

# ICTAL EEG PATTERNS IN GENERALIZED SEIZURE



สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE

Chonpivat Treepong, MD  
Epilepsy Unit, Department of Neurology  
Prasat Neurological Institute



## GENERALIZED EPILEPTIFORM PATTERNS



สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE

Generalized, bisynchronous, symmetric spike and wave pattern



3 Hz  
Spike and Wave



1

## 3 Hz Spike and Wave

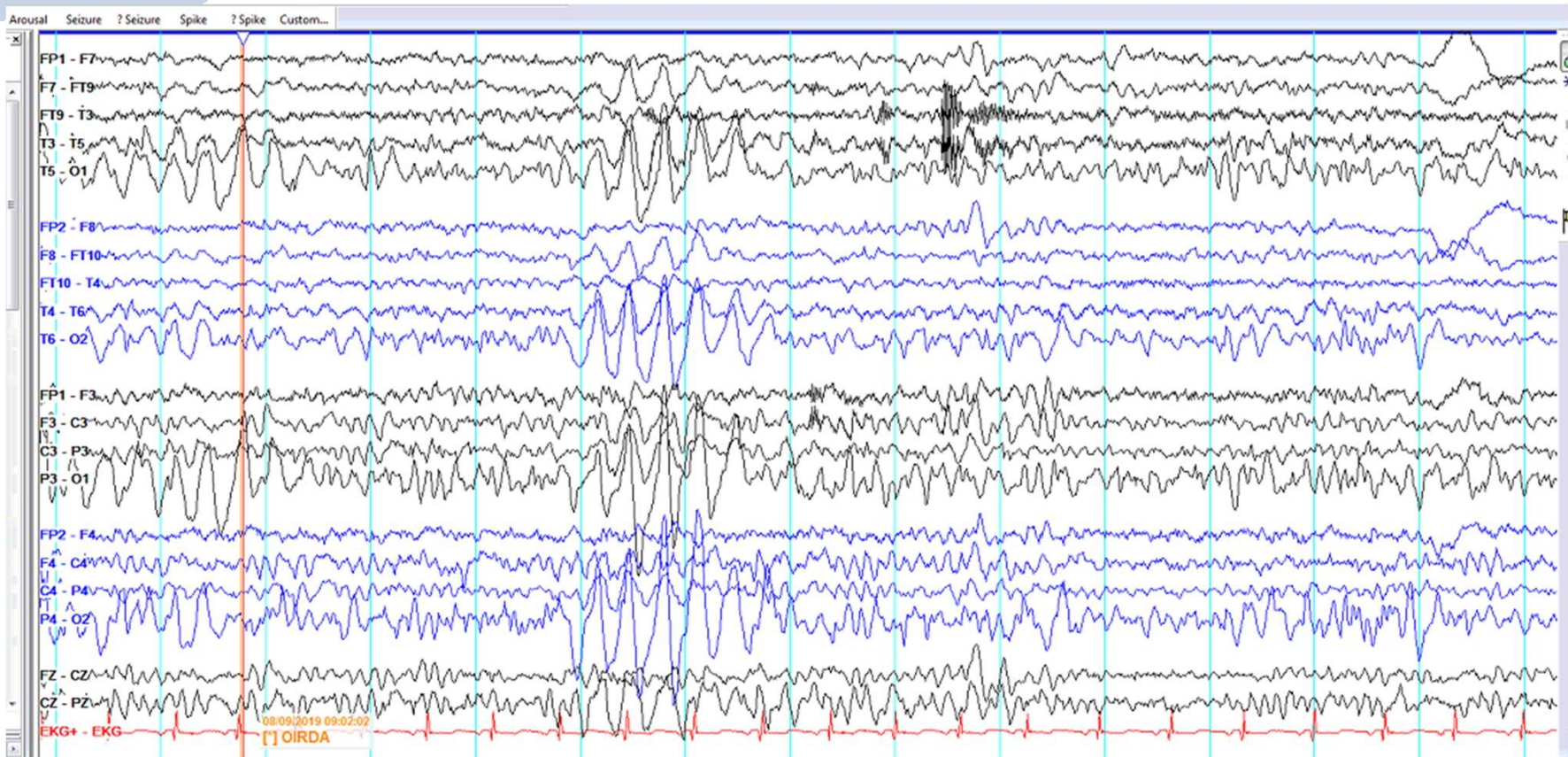


สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE

## 3 Hz Spike and Wave

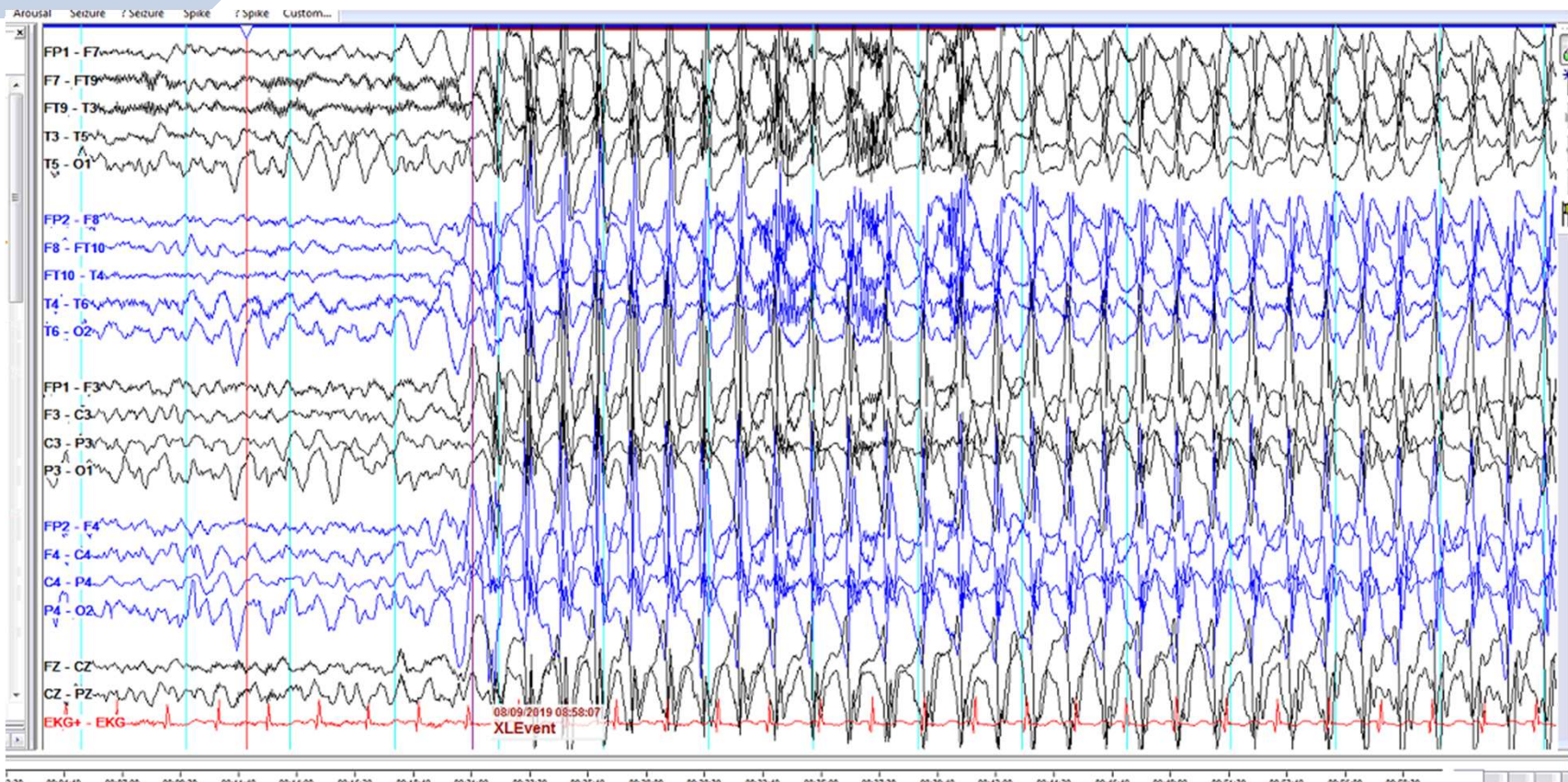


