ÇOCUKLUK ÇAĞI EEG'Sİ **TANIMLAR**

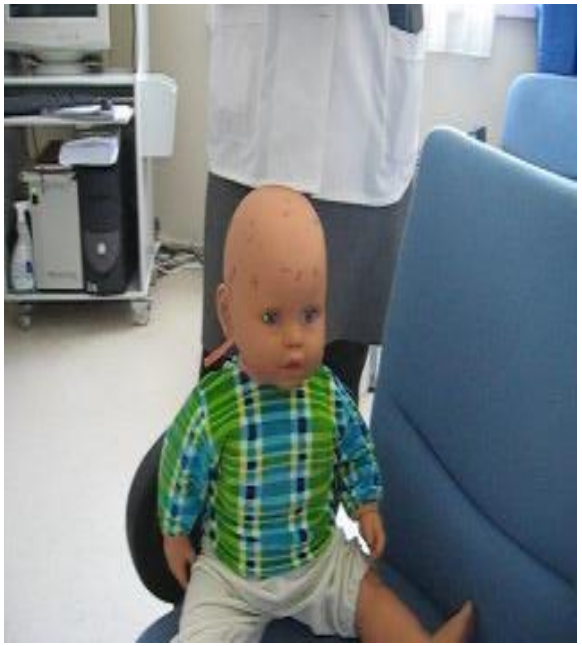
Temel EEG Kursu

Prof. Dr. Hasan Tekgül

İzmir-2025

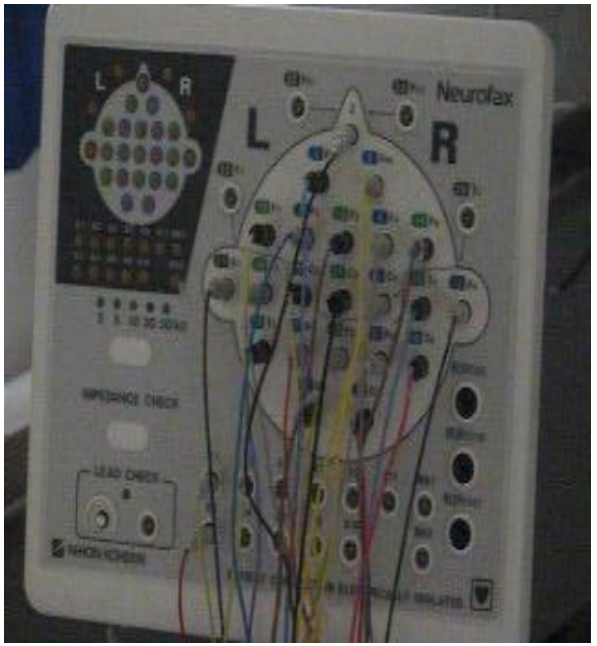
PEDİATRİK EEG

MONTAJLAMA



ELEKTROD YERLEŞİMİ

KAYITLAMA



PEDİATRİK EEG: TANIMLAR

Biyolojik Tanımlar

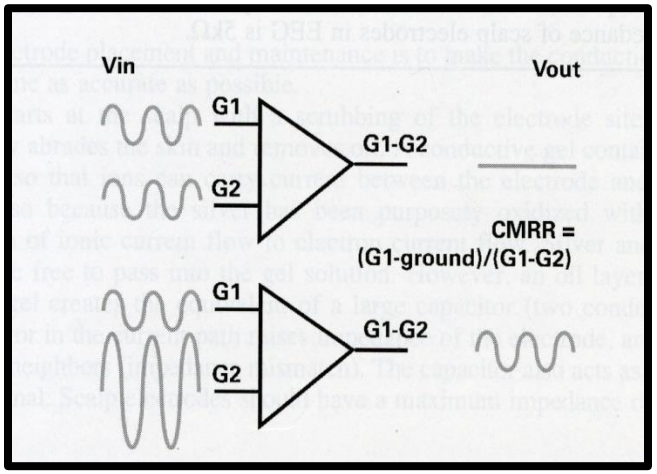
I. Normal Elementler ve Varyantlar
II. Patolojik Aktiviteler

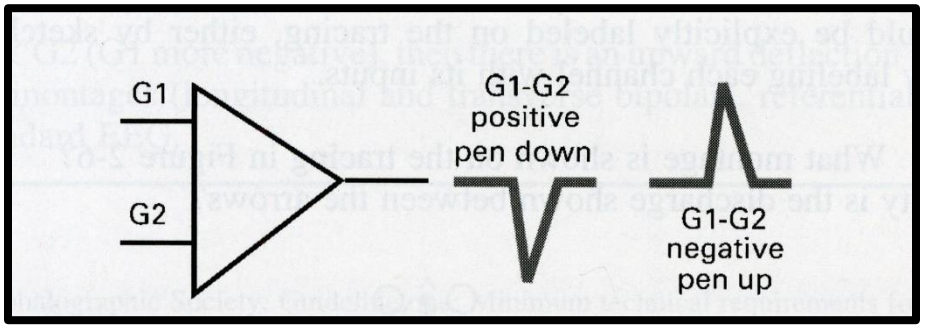
Teknik Tanımlar

I. Çekim
II. Montajlar

ARTEFAKTLAR

PEN RULE: KALEM KURALI

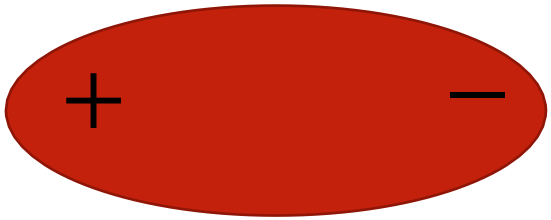


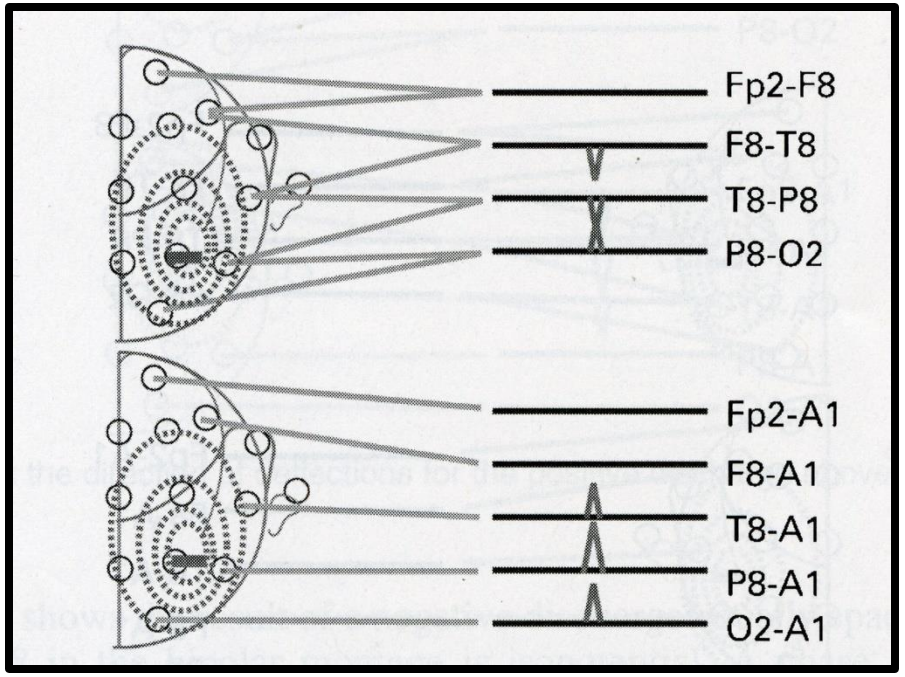


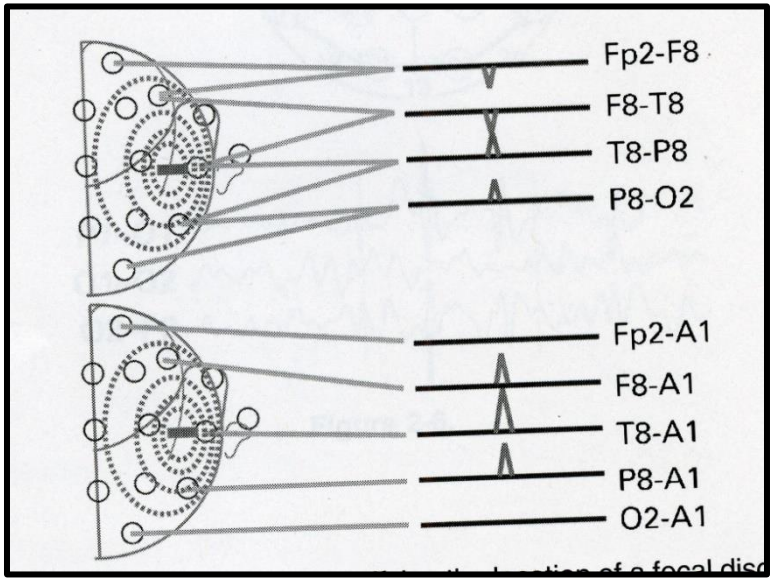
Potansiyel Alanı

- **Bir nöronal ağdaki, İnbitör / Eksitatör PSP lerin toplamı**

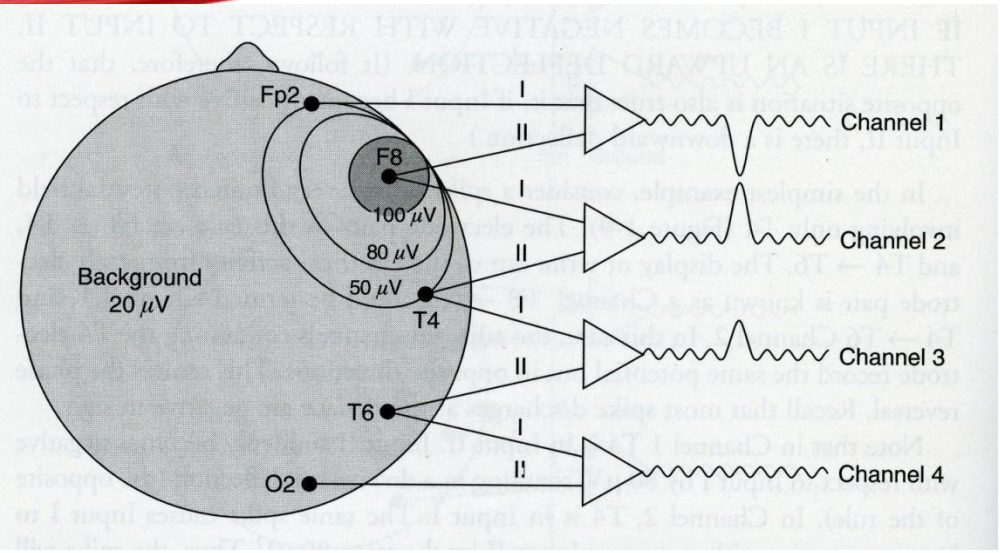
- **Bütün elektrik potansiyelleri ‘dipol’ lerden oluşur.**



