

Fig. 1

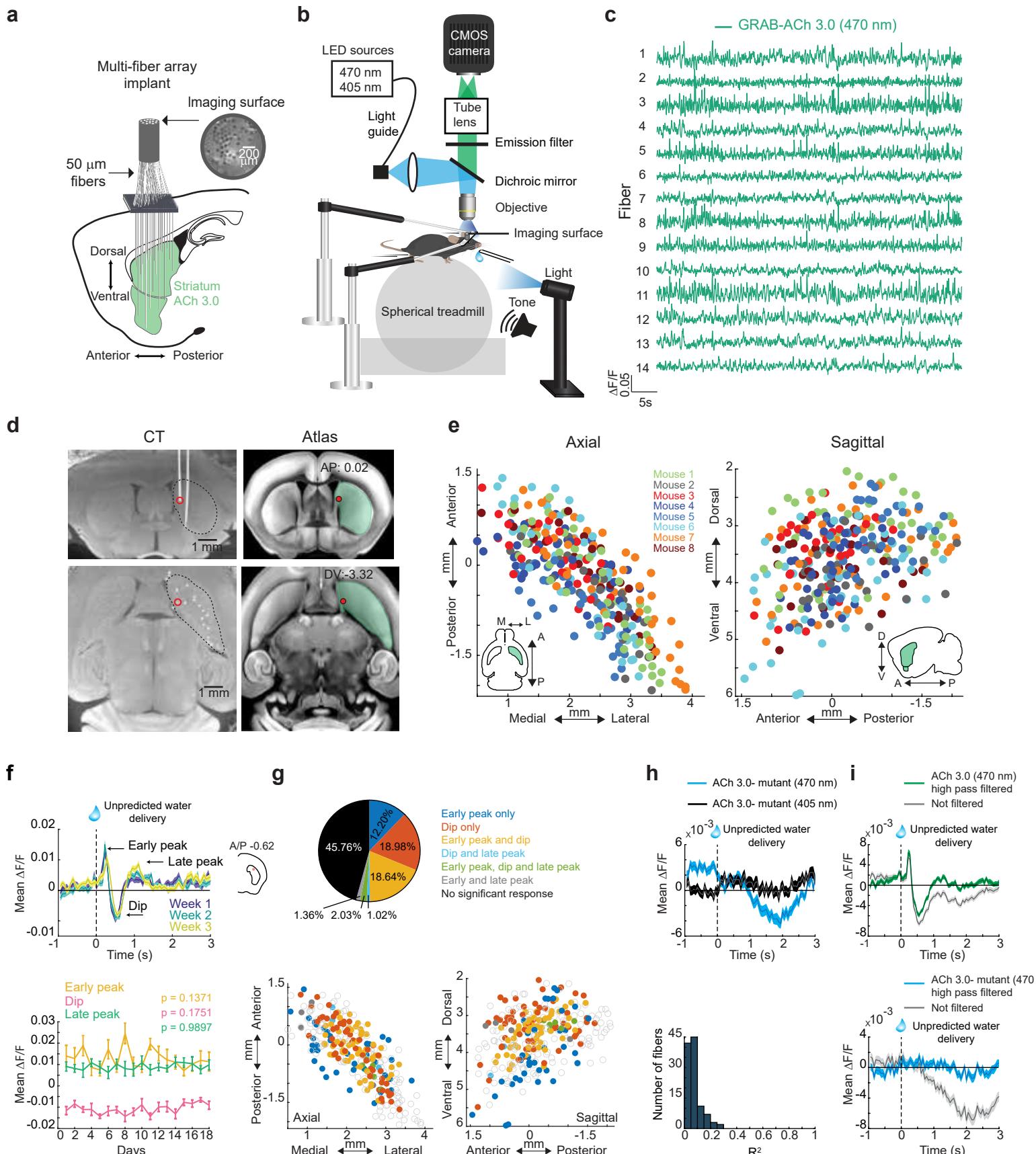


Fig. 2

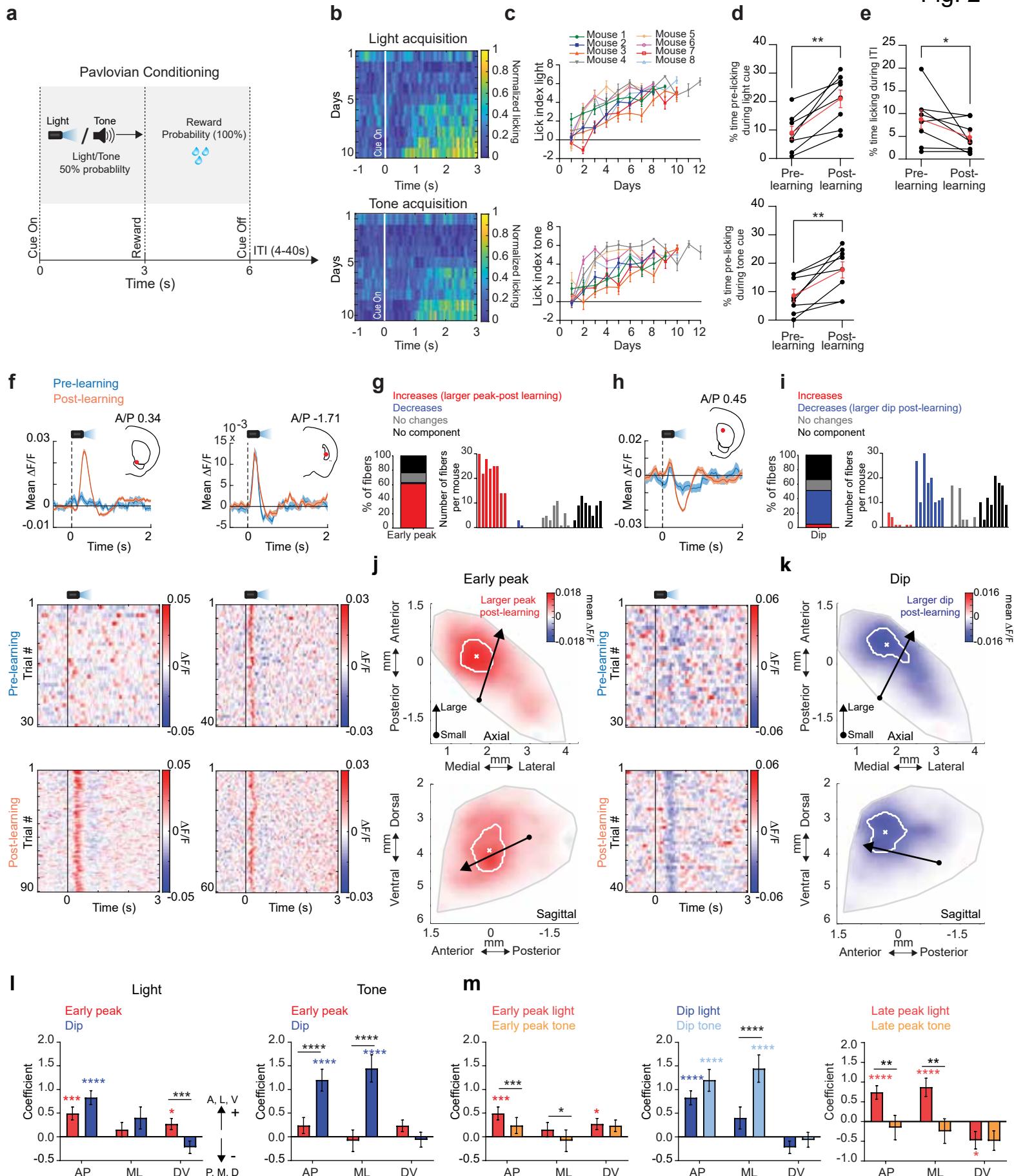


Fig. 3

