Figure 1

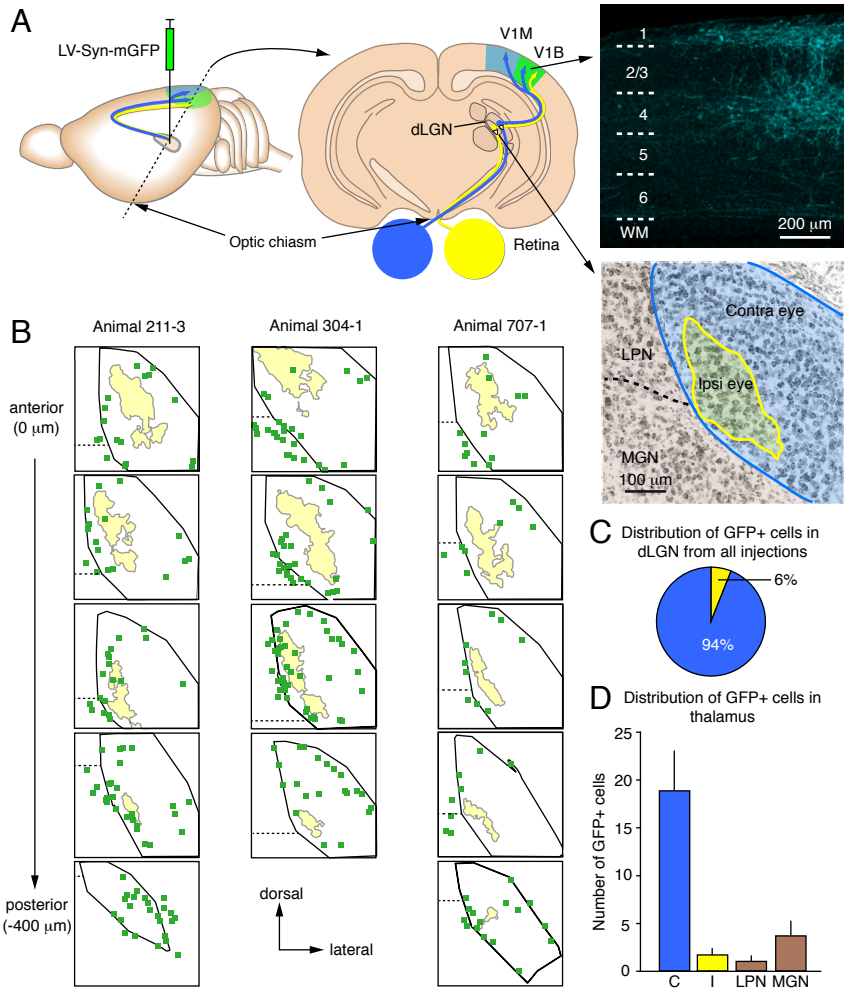

A
LV-Syn-mGFP
V1M
V1B
dLGN
Optic chiasm
Retina
1
2/3
4
5
6
WM
200 μm
Contra eye
LPN
Ipsi eye
MGN
100 μm
B
Animal 211-3
Animal 304-1
Animal 707-1
anterior
(0 μm)
posterior
(-400 μm)
dorsal
lateral
C
Distribution of GFP+ cells in
dLGN from all injections
6%
94%
D
Distribution of GFP+ cells in
thalamus
Number of GFP+ cells
25
20
15
10
5
0
C
I
LPN
MGN