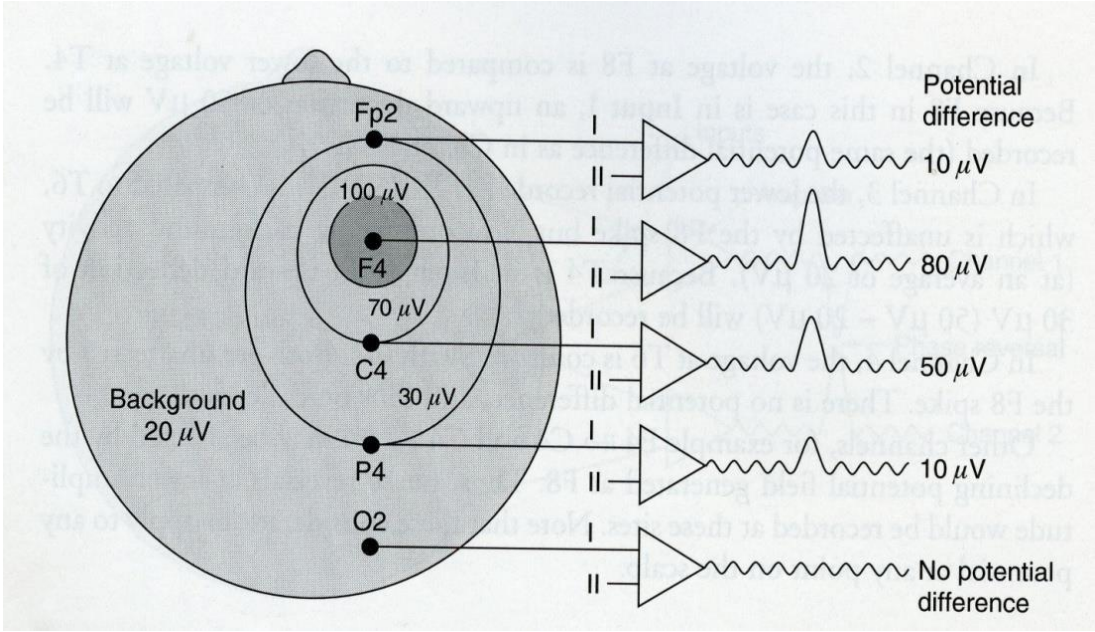




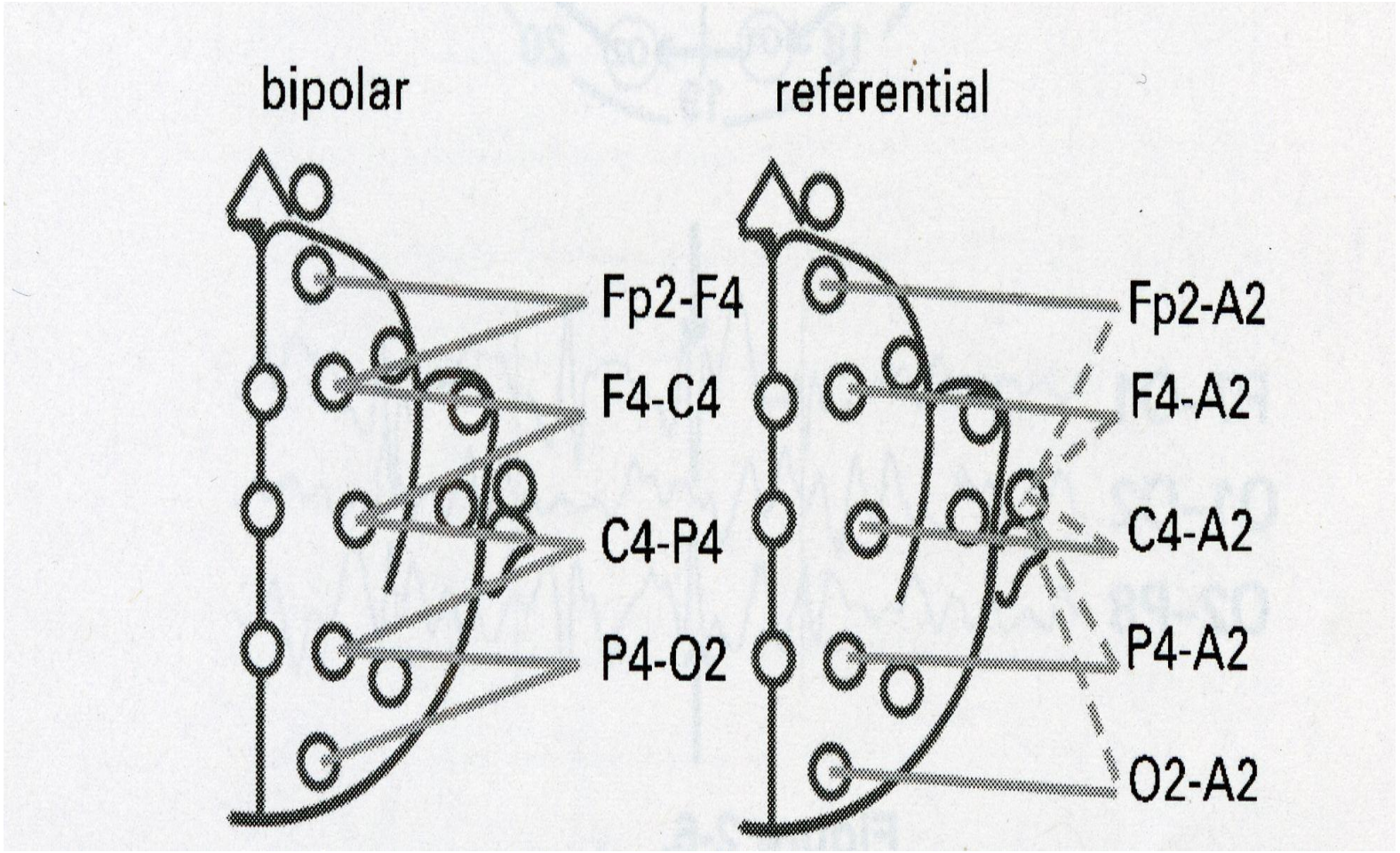
BİPOLAR



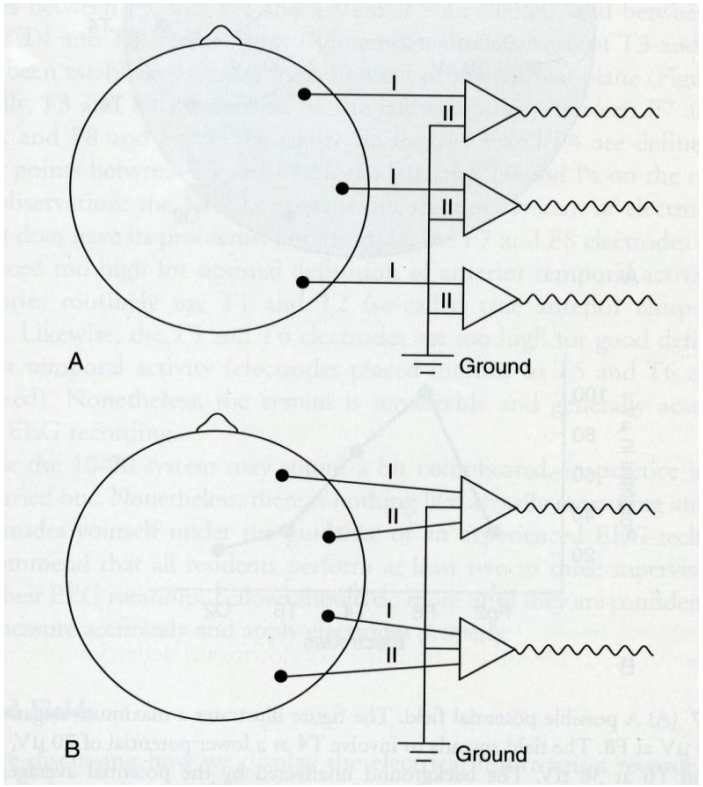
MONOPOLAR

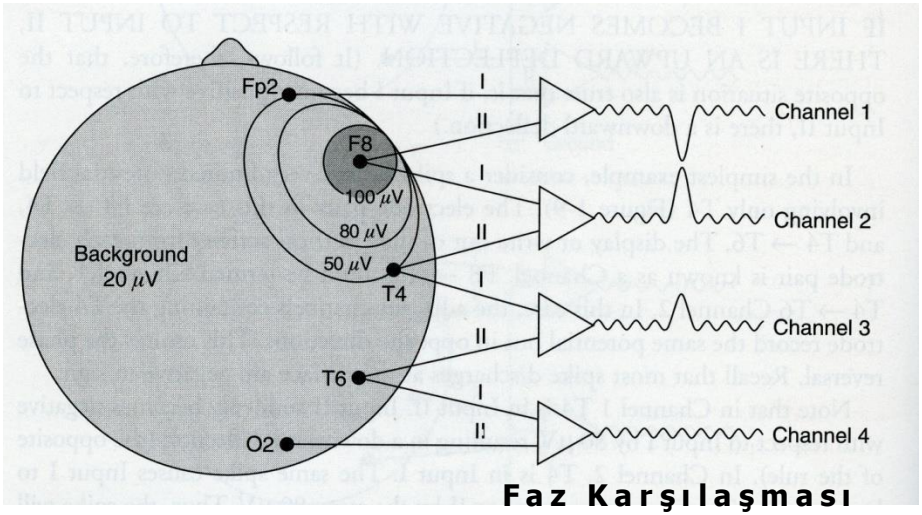


BİPOLAR VE MONOPOLAR (REFERANS) MONTAJLARI

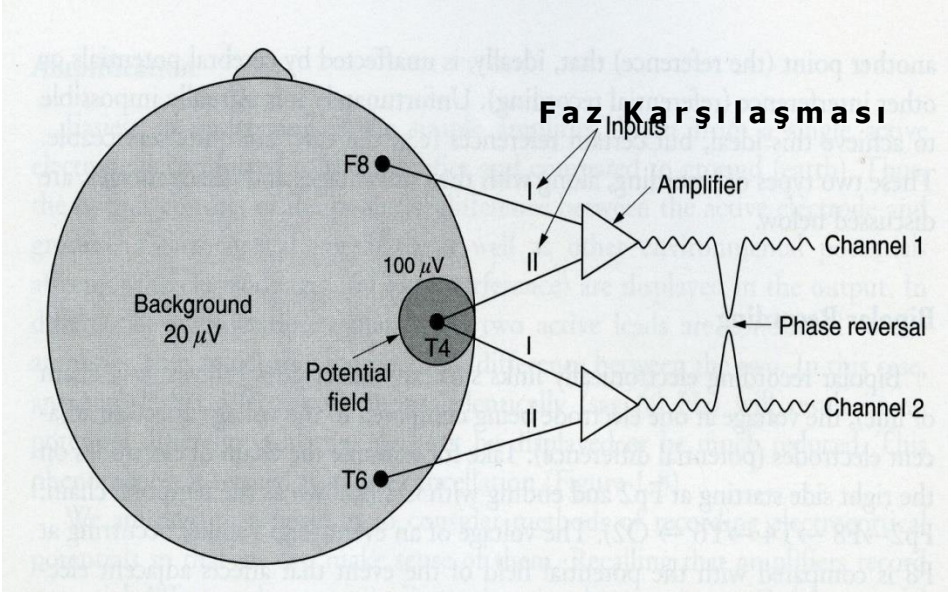


FAZ KARŞILAŞMASI



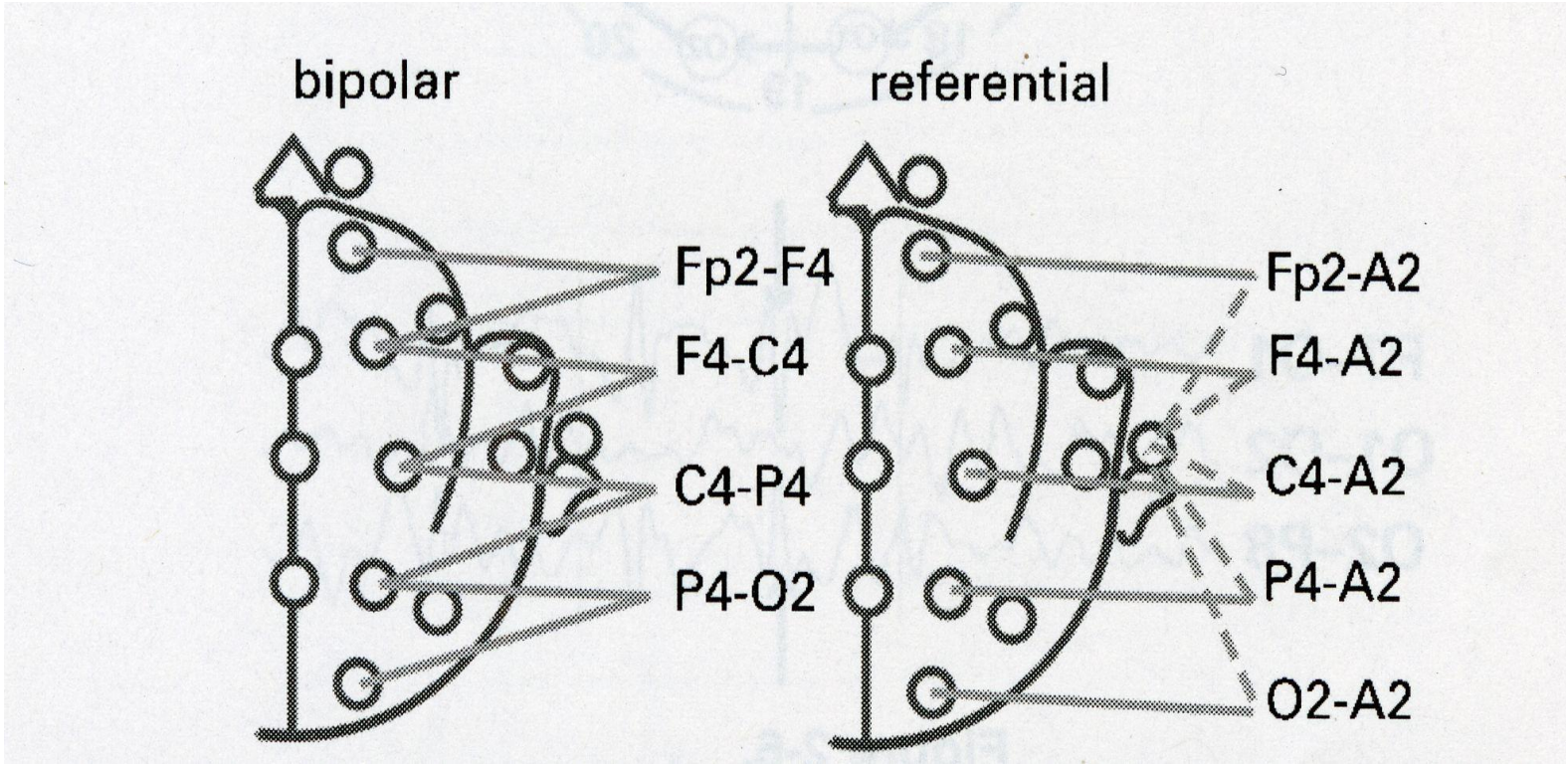


Faz Karşılaşması

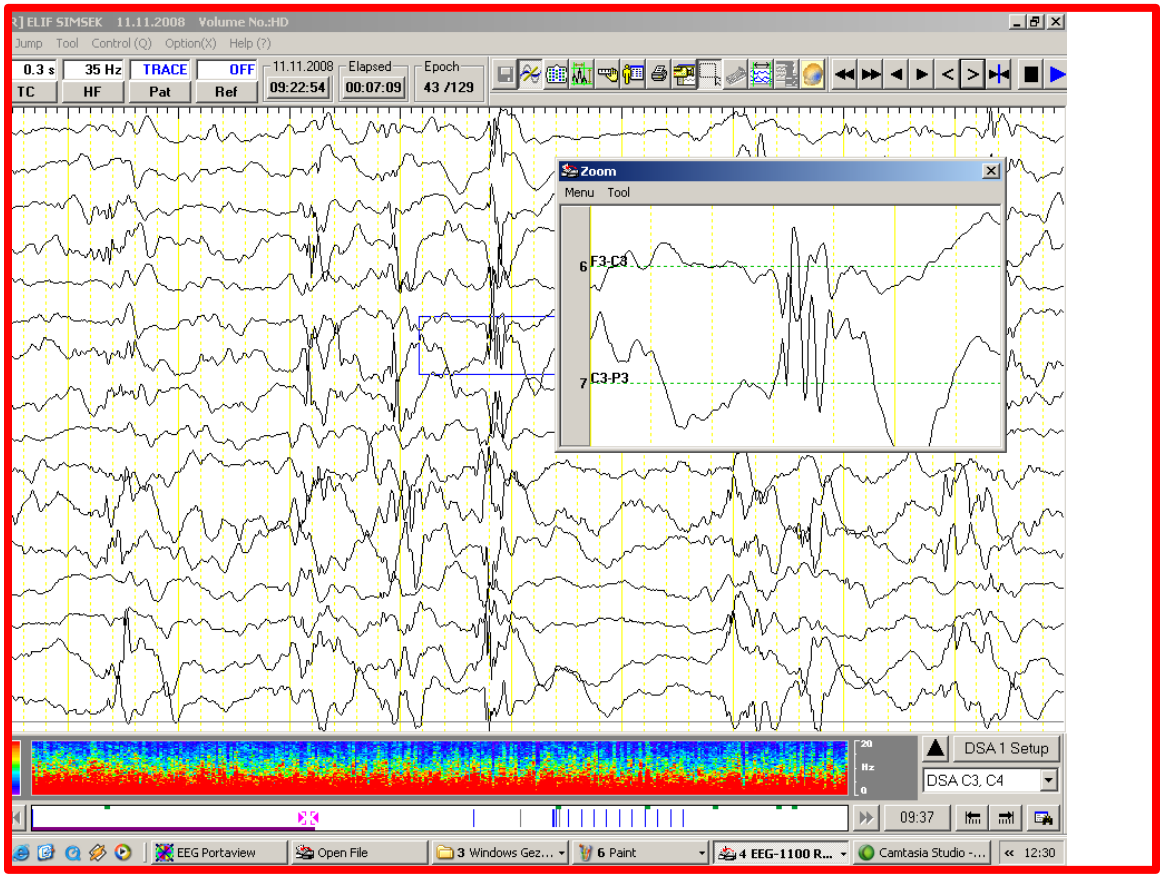


Bipolar montaj: Fokal deşarjın lokalizasyonunu, faz karşılaşması ile yapar

Referans montaj: Fokal deşarjın lokalizasyonunu amplitüdle yapar

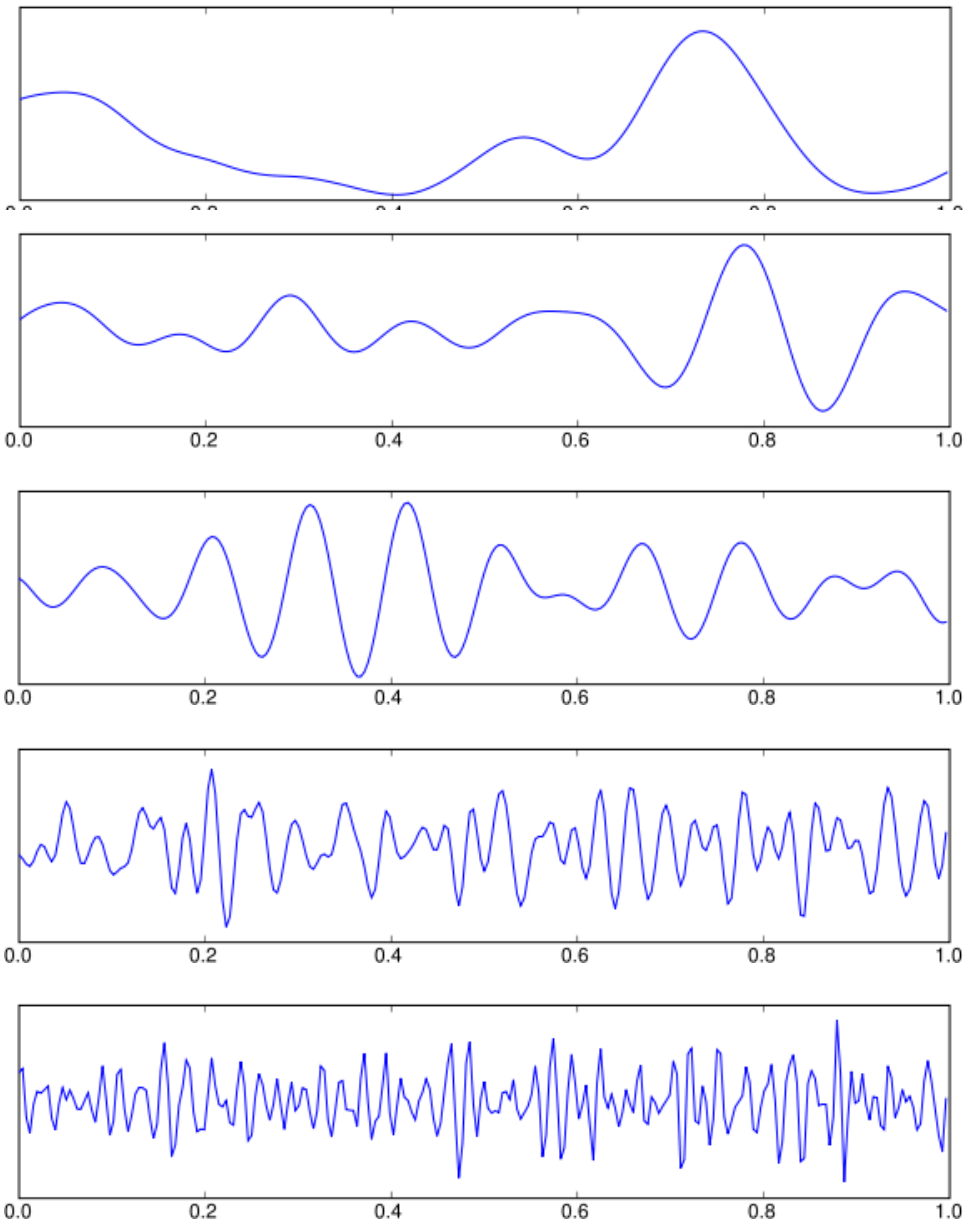


I. ZEMİN RİTMİN AKTİVİTELERİ
II: PAROKSİSMAL AKTİVİTELER



TEMEL AKTİVİTE

(*Zemin Ritmi Aktivitesi - Background Activity*)



Delta (0-3 Hz)

Teta (4-7 Hz)

Alfa (8-12 Hz)

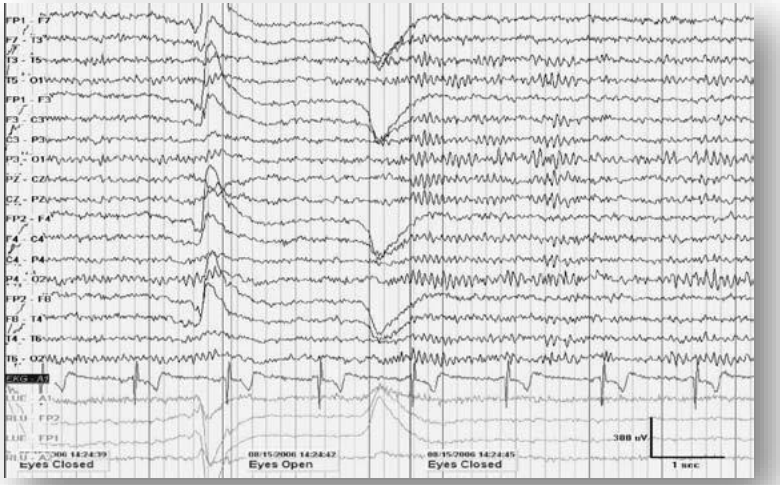
Beta (12-30 Hz)

Gama(26-100 Hz)

Dalga Sayısı/SN (Hertz-Hz)

ALFA 8-13 / SN:

KLİNİK EEG ANALİZİ ALFA RİTMİ TANIMLAMASI İLE BAŞLAR



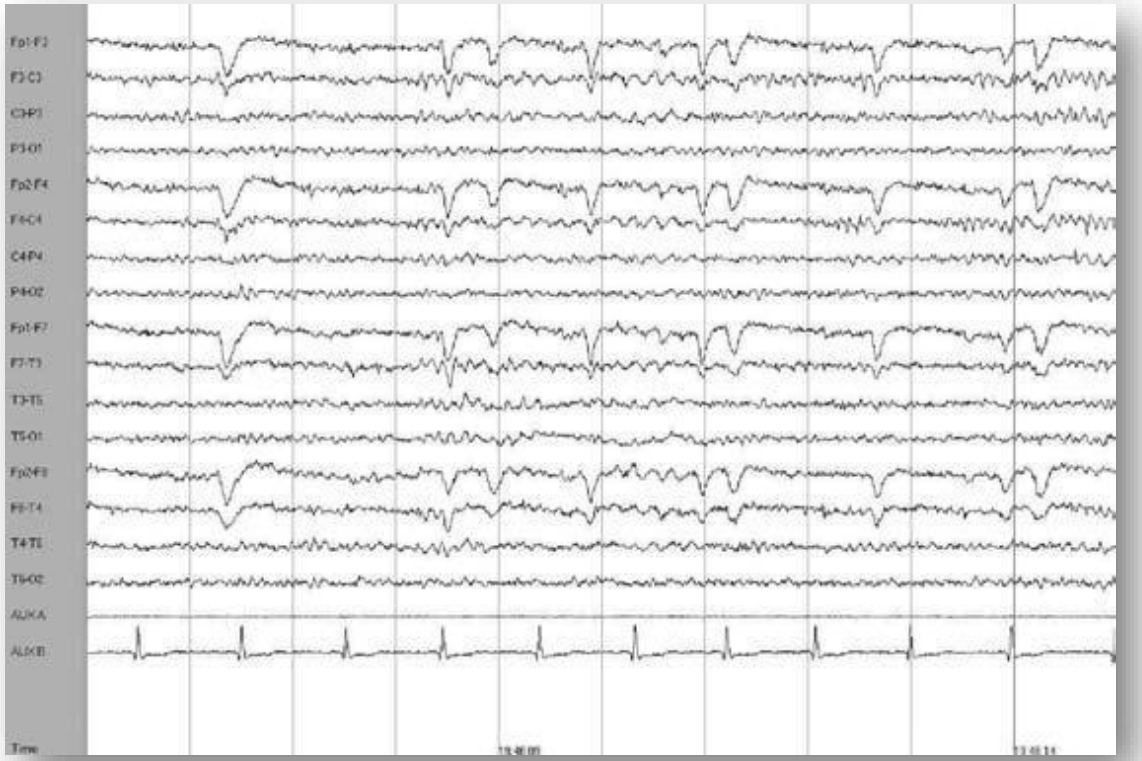
"squeak"

Posterior Dominant Ritim Olarak Bilateral Posterior Elektrodlarda Tanımlanır

TETA RİTMİ: 4-7/SN

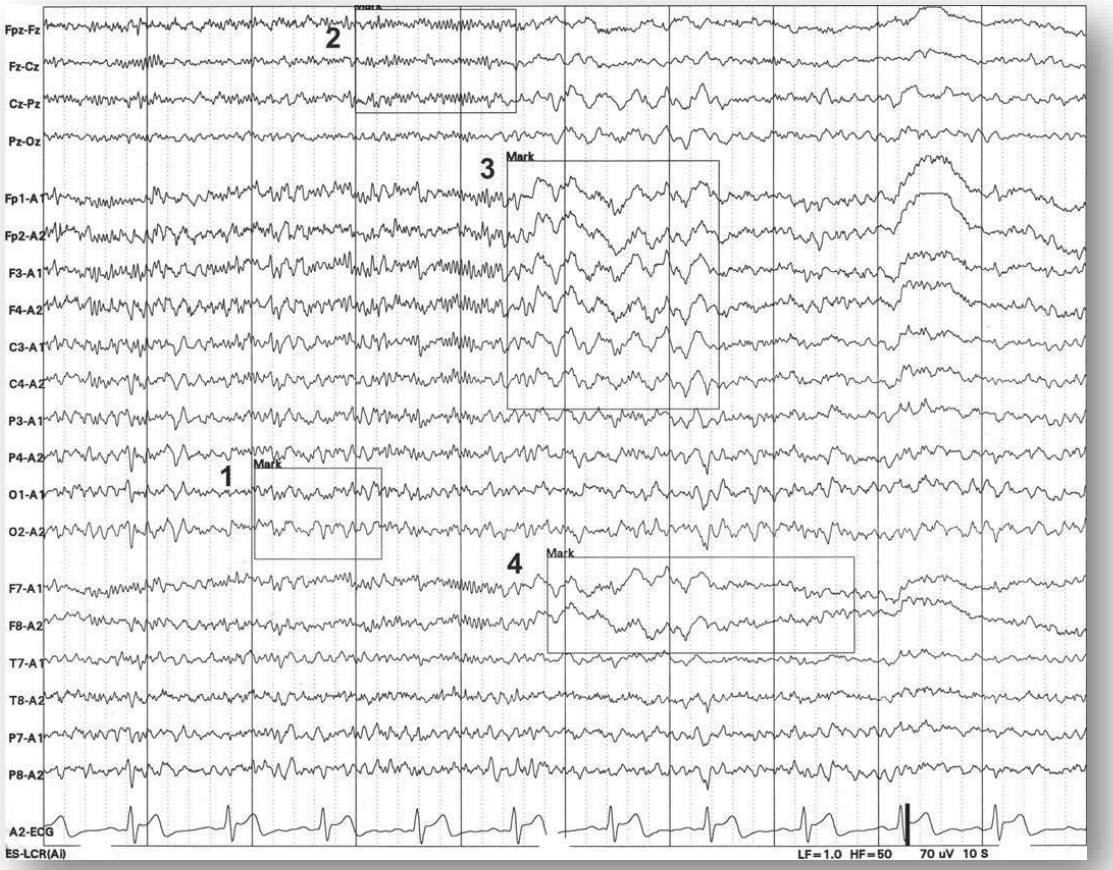
FRONTO- SENTRAL BÖLGELERDE İZLENİR;

UYANIKLIKTA MENTAL İŞLEVLER, KONSANTRASYON VE DUYGUSAL AKTİVİTE İLE ÇIKIŞI KOLAYLAŞIR.



