

README file to accompany the preregistered project titled *Mapping human brain development in high definition using invasive electrophysiology*

This readme file gives an overview of the files in the OSF Storage directory and how to navigate in order to run the analyses to reproduce the results and figures in the paper *The development of aperiodic neural activity in the human brain*.

Directory structure – the OSF Storage folder consists of four main folders:

Preprocessed_Data: includes EEG (slope, offset), memory performance, brain volume, and demographic data in .csv files.

Python_Code: includes the analysis scripts that were used to extract the aperiodic slope and offset from the preprocessed iEEG data for each patient across each channel.

R_Code: contains the analysis scripts for formal statistical analysis and figure generation.

volume_stats: contains the gray matter volume estimates for each patient across left and right hemispheres based on the DKT atlas.

Software: to run formal statistical analyses and generate the figures in R, R version 4.2.3 (2023-03-15) -- "Shortstop Beagle" should be used. To run the code to extract aperiodic slopes and offsets in Python, Spyder version 6.0.1 and Python version 3.10.6 should be used. All required modules and packages are listed at the top of each script.