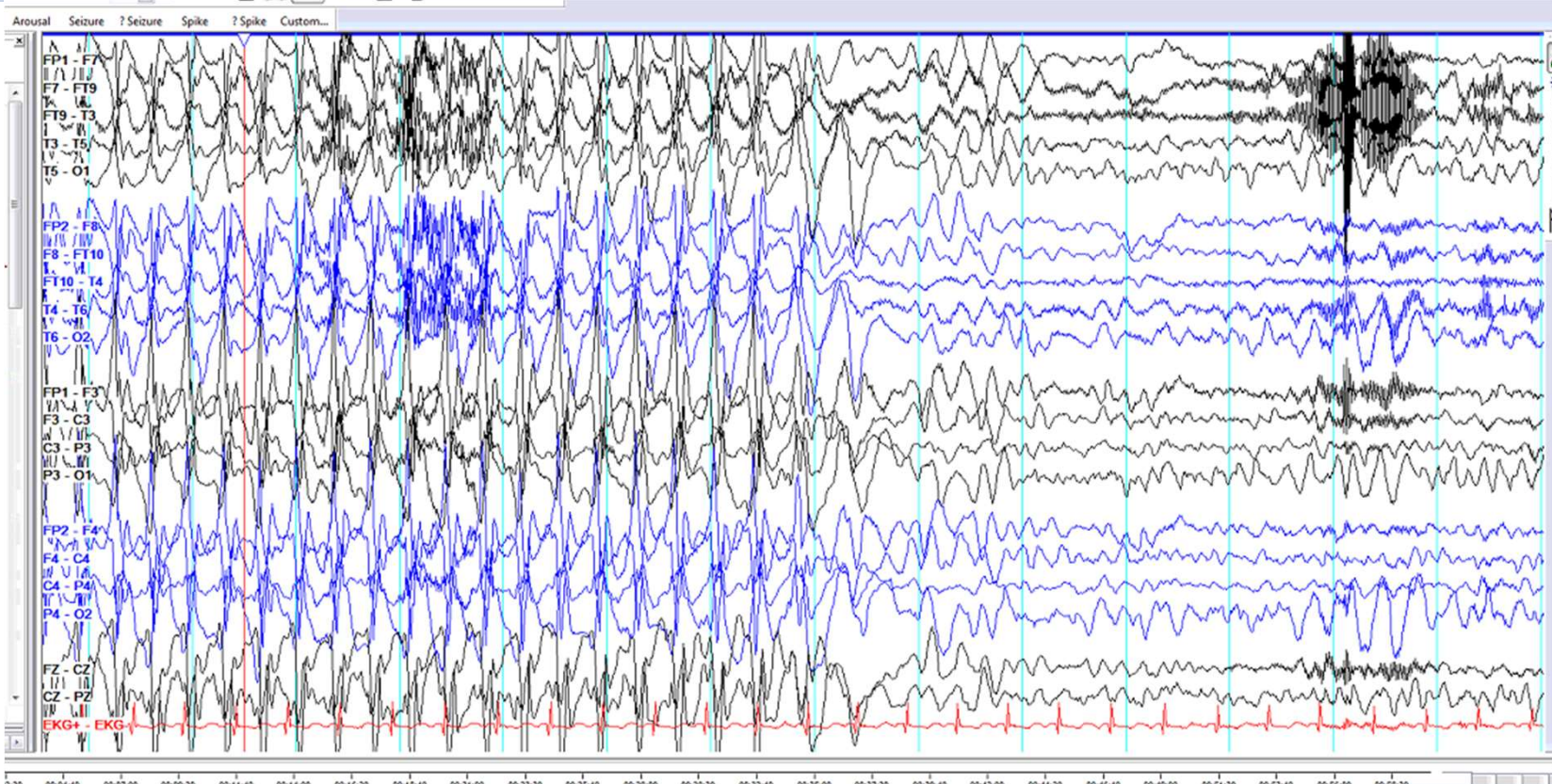
- Mostly associated with absence seizure (95%)
- May be associated with clinical absence seizure if longer than 3–4 s
- More fragmented fashion if occur during sleep
- Activated by **hyperventilation** and **hypoglycemia**
- Usually normal EEG background patterns, cognitive and neurologically



**OIRDA: Occipital Intermittent Rhythmic Delta Activity, should not be mistaken for partial onset seizure.**







2

**< 3 Hz**  
**Spike and Wave**  
(Slow Spike and Wave)

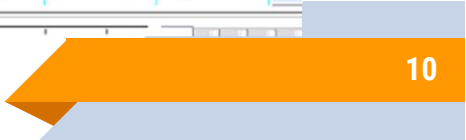
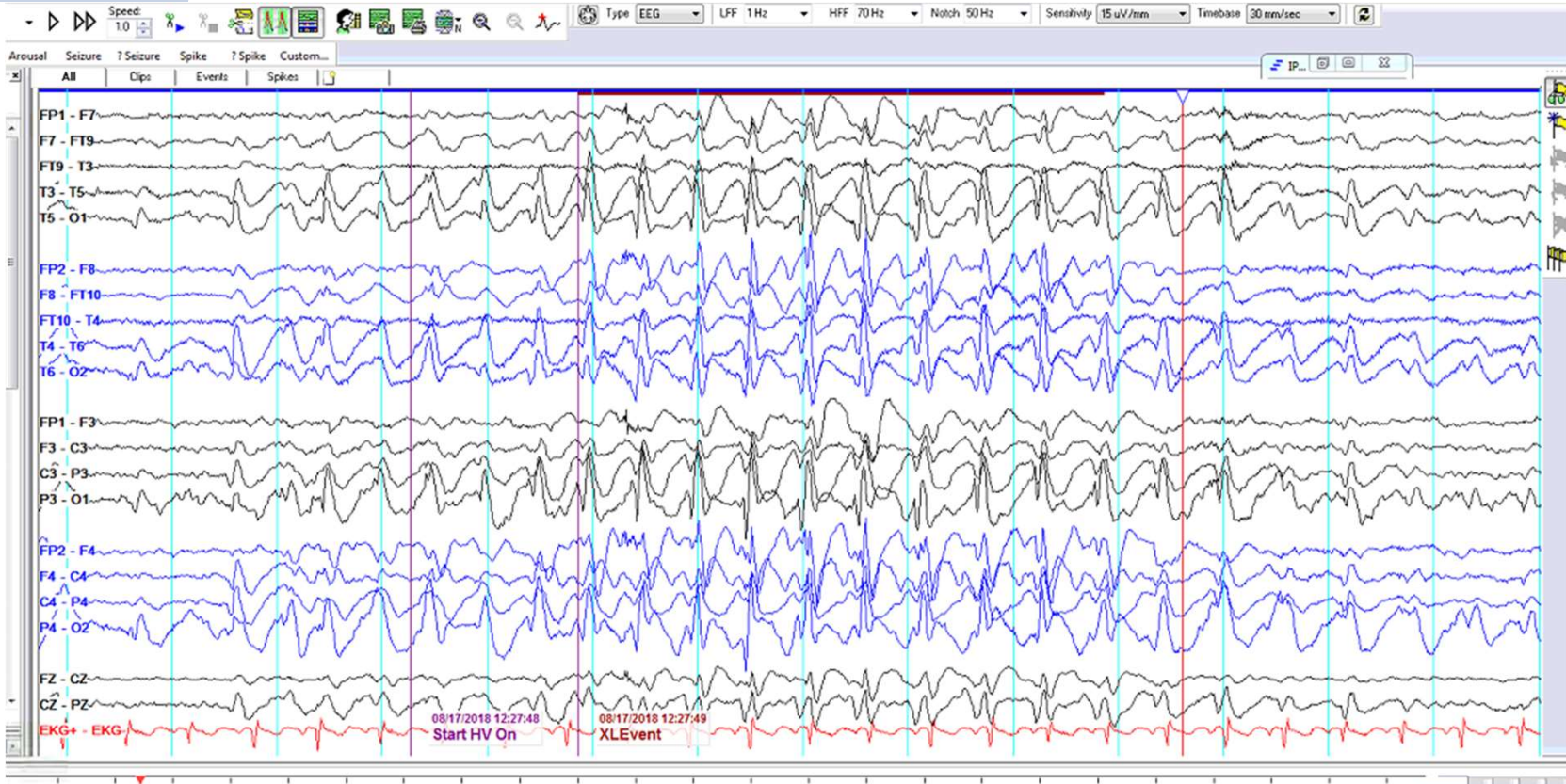