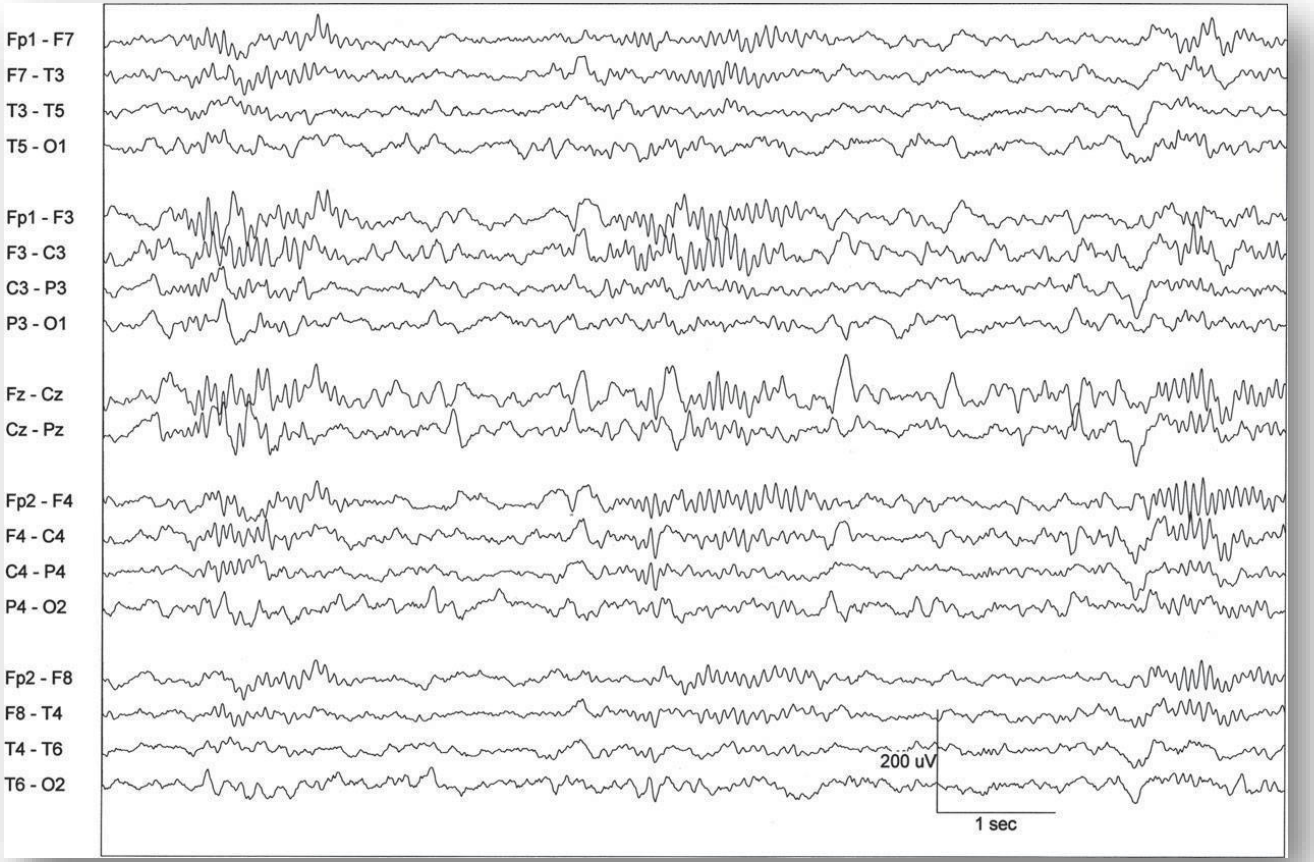
UYUKLAMA-DROWSİNESS; EVRE I UYKU

1. ALFA AKTİVİTESİ AZALMASI
2. ARTMIŞ BETA AKTİVİTESİ
3. DİFFÜZ RİTMİK TETA
4. YAVAŞ GÖZ HAREKETLERİ



EVRE II UYKU (HAFİF UYKU)

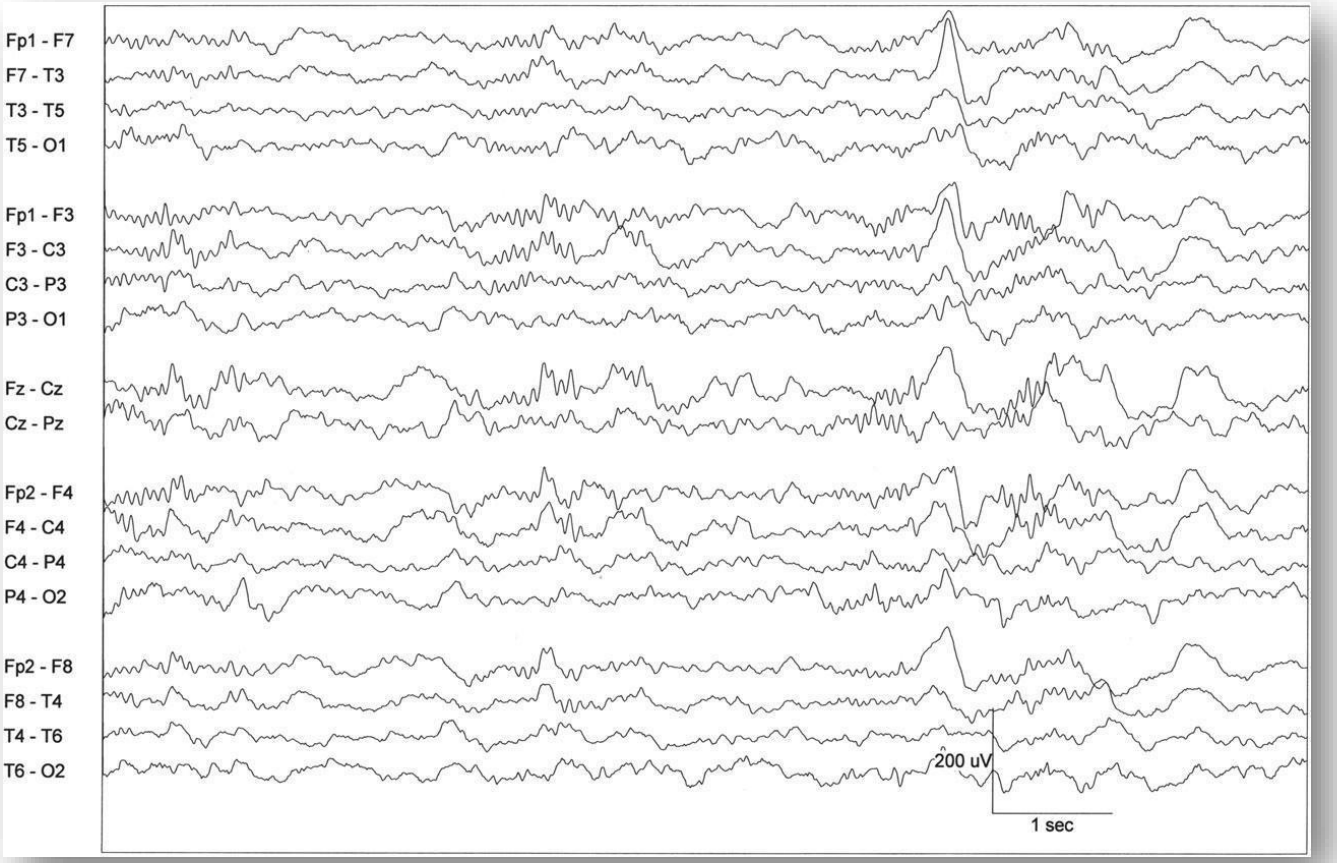
1. POSTERİOR TETA RİTMİ
2. POSTS
3. VERTEKS KESKİN AKTİVİTELERİ
4. 12-15/SEC UYKU İĞCİKLERİ



EVRE III UYKU: (DERİN UYKU I)

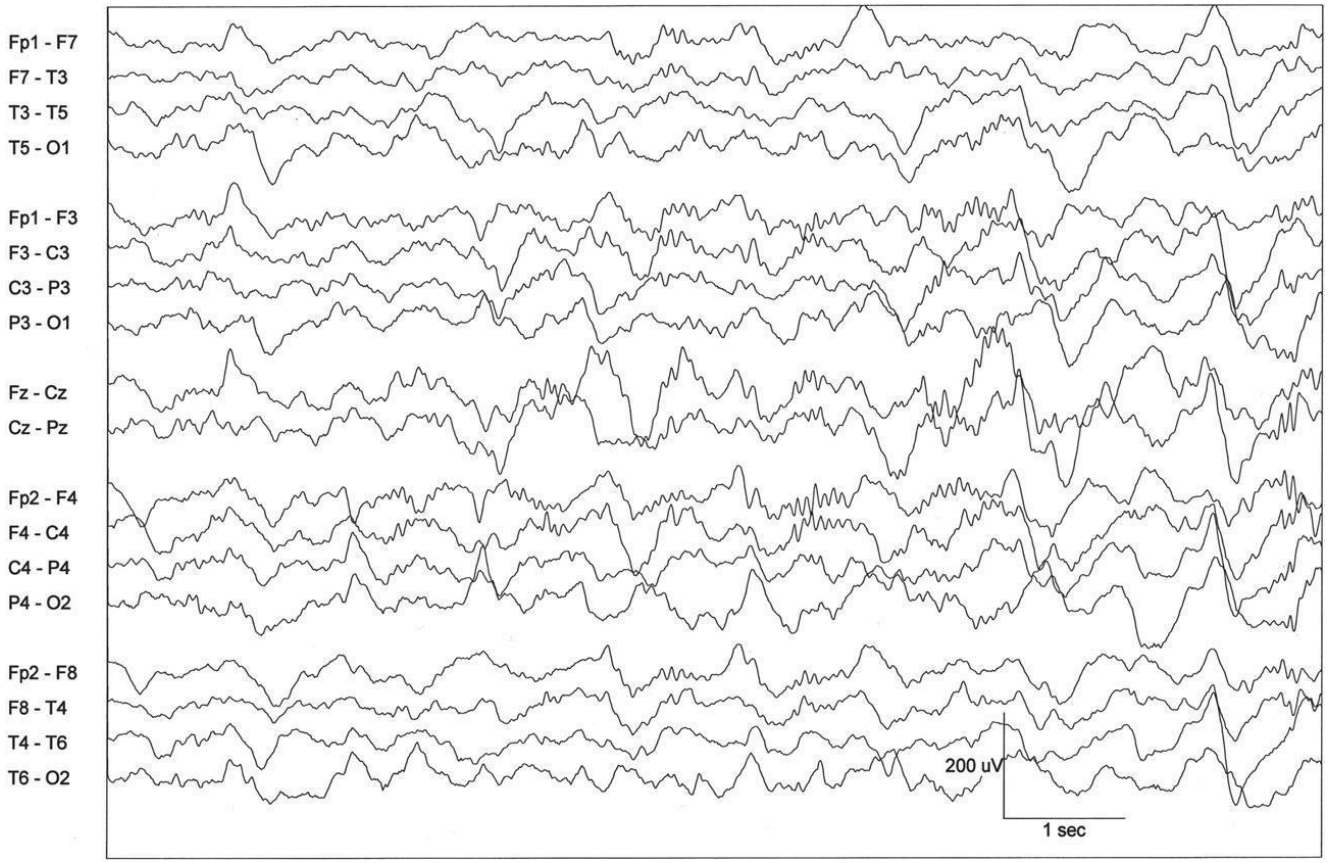
(%20-50 DELTA RİTMİ)

10-12 SEC UYKU İĞCİKLERİ AZALMIŞTIR

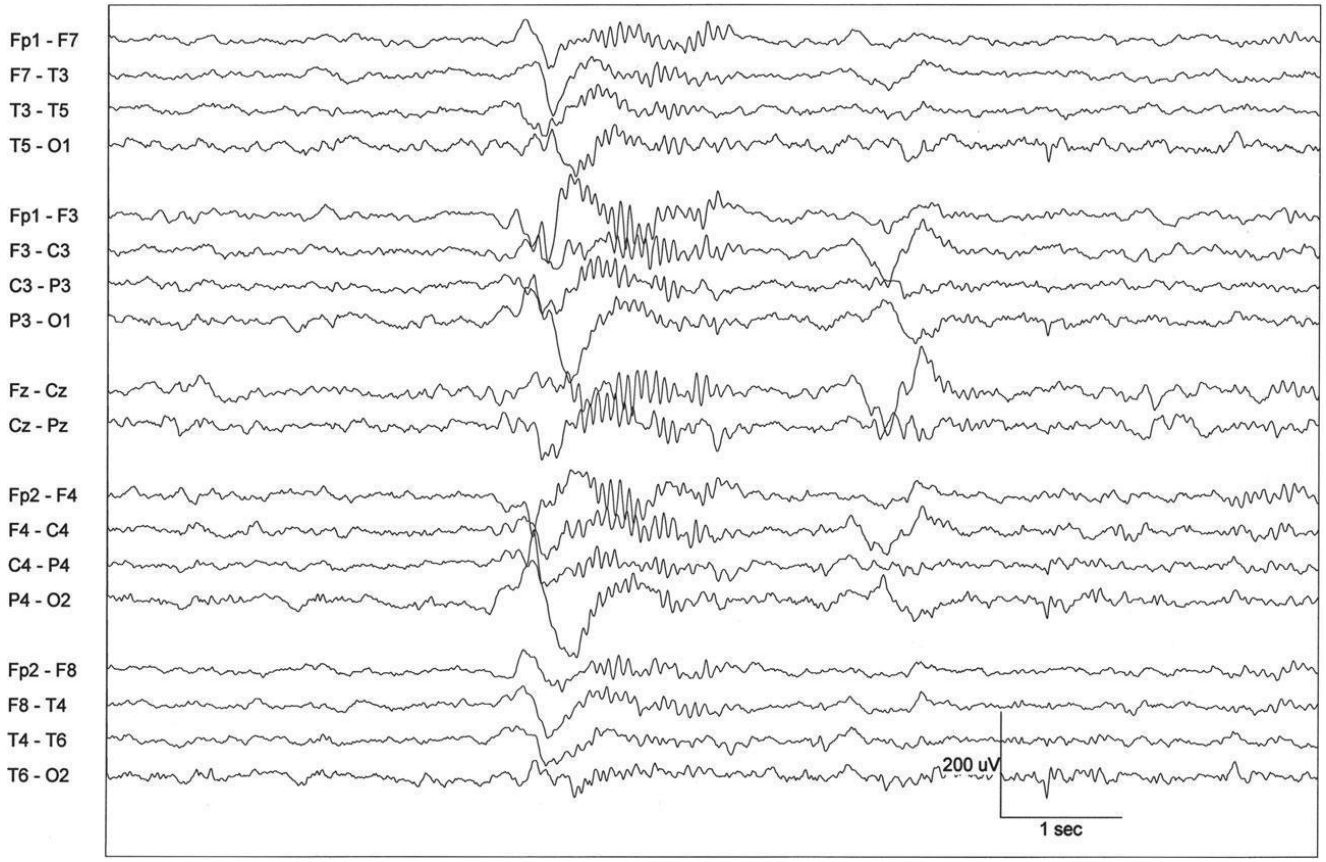


EVRE IV UYKU: DERİN UYKU II

(>%50 DELTA RİTMİ)



K- KOMPLEKSİ


Fp1 - F7
F7 - T3
T3 - T5
T5 - O1
Fp1 - F3
F3 - C3
C3 - P3
P3 - O1
Fz - Cz
Cz - Pz
Fp2 - F4
F4 - C4
C4 - P4
P4 - O2
Fp2 - F8
F8 - T4
T4 - T6
T6 - O2
200 uV
1 sec

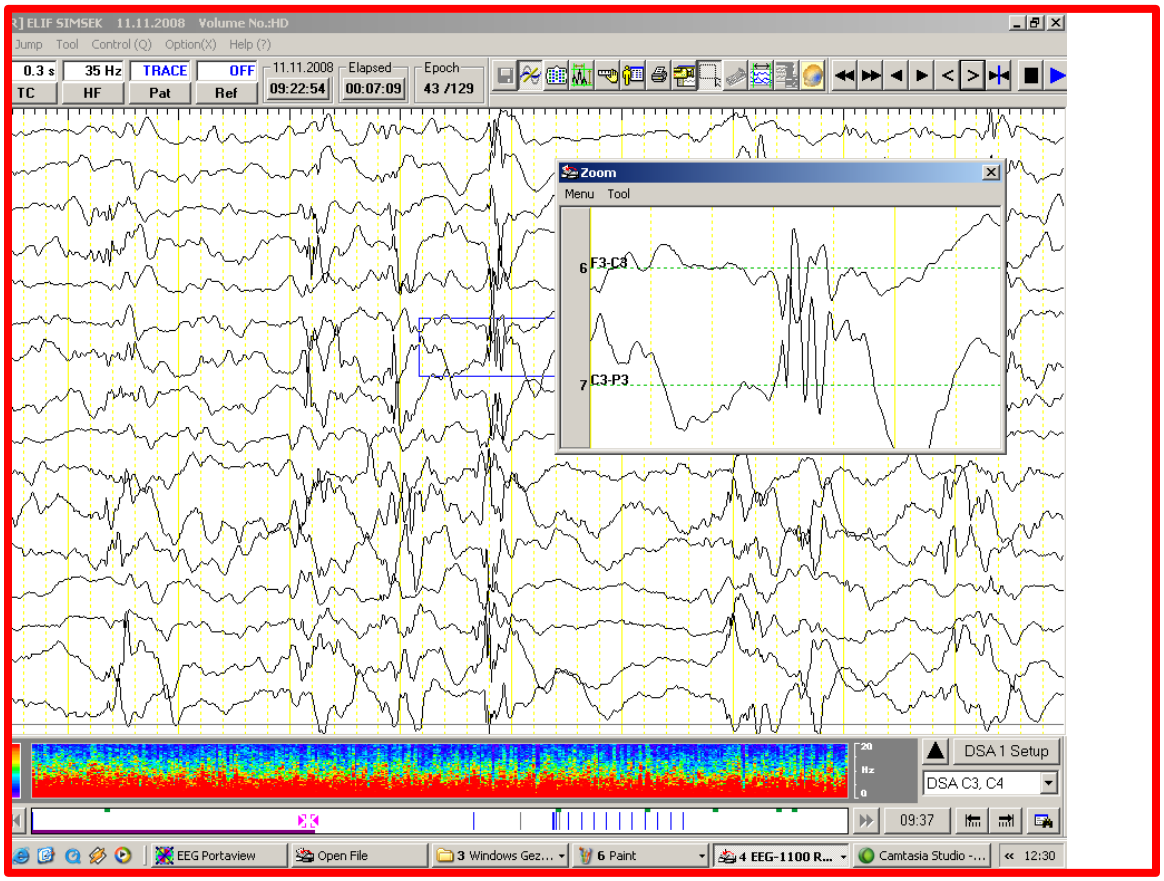
ANORMAL EEG'DE PATOLOJİK TANIMLAMALAR-I

1. Normal Paternlerin Yokluğu
2. Normal Paternlerden Sapma
3. Epileptiform Aktiviteler

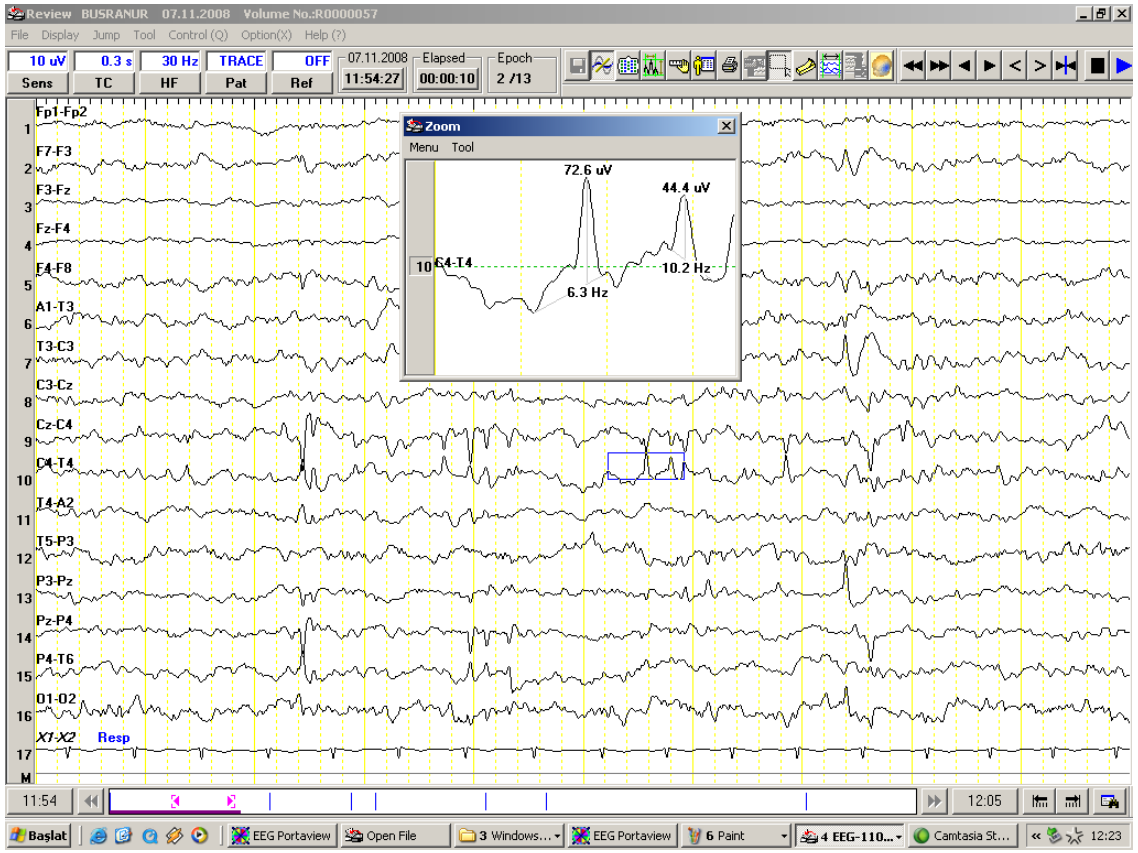
EPİLEPTİFORM AKTİVİTELER

	Süre (ms)	Faz	Morfoloji
I. Diken Dalga (Spike)	20-70	Negatif Pozitif	keskin izole/grup yavaş d±
II. Keskin Dalga (Sharp Wave)	70-200	Negatif	az keskin tek/grup Yavaş d±
III. Yavaş Dalga (Slow Wave)	>200	Negatif	tek/grup

