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Supplementary Figures: 10

Supplementary Tables: 1

Supplementary Videos: 0

Reporting Checklist for Nature Neuroscience

This checklist is used to ensure good reporting standards and to improve the reproducibility of published results. For more information, please read Reporting Life Sciences Research.

Please note that in the event of publication, it is mandatory that authors include all relevant methodological and statistical information in the manuscript.

▶ Statistics reporting, by figure

- Please specify the following information for each panel reporting quantitative data, and where each item is reported (section, e.g. Results, & paragraph number).

- Each figure legend should ideally contain an exact sample size (n) for each experimental group/condition, where n is an exact number and not a range, a clear definition of how n is defined (for example x cells from x slices from x animals from x litters, collected over x days), a description of the statistical test used, the results of the tests, any descriptive statistics and clearly defined error bars if applicable.

- For any experiments using custom statistics, please indicate the test used and stats obtained for each experiment.

- Each figure legend should include a statement of how many times the experiment shown was replicated in the lab; the details of sample collection should be sufficiently clear so that the replicability of the experiment is obvious to the reader.

- For experiments reported in the text but not in the figures, please use the paragraph number instead of the figure number.

Note: Mean and standard deviation are not appropriate on small samples, and plotting independent data points is usually more informative. When technical replicates are reported, error and significance measures reflect the experimental variability and not the variability of the biological process; it is misleading not to state this clearly.

| FIGURE NUMBER | TEST USED | | n | | | DESCRIPTIVE STATS (AVERAGE, VARIANCE) | | P VALUE | | DEGREES OF FREEDOM & F/t/z/R/ETC VALUE | |
	WHICH TEST?	SECTION & PARAGRAPH #	EXACT VALUE	DEFINED?	SECTION & PARAGRAPH #	REPORTED?	SECTION & PARAGRAPH #	EXACT VALUE	SECTION & PARAGRAPH #	VALUE	SECTION & PARAGRAPH #
example 1a	one-way ANOVA	Fig. legend	9, 9, 10, 15	mice from at least 3 litters/group	Methods para 8	error bars are mean +/- SEM	Fig. legend	p = 0.044	Fig. legend	F(3, 36) = 2.97	Fig. legend
example results, para 6	unpaired t-test	Results para 6	15	slices from 10 mice	Results para 6	error bars are mean +/- SEM	Results para 6	p = 0.0006	Results para 6	t(28) = 2.808	Results para 6
+/- S1d	Spearman's rank order correlation	Fig. legend	46	cells from 4 dishes	figure	scatterplot	figure	p<0.000001	figure	R=0.92	figure

