, Homer1b	-	sl Fig 5D, Homer1b	1.2 1.0-1.5	23
103	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 2C, DIV7GFP	-	-	-	23
104	rat	Hipp.	-	-	dissociated culture	~600	hd Fig 4C, P1497L	-	sl Fig 4D, P1497L	1.9 1.4-2.3	23
105	mouse	BC	L5 AB	1 week	slice	2034	-	-	sl Fig 2D, mutant	4.6 4.3-4.9	24
106	mouse	BC	L5 AB	1 week	slice	1806	-	-	sl Fig 2D, wt	3.8 3.5-4.1	24
107	mouse	BC	L5 AB	2 weeks	slice	3224	-	-	sl Fig 2E, mutant	3.1 2.8-3.4	24
108	mouse	BC	L5 AB	2 weeks	slice	3454	-	-	sl Fig 2E, wt	2.9 2.7-3.2	24
109	mouse	BC	L5 AB	4 weeks	slice	3490	-	-	sl Fig 2F, mutant	3.0 2.6-3.3	24
110	mouse	BC	L5 AB	4 weeks	slice	2202	-	-	sl Fig 2F, wt	2.9 2.5-3.3	24
111	rat	CA1	A	4 months	slice	721	-	-	sl Fig 5C, 120 MIV	1.2 0.94-1.4	25
112	rat	CA1	A	4 months	slice	617	-	-	sl Fig 5C, 60 MIV	1.2 1.0-1.4	25
113	rat	CA1	A	4	slice	571	-	-	sl	0.94	25

				months					Fig 5C, CLX	0.13-1.8	
114	rat	CA1	A	4 months	slice	392	-	-	sl Fig 5C, Perfused	0.86 0.41-1.3	25
115	rat	CA1	A	4 months	slice	749	-	-	sl Fig 5C, PUR	0.60 0.10-1.1	25
116	rat	DG	Molecular layer	18-21 days	organotypic culture	~1250	-	-	sl Fig 3, Granule Cells, control	1.2 1.1-1.4	26
117	rat	DG	Molecular layer	18-21 days	organotypic culture	~1250	-	-	sl Fig 3, Granule Cells, dhpg	2.6 2.2-3.1	26
118	rat	Hipp.	-	-	dissociated culture	~1250	-	-	sl Fig 3, Dissociated Neurons, control	1.8 1.5-2.1	26
119	rat	Hipp.	-	-	dissociated culture	~1250	-	-	sl Fig 3, Dissociated Neurons, dhpg	2.9 2.5-3.4	26
120	mouse	Hipp.	-	-	dissociated culture	~1200	-	-	sl Fig 3C, Fmr1-KO	2.6 2.3-2.8	27
121	mouse	Hipp.	-	-	dissociated culture	~1200	-	-	sl Fig 3C, wild type	4.5 4.2-4.7	27
122	mouse	Hipp.	-	-	dissociated culture	~450	-	-	sl Fig 2C, Fmr1-KO	4.0 3.7-4.4	27
123	mouse	Hipp.	-	-	dissociated culture	~750	-	-	sl Fig 2C, wild type	4.0 3.8-4.2	27
124	mouse	CA1	A	6 months	slice	651	-	-	sl Fig 3D, AT2-knockout	0.91 0.60-1.2	28
125	mouse	CA1	B	6 months	slice	572	-	-	sl Fig 3E, AT2-knockout	0.72 0.36-1.1	28
126	mouse	CA1	A	6 months	slice	567	-	-	sl Fig 3D, Wild-type	0.44 0.27-0.60	28
127	mouse	CA1	B	6 months	slice	766	-	-	sl Fig 3E, Wild-type	0.45 0.25-0.66	28
128	mouse	CA1	A	7 weeks	slice	4194	-	-	sl Fig 1D, control	1.0 0.83-1.2	29
129	mouse	CA1	A	8 months	slice	827	-	-	sl Fig S2D, (+/-)	0.83 0.43-1.2	29
130	mouse	CA1	A	7 weeks	slice	2857	-	-	sl Fig 1D, KO (-/-)	1.4 1.2-1.6	29
131	mouse	CA1	A	8 months	slice	1074	-	-	sl Fig S2D, KO (-/-)	1.2 0.98-1.4	29
132	rat	CA1	A	18 days	organotypic culture	320	hv Fig 2	0.92 0.71-1.1	-	-	30

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