DİKEN DALGA (SPİKE)
(SÜRE: <70 MSN)

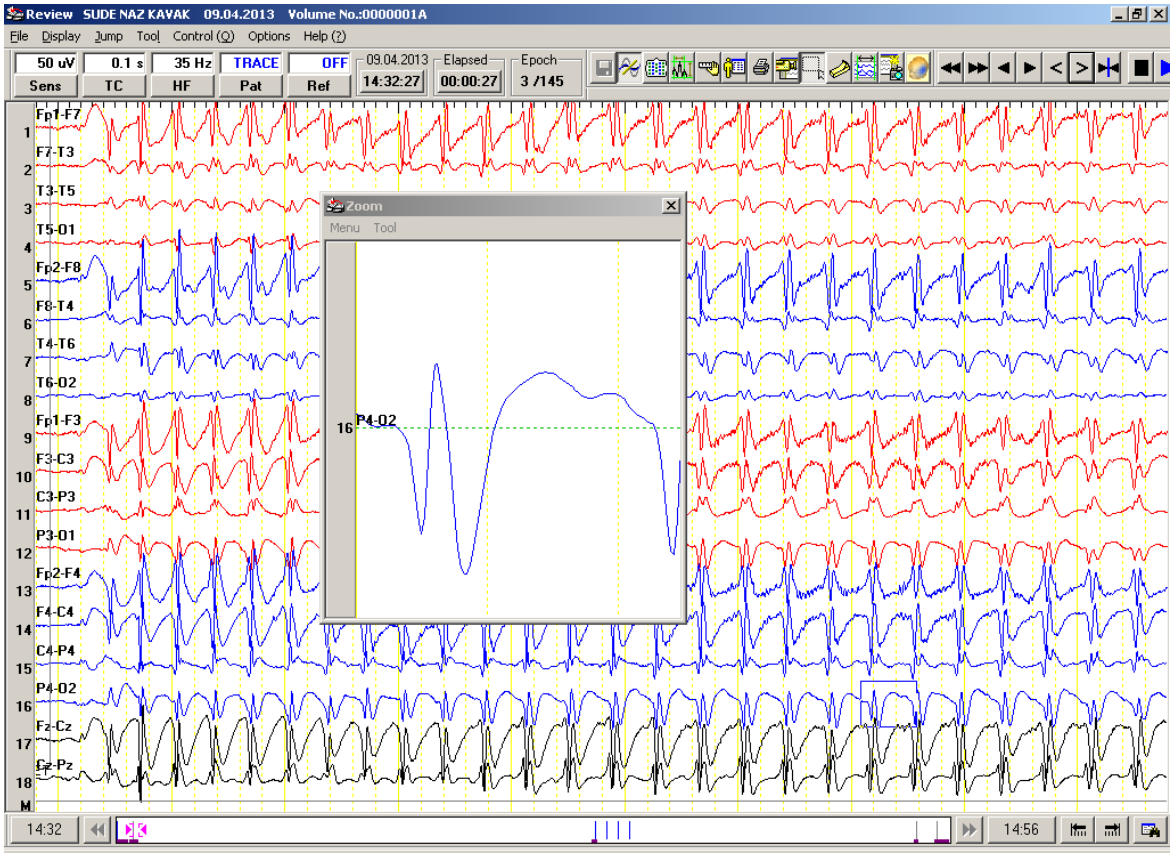


KESKİN DALGA (SHARP WAVE)
(SÜRE: 70-200 MSN)



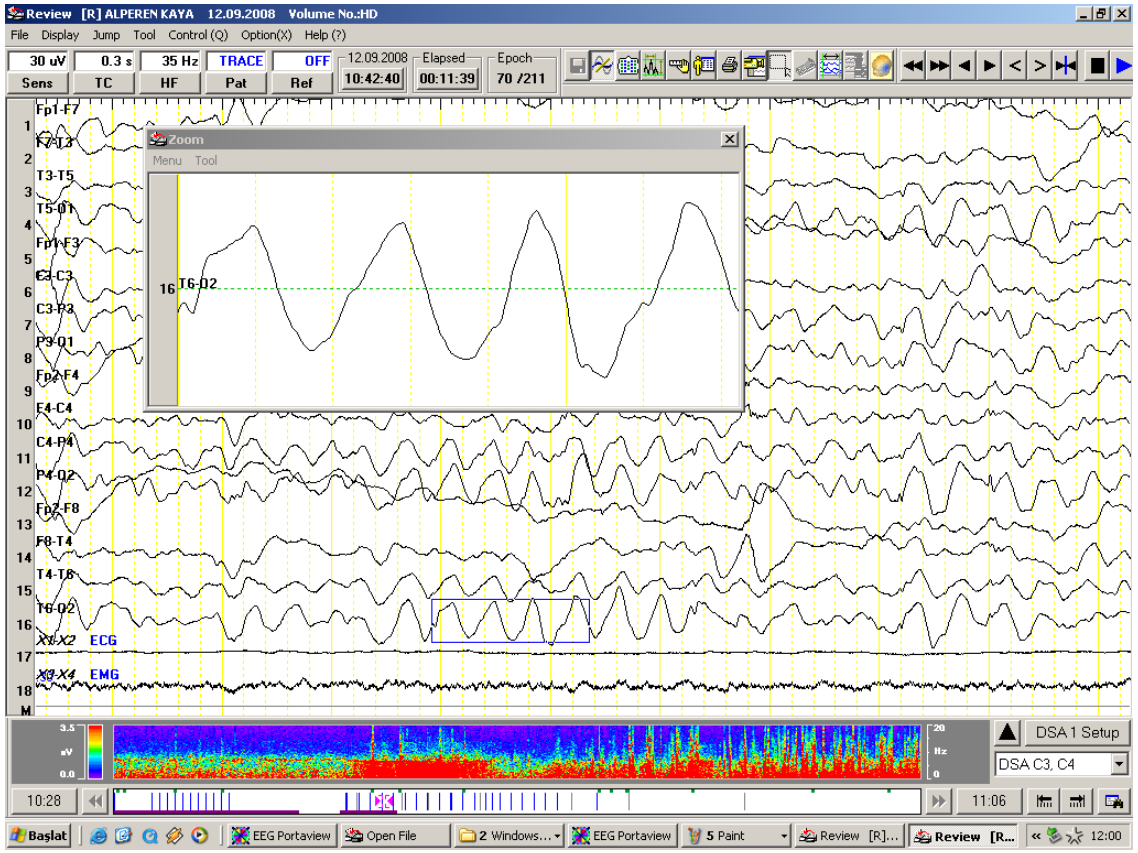
KESKİN DALGA (SHARP WAVE)

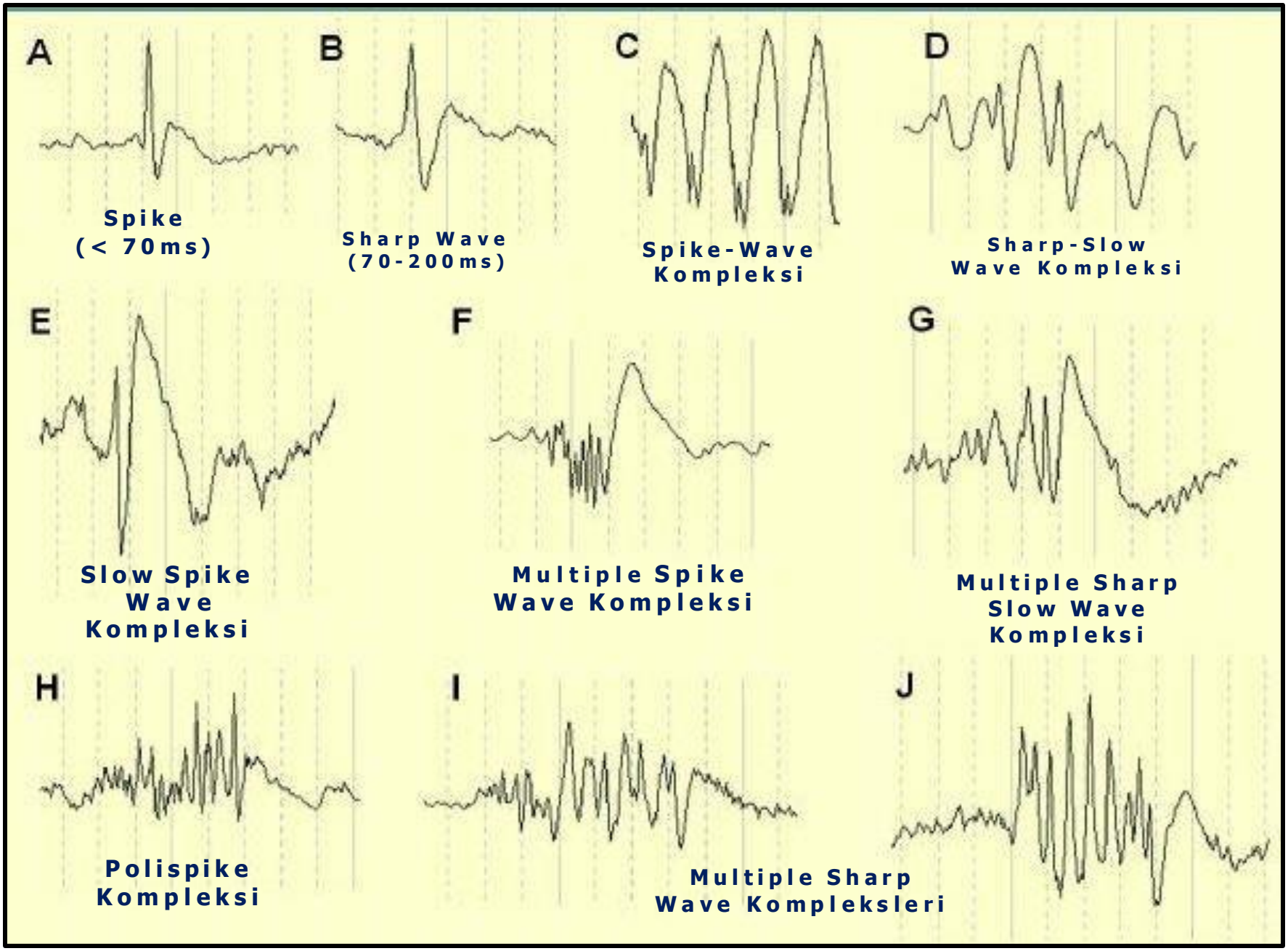
GENELLİKLE ASİMETRİK: 1.FAZ < 2.FAZ

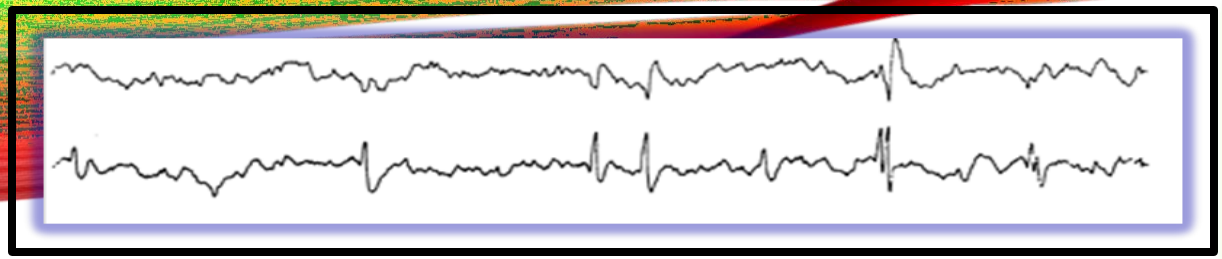


YAVAŞ DALGA (SLOW WAVE)

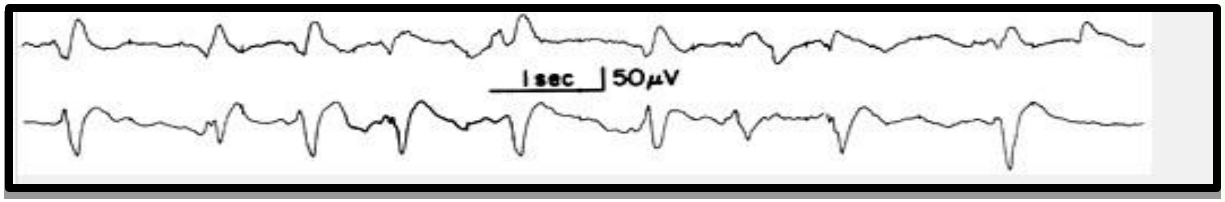
(SÜRE: > 200MSN)



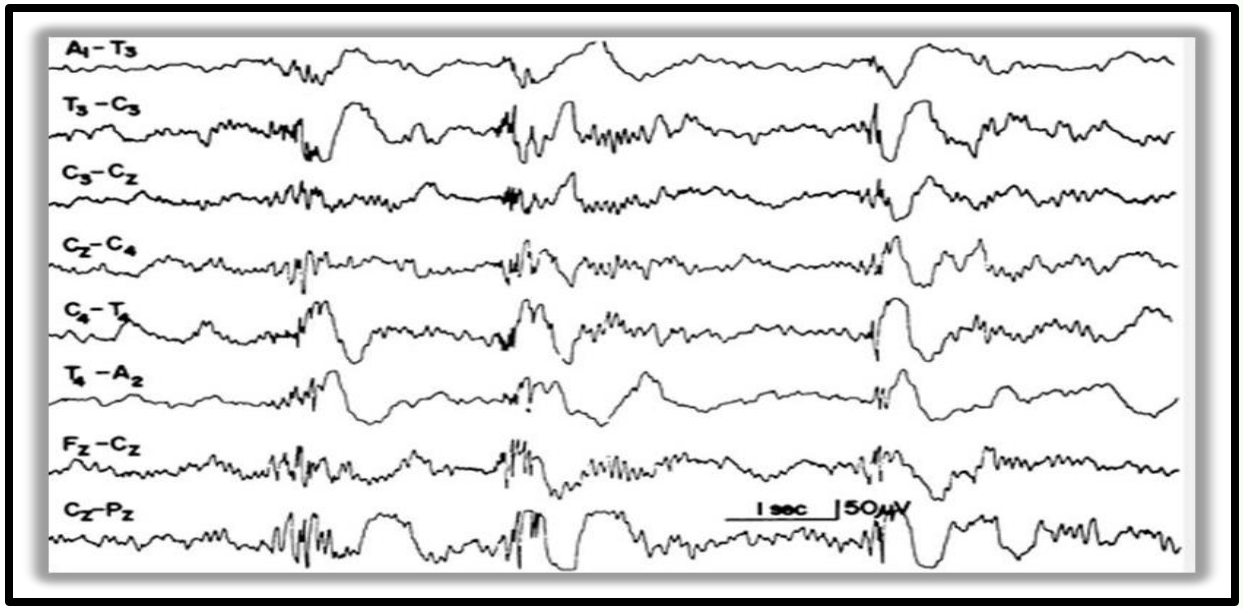

A
Spike
(< 70ms)
B
Sharp Wave
(70-200ms)
C
Spike-Wave
Kompleksi
D
Sharp-Slow
Wave Kompleksi
E
Slow Spike
Wave
Kompleksi
F
Multiple Spike
Wave Kompleksi
G
Multiple Sharp
Slow Wave
Kompleksi
H
Polispike
Kompleksi
I
J
Multiple Sharp
Wave Kompleksleri



