[1]Highlightshighlights

Neural trajectories in the hippocampus exhibited greater variability during a working memory (WM) task compared to

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Subject ID# of sessionsAHLAHRPHLPHRECLECRALAR

*Tables [1]Tablestables [2]ID 01id$_0$1[$htbp$]

1	4	n.a.			n.a.	n.a.	
lightgray 2	7						
3	3					n.a.	
lightgray 4	2						AHL
5	3	n.a.	n.a.	n.a.	n.a.	n.a.	
lightgray 6	6						AHI
7	4						
lightgray 8	5						
9	2						

This figure denotes the placements of electrodes and seizure onset zones. Regions marked with were included in the

[2]ID 02id$_0$2[$htbp$] $width$ =**Silhouette Score of UMAP Cluster**

Subject	**AHL**	**AHR**	**PHL**	**PHR**
1	0.60 0.14	n.a.	n.a.	0.1 0
lightgray 2	0.21 0.16	0.17 0.21	0.18 0.22	0.20 0.15
3	0.40 0.42	0.83 0.12	n.a.	n.a.
lightgray 4	0.10 0.00	0.10 0.00	0.90 0.00	0.10 0.14
5	n.a.	n.a.	n.a.	n.a.
lightgray 6	0.63 0.06	n.a.	n.a.	0.27 0.06
7	0.10 0.00	0.35 0.35	0.37 0.47	0.10 0.00
lightgray 8	0.13 0.10	n.a.	0.28 0.49	n.a.
9	n.a.	0.85 0.07	0.15 0.07	n.a.

The silhouette scores (mean ±SD across sessions per subject) for UMAP clustering of SWR^+ candidates and SWI

[2]ID 03id$_0$3[$htbp$] $width$ = **Summ**

Subject ID	**# of sessions**	**# of trials**	**ROI**	**# of SWRs**	**SWR incidence [Hz]**
#1	2	100	AHL	274	0.34
lightgray #3	2	97	AHR	325	0.42
#4	2	99	PHL	202	0.26
lightgray #6	2	100	AHL	297	0.37
#9	2	97	AHR	72	0.09
lightgray	Total = 10	Total = 493		Total = 1170	0.30 0.13 (mean SD)

The table provides statistics of presumptive CA1 regions and SWR events. Only the initial two sessions (sessions 1

*Figures [1]Figuresfigures

[ht] [2]ID 01figure$_i d_0 1[width = 1]./src/figures/.png/Figure_I D_0 1.png$ **Local Field Potentials, Multiunit Activ**
A. Representative wideband LFP signals for intracranial EEG recording from the left hippocampal head are presen

[ht] [2]ID 02figure$_i d_0 2[width = 0.5]./src/figures/.png/Figure_I D_0 2.png$ **State-Dependent Neural Trajectory o**
A. Neural trajectories (NTs) depicted as a point cloud within the first three-dimensional factors derived from GPF

[ht] [2]ID 03figure$_i d_0 3[width = 1]./src/figures/.png/Figure_I D_0 3.png$ **Positive Correlation between Memory**
A. The relationship between set size (number of letters to be encoded) and accuracy in the working memory task (

[ht] [2]ID 04figure$_i d_0 4[width=1]./src/figures/.png/Figure_I D_0 4.png$**Detection of SWRs in Putative CA1 R**
A. Two-dimensional UMAP [0] projection displays multi-unit spikes during SWR$^+$ candidates (*purple*) and SWR$^-$

[ht] [2]ID 05figure$_i d_0 5[width = 1]./src/figures/.png/Figure_I D_0 5.png$**Transient Change in Neural Trajectory**
A. The distance from origin (O) of the peri-sharp-wave-ripple neural trajectory (mean $\pm 95\%$ confidence interval).

[ht] [2]ID 06figure$_i d_0 6[width = 1]./src/figures/.png/Figure_I D_0 6.png$ **Visualization of Neural Trajectory Du**
The panels depict hippocampal neural trajectories (NTs) during SWR projected onto two-dimensional spaces. ***A.*** S

[ht] [2]ID 07figure$_i d_0 7[width = 0.5]./src/figures/.png/Figure_I D_0 7.png$ **Direction of Neural Trajectory Durin**
A*–*B The kernel density estimation distributions of $\overrightarrow{\mathrm{eSWR}^+} \cdot \overrightarrow{\mathrm{rSWR}^+}$ (*pink circles*), $\overrightarrow{\mathrm{eSWR}^+} \cdot \overrightarrow{\mathrm{g_E g_R}}$ (*blue triangles*