

Movie-watching

Journal: Nature Communications **Title:** Movie-watching evokes ripple-like activity within events and at event boundaries **Authors:** Marta Silva, Xiongbo Wu, Marc Sabio, Estefanía Conde-Blanco, Pedro Roldán, et al. **Date:** 1 July 2025 **DOI:** 10.1038/s41467-025-60788-0 **Study type:** Human intracranial electrophysiology (observational / exploratory)

□ Aim

To investigate whether **ripple-like activity** (a neural oscillatory pattern ~80–120 Hz, known from hippocampal sharp-wave ripples) occurs in humans during **naturalistic experiences**, particularly during **movie watching**, and whether such ripples align with **event boundaries** and **within-event saliency**.

□ Methods

- **Participants:** 14 epilepsy patients undergoing iEEG (intracranial EEG).
- **Stimuli:** Narrative films with annotated **event boundaries**.
- **Analysis:**
 - Detection of ripple-like events in medial temporal lobe (MTL) and other regions.
 - Temporal alignment with annotated cognitive events.
 - Comparison of ripple rate and power across boundary vs. within-event segments.

□ Key Findings

- Ripple-like activity increases at **event boundaries**, suggesting encoding or segmentation functions.
- Ripples also increase **within events**, especially during emotionally or perceptually salient moments.
- Stronger ripple coupling was observed across MTL and high-level cortical regions (e.g., precuneus, medial PFC).

□ Limitations

- **Epilepsy bias:** All subjects were patients with drug-resistant epilepsy, which may affect generalizability.
- **Correlational design:** Cannot determine causal role of ripples in perception or memory.
- **Ripple detection thresholds:** May vary across individuals and cortical regions; risk of false positives or artifact contamination.

□ Significance

- Supports the idea that **cognitive event segmentation** in naturalistic contexts involves ripple-like neural dynamics.
- Provides evidence that **memory-related oscillations** are not restricted to sleep or explicit tasks, but extend to real-life experiences.
- Suggests new approaches to studying human cognition through **naturalistic paradigms** (e.g., movies) rather than artificial tasks.

□ Conclusion

This exploratory iEEG study provides compelling evidence that ripple-like activity is modulated by **narrative event structure** during passive movie-watching. It contributes to bridging the gap between controlled cognitive neuroscience and real-world neural processing, though replication in non-clinical populations and mechanistic work is still needed.

From:

<https://neurosurgerywiki.com/wiki/> - Neurosurgery Wiki

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=movie_watching

Last update: **2025/07/02 18:16**