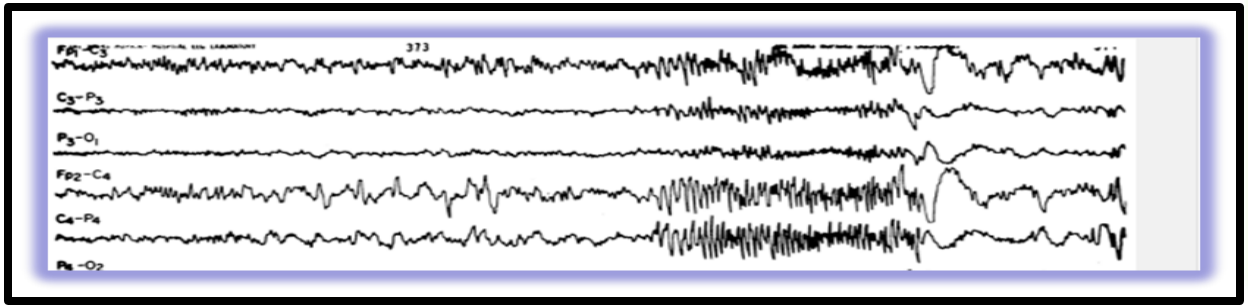
Diken- Spike



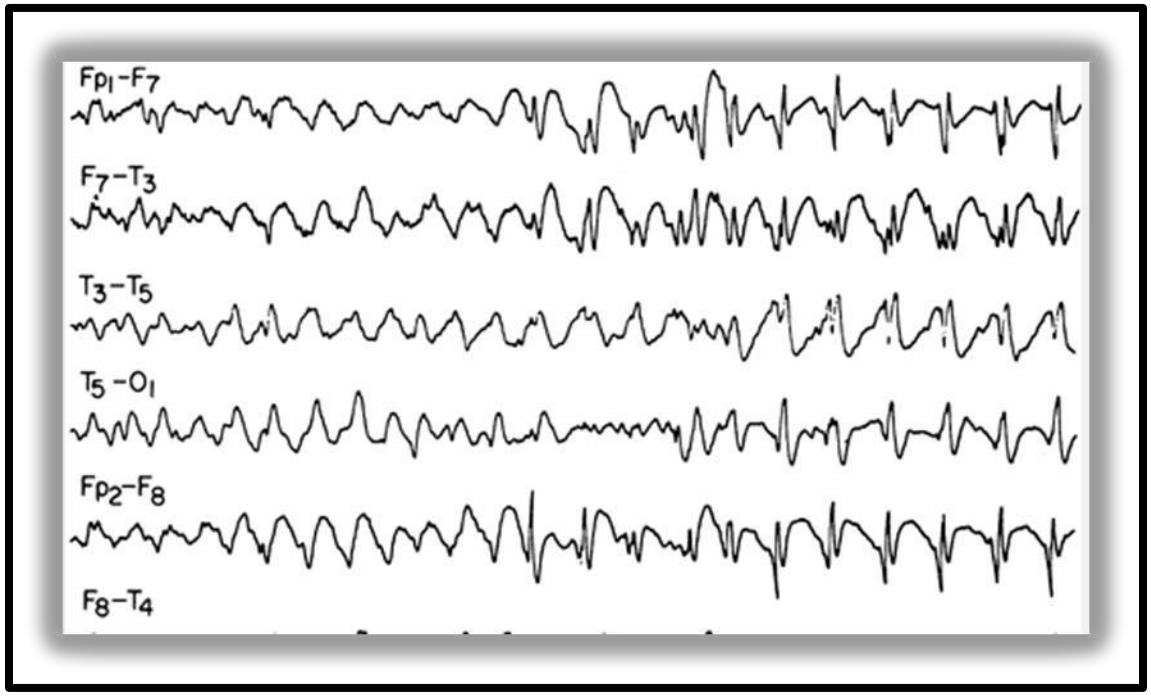
Keskin- Sharp Wave



Çoklu Spike



Çoklu Spike Serisi

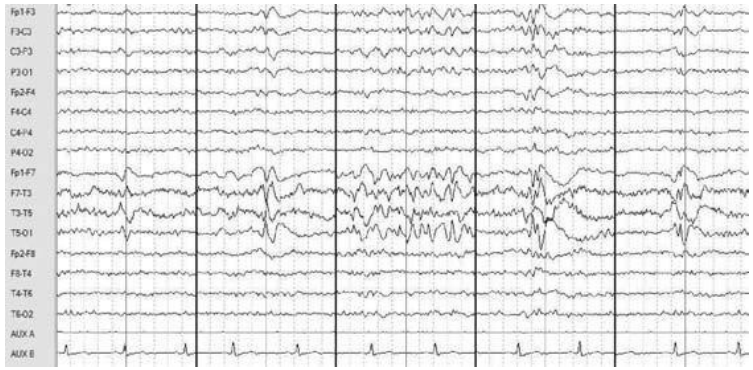


Diken Dalga Kompleksi - > 5sn

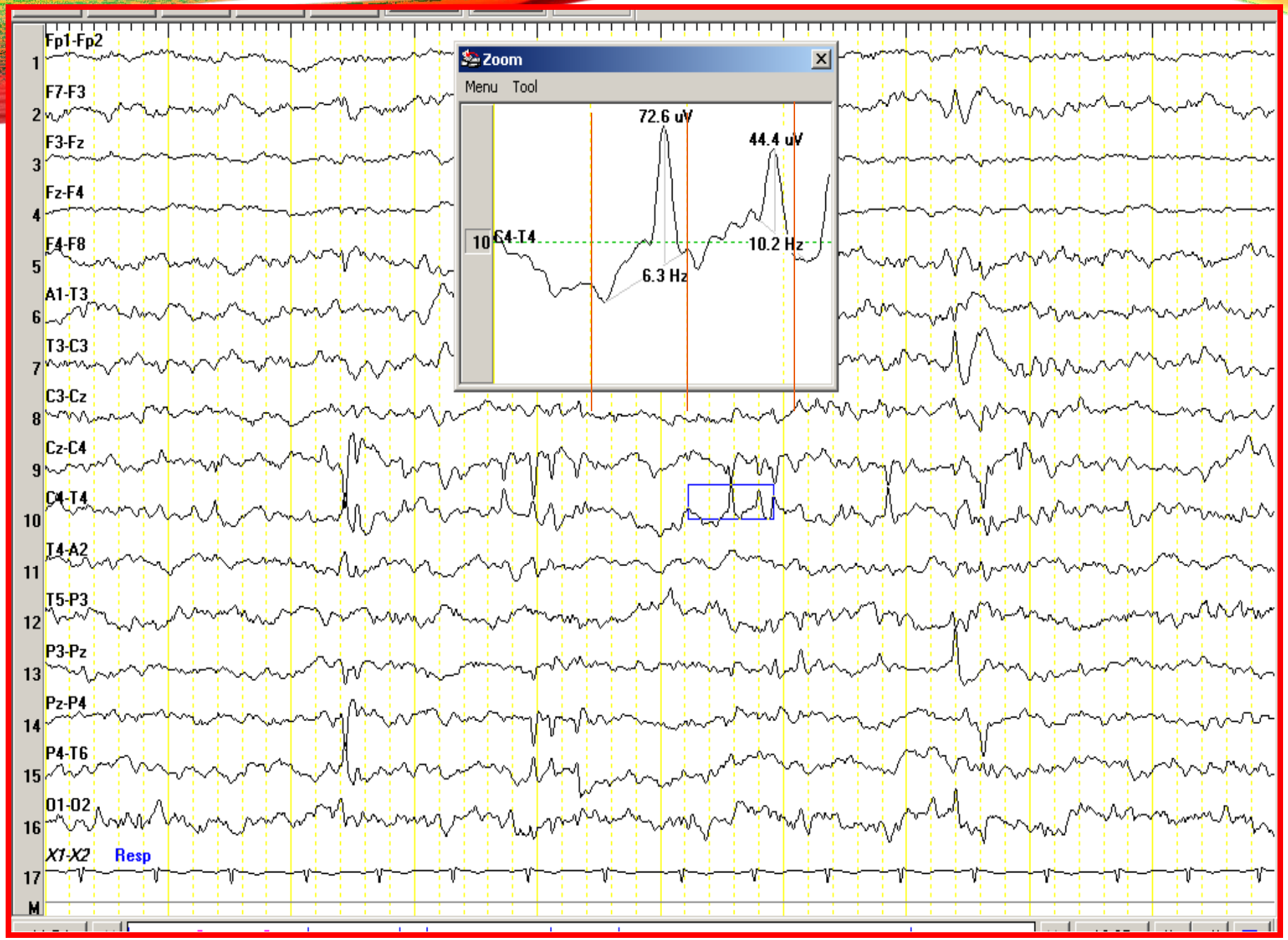
EPİLEPTİFORM AKTVİTELER

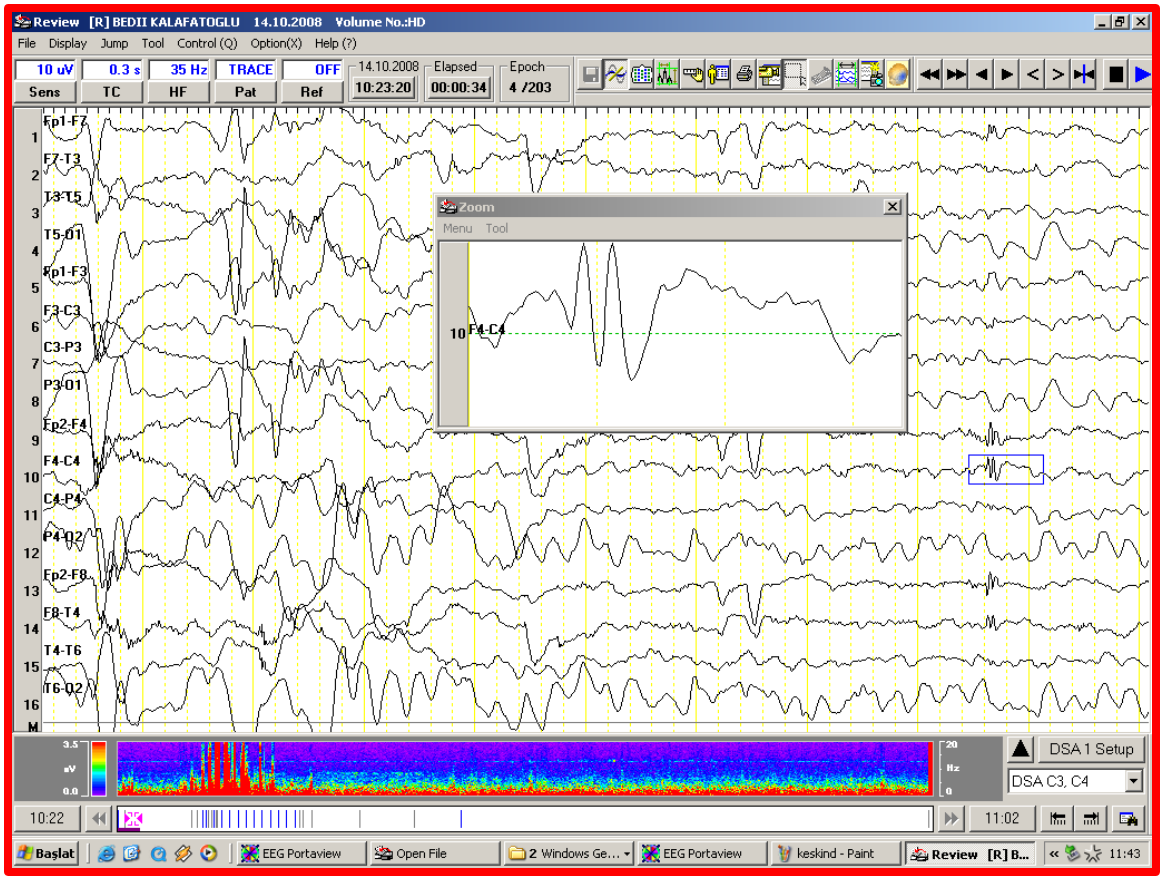
Diken- Spike

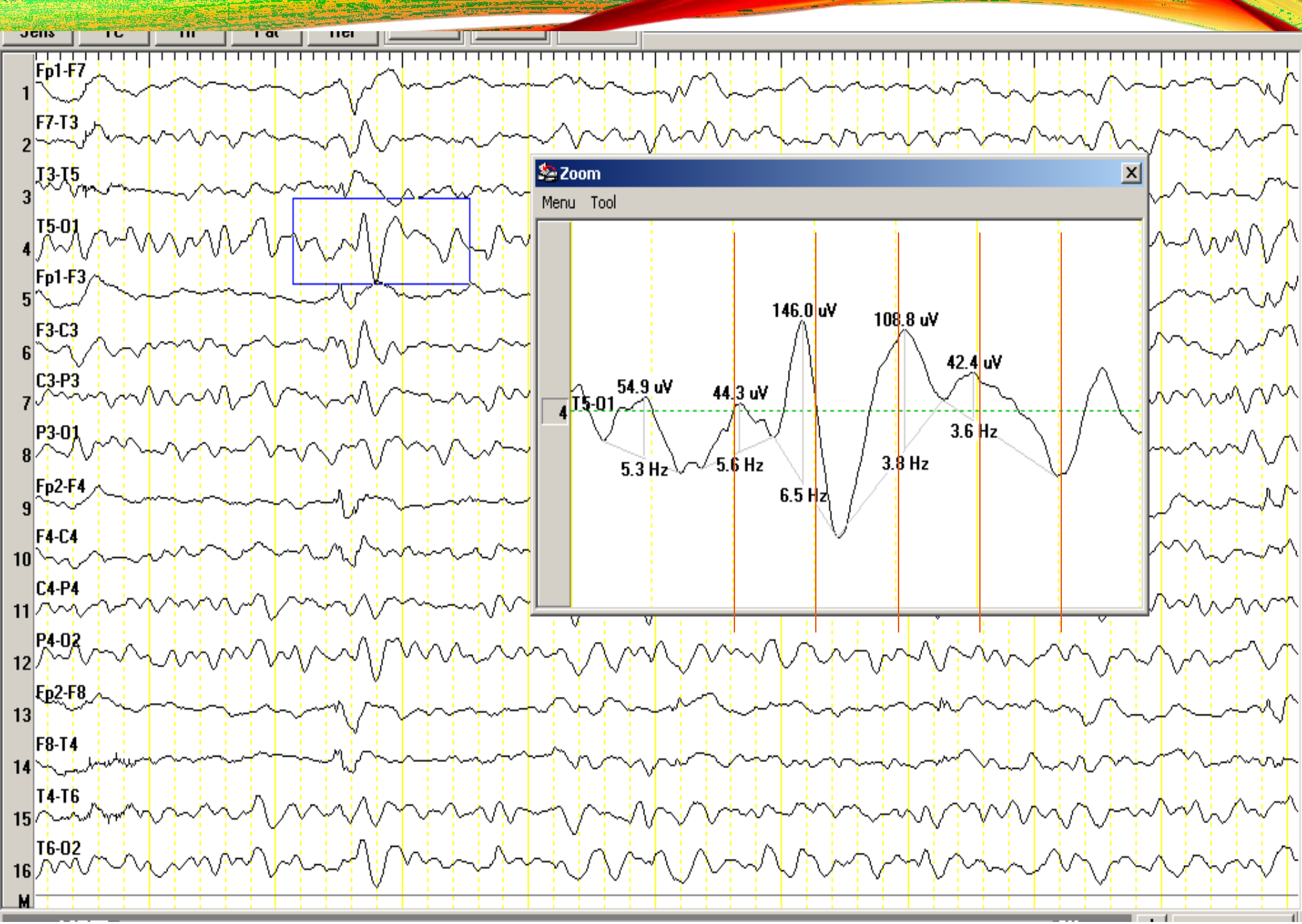
Keskin- Sharp Wave



Çoklu Diken-spike Serisi


Fp1-Fp2
F7-F3
F3-Fz
Fz-F4
F4-F8
A1-T3
T3-C3
C3-Cz
Cz-C4
C4-T4
T4-A2
T5-P3
P3-Pz
Pz-P4
P4-T6
O1-O2
X1-X2
Resp
Zoom
Menu
Tool
72.6 uV
44.4 uV
10
C4-T4
6.3 Hz
10.2 Hz


Review [R] BEDII KALAFATOGLU 14.10.2008 Volume No.:HD
File Display Jump Tool Control (Q) Option(X) Help (?)
10 uV 0.3 s 35 Hz TRACE OFF
Sens TC HF Pat Ref
14.10.2008 10:23:20
Elapsed 00:00:34
Epoch 4 /203
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
Zoom
Menu Tool
10 F4-C4
DSA 1 Setup
DSA C3, C4
10:22
11:02
Başlat
EEG Portaview
Open File
2 Windows Ge...
EEG Portaview
keskind - Paint
Review [R] B...
11:43


Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
1
2
3
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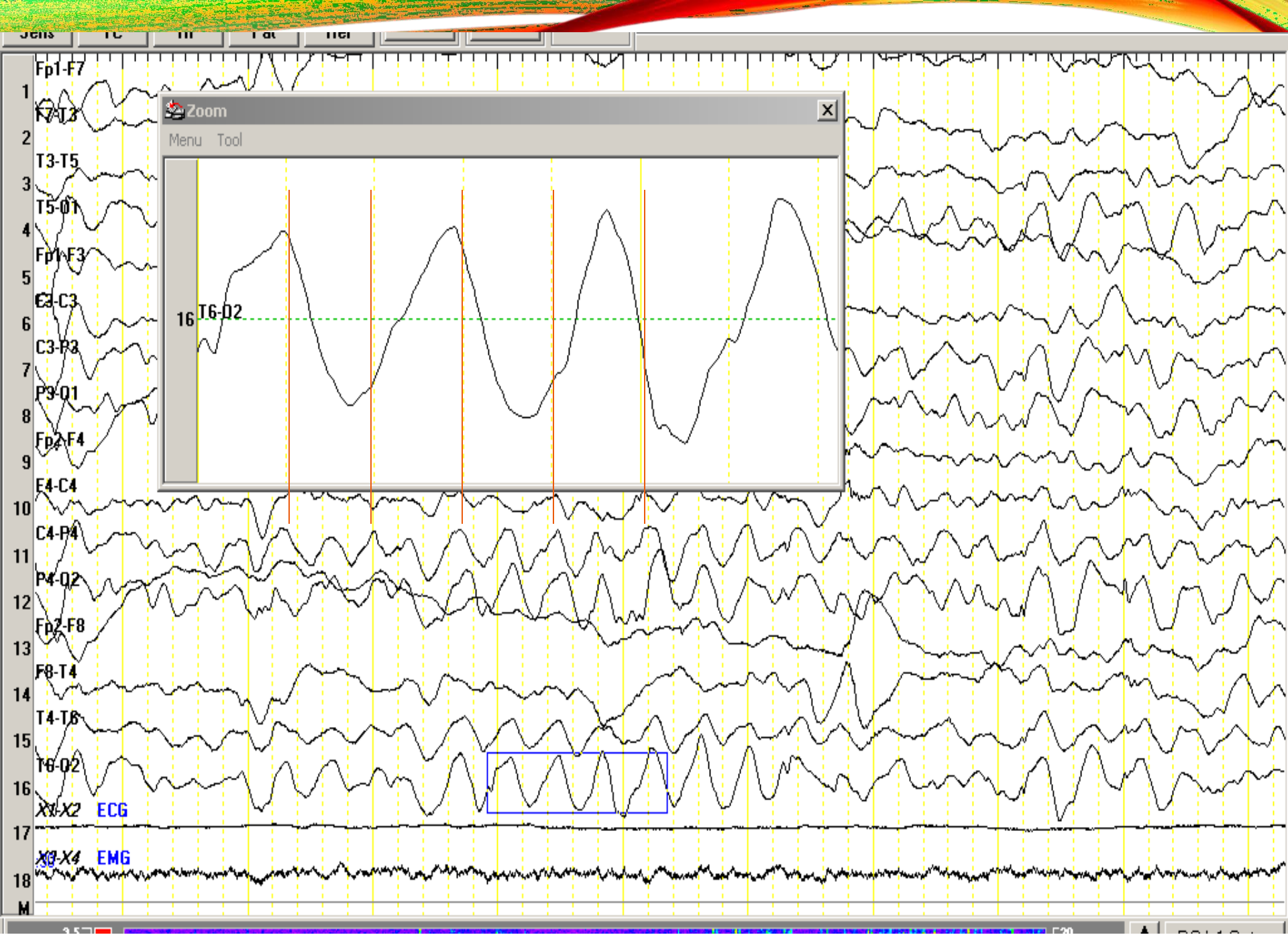
5
6
7
8
9
10
11
12
13
14
15
16
M
Zoom
Menu
Tool
T5-O1
54.9 uV
5.3 Hz
44.3 uV
5.6 Hz
146.0 uV
6.5 Hz
108.8 uV
3.8 Hz
42.4 uV
3.6 Hz


Zoom
Menu Tool
16 T6-O2
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
C3-C3
C3-P3
P3-O1
Fp2-F4
E4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
X1-X2 ECG
X3-X4 EMG

PATOLOJİK TANIMLAMALAR-II

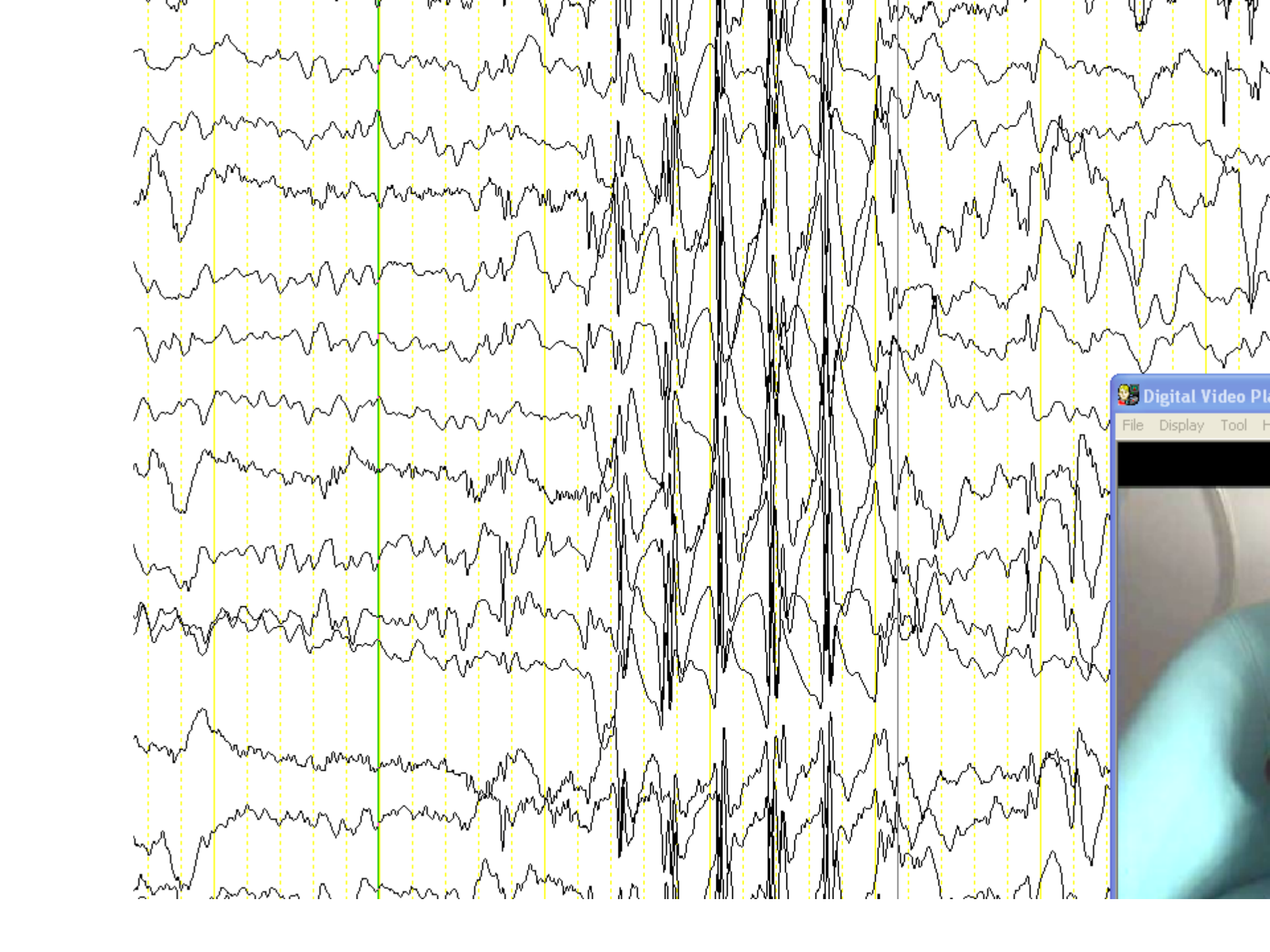
- **Börst (Burst) :** dalga aktivitesi > 200-500msec
- **Deşarj (Discharge): > 1 dk Börst aktivitesi**

