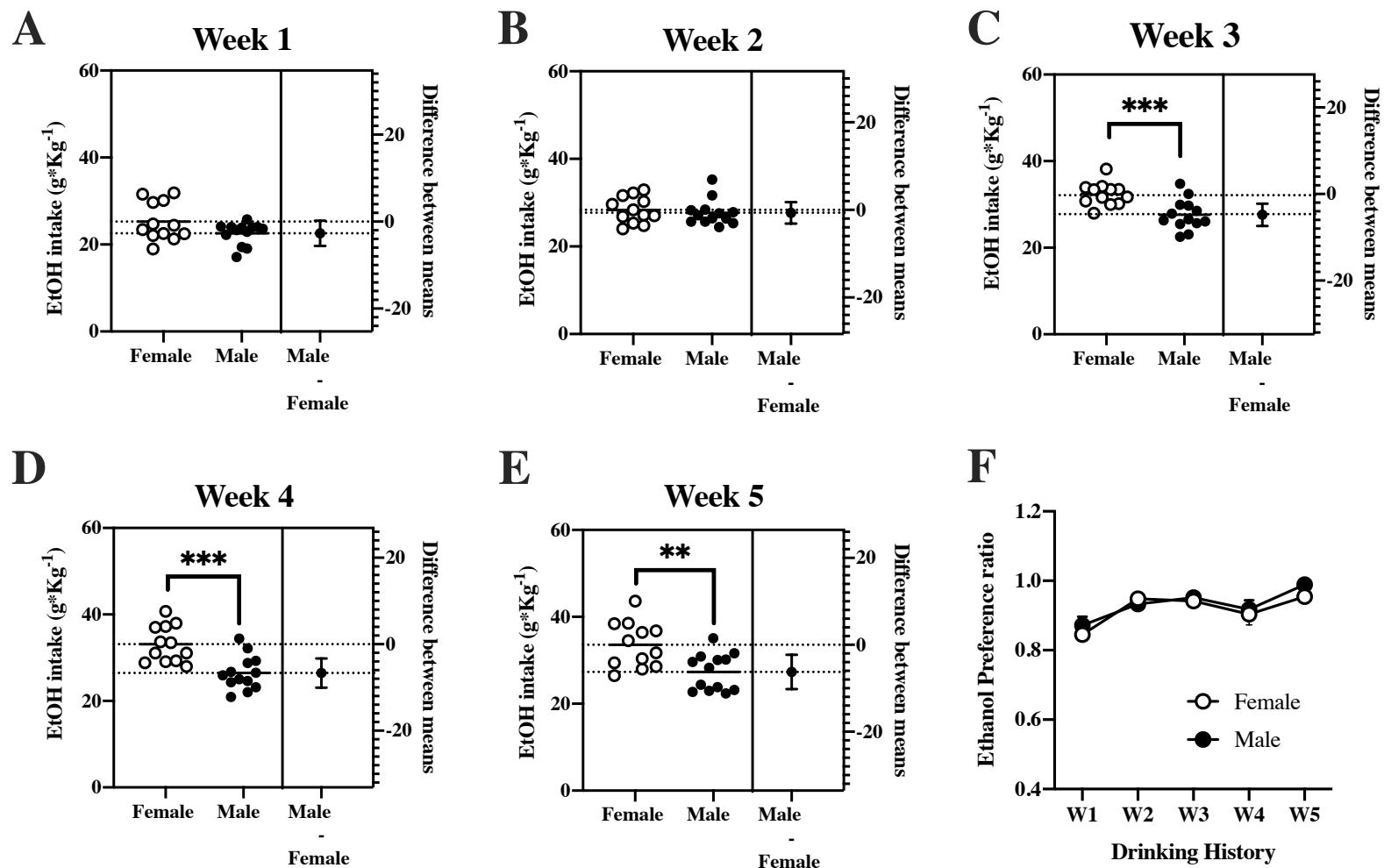
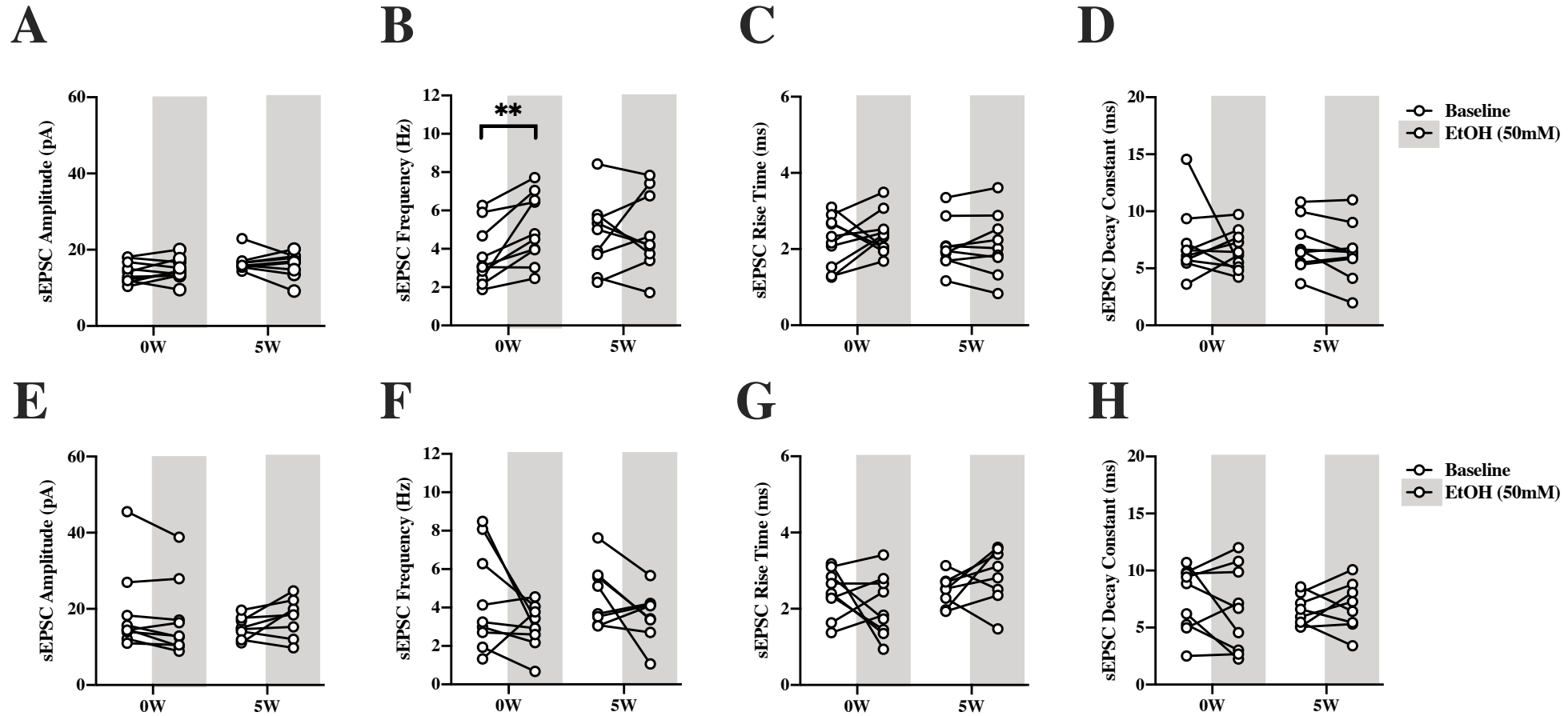