FIGURE NUMBER	TEST USED		n			DESCRIPTIVE STATS (AVERAGE, VARIANCE)		P VALUE		DEGREES OF FREEDOM & F/t/z/R/ETC VALUE	
	WHICH TEST?	SECTION & PARAGRAPH #	EXACT VALUE	DEFINED?	SECTION & PARAGRAPH #	REPORTED?	SECTION & PARAGRAPH #	EXACT VALUE	SECTION & PARAGRAPH #	VALUE	SECTION & PARAGRAPH #
1i	N/A	N/A	208,200	terminals from 3 and 2 mice	Fig. legend	histogram	figure	N/A	N/A	N/A	N/A
2c	N/A	N/A	2168	terminals from 1 cell	figure	histogram	figure	N/A	N/A	N/A	N/A
2i	N/A	N/A	1934	terminals from 1 cell	figure	histogram	figure	N/A	N/A	N/A	N/A
s2	N/A	N/A	1341	localization points from 160 groups	Fig. legend	histogram	figure	N/A	N/A	N/A	N/A
S3a	unpaired two-sided t-test	Fig. legend	14, 18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.1903	Fig. legend	t(30)=-1.3401	Fig. legend
S3b	unpaired two-sided t-test	Fig. legend	14,18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.1691	Fig. legend	t(30)=-1.4089	Fig. legend
S3c	Mann-Whitney U Test	Fig. legend	14,18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.2351	Fig. legend	U=94.5	Fig. legend
S3d	Mann-Whitney U Test	Fig. legend	14,17	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.2455	Fig. legend	U=89	Fig. legend
S3e	unpaired two-sided t-test	Fig. legend	14,18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.1515	Fig. legend	t(30)=-1.4717	Fig. legend
S3f	Mann-Whitney U Test	Fig. legend	14,18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.0024	Fig. legend	U=48.5	Fig. legend
S3g	unpaired two-sided t-test	Fig. legend	14,18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.0373	Fig. legend	t(30)=-2.1783	Fig. legend
S3h	unpaired two-sided t-test	Fig. legend	14,18	neurons form 11 and 12 mice	Fig. legend	median±IQR	Fig. legend	p=0.0133	Fig. legend	t(30)=-2.6313	Fig. legend
S4a	Kolmogorov-Smirnov two-sample test	Fig. legend	150,279	neurons form 11 and 12 mice	Fig. legend	histogram	figure	p>0.05	Fig. legend	Max. Difference=0.128	not shown
S4b	Kolmogorov-Smirnov two-sample test	Fig. legend	279,302	boutons from 6 and 6 neurons from 6 and 5 mice	Fig. legend	histogram	figure	p>0.1	Fig. legend	Max. Difference=0.147	not shown
S4c	Mann-Whitney U Test	Fig. legend	265,233	boutons from 6 slices from 6 mice	Fig. legend	median±IQR	Fig. legend	p=0.3060	Fig. legend	U=29232	Fig. legend
S4d	Mann-Whitney U Test	Fig. legend	202,202	boutons from 6 sclices from 6 mice	Fig. legend	median±IQR	Fig. legend	p=0.1965	Fig. legend	U=4563.5	Fig. legend
S5a	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.82	Fig. legend	U=16	Fig. legend
S5b	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.70	Fig. legend	U=15	Fig. legend

+/−		Test		n			median±IQR		p-value		statistic	
+−	S5c	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.94	Fig. legend	U=17	Fig. legend
+−	3a	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.0043	Fig. legend	U=1	Fig. legend
+−	3b	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.0022	Fig. legend	U=0	Fig. legend
+−	3c	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.0152	Fig. legend	U=3	Fig. legend
+−	3d	Spearman's rank order correlation	Fig. legend	279	boutons from 6 perisomatic cells from 6 mice	Fig. legend	scatterplot	figure	p<0.001	Fig. legend	R=0.73	figure
+−	3d	Spearman's rank order correlation	Fig. legend	334	boutons from 6 dendritic cells from 3 mice	Fig. legend	scatterplot	figure	p<0.001	Fig. legend	R=0.61	figure
+−	3e	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.6991	Fig. legend	U=15	Fig. legend
+−	3f	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.3095	Fig. legend	U=11	Fig. legend
+−	3m	Mann-Whitney U Test	Fig. legend	5,5	mean values by cell from 185 and 226 boutons from 3 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.007937	Fig. legend	U=0	Fig. legend
+−	S6a	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 280 and 338 boutons from 6 and 3 mice	figure	median±IQR	Fig. legend	p=0.59	Fig. legend	U=14	Fig. legend
+−	S6b	Spearman's rank order correlation	Fig. legend	20	cells from 4 dishes	figure	scatterplot	figure	p<0.0001	figure	R=0.88	figure
+−	S6d	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.01515	Fig. legend	U=3	Fig. legend
+−	S6e	Mann-Whitney U Test	Fig. legend	6,6	mean values by cell from 279 and 334 boutons from 6 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.0411	Fig. legend	U=5	Fig. legend
+−	S7e	paired two-sided t-test	Fig. legend	3	3 mice, 100 boutons sampled from both layers from each animal	Fig. legend	median±IQR	Fig. legend	p=0.0246	Fig. legend	t(2)=6.2551	Fig. legend
+−	S7f	paired two-sided t-test	Fig. legend	3	3 mice, 100 boutons sampled from both layers from each animal	Fig. legend	median±IQR	Fig. legend	p=0.0334	Fig. legend	t(2)=5.3319	Fig. legend
+−	S7g	paired two-sided t-test	Fig. legend	3	3 mice, 100 boutons sampled from both layers from each animal	Fig. legend	median±IQR	Fig. legend	p=0.0360	Fig. legend	t(2)=5.1301	Fig. legend
+−	S7h	paired two-sided t-test	Fig. legend	3	3 mice, 100 boutons sampled from both layers from each animal	Fig. legend	median±IQR	Fig. legend	p=0.0641	Fig. legend	t(2)=3.7569	Fig. legend

