Figure S1: Control for effects of electrode insertion into the amygdala on 10% CO_2-evoked behaviors. The sham controls run in parallel with lesioned mice did not have electordes inserted into their brains. To control for the effects of electrode insertion in the amygdala, we tested the effects of electrode insertion on 10% CO_2-evoked behaviors in a new group of controls post hoc. Neither freezing ($t = 0.5111$, $p = 0.6142$, $n = 7$) nor jumping ($p = 0.2678$) differed significantly from previously run sham controls without electrode insertion.

Figure S2: Nissl Staining of amygdala Lesion. Nissl staining showing the amygdala of a sham control (A) and the extent of a typical amygdala lesion (**B**). Atlas provided for reference [58].

Figure S3: Unilateral amygdala lesions elicit 10% CO_2-evoked jumping. A) Mice with unilateral amygdala lesions (x1) displayed similar freezing in response to 10% CO_2 as sham controls ($p = 0.5831$, $n = 6$), but more freezing than mice with bilateral amygdala lesions (x2) (**$p = 0.0016$), sham and bilateral data from **Figure 1B** shown for reference. **B)** Mice with unilateral amygdala lesions displayed similar jumping in response to 10% CO_2 as mice with bilateral amygdala lesions (x2) ($p = 0.3747$), but more jumping than sham controls (*$p = 0.0227$) , sham and bilateral data from **Figure 1C** shown for reference

Figure S4: Effect of electrolytic lesions on gross locomotion. One-way ANOVA revealed a significant difference ($F(4,56) = 3.415$, $p = 0.0144$, $n = 27, 7, 11, 8, 8$). Dunnett's multiple comparison test revealed no effect of amygdala ($p = 0.9568$), BNST ($p = 0.7365$), or dPAG ($p = 0.9990$) on locommotion in the open field, whereas dorsal hippocampus lesions increase locomotor activity (*$p = 0.0105$).

Figure S5: Extent of electrolytic lesions. Diagrams [58] showing location and extent of the largest (red) and smallest (blue) BNST (**A**), dorsal hippocampus (**B**) dPAG (**C**) lesions.

Figure S1

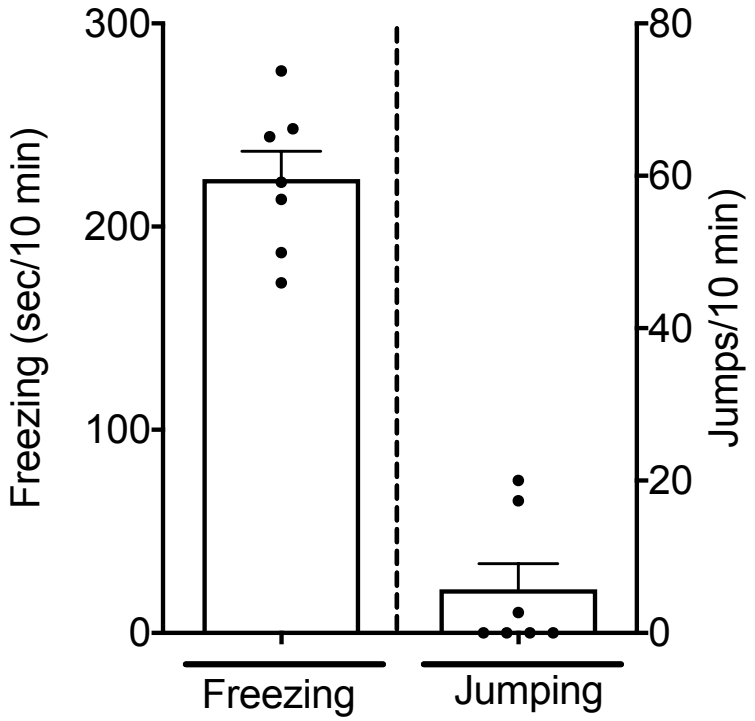
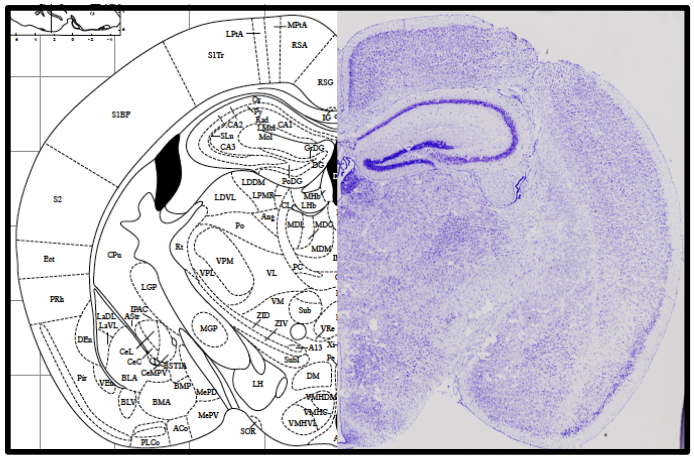

300
200
100
0
Freezing (sec/10 min)
80
60
40
20
0
Jumps/10 min)
Freezing
Jumping

Figure S2

A.