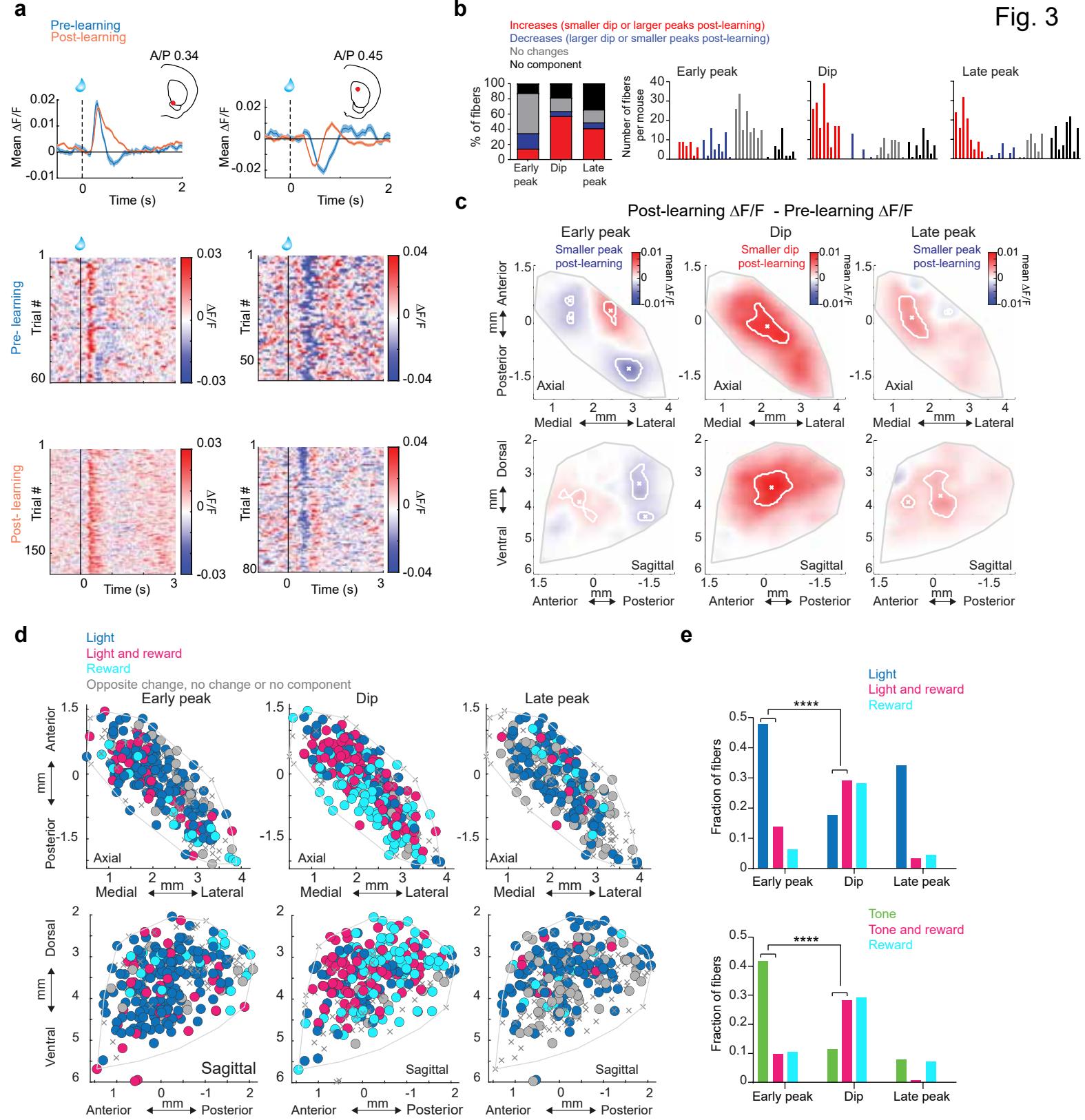


Fig. 4

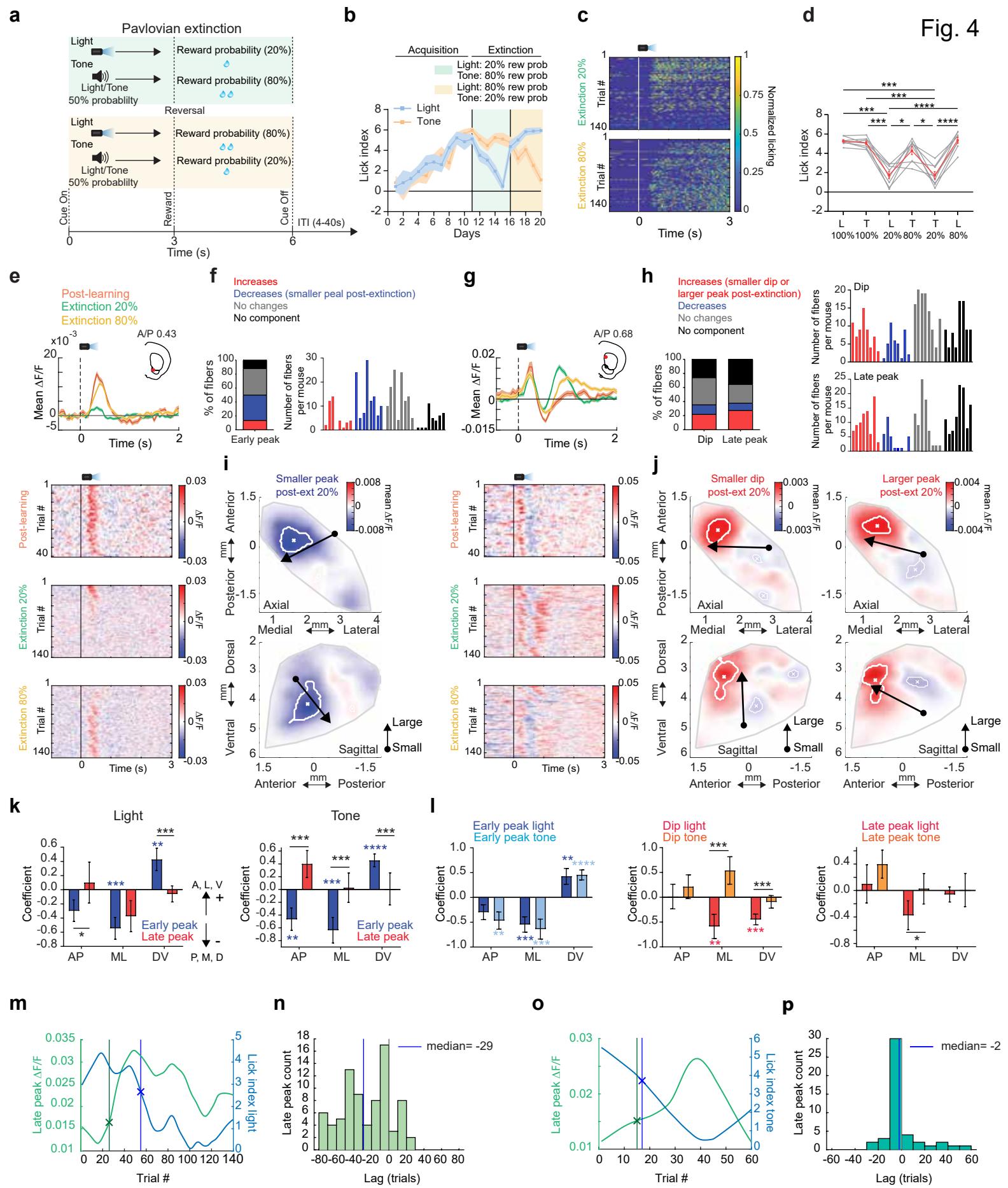


Fig. 5