+/-	result	Test	loc	n	sample	loc	dispersion	loc	p-value	loc	statistic	loc
+ −	results, p11	Mann-Whitney U Test	results, p11	452,452	boutons from 15 neurons from 12 mice	results, p11	not shown	N/A	p=0.5522	results, p11	U=99818	not shown
+ −	4o	Mann-Whitney U Test	Fig. legend	311,141	boutons from 10 and 5 neurons from 9 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.6947	Fig. legend	U=21420	Fig. legend
+ −	4o	Mann-Whitney U Test	Fig. legend	33,22	boutons from 10 and 5 neurons from 9 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.3261	Fig. legend	U=305	Fig. legend
+ −	4p	Mann-Whitney U Test	Figure	33,26	boutons from 10 neurons from 9 mice	Fig. legend	median±IQR	Fig. legend	p=0.6439	Figure	U=398	Figure
+ −	4p	Mann-Whitney U Test	Figure	22, 16	boutons from 5 neurons from 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.2842	Figure	U=139	Figure
+ −	4p	Mann-Whitney U Test	Figure	33,22	boutons from 10 and 5 neurons from 9 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.8581	Figure	U=352	Figure
+ −	4p	Mann-Whitney U Test	Figure	26,16	boutons from 10 and 5 neurons from 9 and 3 mice	Fig. legend	median±IQR	Fig. legend	p=0.3898	Figure	U=174	Figure
+ −	s9d	unpaired two-sided t-test	Fig. legend	50,50	simulations of distribution	Fig. legend	median±IQR	Fig. legend	see figure	Figure	not shown	not shown
+ −	s10g	Kolmogorov-Smirnov two-sample test	Fig. legend	129,141	1 and 5 neurons from 1 and 3 mice	Fig. legend	histogram	figure	p>0.1	Fig. legend	Max. Difference=-0.0889	not shown
+ −	s10h	Kolmogorov-Smirnov two-sample test	Fig. legend	129,141	1 and 5 neurons from 1 and 3 mice	Fig. legend	histogram	figure	p>0.1	Fig. legend	Max. Difference=-0.0598	not shown
+ −	s10i	Spearman's rank order correlation	Fig. legend	129	boutons from 1 neuron	Fig. legend	scatterplot	figure	p<0.001	Fig. legend	R=0.68	figure
+ −	5g	Mann-Whitney U Test	Fig. legend	10,12	mean values by cell from 349 and 374 boutons from 6 and 7 mice	Fig. legend	median±IQR	Fig. legend	p=0.6743	Figure	U=53	Figure
+ −	5h	Kolmogorov-Smirnov two-sample test	Fig. legend	349,374	boutons from 10 and 12 neurons from 6 and 7 mice	Fig. legend	histogram	figure	p>0.1	Figure	Max. Difference=0.0401	not shown
+ −	5h	Kolmogorov-Smirnov two-sample test	Fig. legend	279,334	boutons from 6 and 6 neurons from 6 and 3 mice	Fig. legend	histogram	figure	p<0.001	Figure	Max. Difference=-0.2061	not shown
+ −	5i	Mann-Whitney U Test	Fig. legend	10,12	mean values by cell from 349 and 374 boutons from 6 and 7 mice	Fig. legend	median±IQR	figure	p=0.00896	Figure	U=21	Figure
+ −	5j	Mann-Whitney U Test	Fig. legend	10,12	mean values by cell from 349 and 374 boutons from 6 and 7 mice	Fig. legend	median±IQR	figure	p=0.0249	Figure	U=26	Figure
+ −	5k	Kolmogorov-Smirnov two-sample test	Fig. legend	80,80	boutons selected at random	Fig. legend	median±IQR	figure	p<0.001	Figure	Max. Difference=0.3125	not shown
+ −	5l	Kolmogorov-Smirnov two-sample test	Fig. legend	192,192	boutons selected at random	Fig. legend	histogram	figure	p>0.1	Figure	Max. Difference=0.0208	not shown