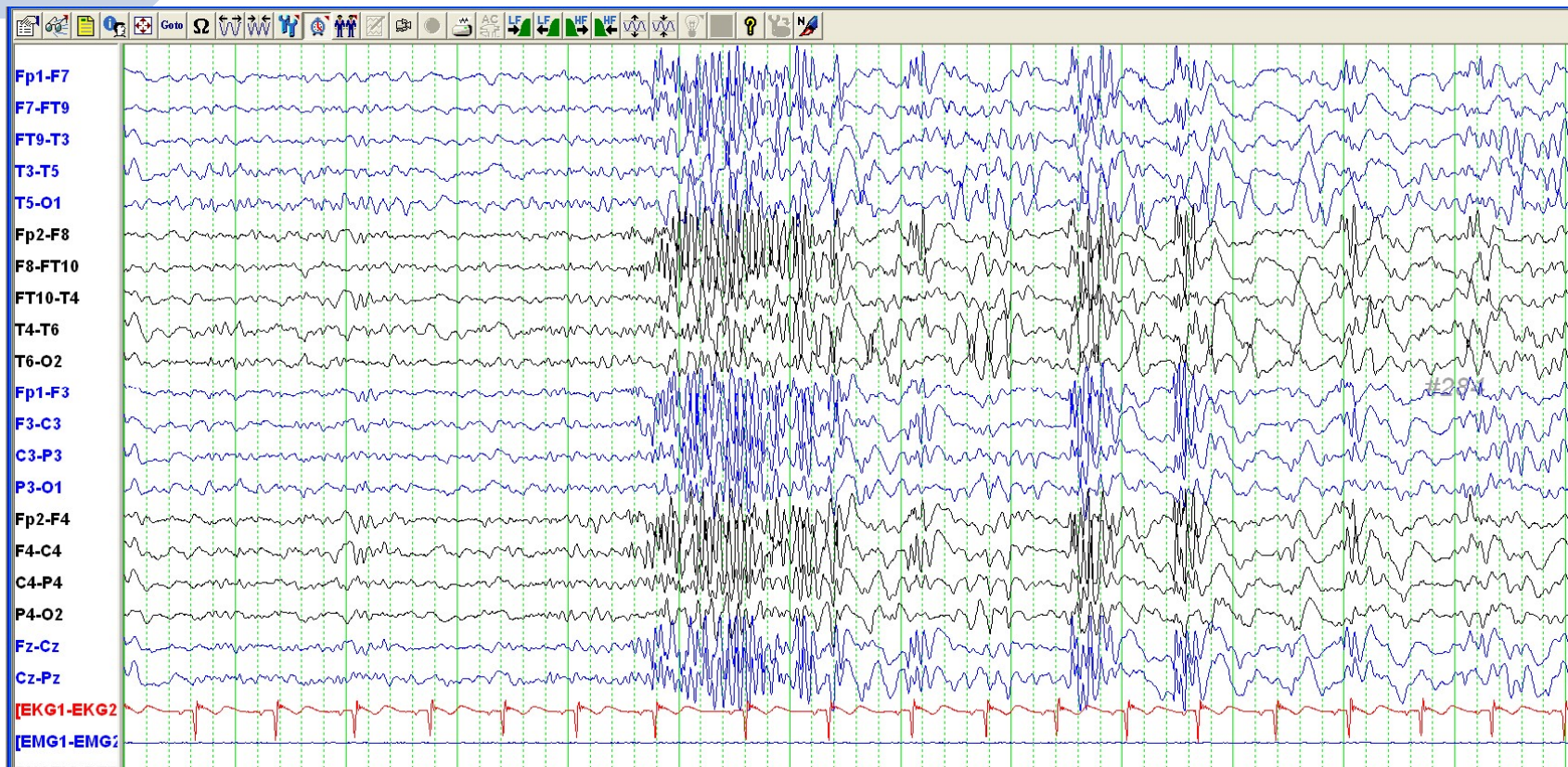


## < 3 Hz Spike and Wave (Slow Spike and Wave)

- Sharp and slow wave complexes
- Occur at a frequency of 1–2.5 Hz
- May be **asymmetric** and **alternating focal predominance** between hemispheres
- May be **enhanced during drowsiness**
- E.g. Lennox-Gastaut Syndrome