MPtA
LPtA
RSA
S1Tr
RSG
S1BF
S2
Ect
PRh
CPu
LGP
DEn
Pir
VEn
BLA
BLV
BMA
MePD
MePV
ACo
PLCo
LH
SOR
MGP
ZID
ZIV
VM
Sub
VRe
A13
DM
VMHDM
VMHC
VMHVL
LDVL
LPMR
MHb
LHb
Aeg
Po
MDL
MDC
MDM
Rt
VPM
VPL
VL
PC
LDDM
PaDG
GrDG
SG
CA2
CA1
SLu
CA3
Mol

B.

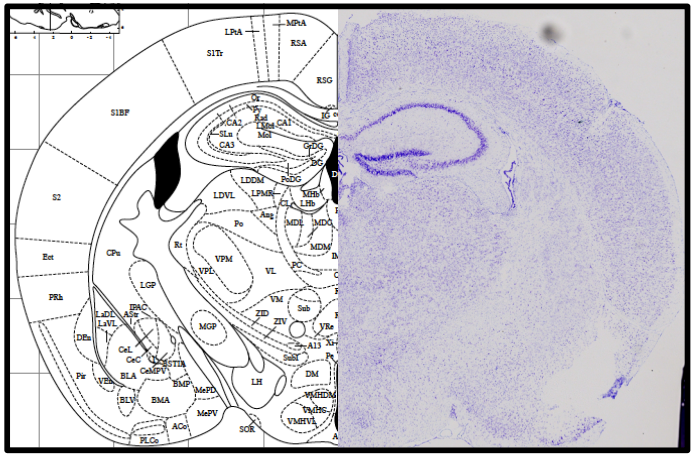

MPtA
LPtA
RSA
S1Tr
RSG
S1BF
S2
Ect
PRh
CPu
LGP
DEn
Pir
VEn
BLA
BLV
BMA
MePD
MePV
ACo
PLCo
LH
SOR
MGP
ZID
ZIV
VM
Sub
VRe
A13
DM
VMHDM
VMHC
VMHVL
LDVL
LPMR
MHb
LHb
Aeg
Po
MDL
MDC
MDM
Rt
VPM
VPL
VL
PC
LDDM
PaDG
GrDG
SG
CA2
CA1
SLu
CA3
Mol