+/−		Test		n	Description		Representation		p value		Statistic	
+ −	5m	Kolmogorov-Smirnov two-sample test	Fig. legend	192,192	boutons selected at random	Fig. legend	histogram	figure	p<0.025	Figure	Max. Difference=-0.16	not shown
+ −	5m	Kolmogorov-Smirnov two-sample test	Fig. legend	192,192	boutons selected at random	Fig. legend	histogram	figure	p>0.1	Figure	Max. Difference=-0.09	not shown
+ −	5n	Kolmogorov-Smirnov two-sample test	Fig. legend	197,197	boutons selected at random	Fig. legend	histogram	figure	p>0.1	Figure	Max. Difference=0.06	not shown
+ −	5o	Kolmogorov-Smirnov two-sample test	Fig. legend	200,200	boutons selected at random	Fig. legend	histogram	figure	p<0.001	Figure	Max. Difference=-0.215	not shown
+ −	5p	Kolmogorov-Smirnov two-sample test	Fig. legend	80,80	boutons selected at random	Fig. legend	median±IQR	figure	p>0.1	Figure	Max. Difference=-0.1375	not shown
+ −	6g	Mann-Whitney U Test	Fig. legend	185,117	boutons from 4 and 2 neurons from 3 and 2 mice	Fig. legend	median±IQR	figure	<0.0001	Figure	U=1813	not shown
+ −	6g	Mann-Whitney U Test	Fig. legend	283,113	boutons from 5 and 3 neurons from 3 and 3 animals	Fig. legend	median±IQR	figure	<0.0001	Figure	U=7096	not shown
+ −	6g	Mann-Whitney U Test	Fig. legend	113,92	boutons from 3 and 3 neurons from 2 and 3 animals	Fig. legend	median±IQR	figure	p=0.7977	Figure	U=4854	not shown
+ −	6g	Mann-Whitney U Test	Fig. legend	129,153	boutons from 4 and 4 cells from 2 and 3 animals	Fig. legend	median±IQR	figure	p<0.0001	Figure	U=7184	not shown
+ −	6h	unpaired two-sided t-test	Fig. legend	185,117	boutons from 4 and 2 neurons from 3 and 2 mice	Fig. legend	median±IQR	figure	p=0.00059	Figure	t(300)=3.474	not shown
+ −	6h	unpaired two-sided t-test	Fig. legend	238,113	boutons from 5 and 3 neurons from 3 and 3 animals	Fig. legend	median±IQR	figure	p=0.483	figure	t(349)=0.702	not shown
+ −	6h	unpaired two-sided t-test	Fig. legend	113,92	boutons from 3 and 3 neurons from 2 and 3 animals	Fig. legend	median±IQR	figure	p=0.574	figure	t(203)=-0.563	not shown
+ −	6h	unpaired two-sided t-test	Fig. legend	129,153	boutons from 4 and 4 cells from 2 and 3 animals	Fig. legend	median±IQR	figure	p=0.331	figure	t(280)=-0.974	not shown

▶ Representative figures

1. Are any representative images shown (including Western blots and immunohistochemistry/staining) in the paper?

   If so, what figure(s)?