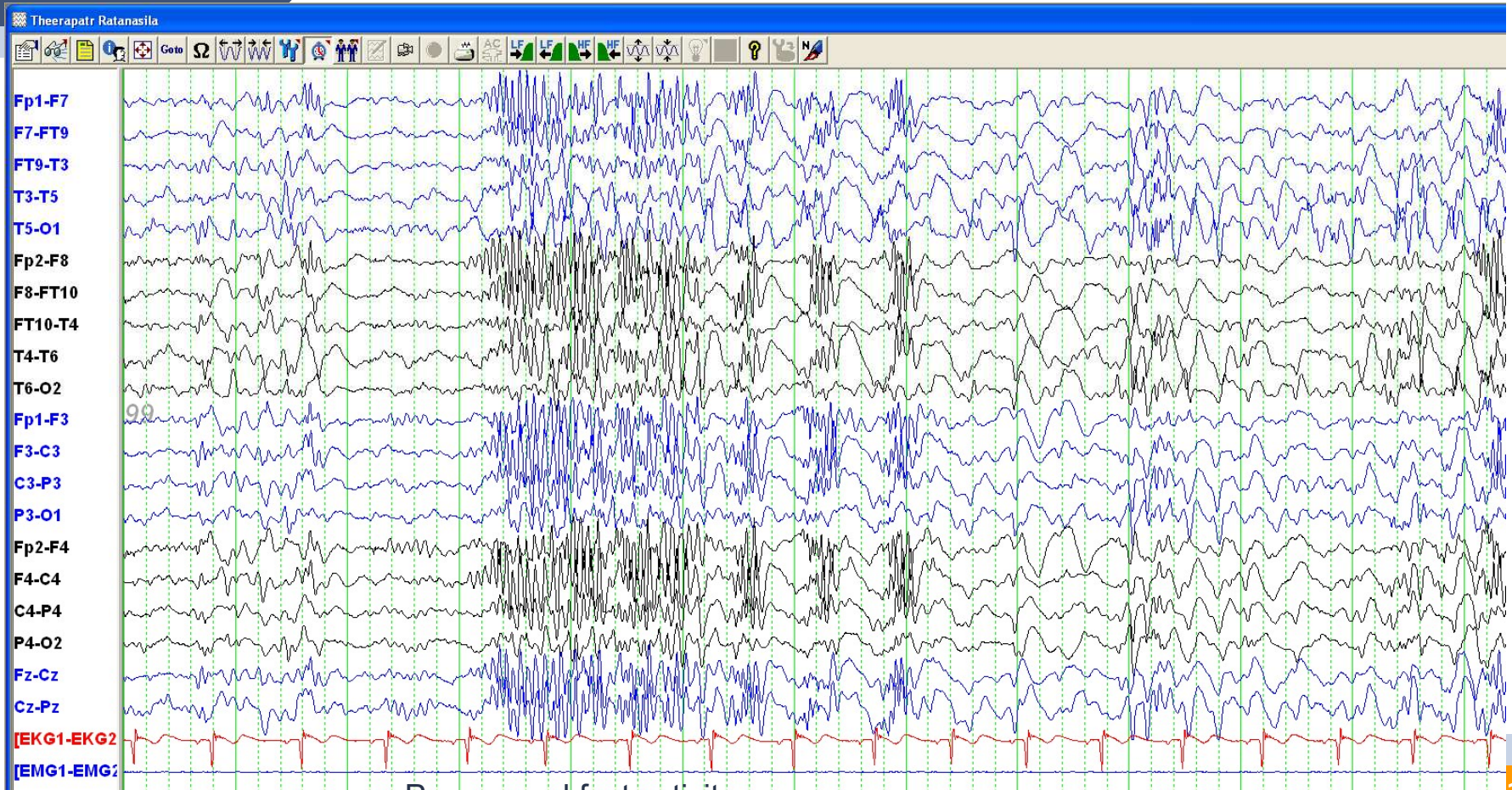






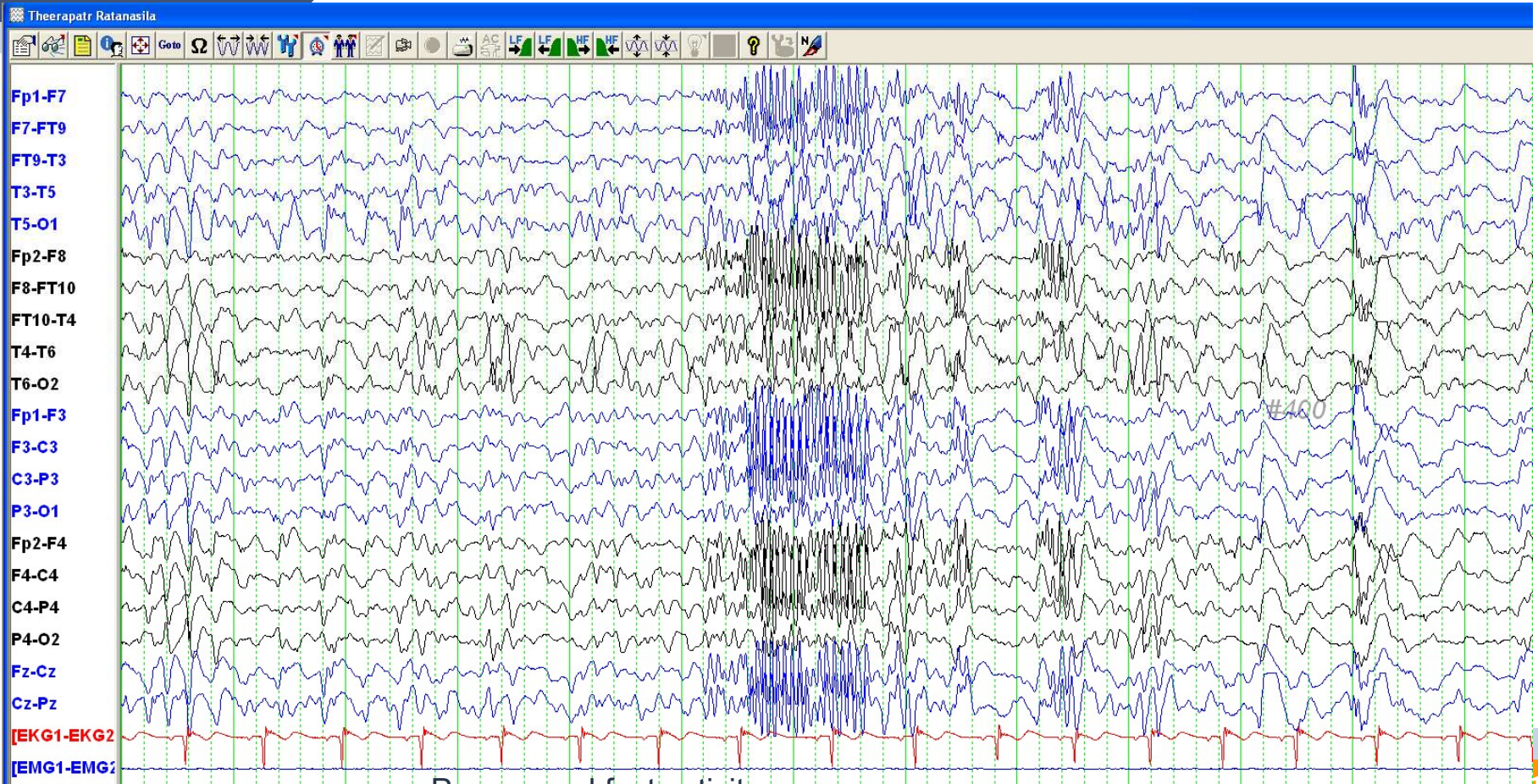
Paroxysmal fast activity





Paroxysmal fast activity





Paroxysmal fast activity



3

**> 3 Hz**  
**Spike and Wave**  
(Atypical Spike and Wave)



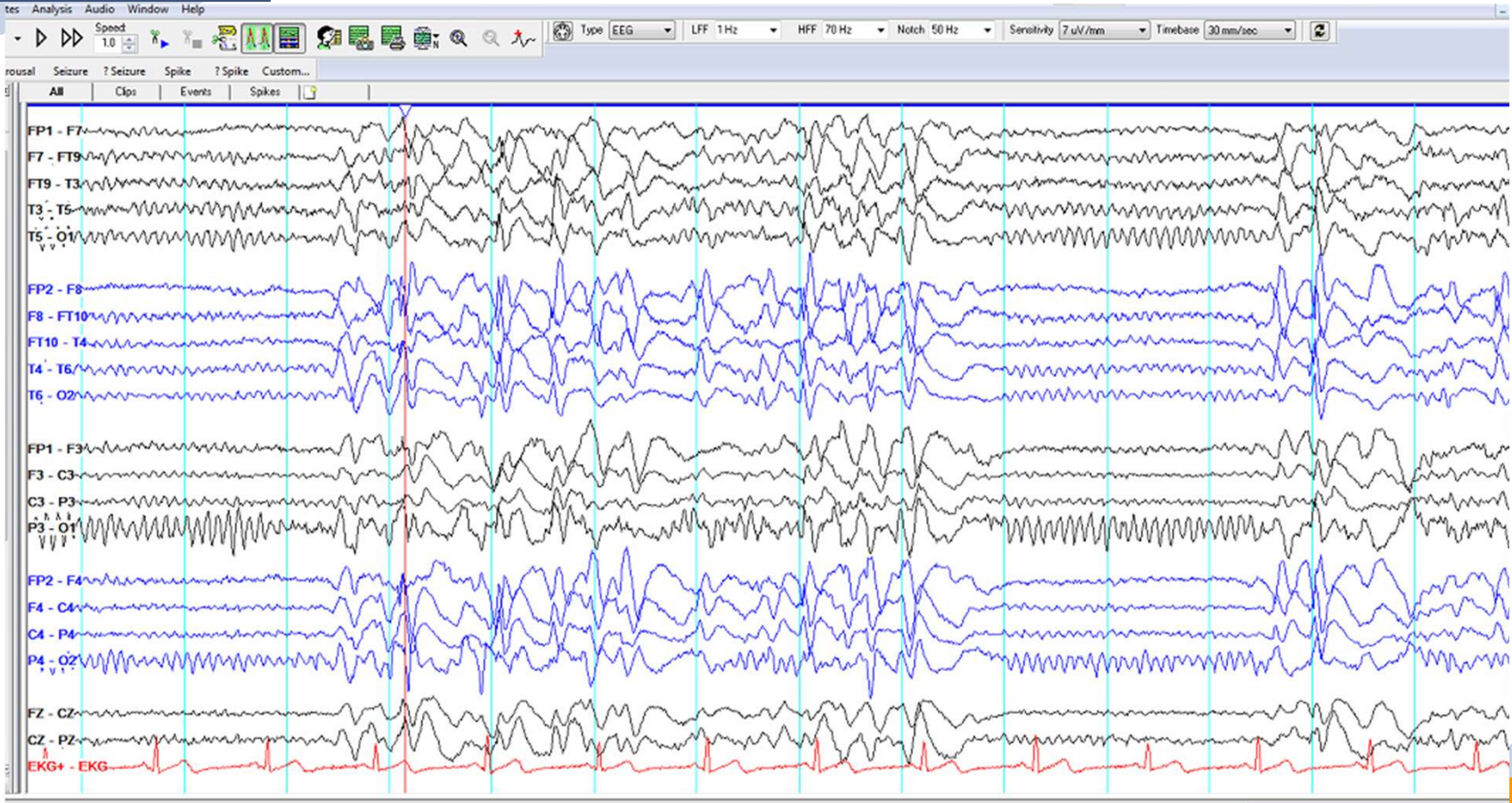
สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE