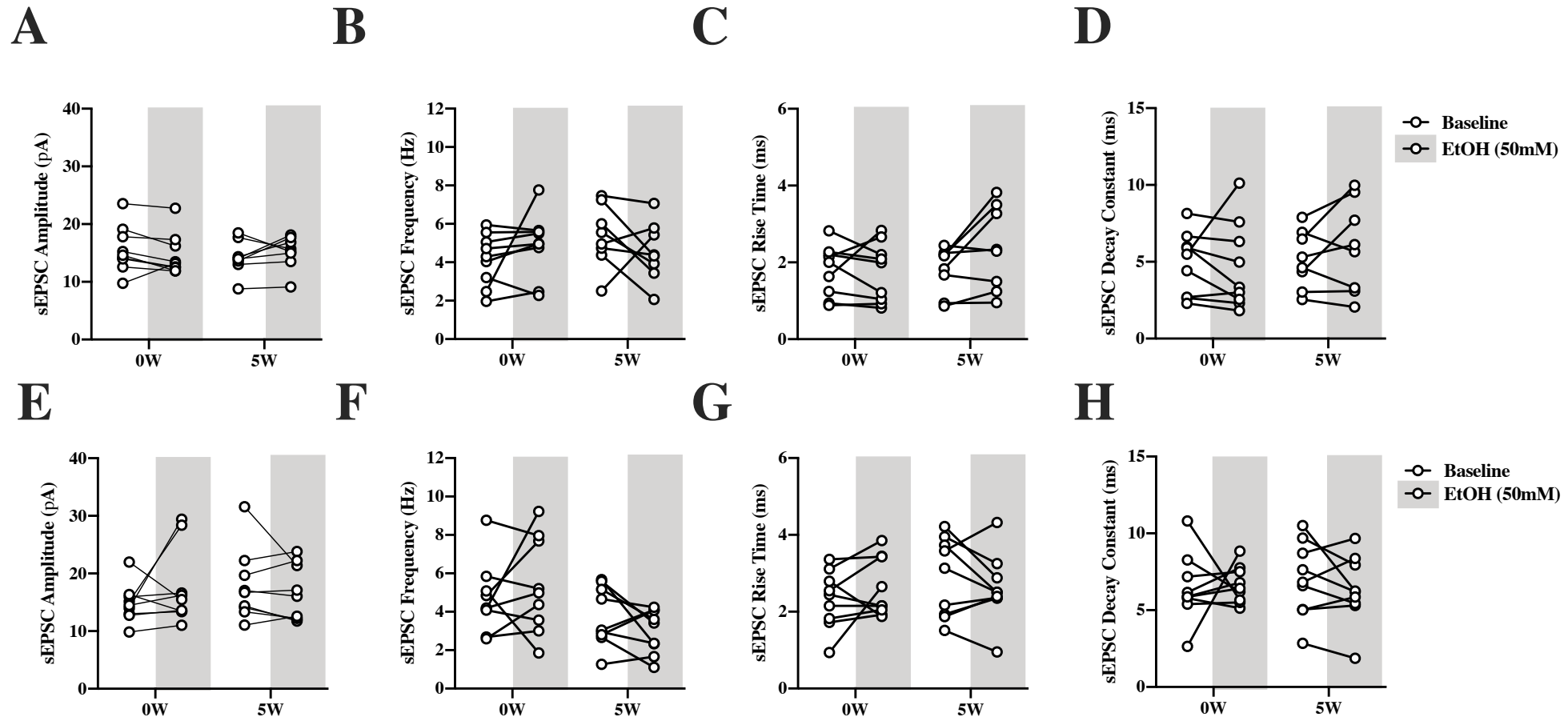
Supplemental Figure 1. Coronal brain sections. A) Illustrative representation of the approximate brain regions (with respect to Bregma; according to Paxinos and Franklin, 2001) considered for the electrophysiological recordings. B) Pictogram delimiting the criterion of DMS and DLS regions where recordings were made (pictogram was modified from The Mouse Brain Library; Rosen et al., 2000).



