

Table 4

Exploration session	Metric	Time-Window ANOVA Statistics	Paired t-test against 0
Open Field 2 (HC)	Delta/beta2 MI time window comparison	$F_{3,8} = 1.12, p = 0.359$	Win1 - $t_{2,8}=3.25, p= 0.011$ Win2 - $t_{2,8}=2.74, p= 0.025$ Win3 - $t_{2,8}=2.76, p= 0.024$ Win4 - $t_{2,8}=2.82, p= 0.022$
Open Field 2 (HC)	Delta/lowG MI time window comparison	$F_{3,8} = 0.22, p = 0.223$	Win1 - $t_{2,8}=2.85, p= 0.021$ Win2 - $t_{2,8}=2.76, p= 0.024$ Win3 - $t_{2,8}=2.59, p= 0.031$ Win4 - $t_{2,8}=3.81, p= 0.005$
Open Field 2 (HC)	Theta/beta2 MI time window comparison	$F_{3,8} = 0.41, p = 0.74$	Win1 - $t_{2,8}=6.68, p> 0.001$ Win2 - $t_{2,8}=3.45, p= 0.008$ Win3 - $t_{2,8}=4.16, p= 0.003$ Win4 - $t_{2,8}=3.04, p= 0.015$
Open Field 2 (HC)	Theta/lowG MI time window comparison	$F_{3,8} = 2.44, p = 0.088$	Win1 - $t_{2,8}=4.77, p= 0.001$ Win2 - $t_{2,8}=4.35, p= 0.002$ Win3 - $t_{2,8}=4.32, p= 0.002$ Win4 - $t_{2,8}=4.08, p= 0.003$
Open Field 2 (HC)	Theta/midG MI time window comparison	$F_{3,8} = 1.44, p = 0.25$	Win1 - $t_{2,8}=2.93, p= 0.019$ Win2 - $t_{2,8}=2.92, p= 0.019$ Win3 - $t_{2,8}=2.96, p= 0.018$ Win4 - $t_{2,8}=2.79, p= 0.023$
Open Field 2 (mPFC)	Delta/beta2 MI time window comparison	$F_{3,8} = 0.86, p = 0.475$	Win1 - $t_{2,8}=1.83, p= 0.109$ Win2 - $t_{2,8}=1.38, p= 0.208$ Win3 - $t_{2,8}=2.40, p= 0.046$ Win4 - $t_{2,8}=1.71, p= 0.129$
Open Field 2 (mPFC)	Delta/lowG MI time window comparison	$F_{3,8} = 0.88, p = 0.464$	Win1 - $t_{2,8}=3.22, p= 0.042$ Win2 - $t_{2,8}=1.88, p= 0.141$ Win3 - $t_{2,8}=2.02, p= 0.174$ Win4 - $t_{2,8}=1.44, p= 0.220$
Open Field 2 (mPFC)	Theta/beta2 MI time window comparison	$F_{3,8} = 0.28, p = 0.83$	Win1 - $t_{2,8}=2.65, p= 0.032$ Win2 - $t_{2,8}=2.52, p= 0.039$ Win3 - $t_{2,8}=3.23, p= 0.014$ Win4 - $t_{2,8}=2.50, p= 0.040$
Open Field 2 (mPFC)	Theta/lowG MI time window comparison	$F_{3,8} = 0.77, p = 0.510;$	Win1 - $t_{2,8}=3.78, p= 0.006$ Win2 - $t_{2,8}=3.02, p= 0.019$ Win3 - $t_{2,8}=2.21, p= 0.062$ Win4 - $t_{2,8}=2.59, p= 0.035$
Open Field 2 (mPFC)	Theta/midG MI time window comparison	$F_{3,8}=0.36, p = 0.781$	Win1 - $t_{2,8}=4.03, p= 0.133$ Win2 - $t_{2,8}=2.37, p= 0.061$ Win3 - $t_{2,8}=2.51, p= 0.035$ Win4 - $t_{2,8}=3.35, p= 0.063$
Open Field 2 (PAR)	Delta/beta2 MI time window comparison	$F_{3,8} = 0.50, p = 0.683$	Win1 - $t_{2,8}=1.47, p= 0.191$ Win2 - $t_{2,8}=1.57, p= 0.166$

			Win3 - $t_{2,8}=2.77$, p= 0.032 Win4 - $t_{2,8}=2.46$, p= 0.048
Open Field 2 (PAR)	Delta/lowG MI time window comparison	$F_{3,8} = 0.63$, p = 0.599	Win1 - $t_{2,8}=1.84$, p= 0.114 Win2 - $t_{2,8}=0.48$, p= 0.642 Win3 - $t_{2,8}=0.25$, p= 0.810 Win4 - $t_{2,8}=1.39$, p= 0.213
Open Field 2 (PAR)	Theta/beta2 MI time window comparison	$F_{3,8} = 0.39$, p = 0.755	Win1 - $t_{2,8}=2.62$, p= 0.039 Win2 - $t_{2,8}=2.31$, p= 0.059 Win3 - $t_{2,8}=2.98$, p= 0.024 Win4 - $t_{2,8}=2.41$, p= 0.052
Open Field 2 (PAR)	Theta/lowG MI time window comparison	$F_{3,8} = 1.03$, p = 0.40;	Win1 - $t_{2,8}=1.44$, p= 0.198 Win2 - $t_{2,8}=2.11$, p= 0.078 Win3 - $t_{2,8}=1.60$, p= 0.159 Win4 - $t_{2,8}=1.95$, p= 0.098
Open Field 2 (PAR)	Theta/midG MI time window comparison	$F_{3,8}=0.21$, p = 0.881	Win1 - $t_{2,8}=1.74$, p= 0.132 Win2 - $t_{2,8}=2.10$, p= 0.079 Win3 - $t_{2,8}=2.07$, p= 0.083 Win4 - $t_{2,8}=2.14$, p= 0.075
Open Field 1 (HC)	Beta/Theta MI time window comparison	$F_{3,8}=1.41$, p = 0.247	Win1 - $t_{2,8}=2.89$, p= 0.019 Win2 - $t_{2,8}=3.17$, p= 0.013 Win3 - $t_{2,8}=3.71$, p= 0.005 Win4 - $t_{2,8}=3.46$, p= 0.008
Open Field 2 (HC)	Beta/Theta MI time window comparison	$F_{3,7}=2.63$, p = 0.081	Win1 - $t_{2,7}=5.17$, p= 0.002 Win2 - $t_{2,7}=8.19$, p= 0.000 Win3 - $t_{2,7}=9.76$, p= 0.000 Win4 - $t_{2,7}=5.76$, p= 0.001
Object 1 (HC)	Beta/Theta MI time window comparison	$F_{3,7}=0.63$, p = 0.625	Win1 - $t_{2,7}=5.21$, p= 0.002 Win2 - $t_{2,7}=5.92$, p= 0.001 Win3 - $t_{2,7}=4.65$, p= 0.003 Win4 - $t_{2,7}=4.52$, p= 0.004
Object 2 (HC)	Beta/Theta MI time window comparison	$F_{3,7}=2.84$, p = 0.073	Win1 - $t_{2,7}=4.28$, p= 0.008 Win2 - $t_{2,7}=4.07$, p= 0.009 Win3 - $t_{2,7}=4.65$, p= 0.005 Win4 - $t_{2,7}=3.92$, p= 0.011

Table 4 – Table of statistics related to the supplementary figure 2. Descriptive statistics and comparisons with different MI time window analysis and the comparison with null hypothesis 0. Black: Significant p values, Red: non-significant p values.