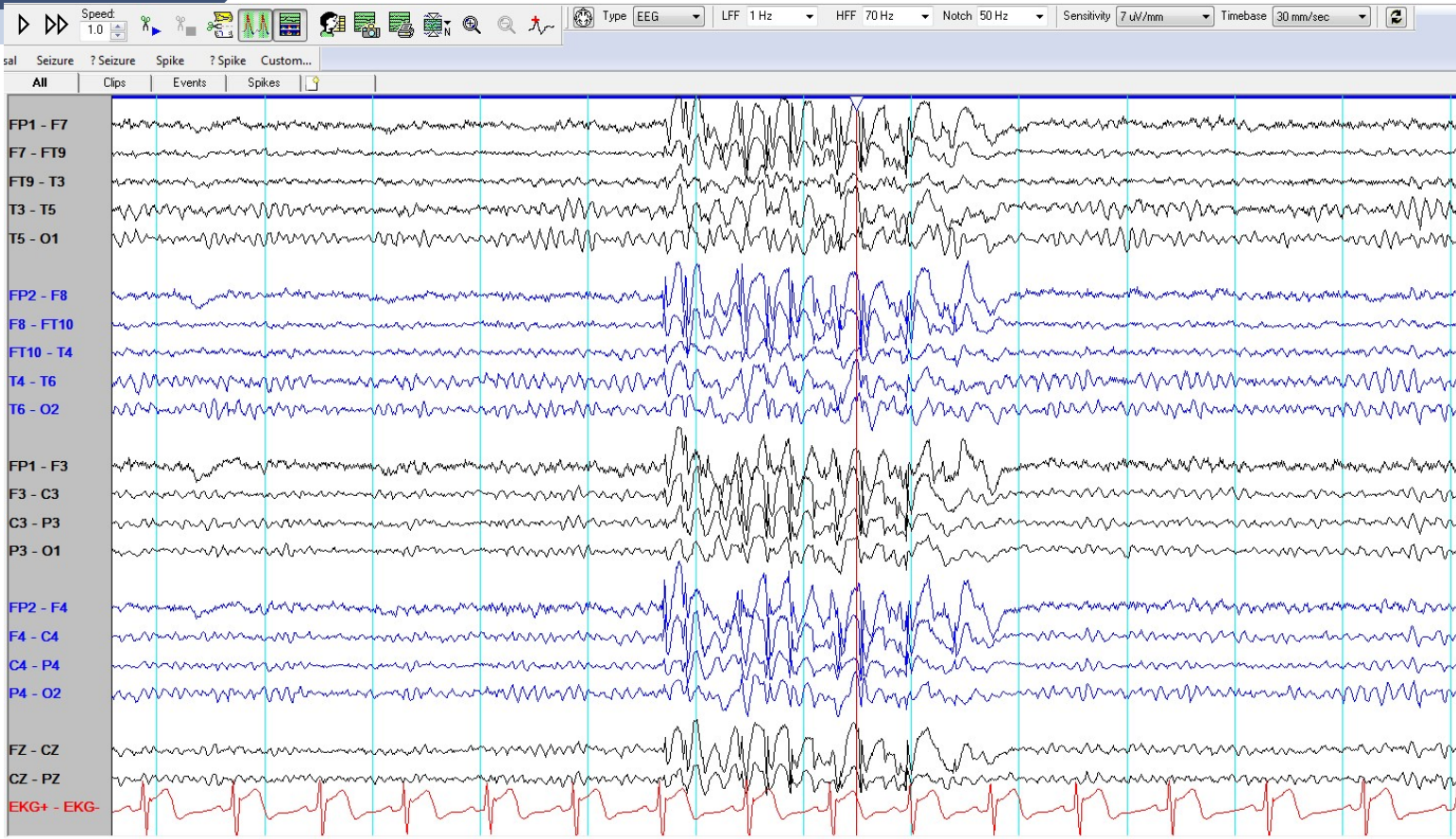
## > 3 Hz Spike and Wave (Atypical Spike and Wave)

- Higher-frequency generalized discharges vary from 4-7 Hz
- **Does not** show the stereotype appearance
- May be **asymmetric** between the hemispheres
- May be mixed with **polyspikes** and **multiphasic** spikes
- Usually duration is brief ranging from 1- 3 s
- Commonly associated with **juvenile myoclonic epilepsy** (JME)