Figure 2

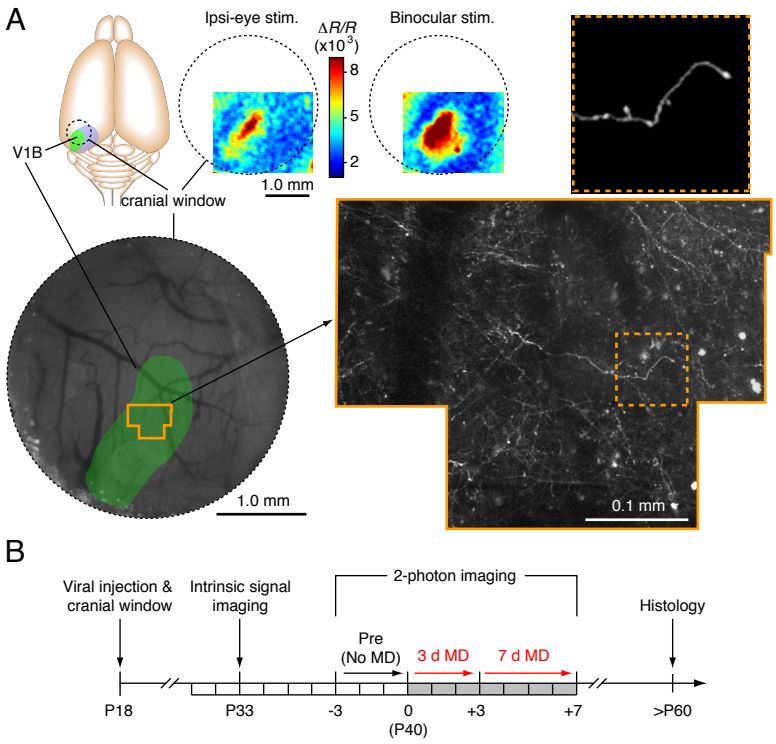

A
Ipsi-eye stim.
ΔR/R
(x10 3)
8
5
2
Binocular stim.
V1B
1.0 mm
cranial window
1.0 mm
0.1 mm
B
Viral injection &
cranial window
Intrinsic signal
imaging
2-photon imaging
Histology
Pre
(No MD)
3 d MD
7 d MD
P18
P33
-3
0
(P40)
+3
+7
>P60

Figure 3

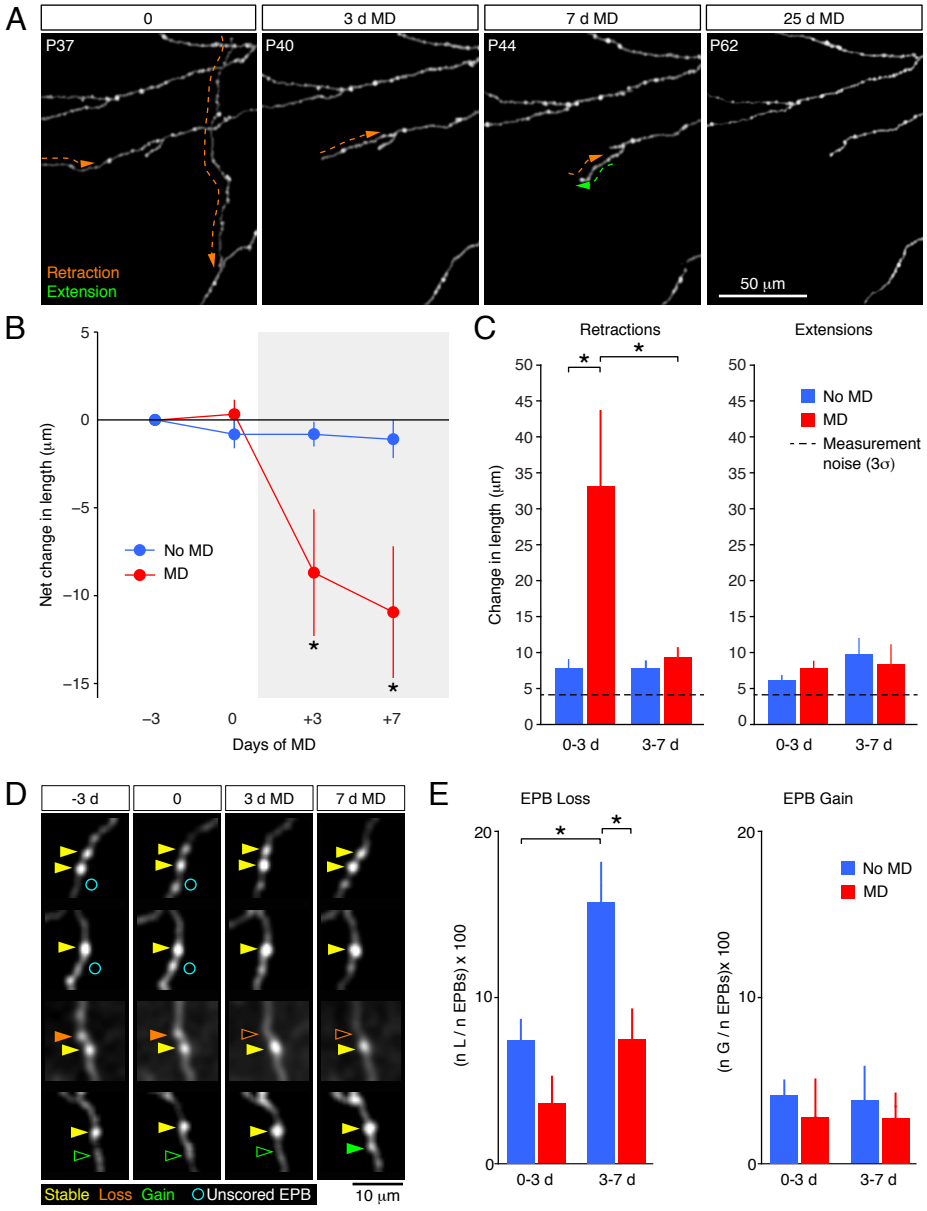
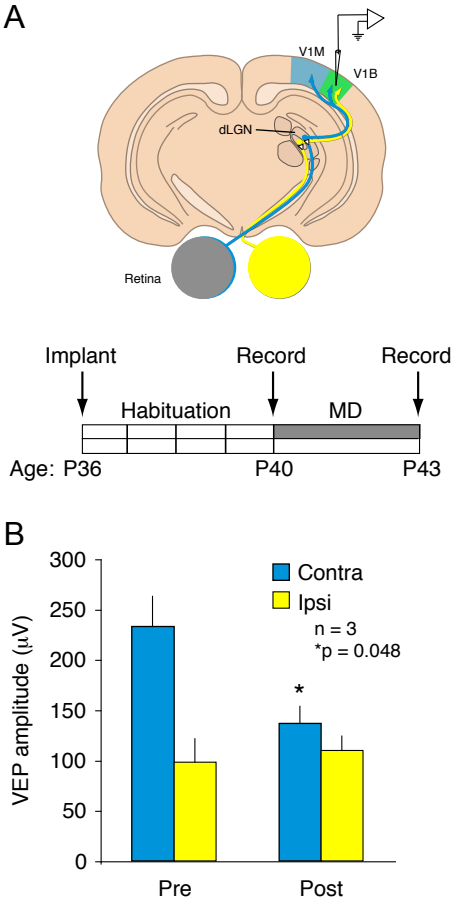