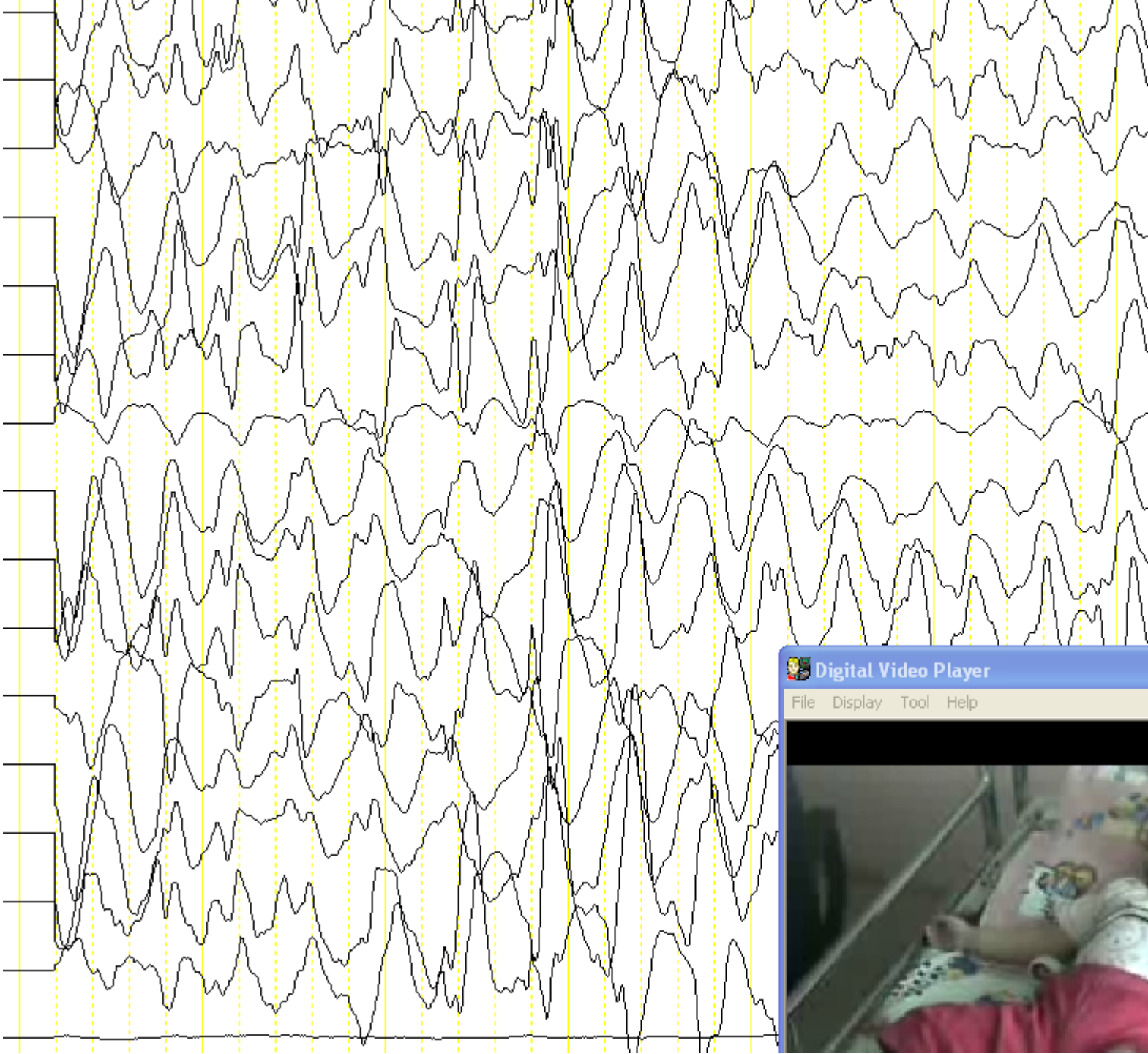
- **Foküs (Focus):** patolojik epileptik aktivitesi gösteren bölgeyi tanımlar

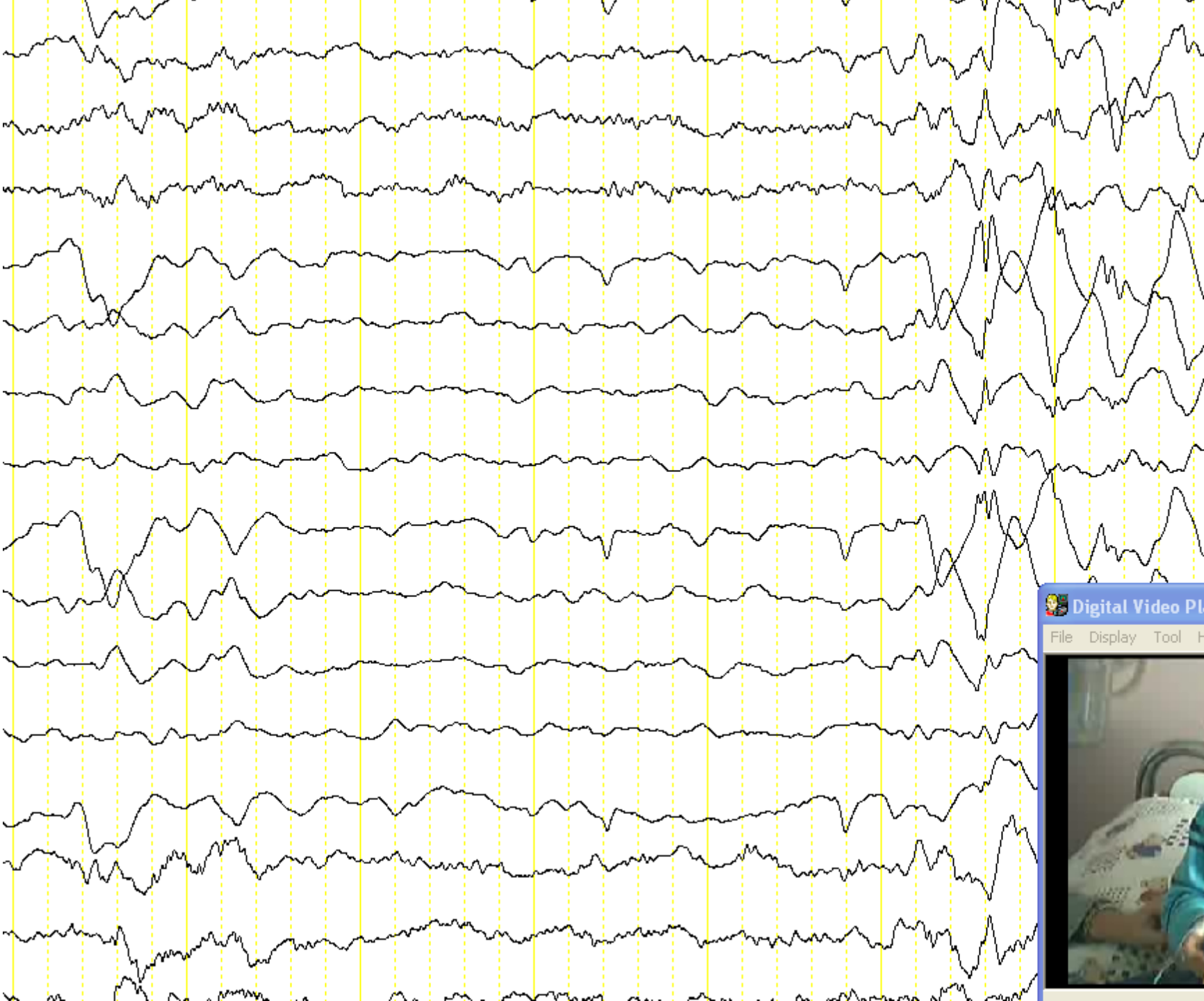
- **Paroksismal (Paroxysm) aktivite**
- **İktal (Ictal) aktivite**

- **Senkroni & Asenkroni**

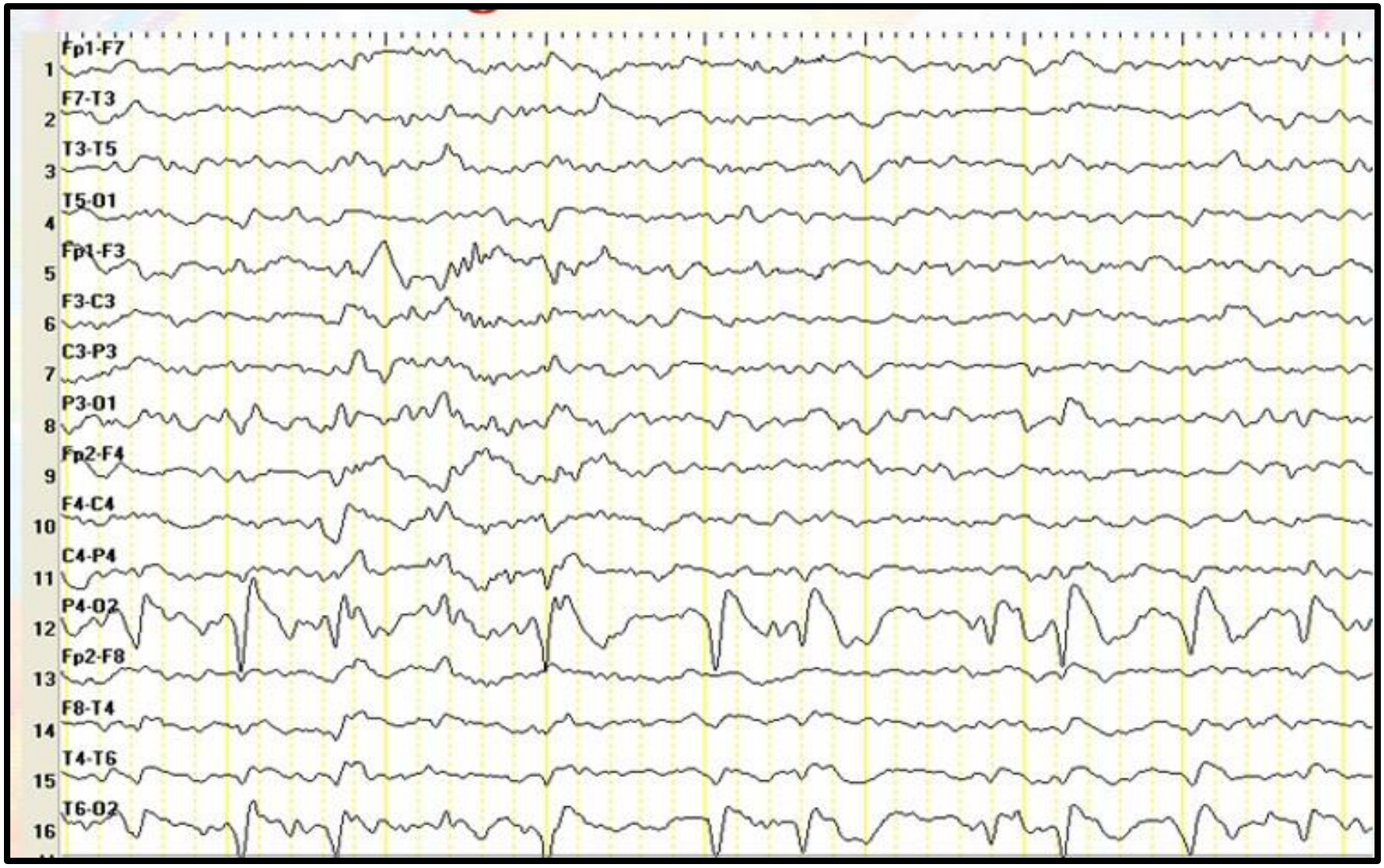
- **Paternler (Pattern)**


Digital Video Pl
File
Display
Tool


Digital Video Player
File
Display
Tool
Help


Digital Video Pl
File
Display
Tool

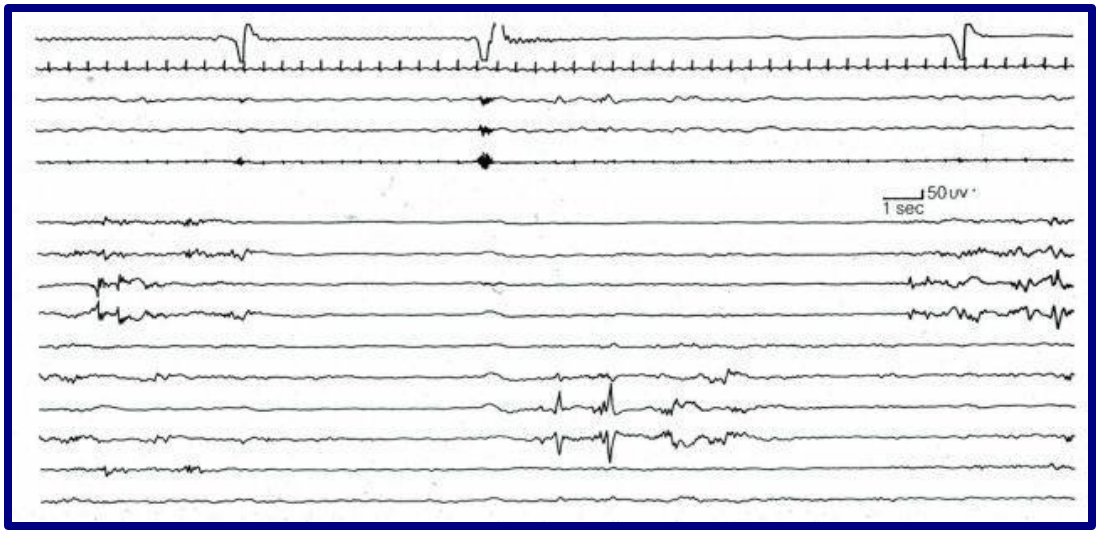
AYNI BÖLGEDE ISRARLI ÇIKAN FOKAL AKTİVİTE: FOKÜS



Oksipital Foküs Longitüdinal Bipolar Montaj

ASENKRONİ & SENKRONİ

Normal Senkroni: İki hemisferde burst aktivite aktivitelerininbaşlangıç ve maksimum amplitüde ulaşma zamanları **2 sn** içinde gerçekleşir.



EPİLEPTİFORM AKTİVİTELER

İnteriktal / İktal

- Fokal
- Jeneralize
- Özgül Patternler

ÇOCUKLUK ÇAĞI EEG'Sİ: TANIMLAR

1. **Fokal aktivite:** Bir elektrod veya grubuna ait aktivite
- Lokalize aktivite: Bir veya birkaç kortikal hemisfer alanına ait fokal aktivite
- Lateralize aktivite: Bir hemisfere ait fokal aktivite
- Multifokal aktivite: > 2 fazla hemisferik alanı tanımlar (*sırt sırta veren anatomik yapılar olmamalı*)

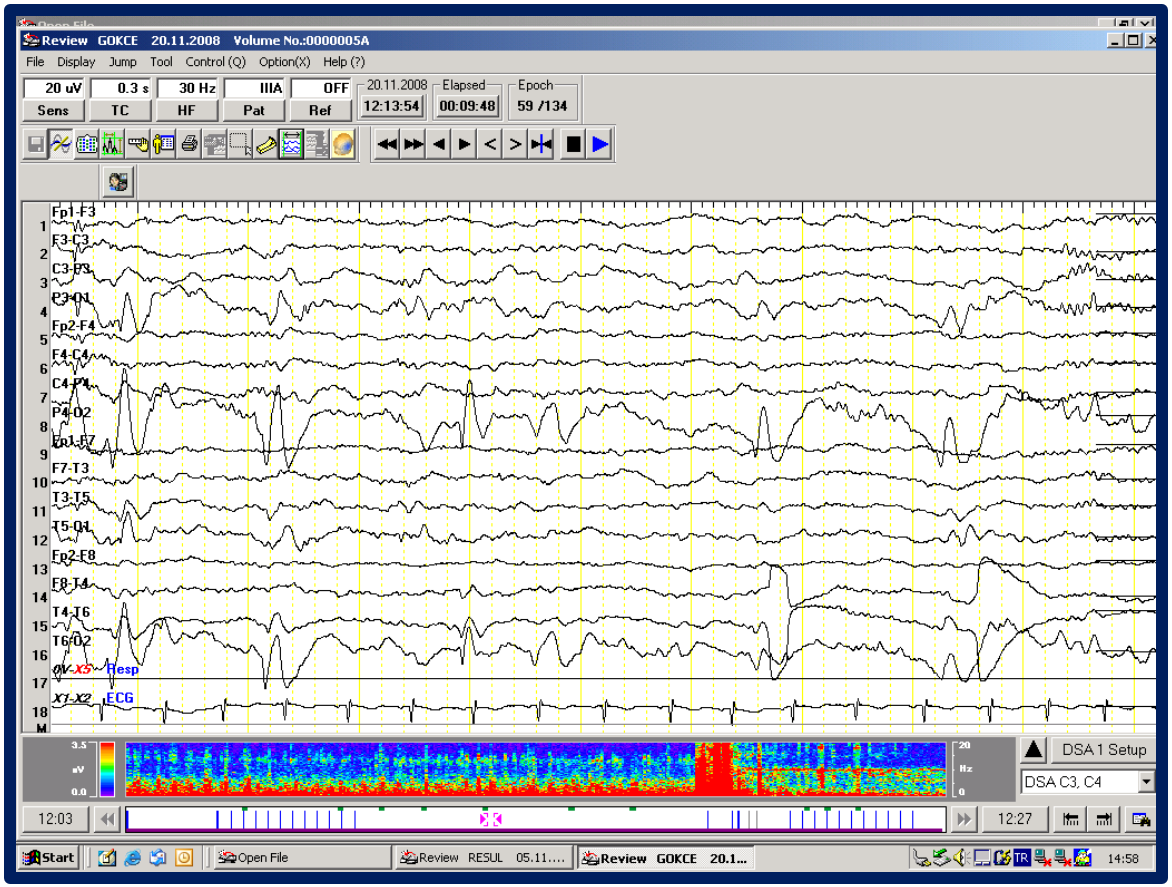
2. **Jeneralize aktivite** : Her iki hemisferden eş zamanlı çıkan aktiviteleri tanımlar (<200msn)

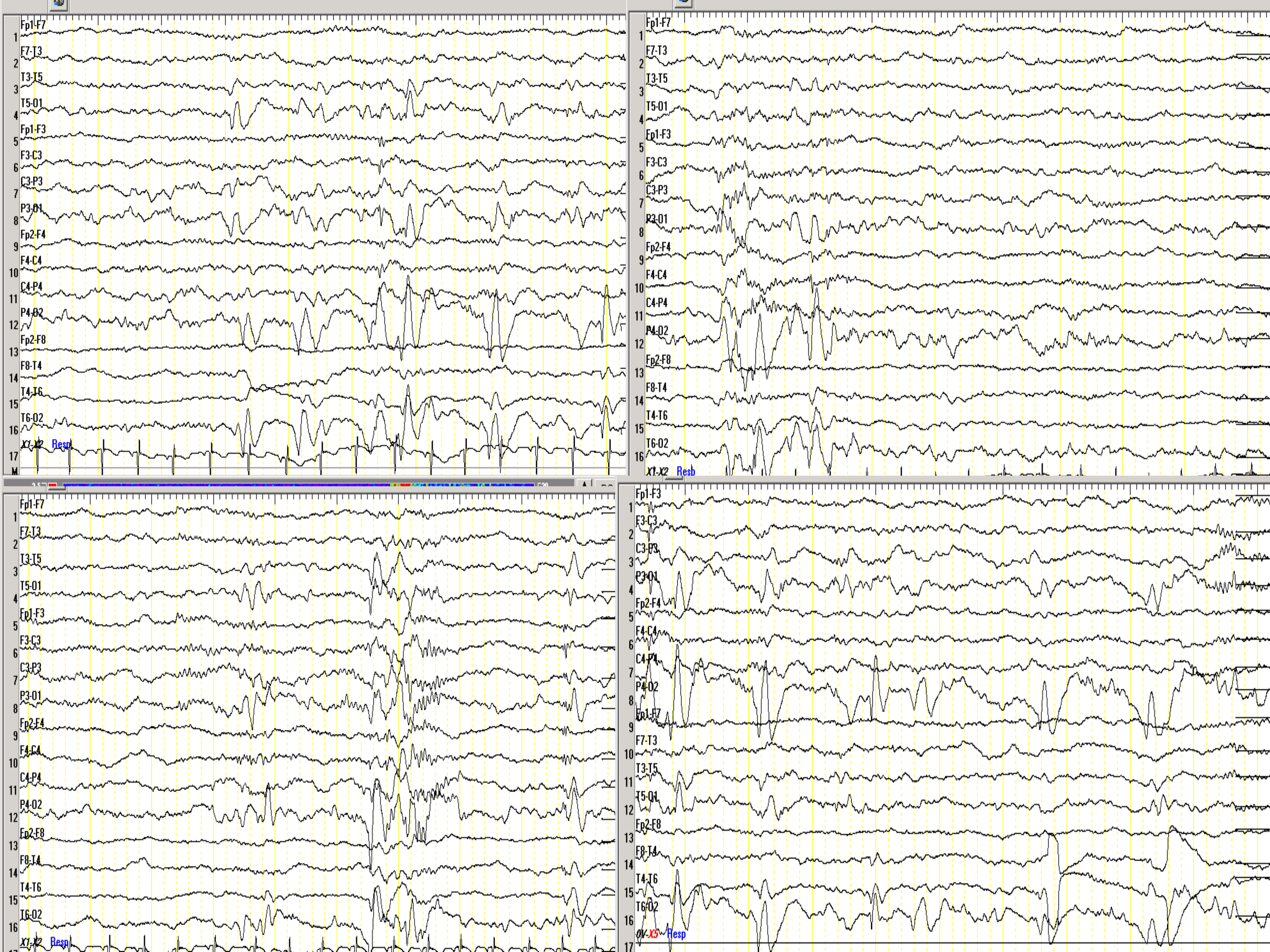
3. **Diffüz aktivite:** intra veya inter hemisferik yaygın aktiviteleri tanımlar.

