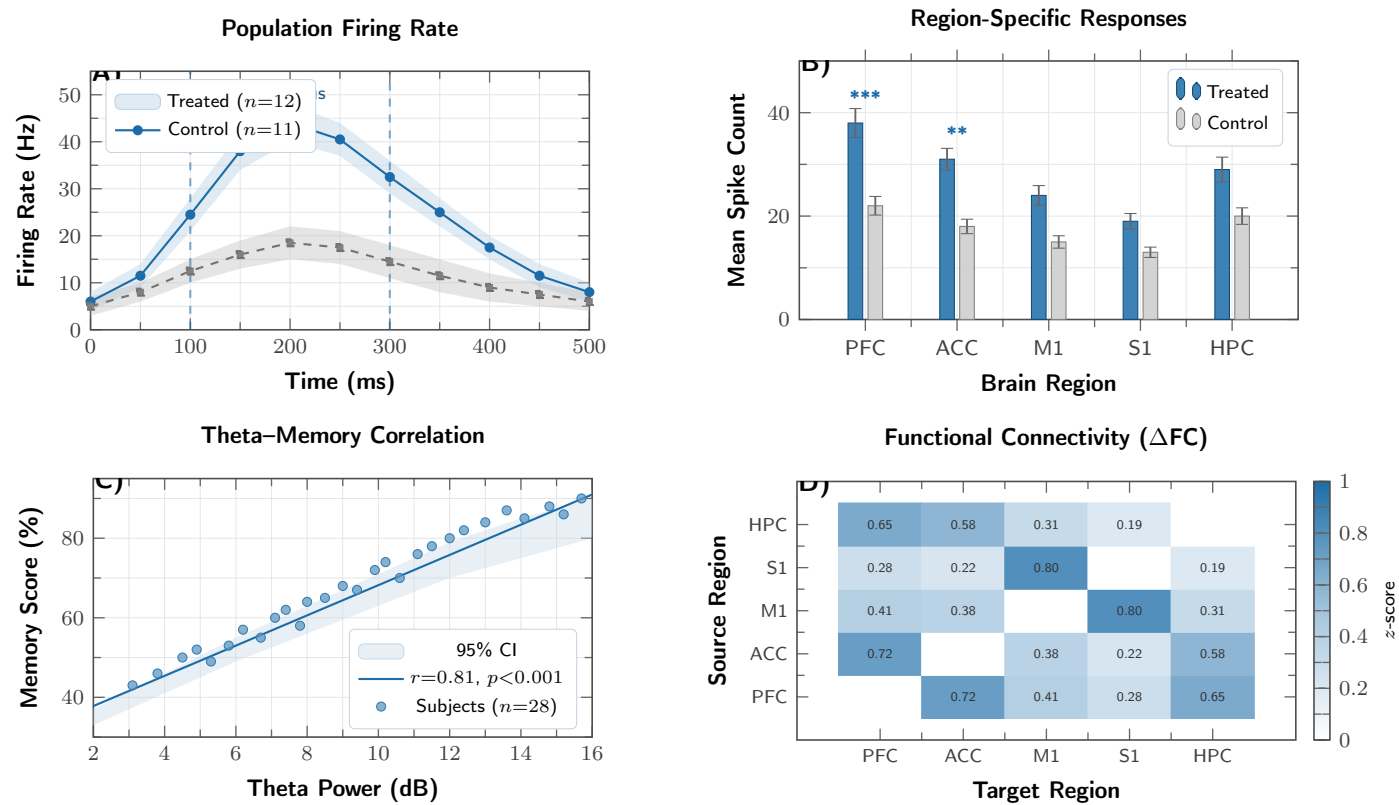


# Neuronal Activity Dynamics and Connectivity in Prefrontal Cortex

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**Figure 1 | Neuronal dynamics and connectivity in prefrontal and associated cortices following acute neuromodulation.** (A) Population-averaged firing rate (mean  $\pm$  SD) for treated (blue) and control (grey) cohorts across a 500-ms trial window. Dashed vertical lines denote stimulus onset (100 ms) and offset (300 ms). (B) Mean spike counts per brain region ( $\pm$  SEM). Asterisks indicate Bonferroni-corrected significance: \*\* $p<0.01$ , \*\*\* $p<0.001$ . (C) Scatter plot of individual subjects' theta-band power versus delayed memory score ( $n=28$ ); regression line and 95% CI shown;  $r=0.81$ ,  $p<0.001$ . (D) Symmetric functional connectivity change matrix ( $\Delta FC$ , z-score) in the treated group relative to baseline. Diagonal entries are zero (self-connectivity undefined). PFC, prefrontal cortex; ACC, anterior cingulate cortex; M1, primary motor cortex; S1, primary somatosensory cortex; HPC, hippocampus.