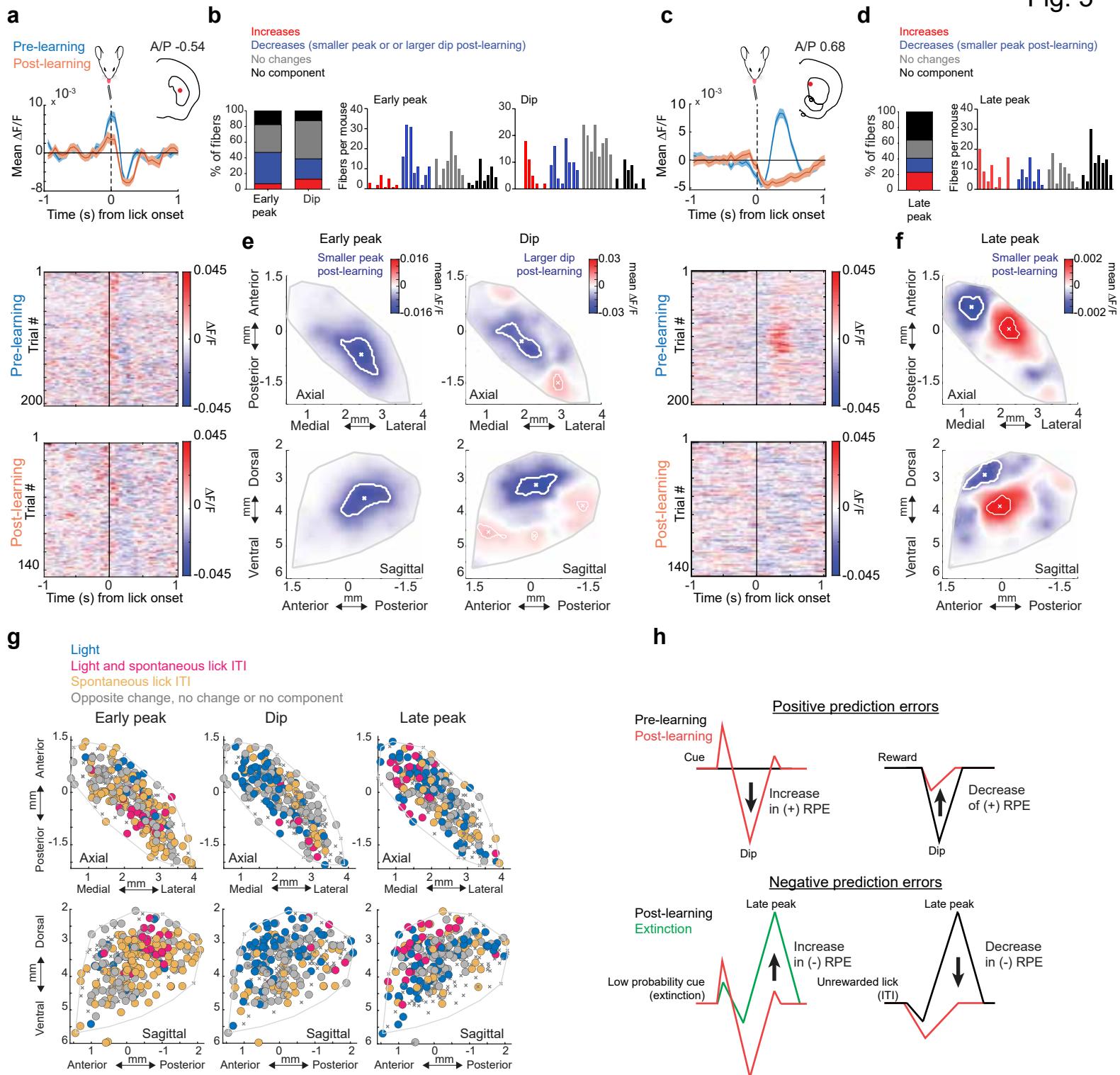


Fig. 6

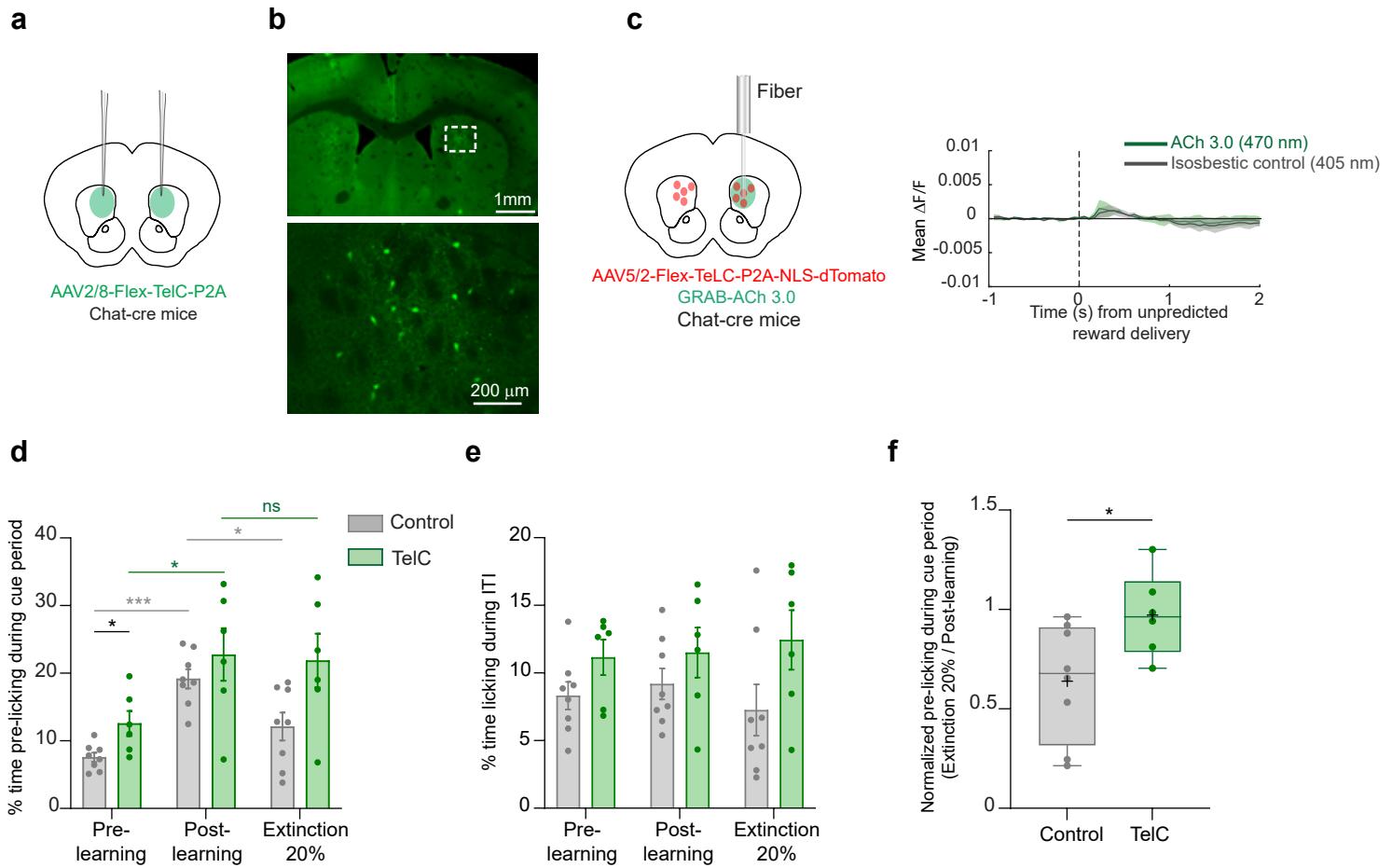


Fig. 7