A
0
3 d MD
7 d MD
25 d MD
P37
P40
P44
P62
Retraction
Extension
50 µm
B
Net change in length (µm)
5
0
−5
−10
−15
No MD
MD
−3
0
+3
+7
Days of MD
C
Retractions
Extensions
Change in length (µm)
50
45
40
35
30
25
20
15
10
5
0
No MD
MD
Measurement noise (3σ)
0-3 d
3-7 d
D
-3 d
0
3 d MD
7 d MD
Stable
Loss
Gain
Unscored EPB
10 µm
E
EPB Loss
EPB Gain
(n L / n EPBs) x 100
(n G / n EPBs)x 100
20
10
0
No MD
MD
0-3 d
3-7 d

Figure S1


A
V1M
V1B
dLGN
Retina
Implant
Record
Record
Habituation
MD
Age: P36
P40
P43
B
VEP amplitude (μV)
300
250
200
150
100
50
0
Contra
Ipsi
n = 3
*p = 0.048
*
Pre
Post

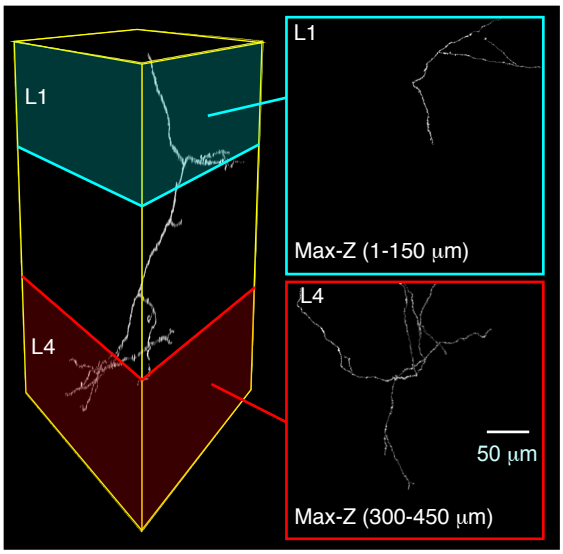



Figure S2