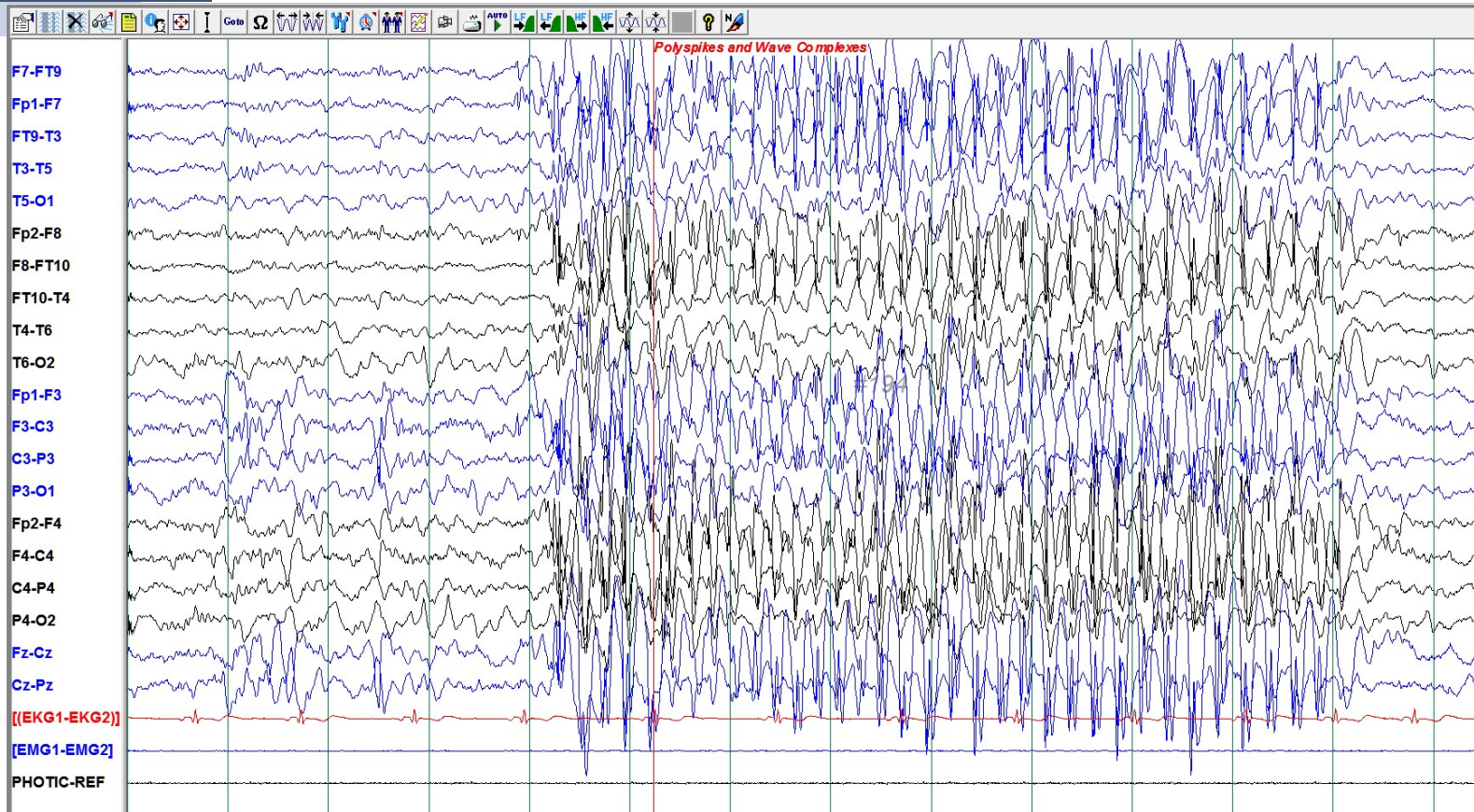


สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE









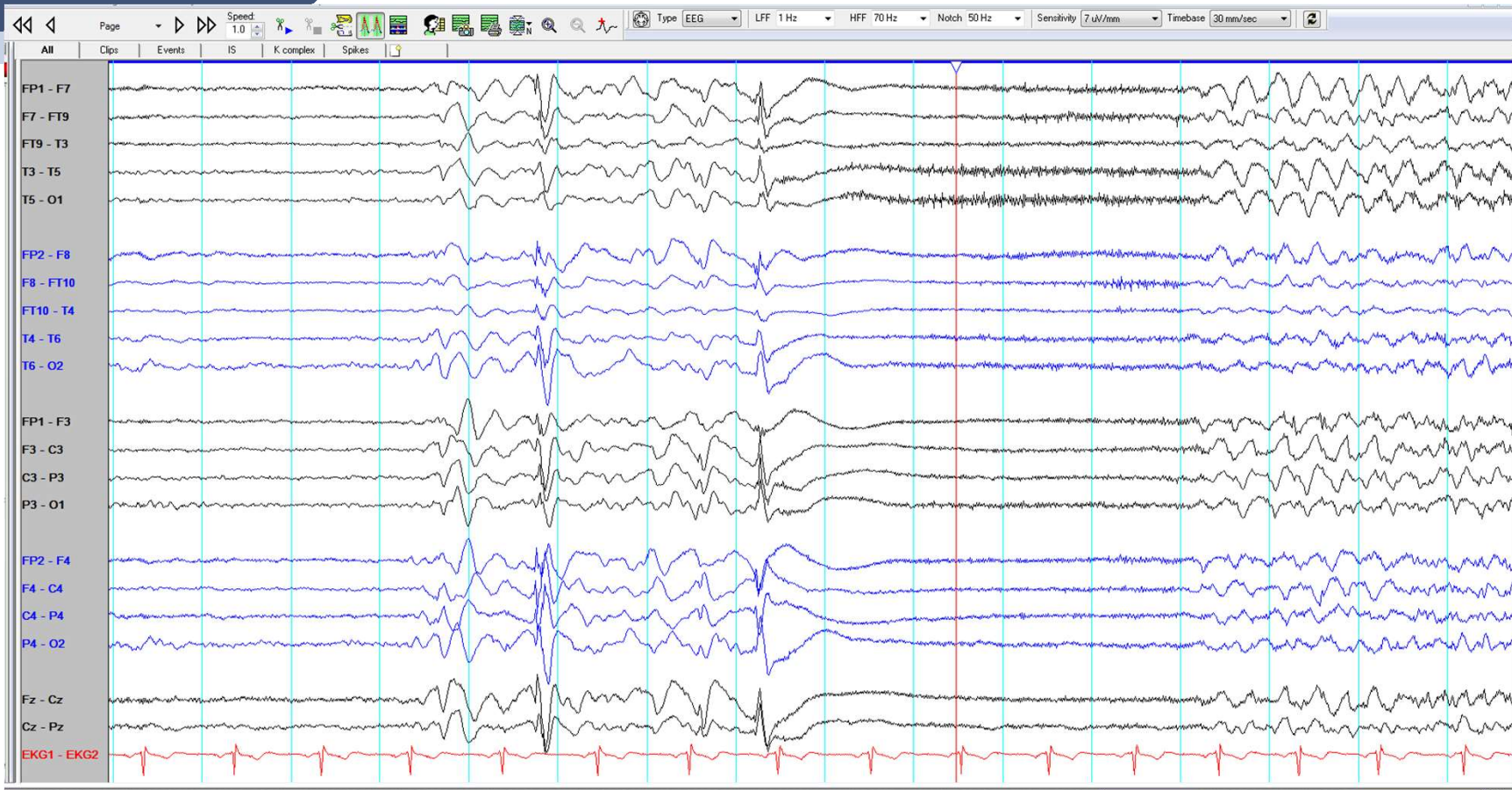


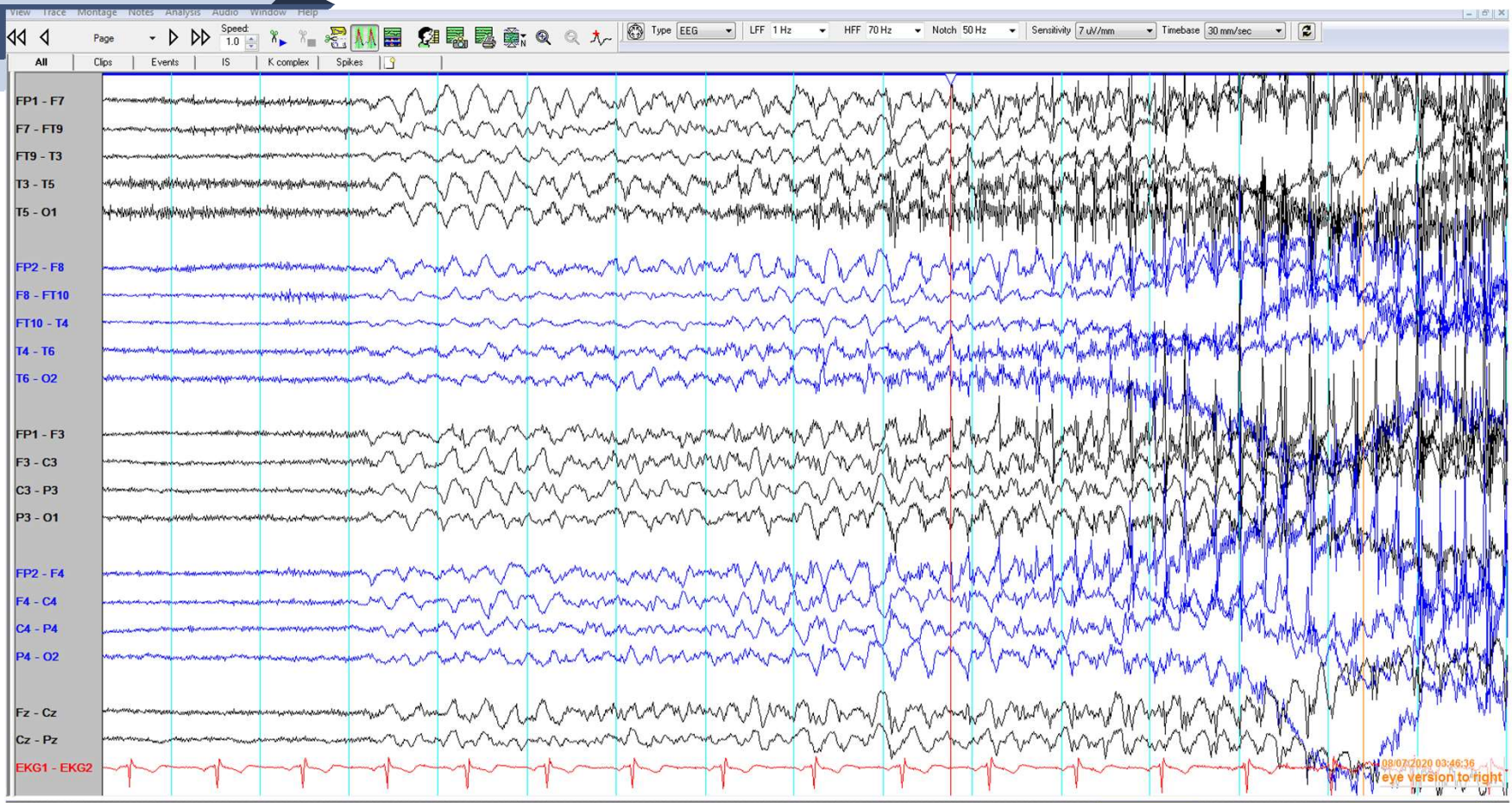
“ Focal onset with secondary *bisynchrony* from the rapid contralateral propagation of a focal