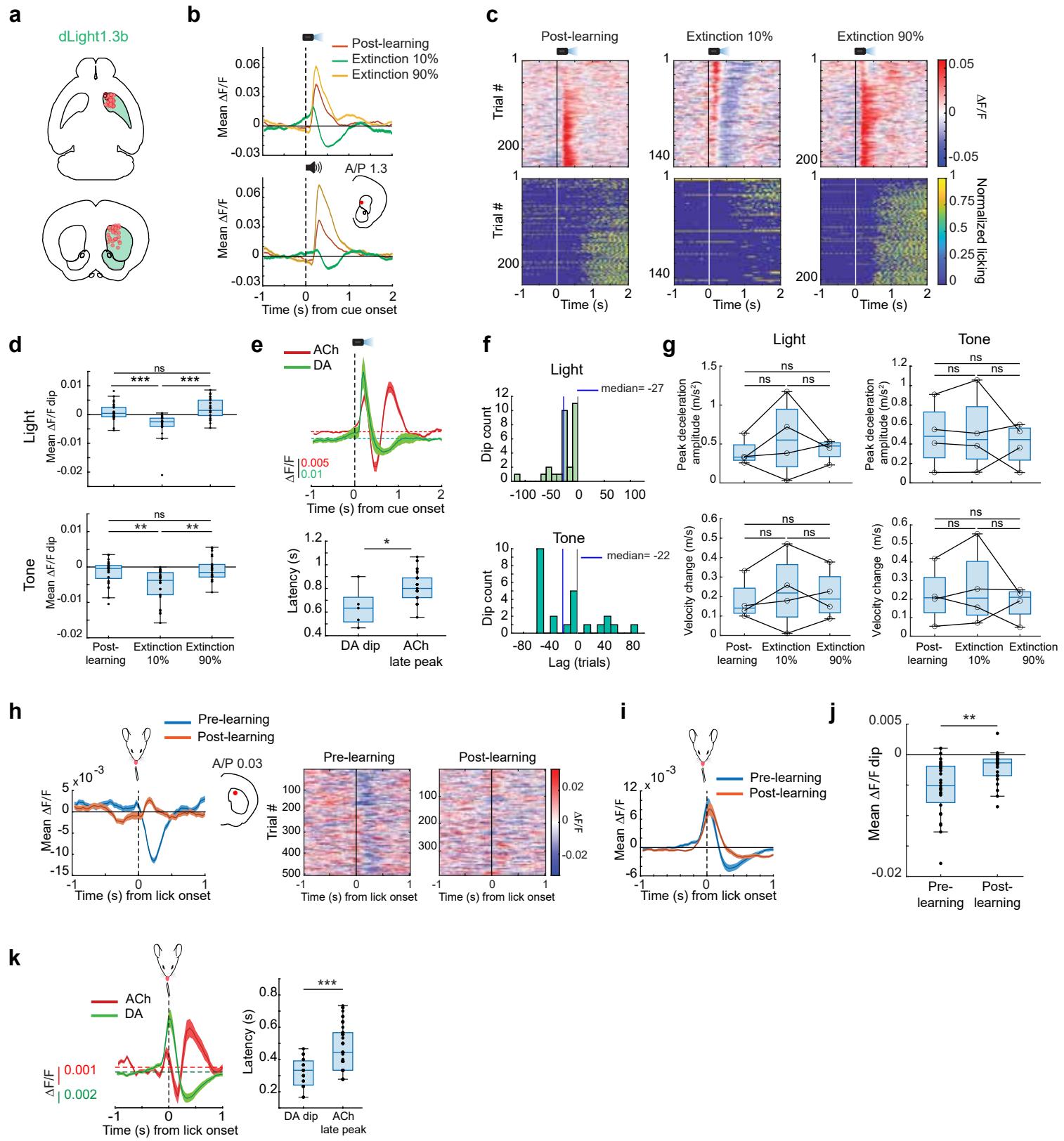
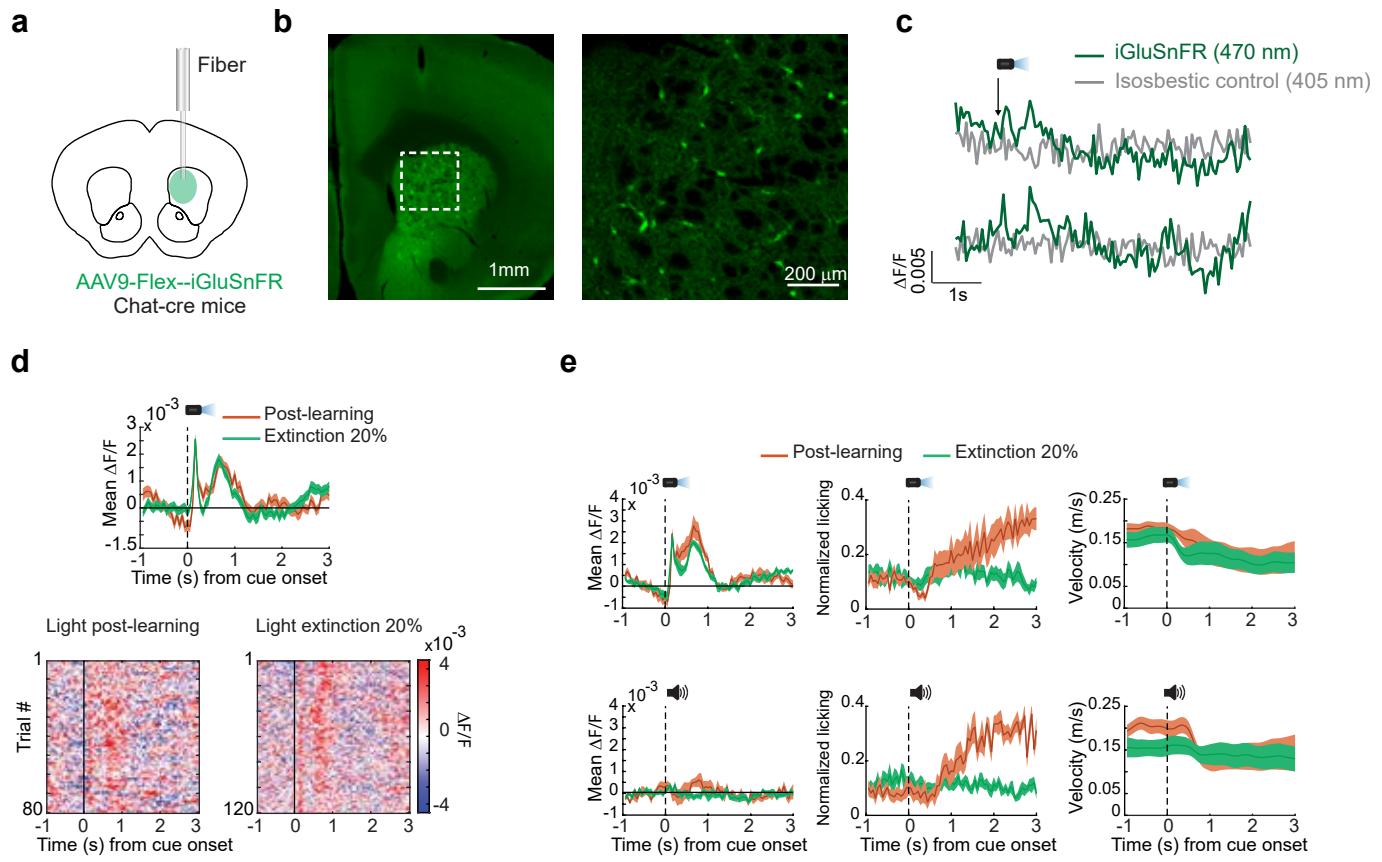
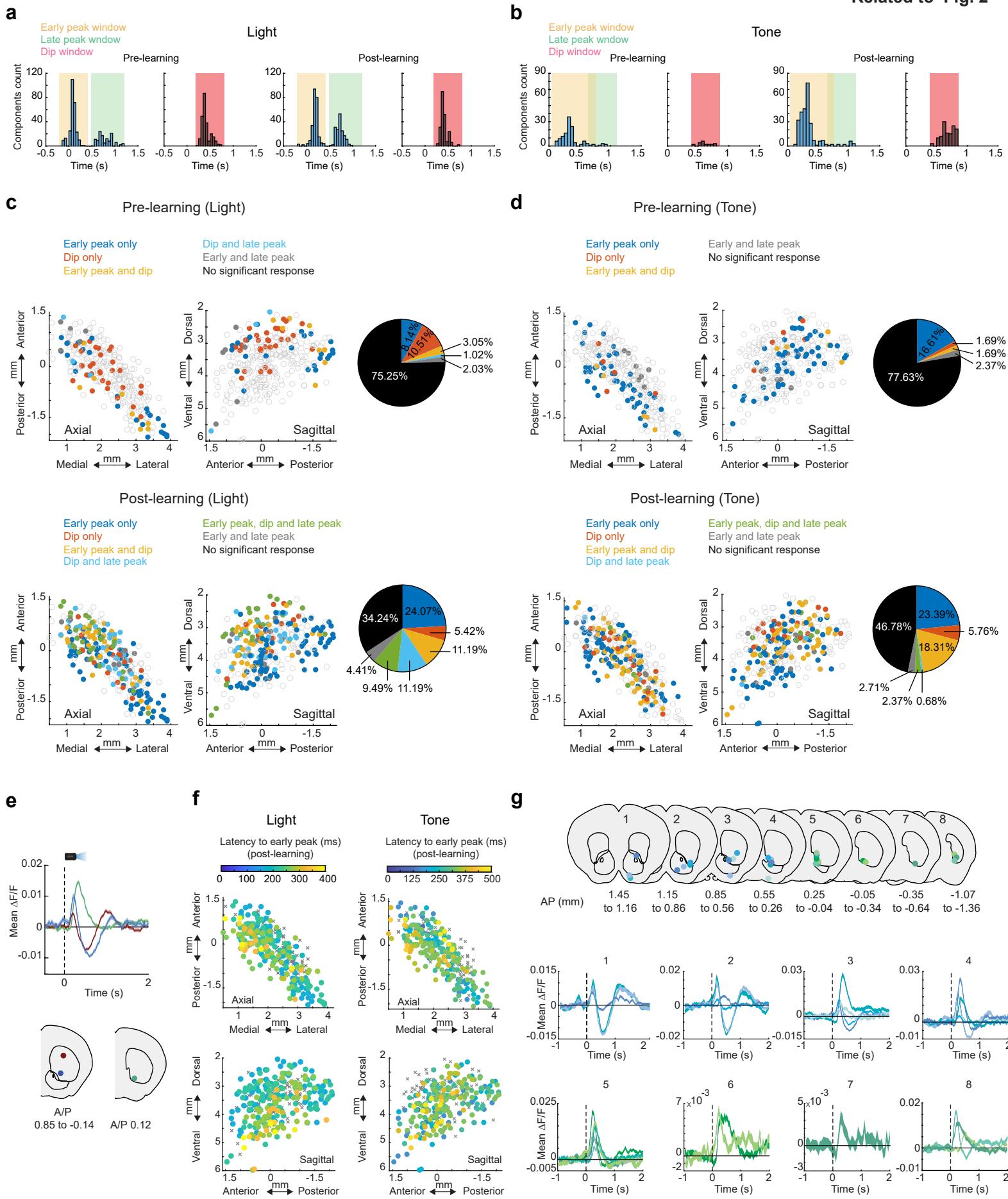


