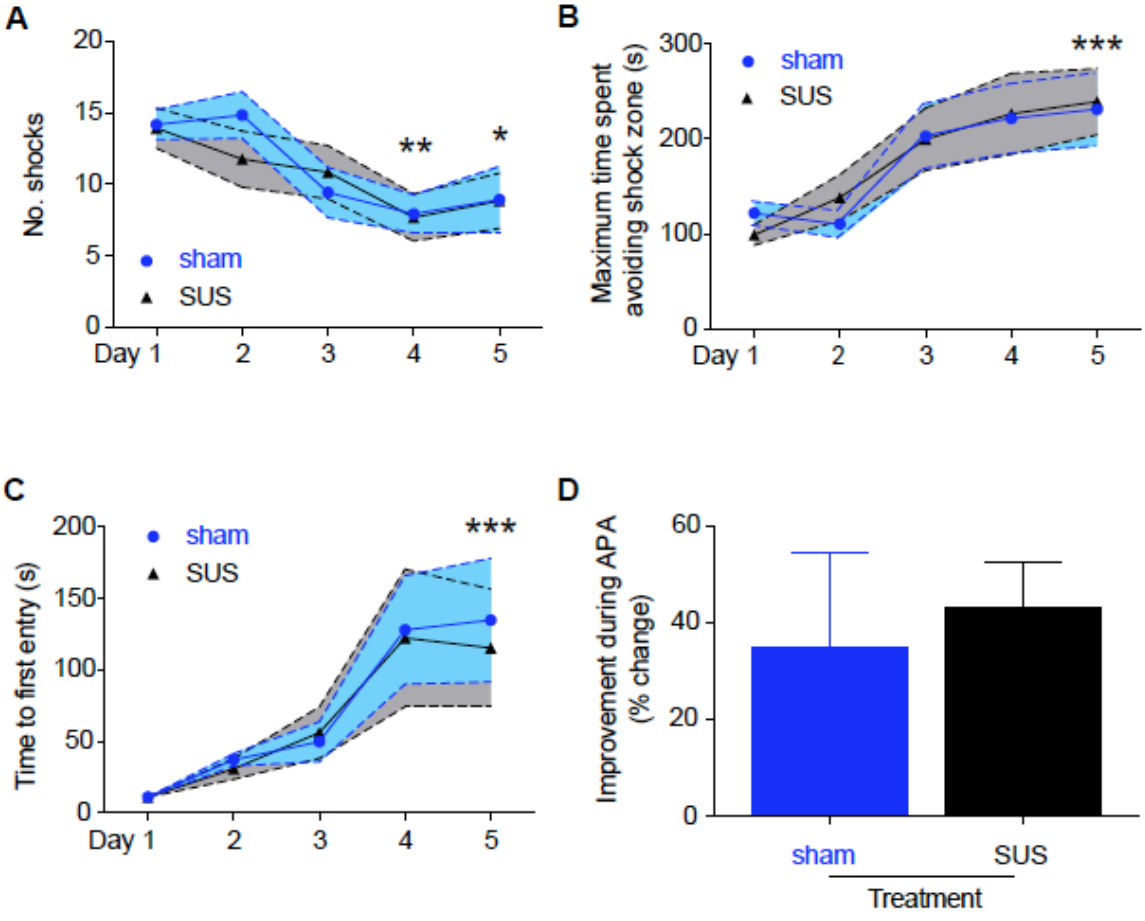
Supplementary information

Supplementary Figure S1

Spatial learning in 12-month-old animals is intact. Before initiating the SUS treatment, the baseline performance of the animals was tested in the active place avoidance (APA) paradigm. (**A**) During the course of the testing period, animals received significantly fewer shocks, indicating that they were able to avoid the shock zone. There was a significant increase in both the maximal time spent avoiding the shock zone (**B**) and the time to first entrance of this zone (**C**) during the course of the APA testing (mean ± SEM represented as a shaded area contained within dotted lines; *p<0.05, **p<0.01, ***p<0.001, two-way ANOVA with Bonferroni *post-hoc* test). (**D**) Both groups displayed improvements during the testing period, with no difference between them (mean + SEM).