discharge through the interhemispheric fibers.

e.g. focal seizure from medial or orbitofrontal regions.



สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE



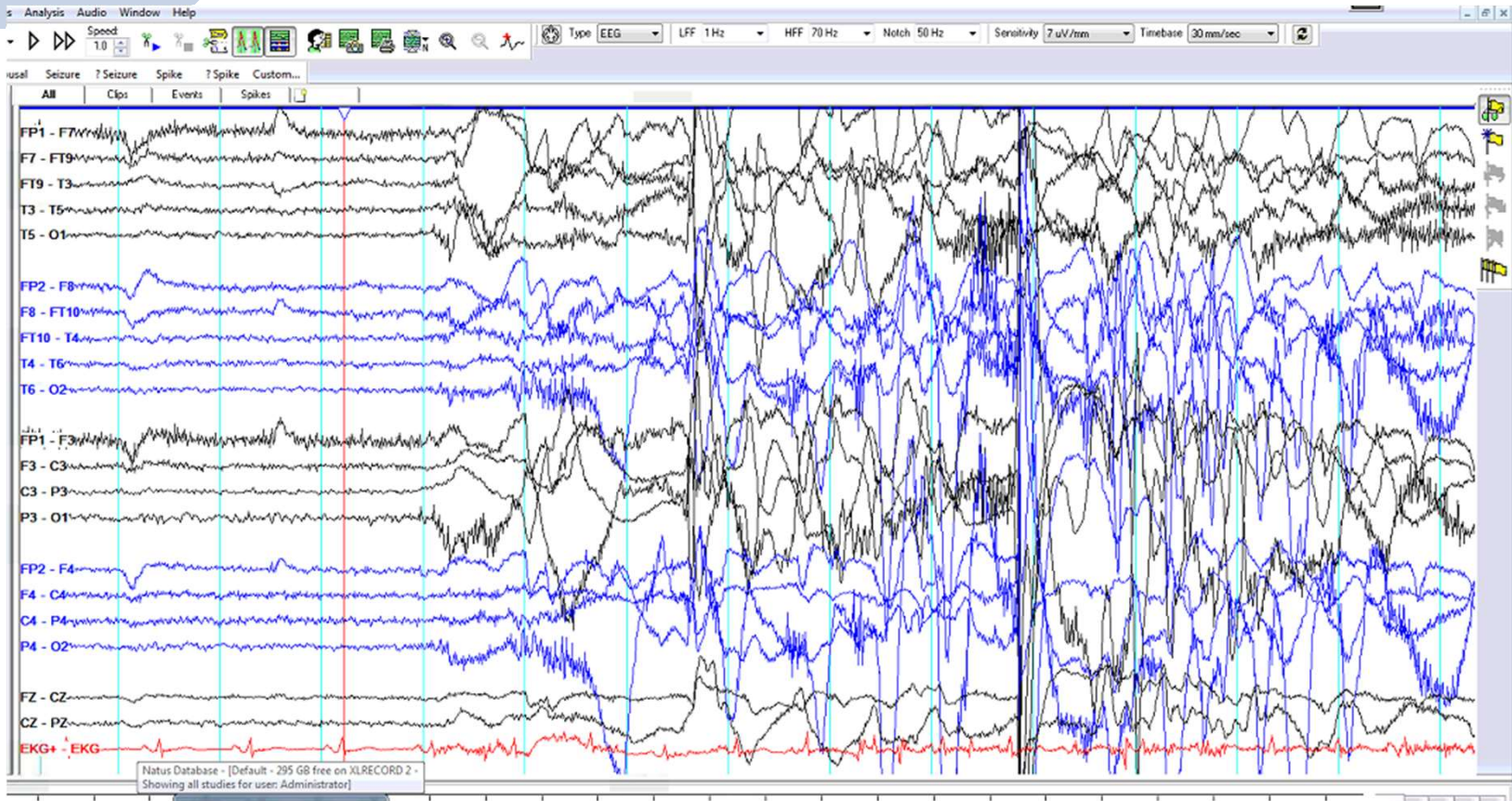


“ *Looked alike generalized epileptiform activities, but it is not.* ”