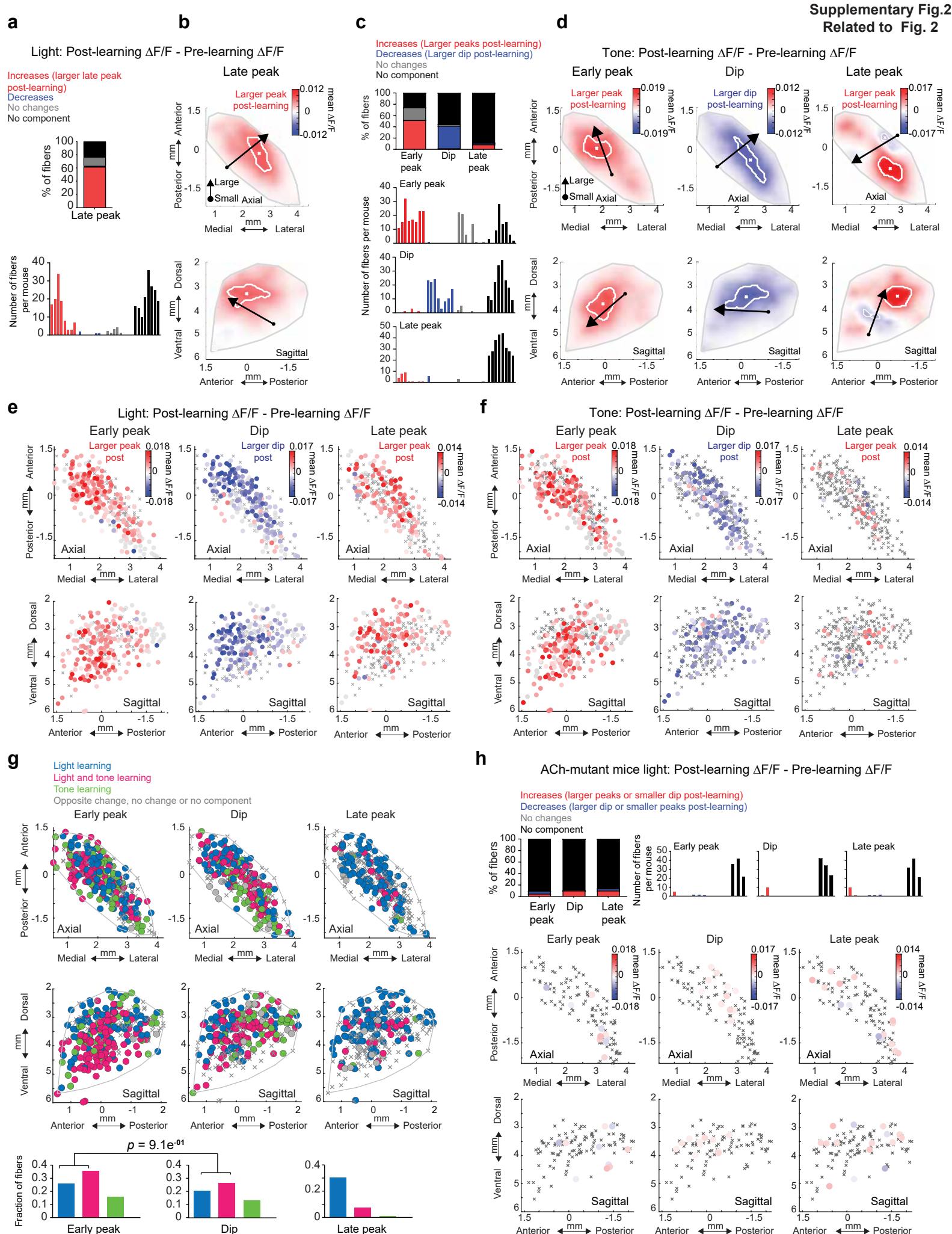
Fig. 8



Supplementary Fig. 1
Related to Fig. 2



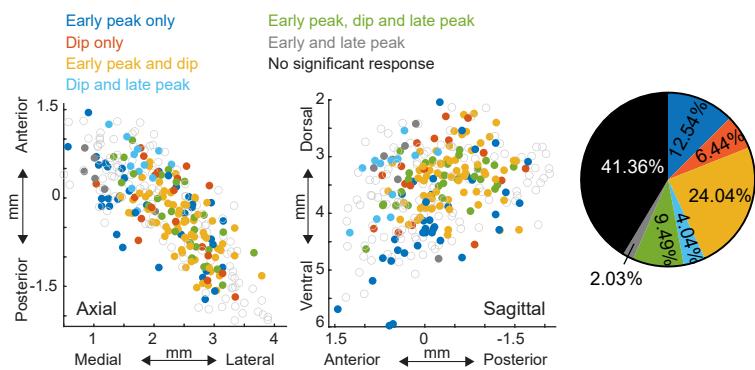
Supplementary Fig. 2
Related to Fig. 2



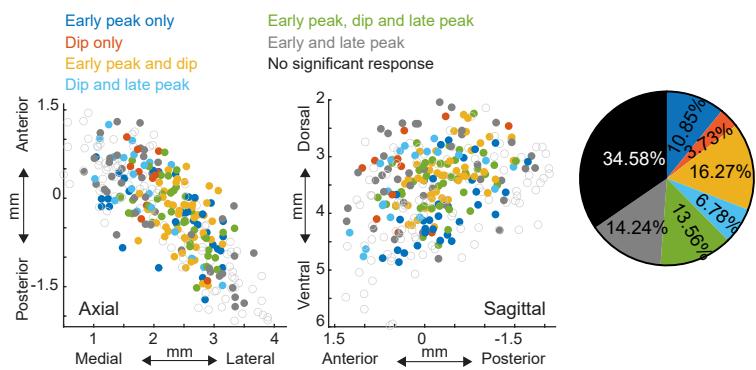
Supplementary Fig.3
Related to Fig. 3

a

Pre-learning

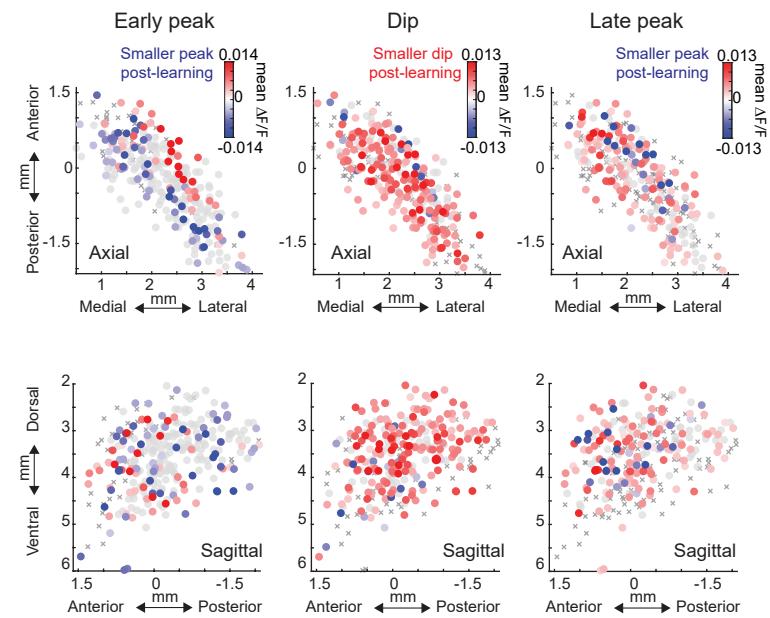


Post-learning



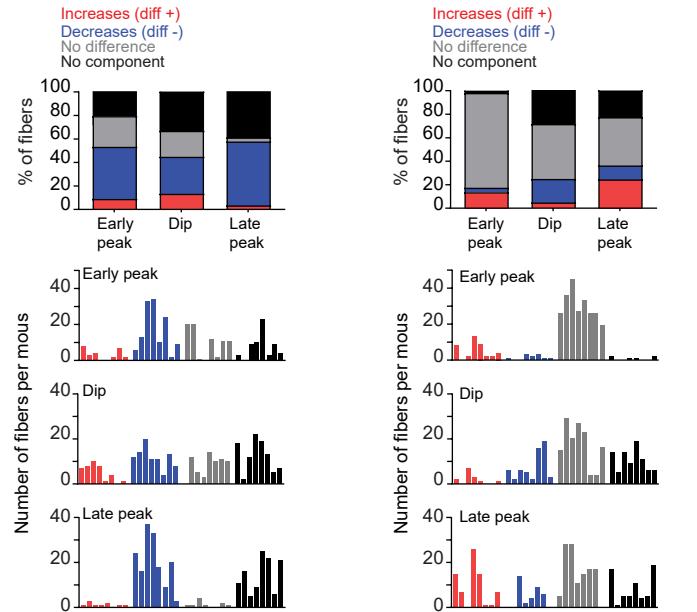
b