Supplemental Figure 2. Estimation of weekly EtOH consumption and weekly preference ratios. (A-E) Scatterplot showing averaged weekly EtOH consumption per subject, separated by sex (male: black circles; female: white circles) horizontal line represent the mean of each group. Right axes shows the difference between the means \pm standard deviation. Dashed horizontal lines show the probability distribution of the difference between the two means. Unpaired t test revealed significant differences between male and female mice in week 3 ($t_{23}= 3.85$; $p=0.0008$), week 4 ($t_{23}= 4.09$; $p=0.0004$), and week 5 ($t_{23}= 3.28$; $p=0.0033$). (F) Average weekly EtOH preference ratios by sex across the 5-week drinking period. Preference data are presented as mean \pm standard error of the mean, calculated as (10% EtOH fluid consumed)/(total fluid consumed). Two-way ANOVA showed no significant interaction between weeks of treatment and sex ($F_{(4, 92)}=0.53$, $p=0.71$), no main effect by sex ($F_{(4, 92)}=1.06$, $p=0.31$), but significant differences by weeks of treatment ($F_{(4, 92)}=10.9$, $p<0.0001$).



Supplemental Figure 3. Acute effect of EtOH on sEPSC parameters of DMS neurons. Parameters of sEPSC are shown for (A-D) female and (E-H) male data before (baseline) and after acute application of 50 mM EtOH (gray shadow) for neurons from control (0W) and drinking history (5W) mice. Paired t-test analysis revealed significant acute EtOH effects on frequency (B) in female mice ($t_9=3.95$; $p=0.003$), without change in amplitude, rise time or decay constant. No significant acute EtOH effects were found for males.



Supplemental Figure 4. Acute effect of EtOH on sEPSC parameters of DLS neurons. Parameters of sEPSC are shown for (A-D) female and (E-H) male neurons in baseline conditions and after acute application of EtOH (gray shadow) for the control group (0W) group and drinking history group (5W). Paired t-test analysis revealed no significant acute EtOH effect for female or male mice.

Supplemental Table 1. Summary of correlations of alcohol blood concentration and alcohol intake contrasted with recorded sEPSC parameters

Variables	DMS				DLS			
	EtOH intake (g*kg ⁻¹)		BEC (mg/dL)		EtOH intake (g*kg ⁻¹)		BEC (mg/dL)	
	Female	Male	Female	Male	Female	Male	Female	Male
	sEPSC Amplitude (pA)	$r^2= 0.034$	$r^2= 0.041$	$r^2= 0.051$	$r^2= 0.010$	$r^2= 0.204$	$r^2= 0.019$	$r^2= 0.120$
sEPSC Frequency (Hz)	$r^2= 0.046$	$r^2= 0.047$	$r^2= 0.064$	$r^2= 0.035$	$r^2= 0.011$	$r^2= 0.128$	$r^2= 0.010$	$r^2= 0.051$
sEPSC Rise Time (ms)	$r^2= 0.018$	$r^2= 0.009$	$r^2= 0.006$	$r^2= 0.022$	$r^2= 0.192$	$r^2= 0.020$	$r^2= 0.190$	$r^2= 0.040$
sEPSC Decay Constant (ms)	$r^2= 0.128$	$r^2= 0.001$	$r^2= 0.097$	$r^2= 0.009$	$r^2= 0.114$	$r^2= 0.073$	$r^2= 0.038$	$r^2= 0.066$

All correlational analysis were performed using data of BECs and EtOH intakes collected from the last day of TBC. No significant correlation was found between the variables.