   > Representative images are shown:
   > Figures 1, 2, 3, 4, 5, 6
   > Supplementary figures 1, 7, 10.

2. For each representative image, is there a clear statement of how many times this experiment was successfully repeated and a discussion of any limitations in repeatability?

   If so, where is this reported (section, paragraph #)?

   > All shown differences are quantified and reported in the paper with sample sizes. For figures showing representative images for illustrative purposes(Figures 2, 3, 4, Supplementary Figure 10), the nuber of repeated experiments is stated in the figure legends.

▶ Statistics and general methods

1. Is there a justification of the sample size?

   If so, how was it justified?

   Where (section, paragraph #)?

   Even if no sample size calculation was performed, authors should report why the sample size is adequate to measure their effect size.

   > Post-hoc power analysis reported in Methods - Statistical analysis and figure preparation p1.

2. Are statistical tests justified as appropriate for every figure?

   Where (section, paragraph #)?

   > Statement in Methods: Statistical analysis and figure preparation p1.

   a. If there is a section summarizing the statistical methods in the methods, is the statistical test for each experiment clearly defined?

   > Yes.
   > Statistical analysis and figure preparation p1.
   > At each reported experiment, the appled statistical probe is defined.

   b. Do the data meet the assumptions of the specific statistical test you chose (e.g. normality for a parametric test)?

   Where is this described (section, paragraph #)?

   > Yes. Statement in Methods: Statistical analysis and figure preparation p1.

   c. Is there any estimate of variance within each group of data?

   Is the variance similar between groups that are being statistically compared?

   Where is this described (section, paragraph #)?

   > Out of the 66 statistical comparisons reported in the paper, 13 were parametric tests (Student's t-test). Because the t-test is highly robust to unequal variances and the sample sizes were similar in the experimental groups compared, therefore equal variances were not assessed.

   d. Are tests specified as one- or two-sided?

   > Yes (all tests in the study are two-sided).

   e. Are there adjustments for multiple comparisons?

   > Multiple comparisons were not performed.

3. Are criteria for excluding data points reported?

   Was this criterion established prior to data collection?

   Where is this described (section, paragraph #)?

   > Criteria were reported in every case where exclusions were made.
   > fig. s8
   > Methods: Development and analysis of in vitro and in vivo recorded cells p2
   > Methods: Acute slice preparation and recording p2

4. Define the method of randomization used to assign subjects (or samples) to the experimental groups and to collect and process data.

   If no randomization was used, state so.

   Where does this appear (section, paragraph #)?

   > Mice were randomly assigned to vehicle or THC treatment.
   > Methods: Chronic drug treatment, p1.

5. Is a statement of the extent to which investigator knew the group allocation during the experiment and in assessing outcome included?

   If no blinding was done, state so.

   Where (section, paragraph #)?

   > Methods: Chronic drug treatment, p1.

6. For experiments in live vertebrates, is a statement of compliance with ethical guidelines/regulations included?

    Where (section, paragraph #)?

    Yes. Statements in:
    Methods: Perfusion and preparation of tissue sections, p1
    Methods: In vivo recording, p1
    Methods: Preparation of the rabbit anti-CB1 antibody, p1
    Methods: Chronic drug treatment, p1.

7. Is the species of the animals used reported?

    Where (section, paragraph #)?

    Yes.
    Methods: Perfusion and preparation of tissue sections, p1
    Methods: In vivo recording, p1
    Methods: Preparation of the rabbit anti-CB1 antibody, p1
    Methods: Chronic drug treatment, p1.

8. Is the strain of the animals (including background strains of KO/ transgenic animals used) reported?

    Where (section, paragraph #)?