Reward: Post-learning $\Delta F/F$ - Pre-learning $\Delta F/F$



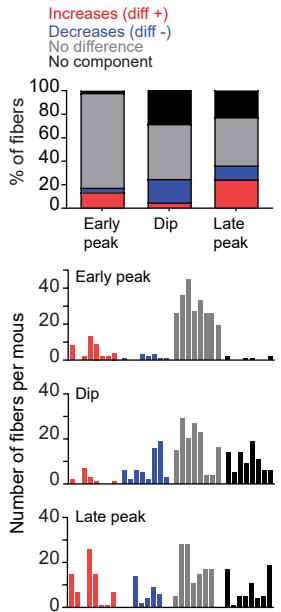
c

Unpredicted reward - post-learning reward

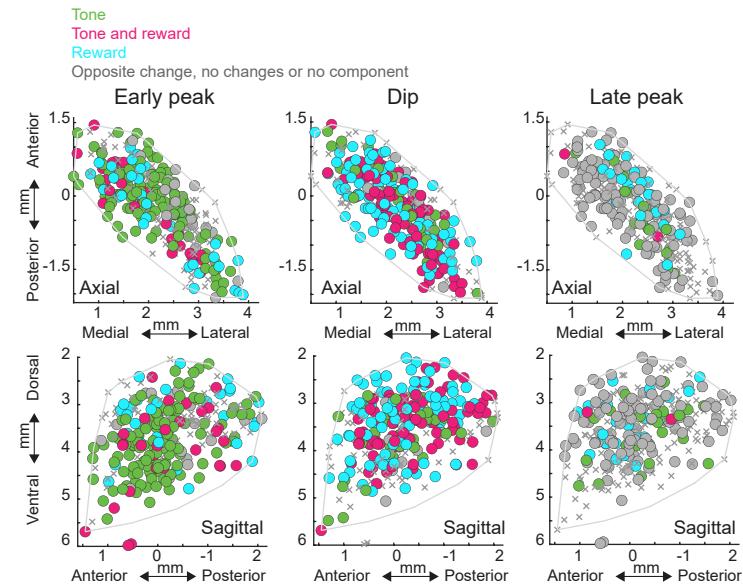


d

20% reward prob - 80% reward prob

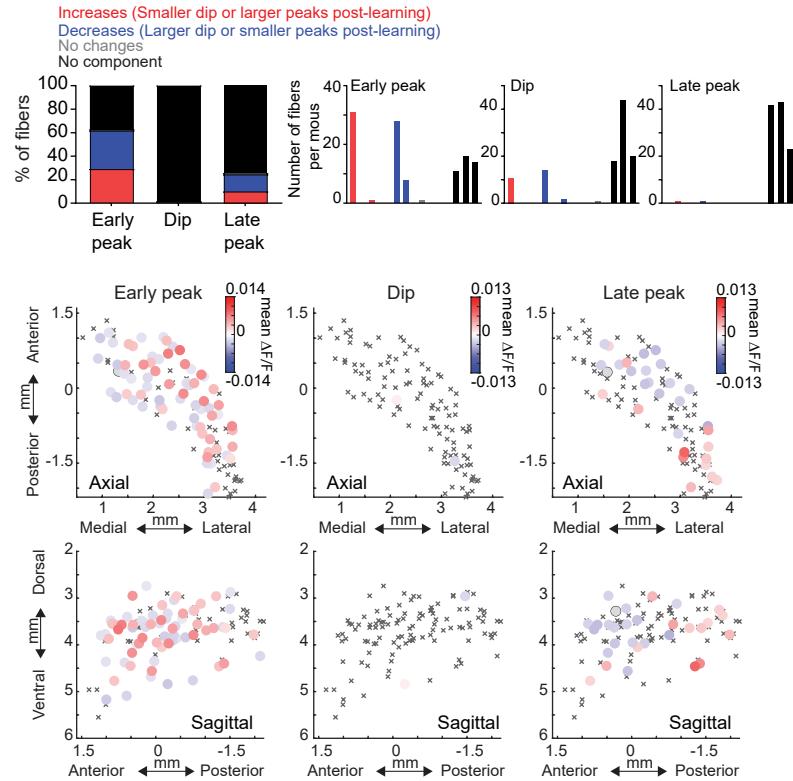


e



f

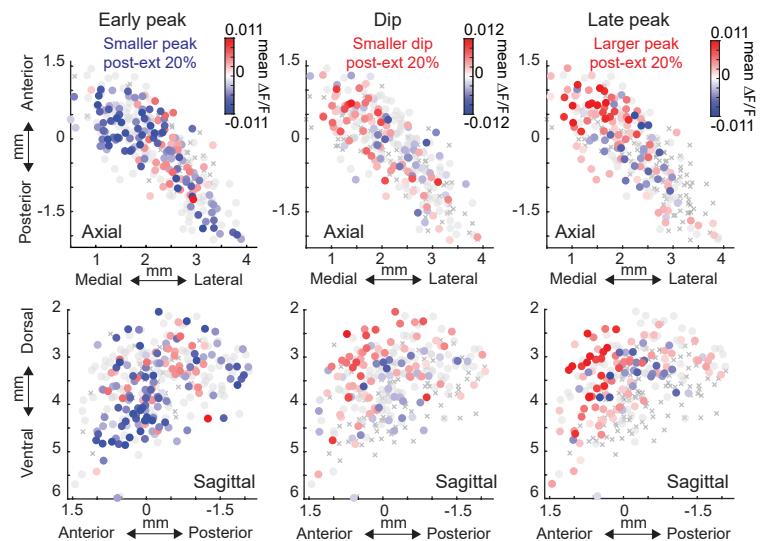
ACh mutant mice reward: Post-learning $\Delta F/F$ - Pre-learning $\Delta F/F$



