

**LONG TERM  
VIDEO EEG  
MONITORING  
(VEM)**

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**LONG-TERM MONITORING  
FOR EPILEPSY (LTME)**

**A LUXURY SERVICE?  
OR A NEED?**

# DEFINITION:

- Simultaneous recording of EEG and clinical behavior
- Over extended periods of time
- To evaluate patients with paroxysmal disturbances of cerebral function.

- **1-Diagnosis**
- **2-Classification/  
Characterization**
- **3-Quantification**
- **4- Presurgical Evaluations**

**INDICATIONS  
FOR  
LTME**

# 1-DIAGNOSIS

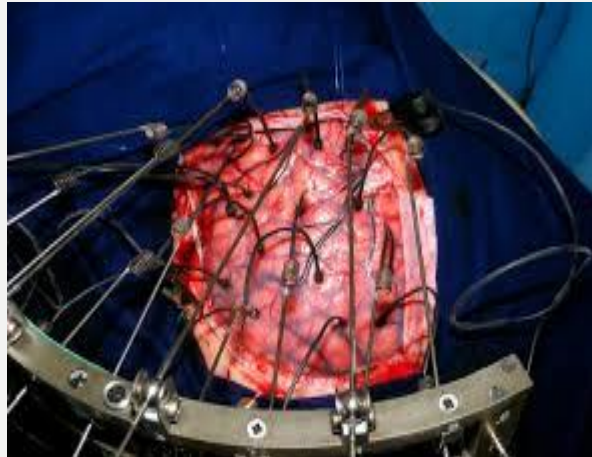
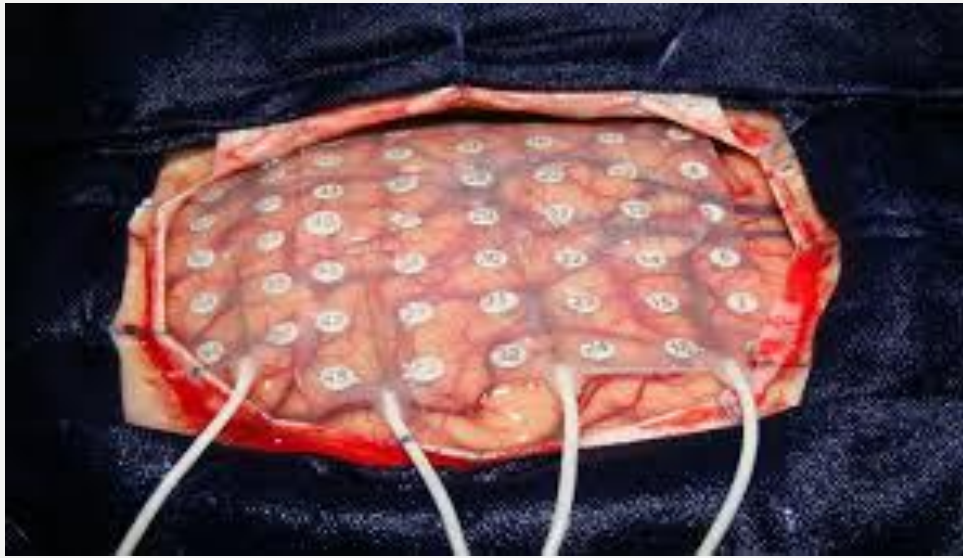
- **Identification** of epileptic **paroxysmal** electrographic and/or behavioral abnormalities.
  - EEG/video is the **"gold standard"** for the diagnosis of nonepileptic events
- **Documentation** of interictal epileptiform discharges
- **Differentiation** of paroxysms due to nonepileptic mechanisms (e.g., syncope, cardiac arrhythmias, transient ischemic attacks, narcolepsy, other sleep disturbances, psychogenic seizures, other behavioral disorders)
- **Verification** of the epileptic nature of the new “spells” in a patient with previously documented and controlled seizures

# 2-CLASSIFICATION/ CHARACTERIZATION

- **Classification** of clinical seizure types
- **Characterization** (lateralization, localization, distribution) of EEG abnormalities, both ictal and interictal, associated with seizure disorders
- **Characterization** of the relationship of seizures to specific precipitating circumstances or stimuli

# 3-QUANTIFICATION

- The number or frequency of seizures and/or interictal discharges
- Quantitative documentation of the EEG response (ictal and interictal) to a therapeutic intervention or modification (e.g., drug alteration)



## 4- PRESURGICAL EVALUATIONS

The most exacting evaluation in LTME is the attempt to localize, by means of surface and/or intracranial electrodes, a region of epileptogenic brain tissue that is the site of origin of recurrent seizures and that is amenable to surgical removal



• برای کامیابی در جراحی، لوکالیزاسیون دقیق ضایعه اولین نیاز است

مانیتورینگ با ویدیو-نوارمغز تنها یکی از چندین گام ضروری (و اغلب اولین گام) برای لوکالیزاسیون کانون موجد تشنج‌ها به شمار می‌رود

و برای لوکالیزاسیون دقیق اغلب اقدامات دیگری ضروری است.

# MODALITIES NEEDED TO HELP FOR SURGERY

- High Resolution MRI with epilepsy protocol
- PET scan
- SISCOM (Subtraction Ictal SPECT coregistered with MRI)
- MEG (MagnetoEncephaloGraphy)
- And
- Intracranial EEG Monitoring



**EQUIPMENTS  
AND**

**HUMAN  
RESOURCES**

# DURATION OF LTME AND ACTIVATION METHODS:

- 24 hours to several days
- For presurgical evaluation Even for typical cases of mesial temporal lobe epilepsy (MTLE), most centers require at least **three to five** successfully recorded Seizures
  - Average Length of Stay (more prolonged in adults)
- Less familiar forms of epilepsy, notably extratemporal seizure disorders, may require considerably more seizures for a reliable localization of the EZ
- In general, AED withdrawal seems to be effective for seizure activation and the enhancement of interictal abnormalities regardless of type of epilepsy
  - No unique general rule



PROLONGED VIDEO-EEG  
MONITORING IS AN ACCEPTABLY  
SAFE PROCEDURE

ADVERSE EVENTS OCCUR BUT NEED  
NOT RESULT IN  
SUBSTANTIAL MORBIDITY OR  
INCREASE LENGTH OF  
HOSPITALIZATION.

**THE ISSUE OF SAFETY**

# HAZARDS

- Status Epilepticus
- Seizure clusters
- Trauma
- Psychological impacts
  
- >>>> The need for informed consent
- ..... AND the need for prior explanations and modification of expectations



**THANK YOU**