

## Epilepsy Dataset Description

The database contains two types of recordings collected as part the ACTIVE project at Tel-Aviv Sourasky Medical Center (TASMC) Israel. The first set is an fMRI dataset including language fMRI testing and anatomical MRI that were part of a machine learning language lateralization project. These patients have also undergone the invasive WADA test for language lateralization. The second set is EEG-fMRI recording for the detection of the epileptic network. This dataset includes both EEG and fMRI recordings, recorded simultaneously and anatomical MRI. This dataset also includes the markings of at least one trained epileptologist specifying the timings in which the epileptologist found epileptic activity. Both datasets were collected from epilepsy patients candidates for neurosurgical resection of their epileptogenic foci.

### Dataset 1 – fMRI for language assessment

At the root folder you will find:

1. ListOffMRISubjects.xls. This file contains all relevant clinical information including patient number, sex, age, hand dominance, age of seizure onset, lesion by MRI or pathology, standard scalp EEG localization of foci, medication, Wada results and the date of the fMRI scan.
2. Test protocol folder– containing paradigm protocols
3. Patient folder – containing patient specific recordings. A folder for each patient is provided inside. For each patient you will find folders of the raw fMRI scans and an anatomical SPGR MRI scan

### Dataset 2 – EEG-fMRI

At the root folder you will find:

4. fMRI folder- containing fMRI and MRI raw data similar to what has been described for dataset 1
5. EEG folder – containing the simultaneous EEG recording. Collected by a 64 channel EEG cap produced by Brain Products Inc. This data has already been cleaned for removal of gradient and movement artifacts: Cardiobalistic and also non-cardiobalistic, it has been resampled at 250Hz (originally 5000Hz), and filtered with a band pass filter of 0.5-40Hz. The data has also been remontaged to bipolar montage (necessary for cleaning).
6. An xls file/s containing the times of epileptic activity as reviewed by the narrator/s. In patients where epileptic activity was not found this file does not exist.

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