Supplementary Fig.4
Related to Fig. 4

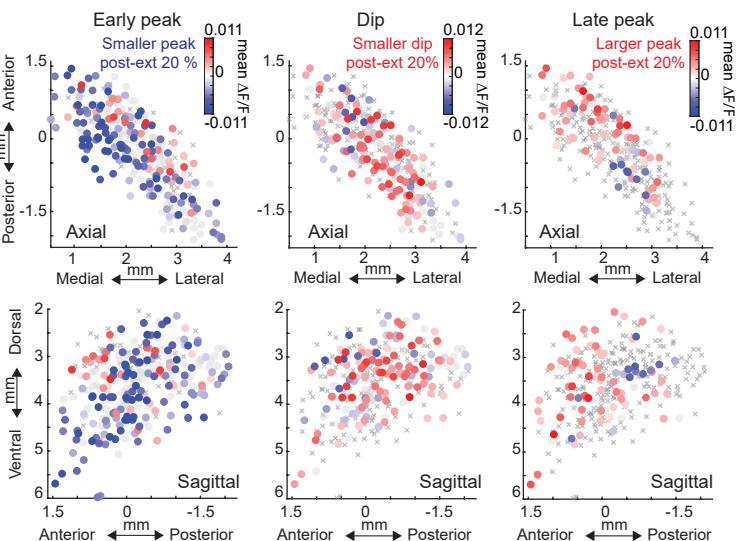
a

Light: Extinction $\Delta F/F$ (20%) - Post-learning $\Delta F/F$



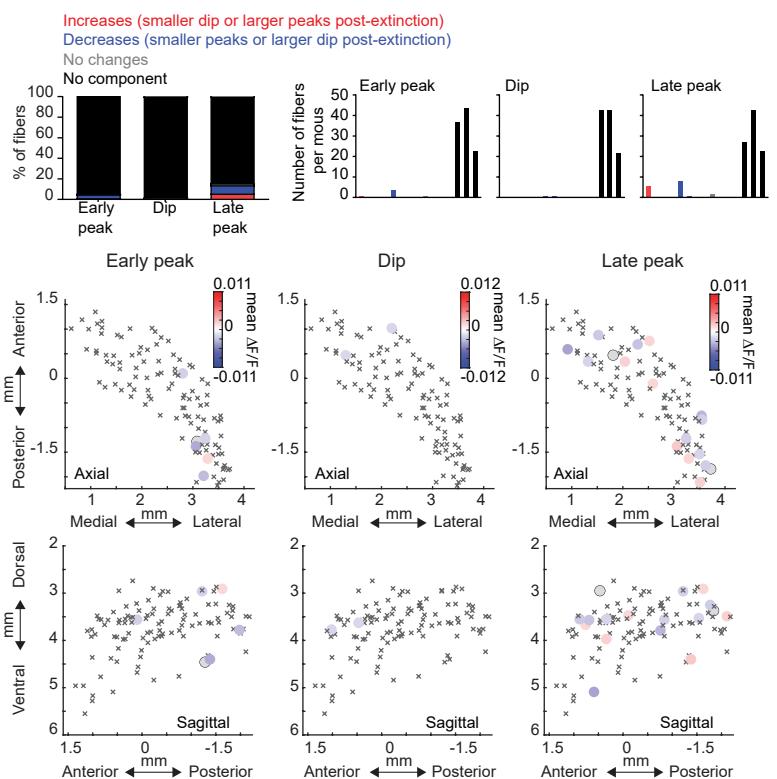
b

Tone: Extinction $\Delta F/F$ (20%) - Post-learning $\Delta F/F$



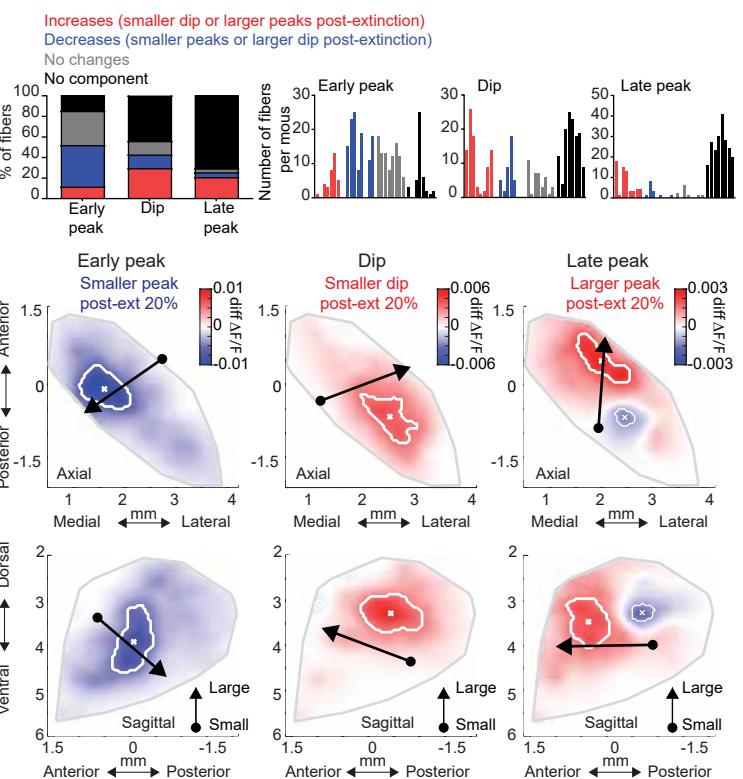
c

ACh mutant mice light: Extinction $\Delta F/F$ (20%) - Post-learning $\Delta F/F$



d

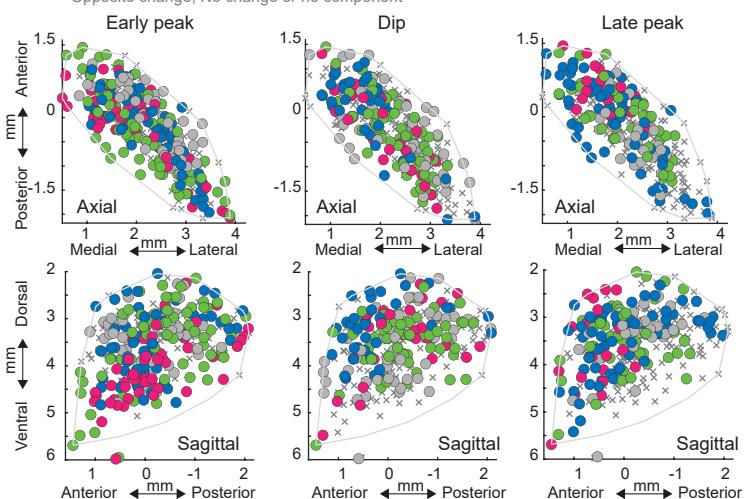
Tone: Extinction $\Delta F/F$ (20%) - Post-learning $\Delta F/F$



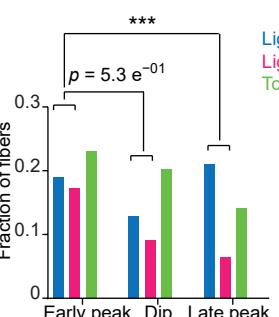
e

Light
Light and tone
Tone

Opposite change, No change or no component



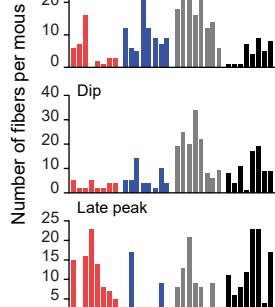
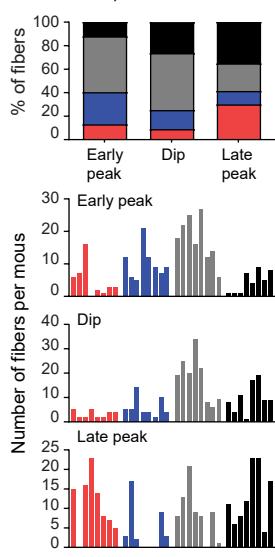
f



Supplementary Fig. 5 Related to Fig. 4

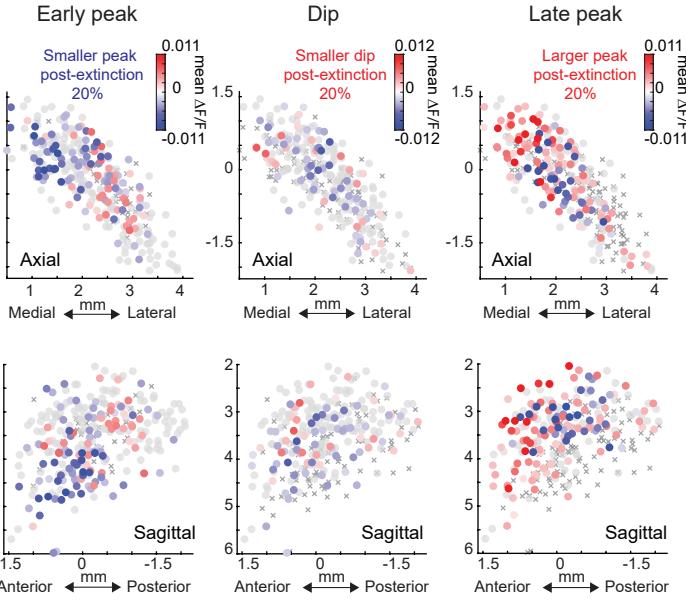
a

Increases (smaller dip or larger peaks post-extinction 20%)
Decreases (smaller peaks or larger dip post-extinction 20%)
No changes
No component



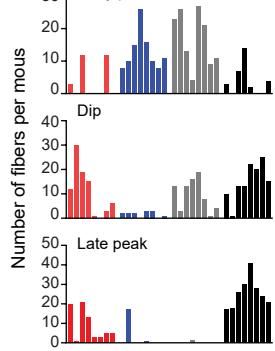
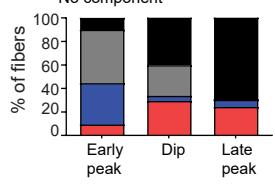
b

Light: Extinction $\Delta F/F$ (20%) - Extinction $\Delta F/F$ (80%)



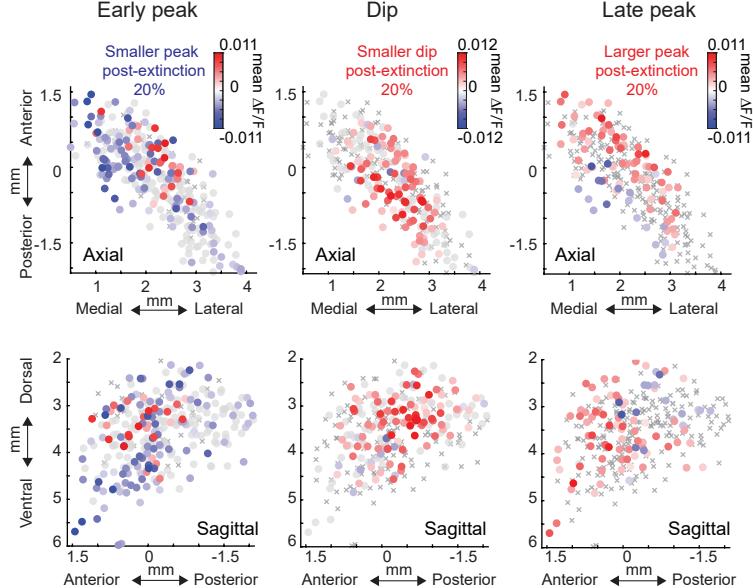
c

Increases (smaller dip or larger peaks post-extinction 20%)
Decreases (smaller peaks or larger dip post-extinction 20%)
No changes
No component