FOKAL EPİLEPTİFORM AKTİVİTELER

1. İnteriktal / iktal : diken & keskin dalga, yavaş dalga ?
2. Bir / birkaç komşu elektrod (+)
3. Zemin aktivitesinden farklıdır ve aynı bölgeden ısrarla çıkışını sürdürür
4. Birden fazla odak olabilir **(multifokal)**

FOKAL EPİLEPTİFORM İNTERİKTAL AKTİVİTE

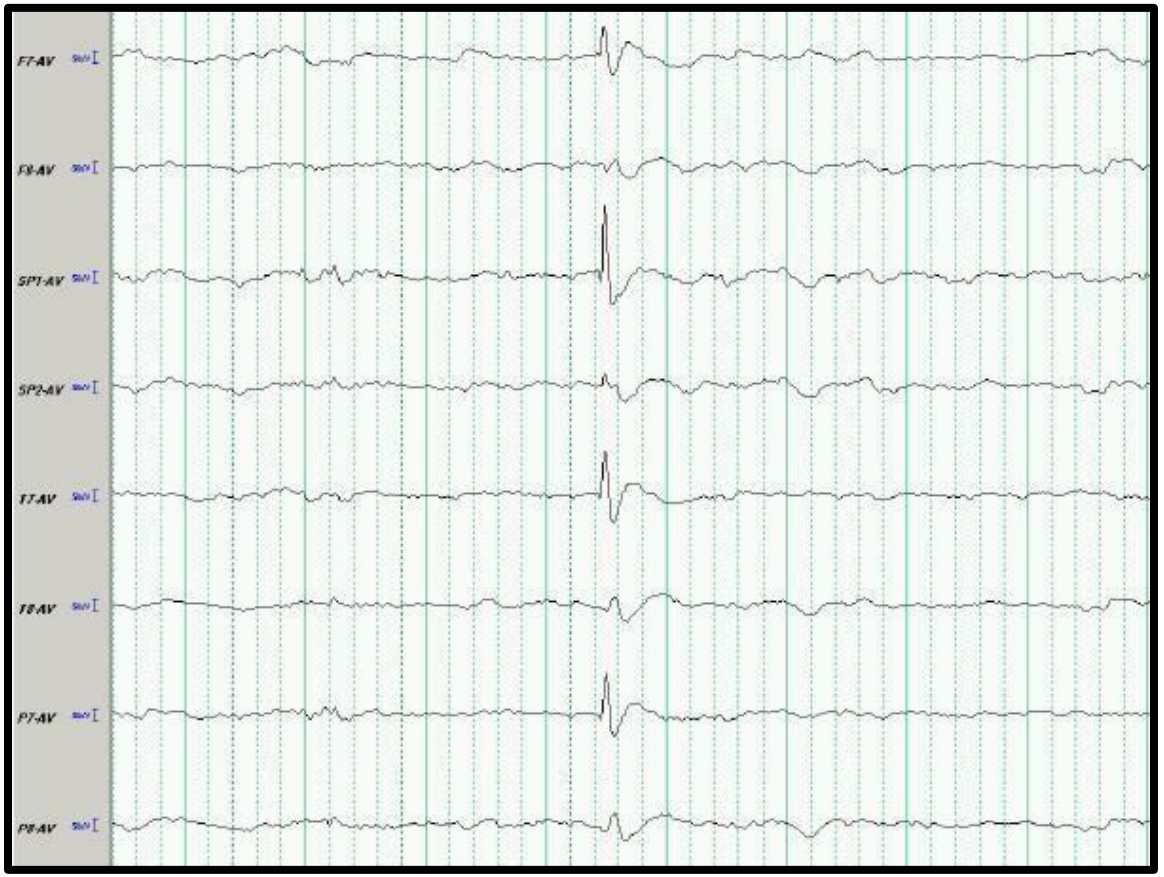



Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
X1-X2
Resp
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
X1-X2
Resp
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
X1-X2
Resp
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp2-F8
F8-T4
T4-T6
T6-O2
0V-X5
Resp

FOKAL EPİLEPTİFORM AKTİVİTE:

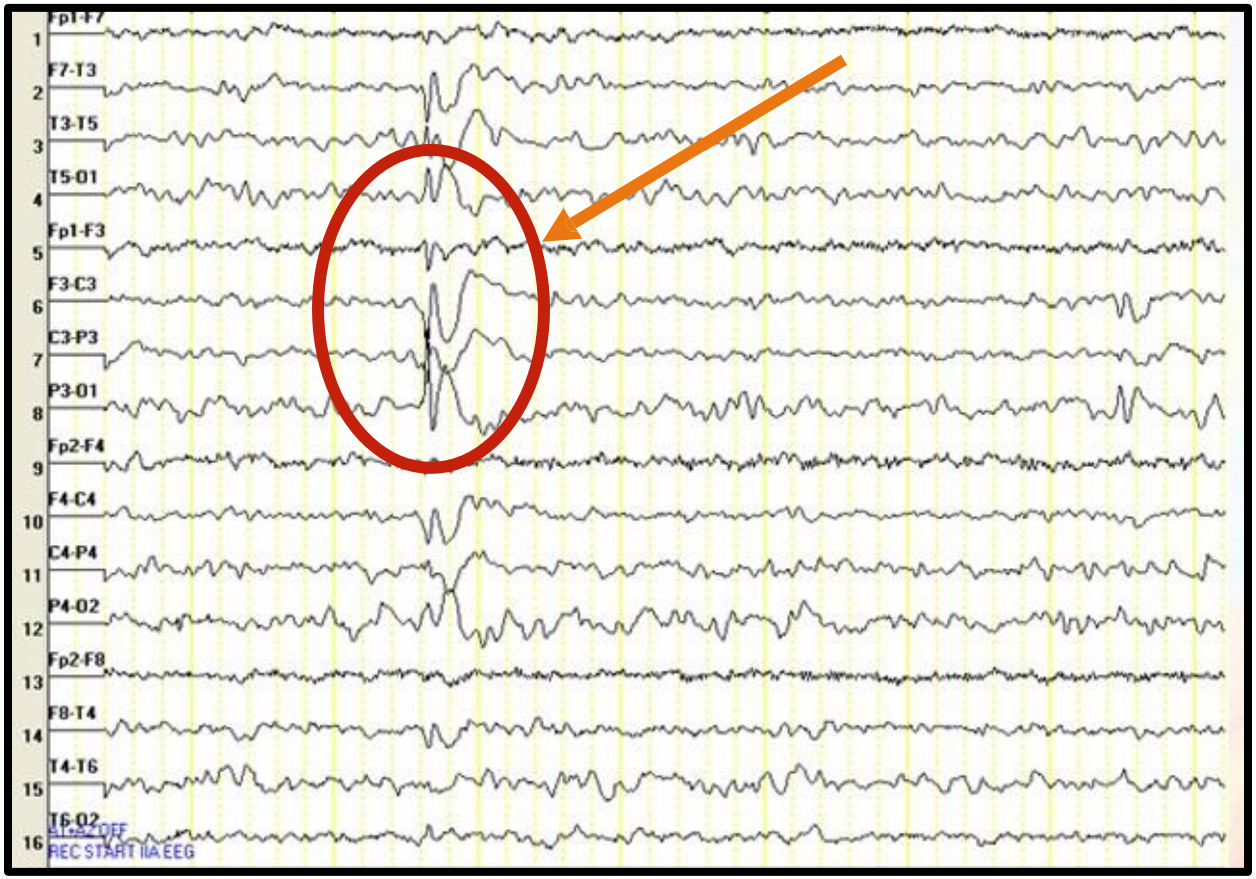
İNTERİKTAL

SOL MTS, SOL TEMPORAL KESKİN DALGA (SHARP WAVE)



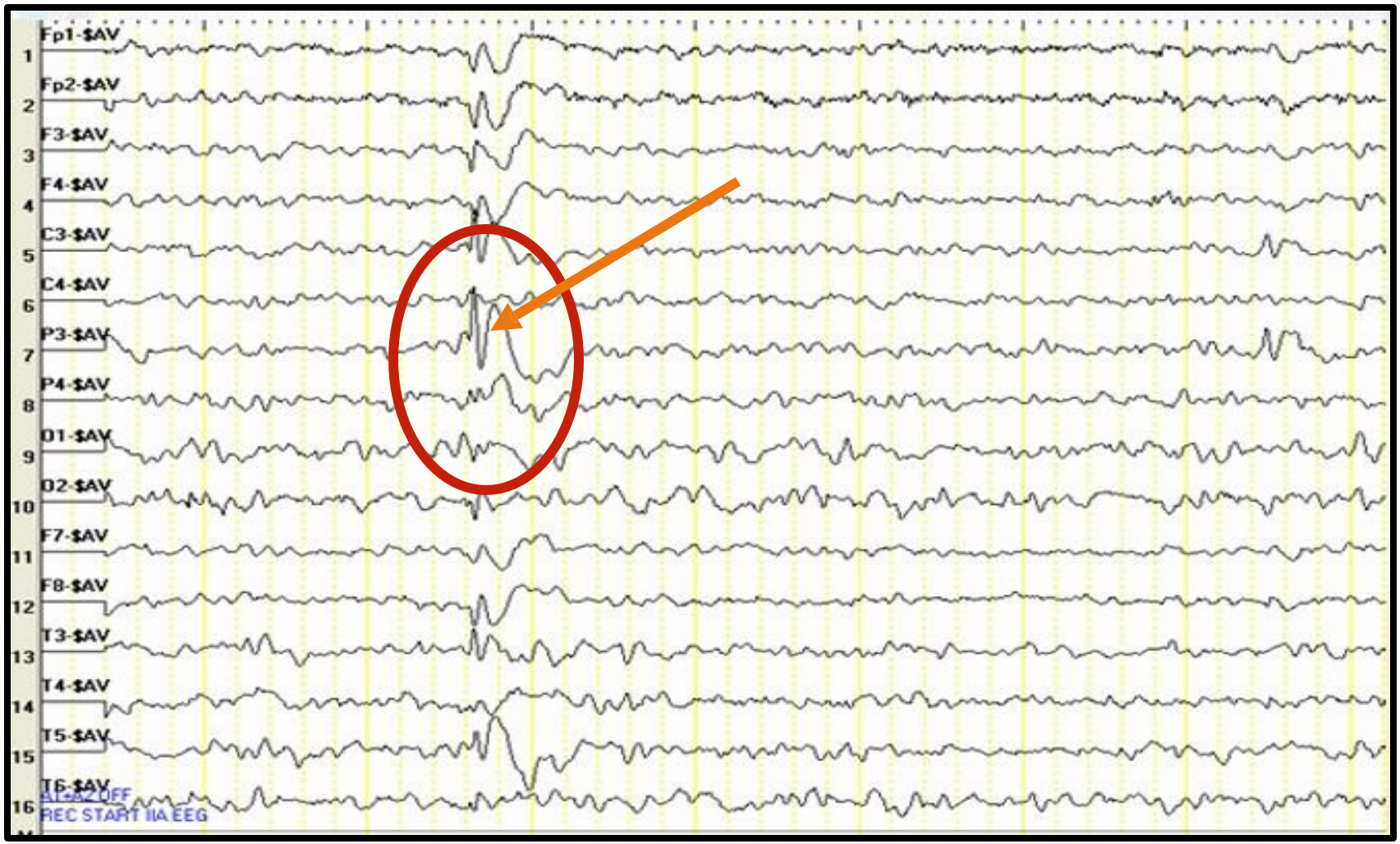
FOKAL EPİLEPTİFORM AKTİVİTE: İNTERİKTAL

BIPOLAR MONTAJ P3 FAZ KARŞILAŞMASI



FOKAL EPİLEPTİFORM AKTİVİTE: İNTERİKTAL

REFERANS MONTAJINDA EN YÜKSEK AMPLITÜD P3'TE



FOKAL EPİLEPTİFORM AKTİVİTE: İNTERİKTAL

Nöbet öyküsü (+): (%80-60)

- İnteriktal deşarj yok (%20-40)
- Uzun kayıt
- Tekrarlanan kayıt şans artar
- Aktivasyon yöntemleri (*fotik, HPV, uykusuzluk*)

Nöbet öyküsü (-); <%2

Subklinik epileptik deşarj

FOKAL EPİLEPTİFORM AKTİVİTE: İNTERİKTAL

- Akut/ Kronik Lokal Kortikal Lezyon
- (Vasküler, Tm, Travma)
- Epilepsi ?

Süt Çocuğu

- Yaygın Yapısal Hasar (Anoksi, İskemi)
- Toksik / Metabolik Nedenler
- Elektrolit Denge Bozuklukları

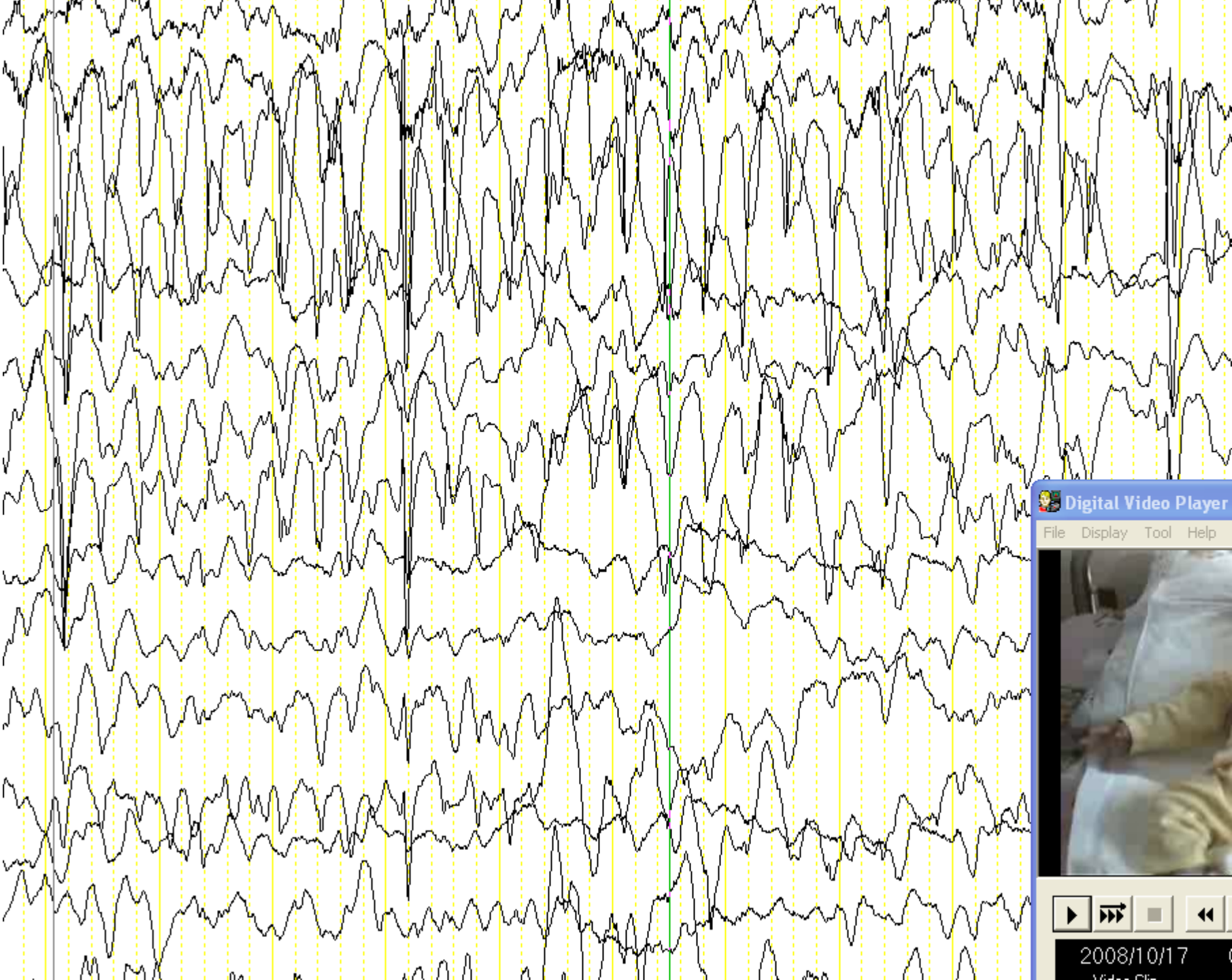
Çocukluk Çağı

- İdyopatik Fokal Epilepsiler

FOKAL EPİLEPTİFORM İKTAL AKTİVİTE:

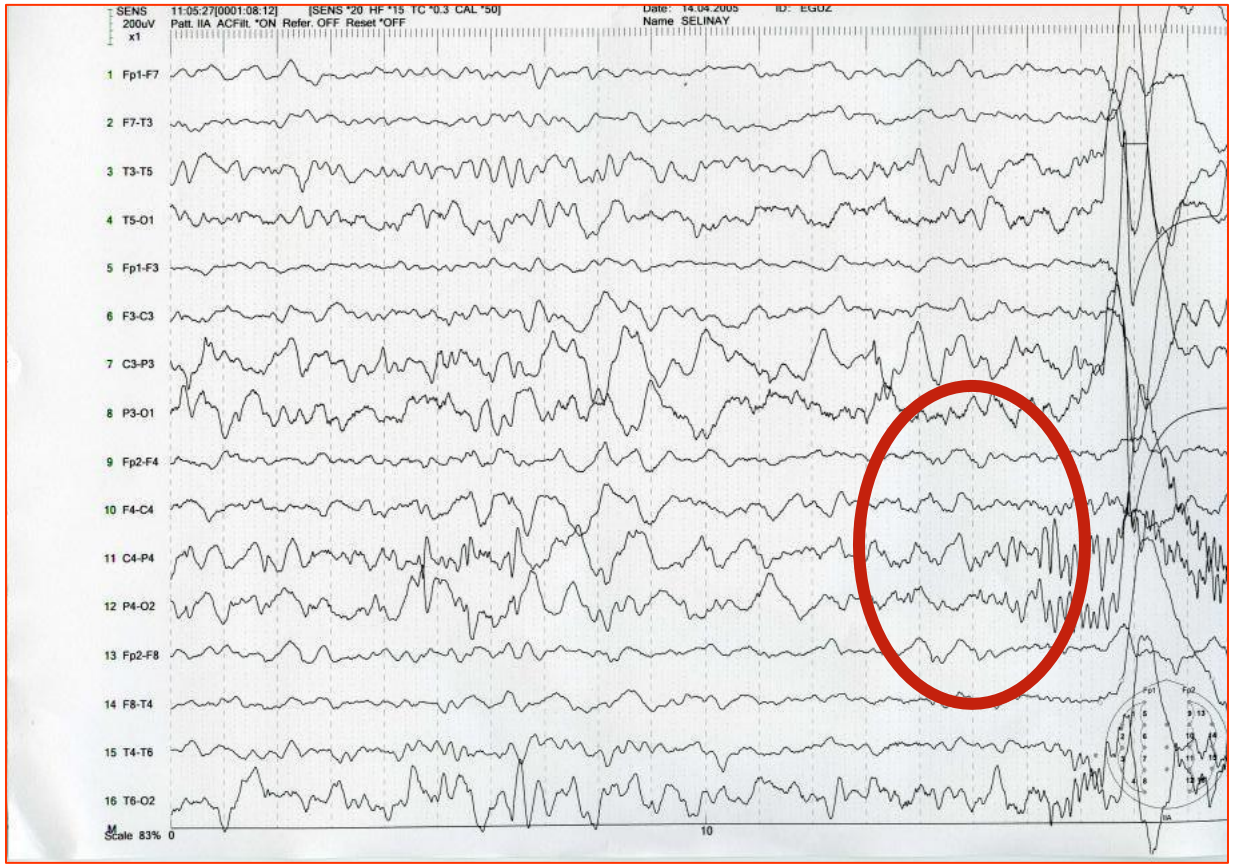
ELEKTROGRAFİK İMZA

1. Fokal ritmik aktivite: **ritmik / semiritmik**
2. Nöbetin sonuna doğru frekans düşer **(evolusyon)**
3. **Postiktal yavaş aktivite** - ritmik iktal aktiviteden ayırdetmek güç olabilir
4. Fokal iktal deşarjlar **voltaj düşüşü** ile başlayabilir.