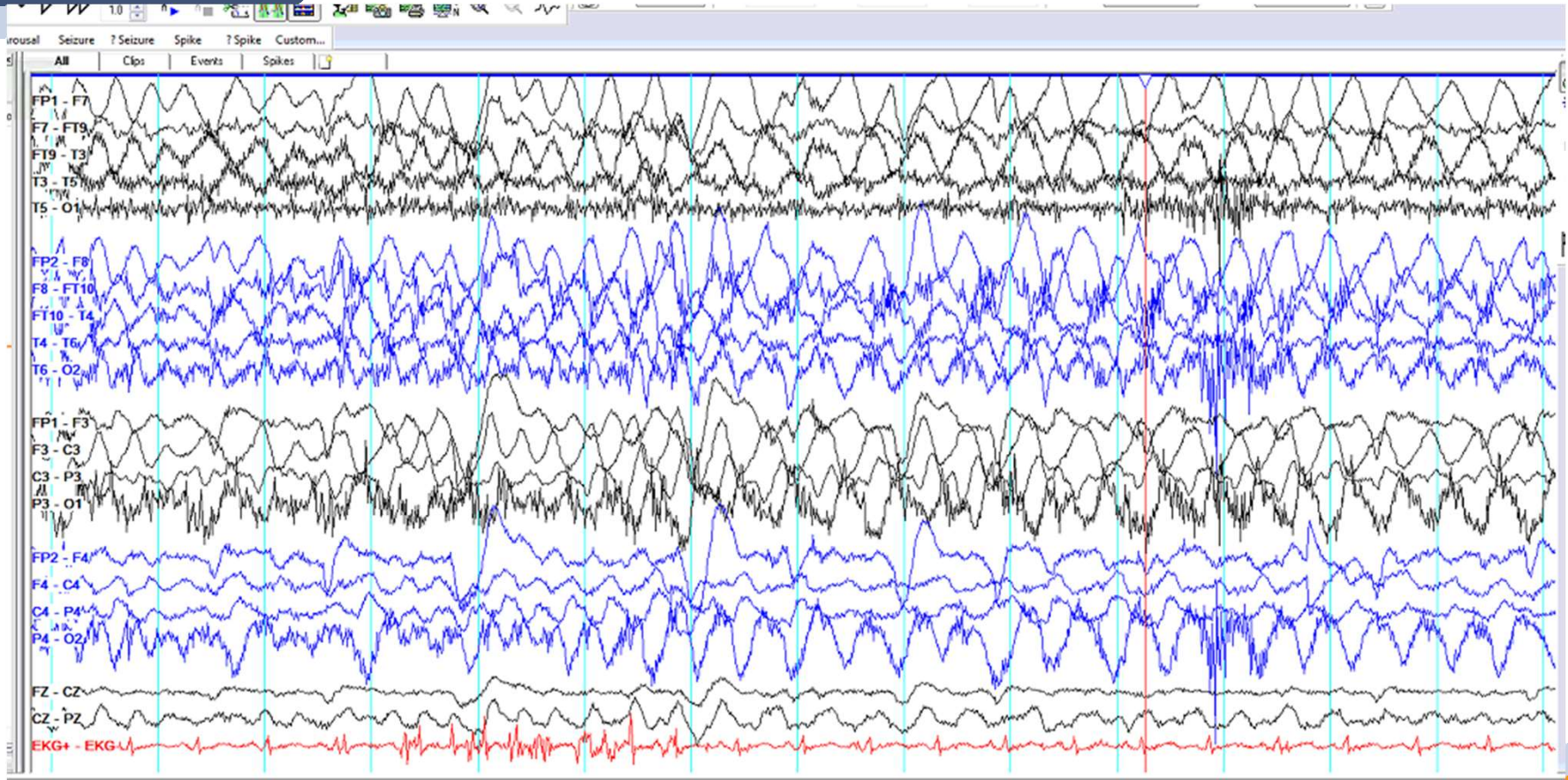


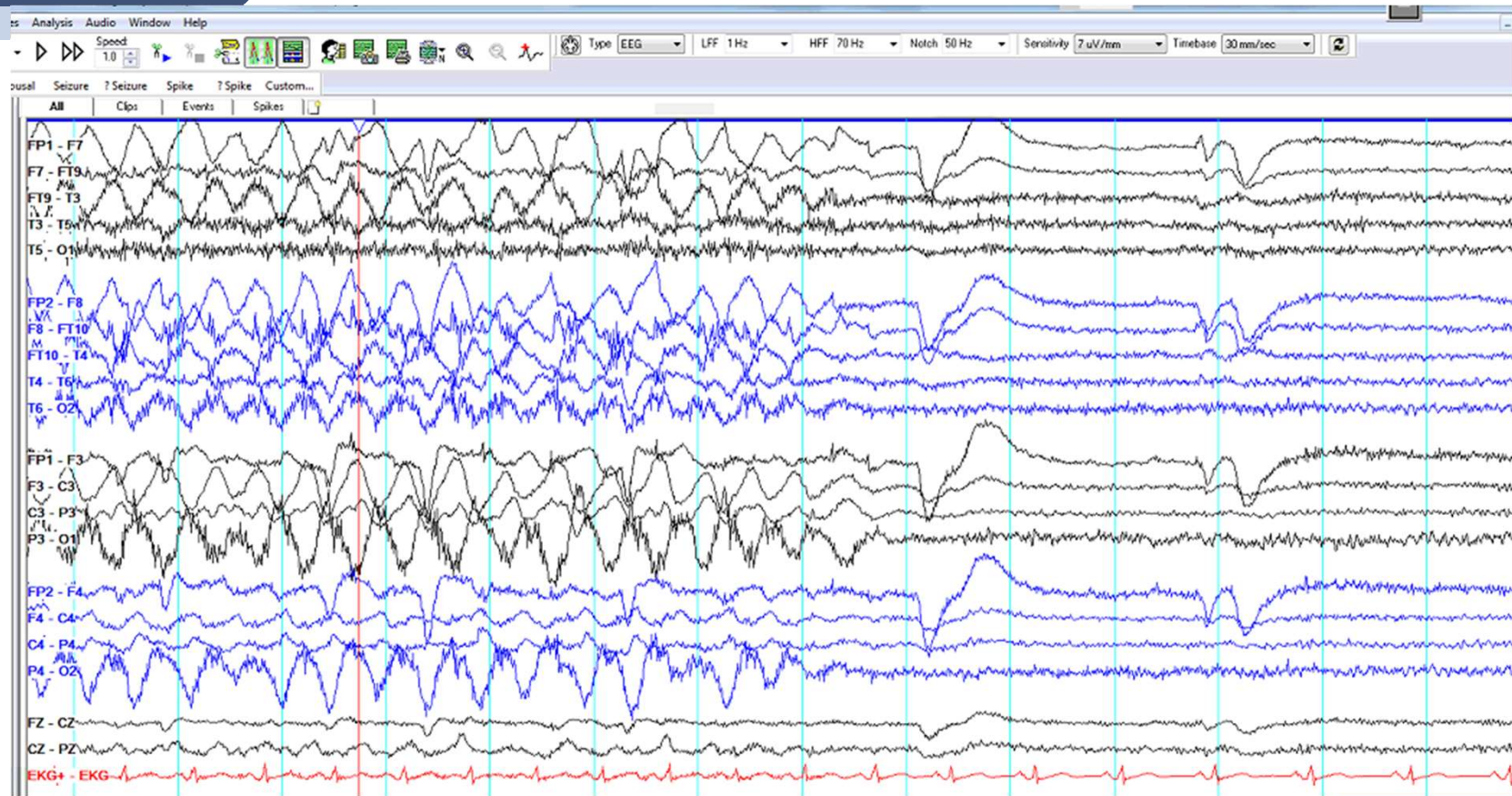
สถาบันประสาทวิทยา  
PRASAT NEUROLOGICAL INSTITUTE







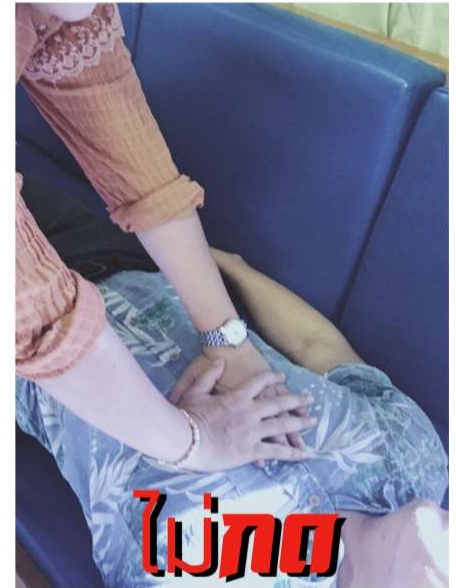








# เมื่อเจอคนกำลัง "ชัก"



ไม่ทั้งหมด **ชักจะหยุดเอง**

แค่ดูแลให้ชักอย่างปลอดภัย และนำส่งโรงพยาบาลเมื่อชักนานหรือชักต่อเนื่อง