    Yes.
    Methods: Perfusion and preparation of tissue sections, p1
    Methods: In vivo recording, p1
    Methods: Preparation of the rabbit anti-CB1 antibody, p1
    Methods: Chronic drug treatment, p1.

9. Is the sex of the animals/subjects used reported?

    Where (section, paragraph #)?

    Yes.
    Methods: Perfusion and preparation of tissue sections, p1
    Methods: Preparation of the rabbit anti-CB1 antibody, p1
    Methods: In vivo recording, p1
    Methods: Chronic drug treatment, p1.

10. Is the age of the animals/subjects reported?

    Where (section, paragraph #)?

    Yes.
    Methods: Perfusion and preparation of tissue sections, p1
    Methods: In vivo recording, p1
    Methods: Preparation of the rabbit anti-CB1 antibody, p1
    Methods: Chronic drug treatment, p1.

11. For animals housed in a vivarium, is the light/dark cycle reported?

    Where (section, paragraph #)?

    Yes. Methods: Chronic drug treatment, p1.

12. For animals housed in a vivarium, is the housing group (i.e. number of animals per cage) reported?

    Where (section, paragraph #)?

    Yes. Methods: Chronic drug treatment, p1.

13. For behavioral experiments, is the time of day reported (e.g. light or dark cycle)?

    Where (section, paragraph #)?

    N/A

14. Is the previous history of the animals/subjects (e.g. prior drug administration, surgery, behavioral testing) reported?

    Where (section, paragraph #)?

    Yes. Methods: Chronic drug treatment, p1.

    a. If multiple behavioral tests were conducted in the same group of animals, is this reported?

        Where (section, paragraph #)?

        N/A

15. If any animals/subjects were excluded from analysis, is this reported?

    Where (section, paragraph #)?

    No animals were excluded.

a. How were the criteria for exclusion defined?

Where is this described (section, paragraph #)?

> N/A

b. Specify reasons for any discrepancy between the number of animals at the beginning and end of the study.

Where is this described (section, paragraph #)?

> N/A

▶ Reagents

1. Have antibodies been validated for use in the system under study (assay and species)?

> All antibodies have been validated for immunohistochemistry in mice.

   a. Is antibody catalog number given?

   Where does this appear (section, paragraph #)?

> Yes.
> Methods: Immunostaining for STORM imaging, p1.

   b. Where were the validation data reported (citation, supplementary information, Antibodypedia)?

   Where does this appear (section, paragraph #)?

> Validation data are cited in:
> Methods: Immunostaining for STORM imaging, p1.

2. If cell lines were used to reflect the properties of a particular tissue or disease state, is their source identified?

Where (section, paragraph #)?

> N/A

   a. Were they recently authenticated?

   Where is this information reported (section, paragraph #)?

> N/A

▶ Data deposition

Data deposition in a public repository is mandatory for:

  a. Protein, DNA and RNA sequences
  b. Macromolecular structures
  c. Crystallographic data for small molecules
  d. Microarray data

Deposition is strongly recommended for many other datasets for which structured public repositories exist; more details on our data policy are available here. We encourage the provision of other source data in supplementary information or in unstructured repositories such as Figshare and Dryad.

1. Are accession codes for deposit dates provided?

Where (section, paragraph #)?

> N/A

▶ Computer code/software

Any custom algorithm/software that is central to the methods must be supplied by the authors in a usable and readable form for readers at the time of publication. However, referees may ask for this information at any time during the review process.

1. Identify all custom software or scripts that were required to conduct the study and where in the procedures each was used.

> Algorithms used throughout the analysis are described in:
> Methods: Combined confocal/STORM image processing, p1-4
> Methods: Quantitative analysis of combined confocal/STORM images of axon terminals, p1-5.

2. Is computer source code/software provided with the paper or deposited in a public repository? Indicate in what form this is provided or how it can be obtained.