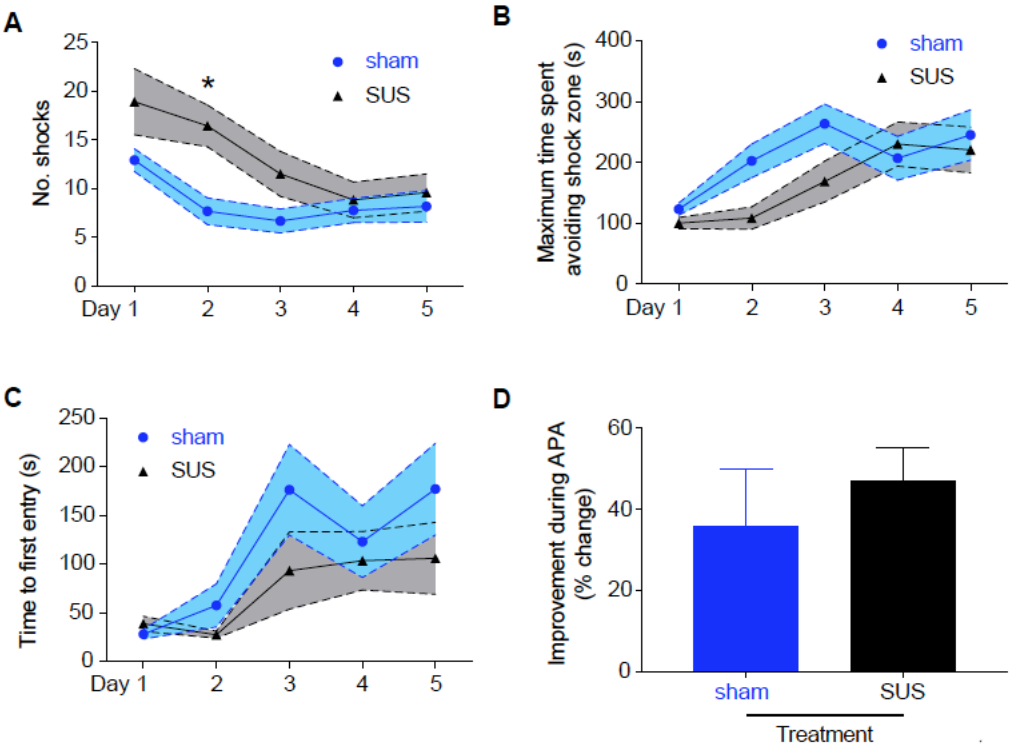
Figure S1


A
No. shocks
20
15
10
5
0
Day 1
2
3
4
5
**
*
sham
SUS
B
Maximum time spent avoiding shock zone (s)
300
200
100
0
***
sham
SUS
C
Time to first entry (s)
200
150
100
50
0
***
sham
SUS
D
Improvement during APA (% change)
60
40
20
0
sham
SUS
Treatment

Supplementary Figure S2

SUS treatment does not adversely affect spatial learning in 15-month-old mice. (A) The SUS-treated animals received more shocks on day 2 of the re-test but then displayed a steeper learning curve compared than that of the sham group, with no significant difference in shock numbers on day 5 (mean ± SEM represented as a shaded area contained within the dotted lines; *$p<0.05$, two-way ANOVA with Bonferroni *post-hoc* test). There was no difference between groups in the maximal time spent avoiding the shock zone (**B**) or time to first entrance (**C**) during the retest (mean ± SEM represented as a shaded area contained within dotted lines). (**D**) Both groups showed improvements in spatial learning during the course of the APA retest paradigm (mean + SEM).

Figure S2


A
No. shocks
25
20
15
10
5
0
Day 1
2
3
4
5
*
sham
SUS
B
Maximum time spent avoiding shock zone (s)
400
300
200
100
0
Day 1
2
3
4
5
sham
SUS
C
Time to first entry (s)
250
200
150
100
50
0
Day 1
2
3
4
5
sham
SUS
D
Improvement during APA (% change)
60
40
20
0
sham
SUS
Treatment