Figure S3

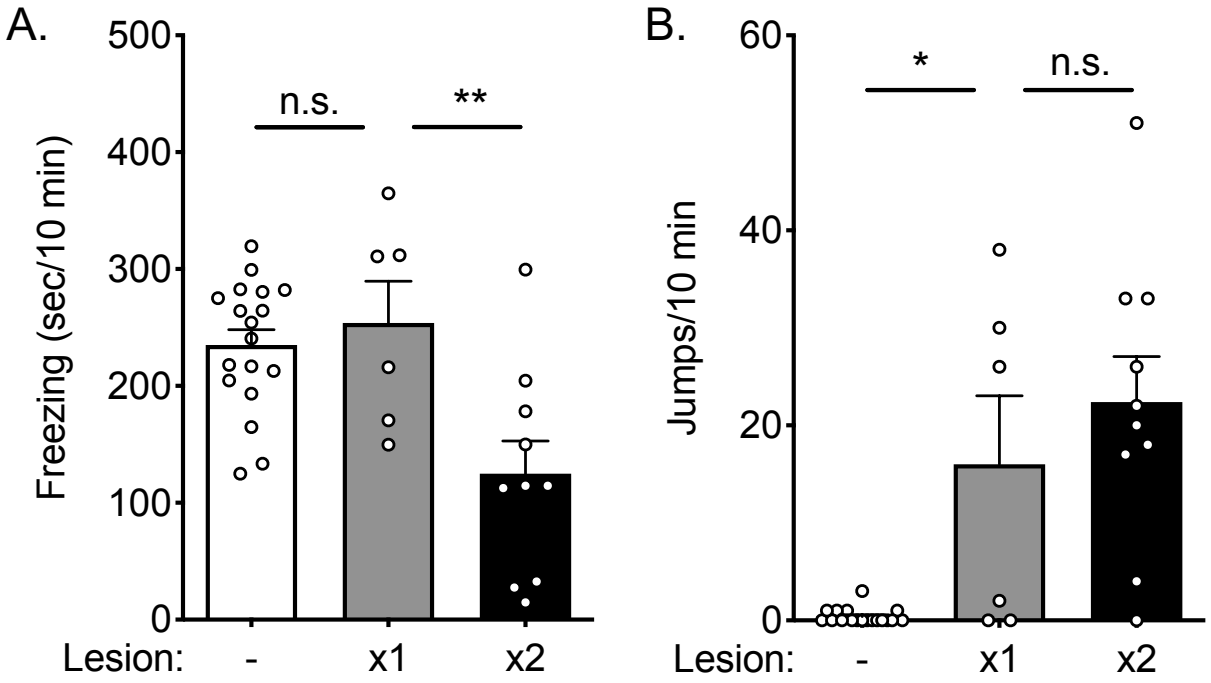

A.
Freezing (sec/10 min)
500
400
300
200
100
0
n.s.
**
Lesion:
-
x1
x2
B.
Jumps/10 min
60
40
20
0
*
n.s.
Lesion:
-
x1
x2

Figure S4

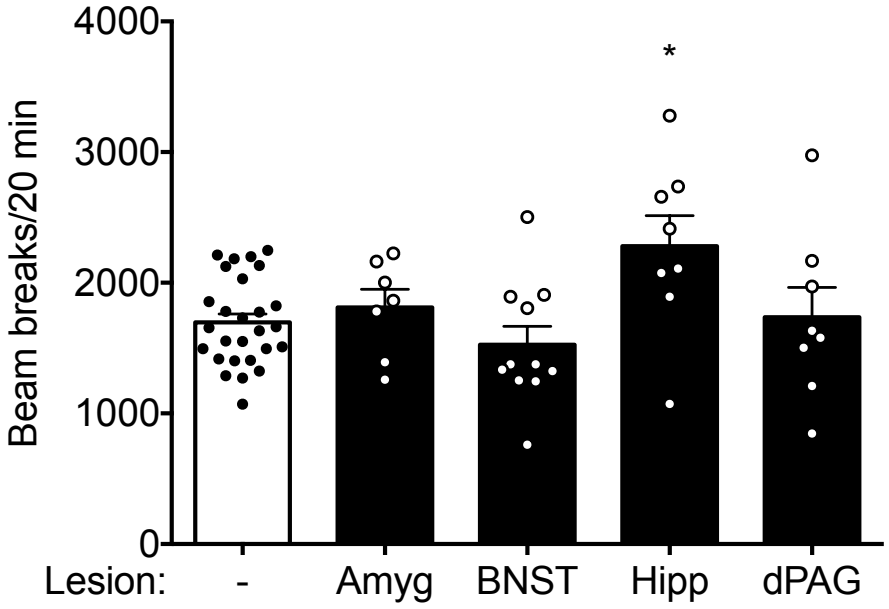
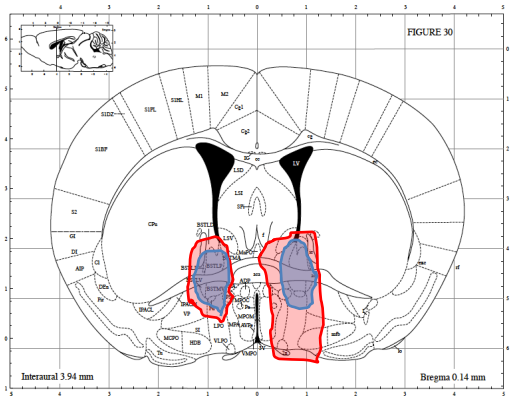
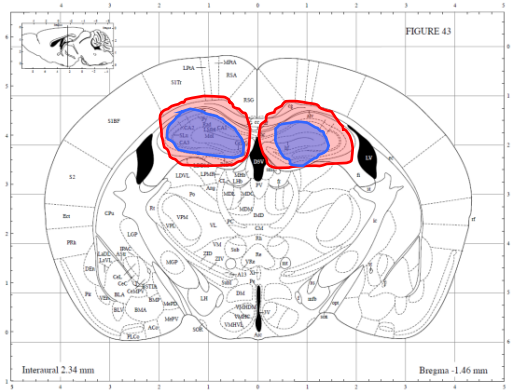

4000
3000
2000
1000
0
Beam breaks/20 min
*
Lesion:
-
Amyg
BNST
Hipp
dPAG

Figure S5

A.



B.



C.