> Scripts used in the study will be freely provided to any member of the scientific community upon request after the study is published. We are also developing a standalone software to release.

▶ Human subjects

1. Which IRB approved the protocol?

   Where is this stated (section, paragraph #)?

   > N/A

2. Is demographic information on all subjects provided?

   Where (section, paragraph #)?

   > N/A

3. Is the number of human subjects, their age and sex clearly defined?

   Where (section, paragraph #)?

   > N/A

4. Are the inclusion and exclusion criteria (if any) clearly specified?

   Where (section, paragraph #)?

   > N/A

5. How well were the groups matched?

   Where is this information described (section, paragraph #)?

   > N/A

6. Is a statement included confirming that informed consent was obtained from all subjects?

   Where (section, paragraph #)?

   > N/A

7. For publication of patient photos, is a statement included confirming that consent to publish was obtained?

   Where (section, paragraph #)?

   > N/A

▸ fMRI studies

For papers reporting functional imaging (fMRI) results please ensure that these minimal reporting guidelines are met and that all this information is clearly provided in the methods:

1. Were any subjects scanned but then rejected for the analysis after the data was collected?

    N/A

    a. If yes, is the number rejected and reasons for rejection described?

        Where (section, paragraph #)?

        N/A

2. Is the number of blocks, trials or experimental units per session and/ or subjects specified?

    Where (section, paragraph #)?

    N/A

3. Is the length of each trial and interval between trials specified?

    N/A

4. Is a blocked, event-related, or mixed design being used? If applicable, please specify the block length or how the event-related or mixed design was optimized.

    N/A

5. Is the task design clearly described?

    Where (section, paragraph #)?

    N/A

6. How was behavioral performance measured?

    N/A

7. Is an ANOVA or factorial design being used?

    N/A

8. For data acquisition, is a whole brain scan used?

    If not, state area of acquisition.

    N/A

    a. How was this region determined?

        N/A

9. Is the field strength (in Tesla) of the MRI system stated?

    N/A

    a. Is the pulse sequence type (gradient/spin echo, EPI/spiral) stated?

        N/A

    b. Are the field-of-view, matrix size, slice thickness, and TE/TR/ flip angle clearly stated?

        N/A

10. Are the software and specific parameters (model/functions, smoothing kernel size if applicable, etc.) used for data processing and pre-processing clearly stated?

    N/A

11. Is the coordinate space for the anatomical/functional imaging data clearly defined as subject/native space or standardized stereotaxic space, e.g., original Talairach, MNI305, ICBM152, etc? Where (section, paragraph #)?

N/A

12. If there was data normalization/standardization to a specific space template, are the type of transformation (linear vs. nonlinear) used and image types being transformed clearly described? Where (section, paragraph #)?

N/A

13. How were anatomical locations determined, e.g., via an automated labeling algorithm (AAL), standardized coordinate database (Talairach daemon), probabilistic atlases, etc.?

N/A

14. Were any additional regressors (behavioral covariates, motion etc) used?

N/A

15. Is the contrast construction clearly defined?

N/A

16. Is a mixed/random effects or fixed inference used?

N/A

    a. If fixed effects inference used, is this justified?

N/A

17. Were repeated measures used (multiple measurements per subject)?

N/A

    a. If so, are the method to account for within subject correlation and the assumptions made about variance clearly stated?

N/A

18. If the threshold used for inference and visualization in figures varies, is this clearly stated?

N/A

19. Are statistical inferences corrected for multiple comparisons?

N/A

    a. If not, is this labeled as uncorrected?

N/A

20. Are the results based on an ROI (region of interest) analysis?

N/A

    a. If so, is the rationale clearly described?

N/A

    b. How were the ROI's defined (functional vs anatomical localization)?

N/A

21. Is there correction for multiple comparisons within each voxel?

N/A

22. For cluster-wise significance, is the cluster-defining threshold and the corrected significance level defined?

N/A

▶ Additional comments

Additional Comments