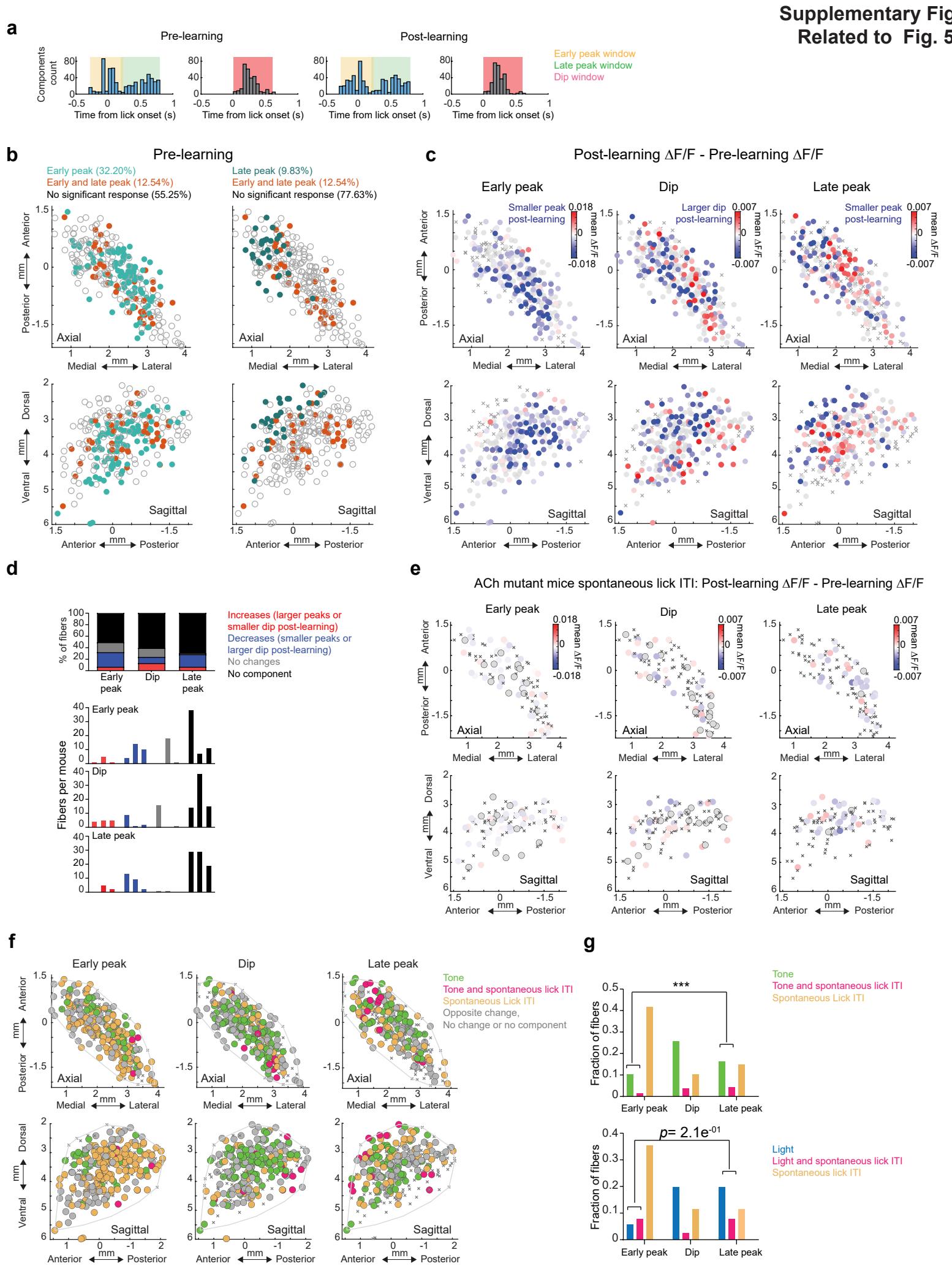


d

Tone: Extinction $\Delta F/F$ (20%) - Extinction $\Delta F/F$ (80%)



Supplementary Fig. 6
Related to Fig. 5



Supplementary Fig.7
Related to Fig. 2,3,4 and 5

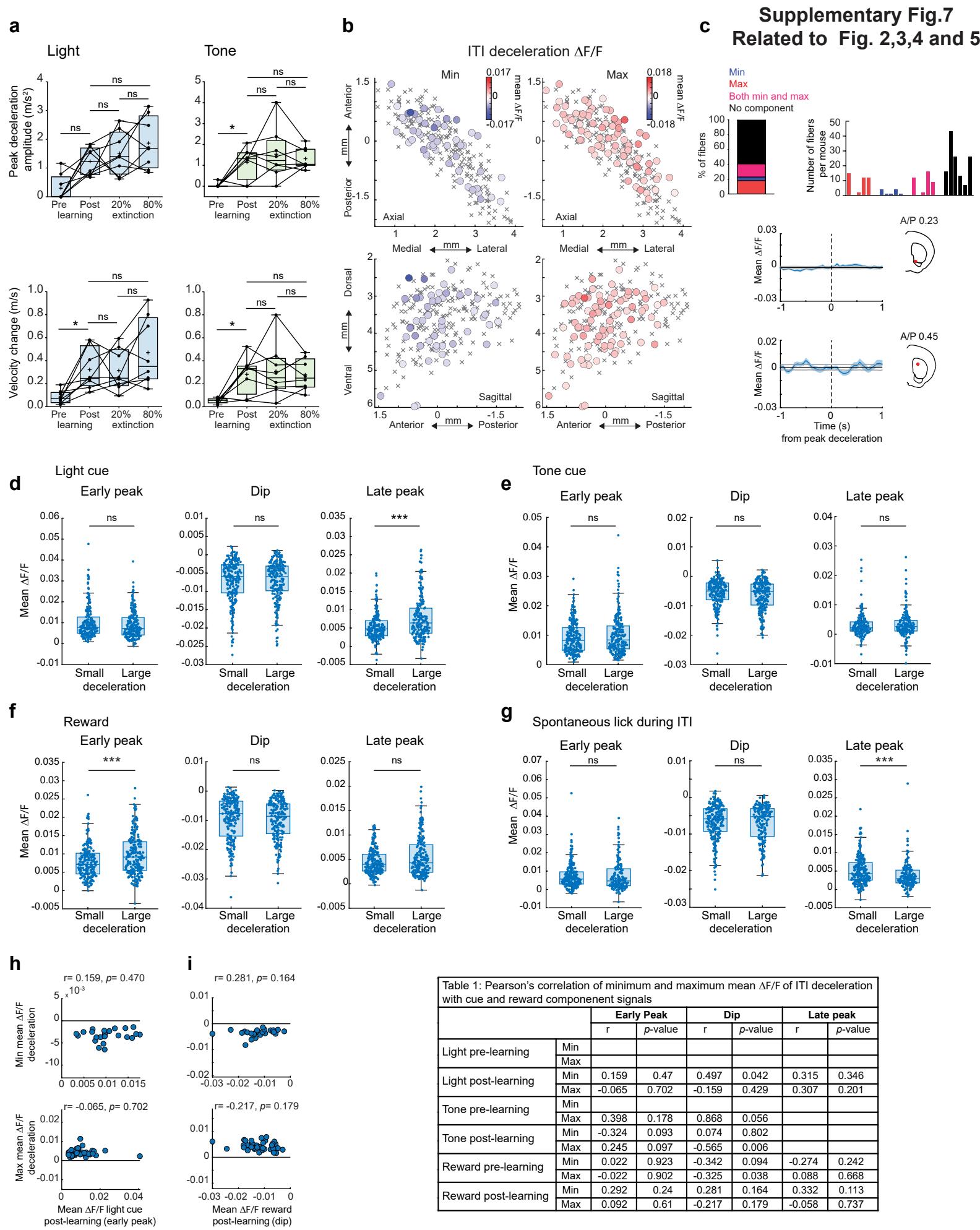


table will not be a part of this figure it will be submitted separately as doc file