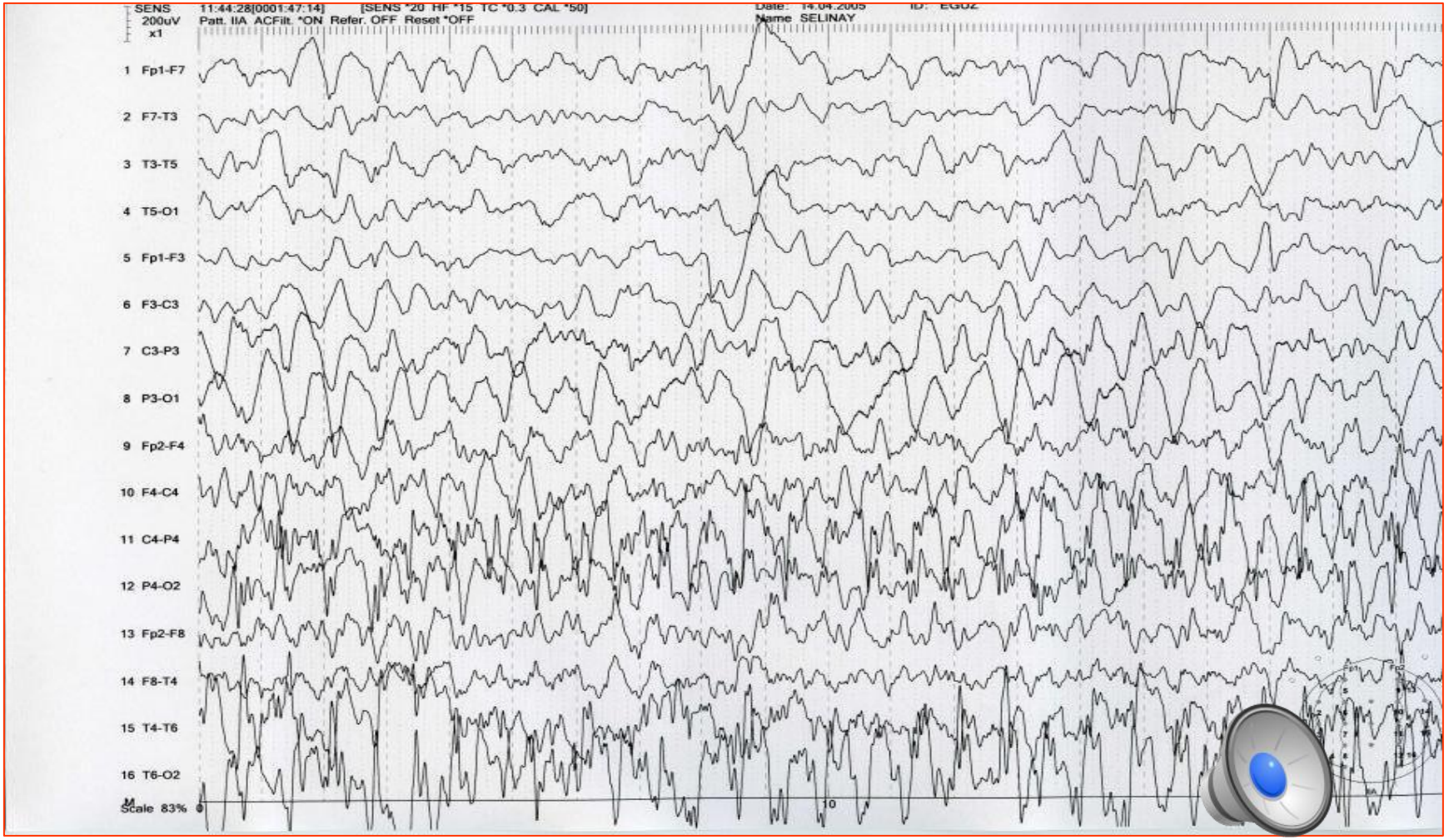

Digital Video Player
File
Display
Tool
Help
2008/10/17

FOKAL EPİLEPTİFORM İKTAL AKTİVİTE:

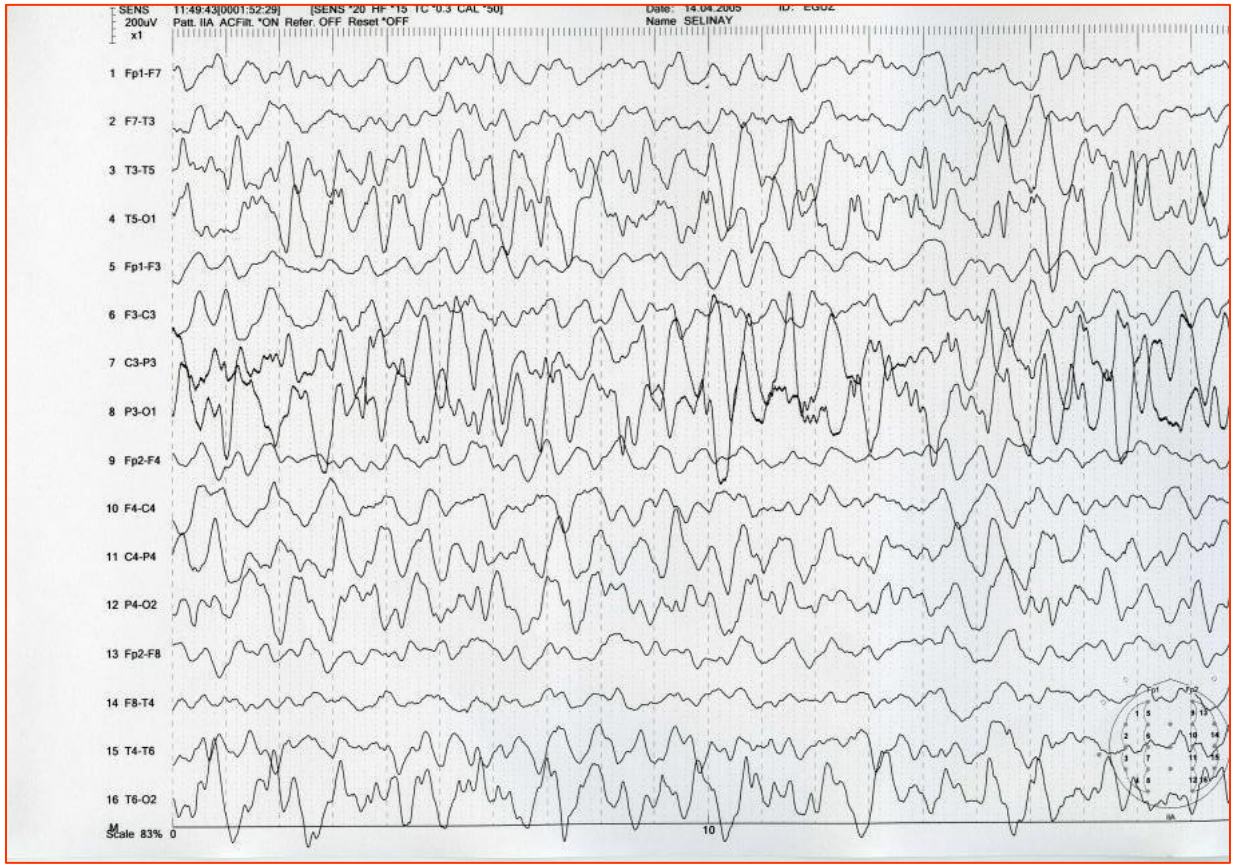
SAĞ FOKAL



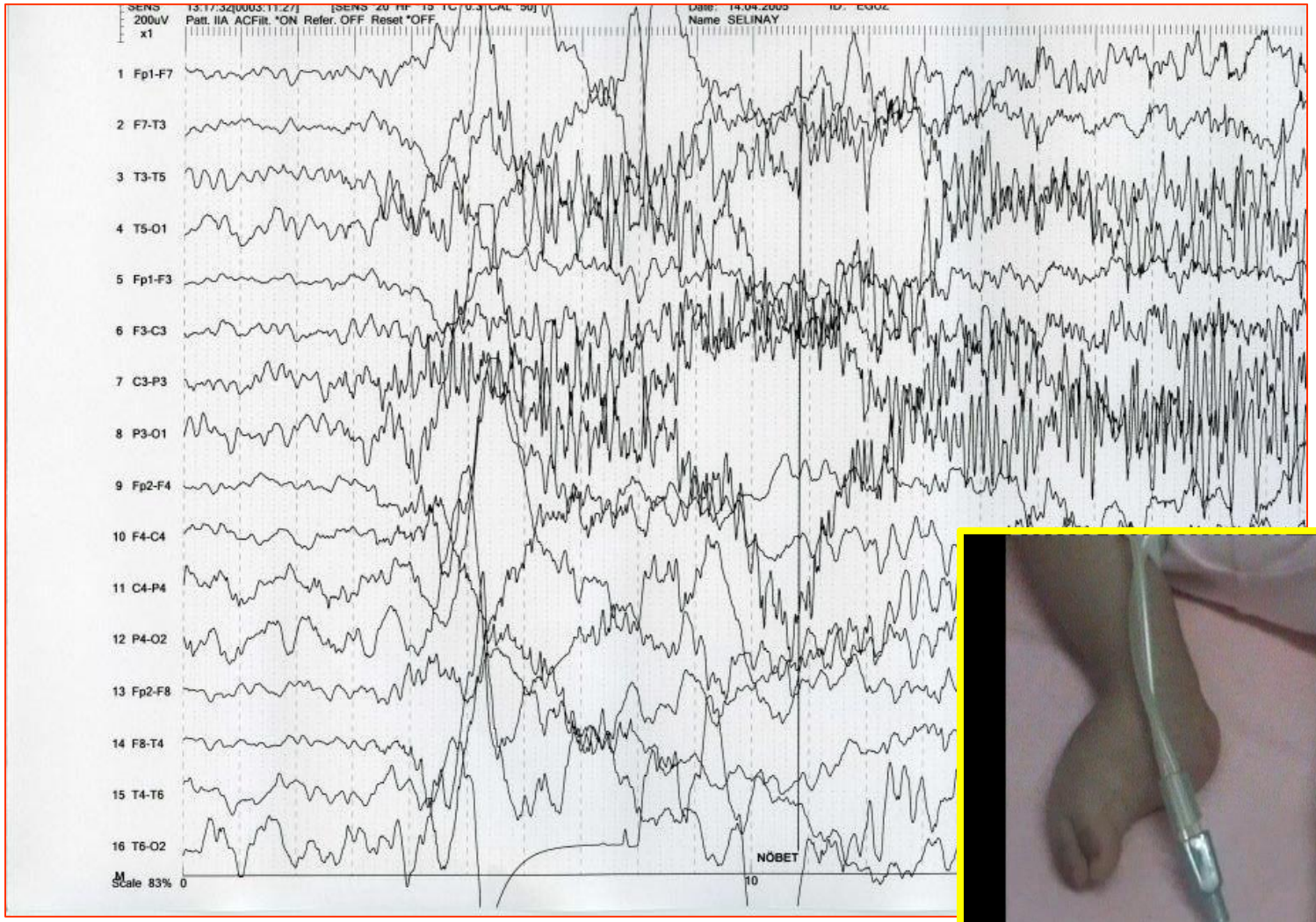
FOKAL EPİLEPTİFORM İKTAL AKTİVİTE

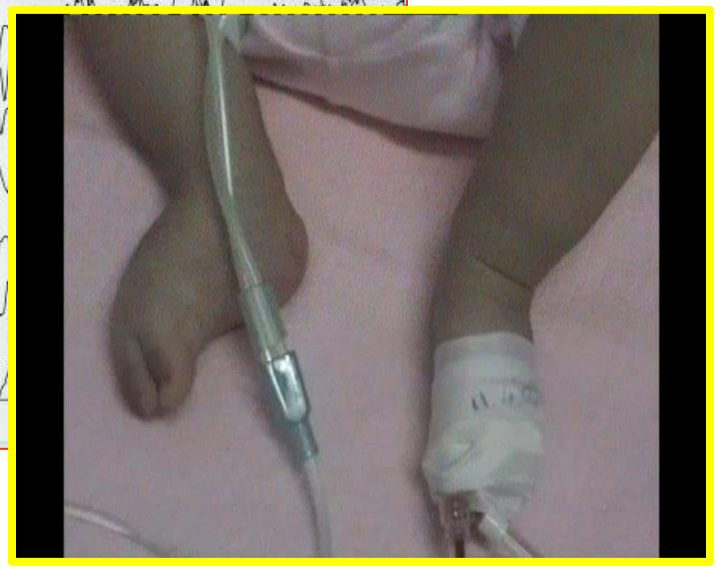


FOKAL EPİLEPTİFORM İKTAL AKTİVİTE:

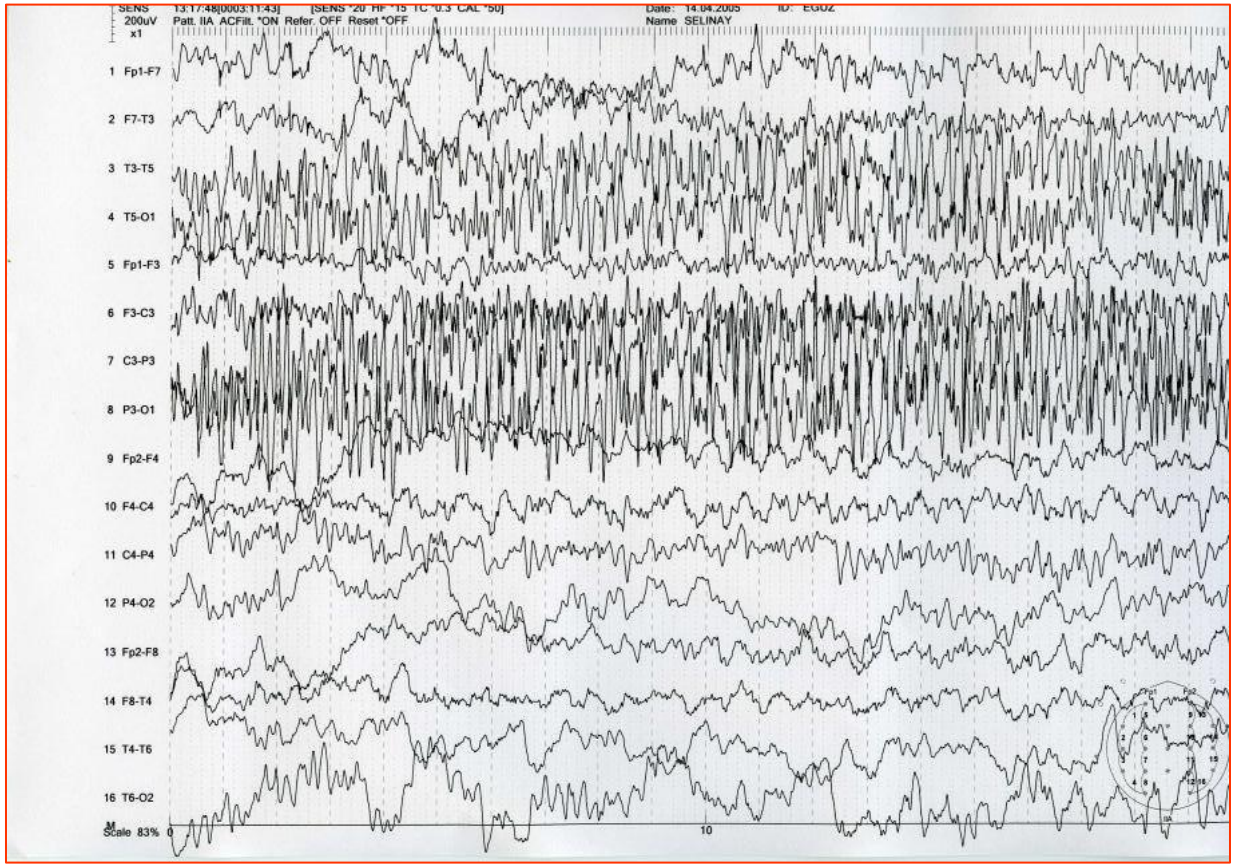


FOKAL EPİLEPTİFORM AKTİVİTE: İKTAL

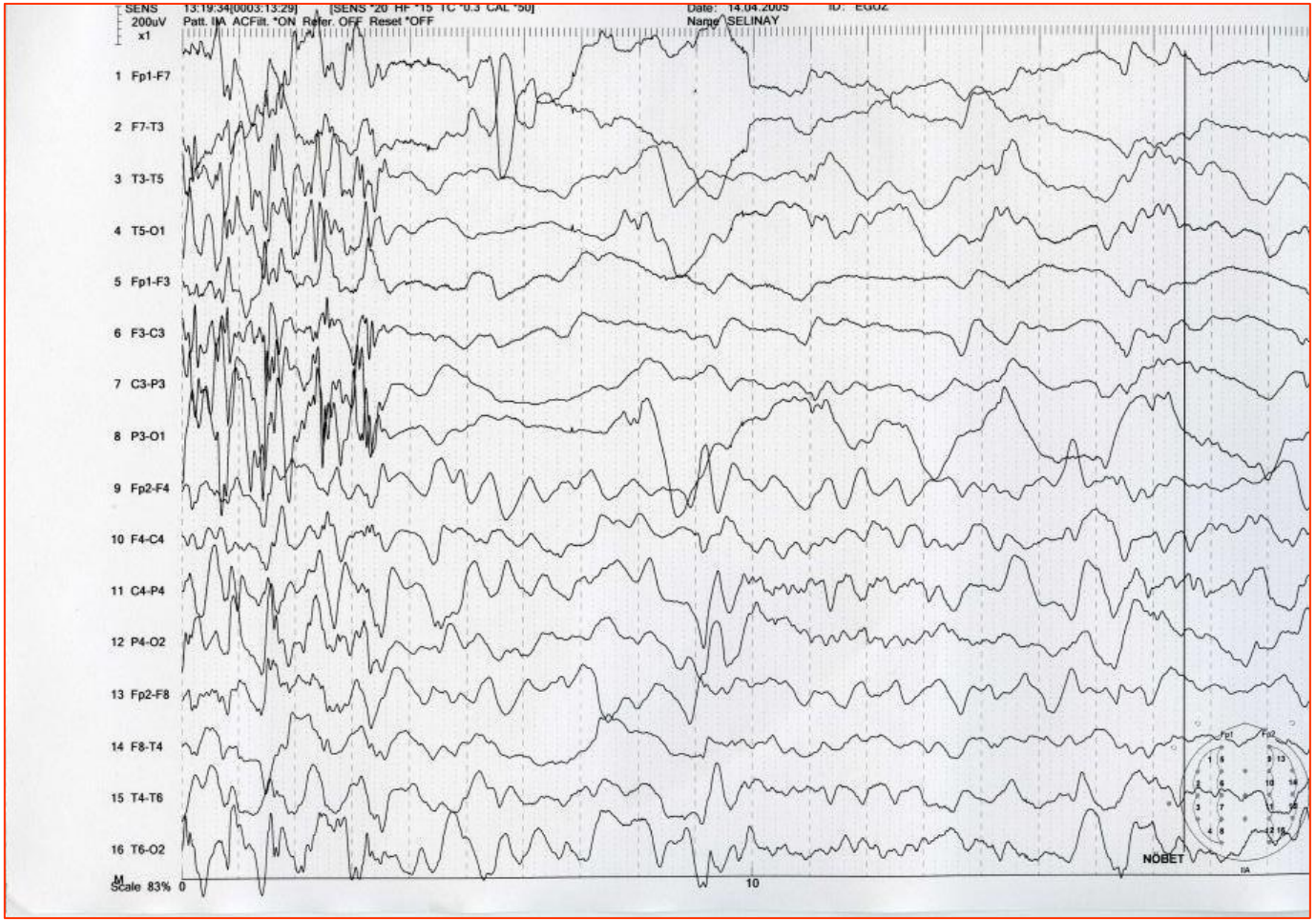




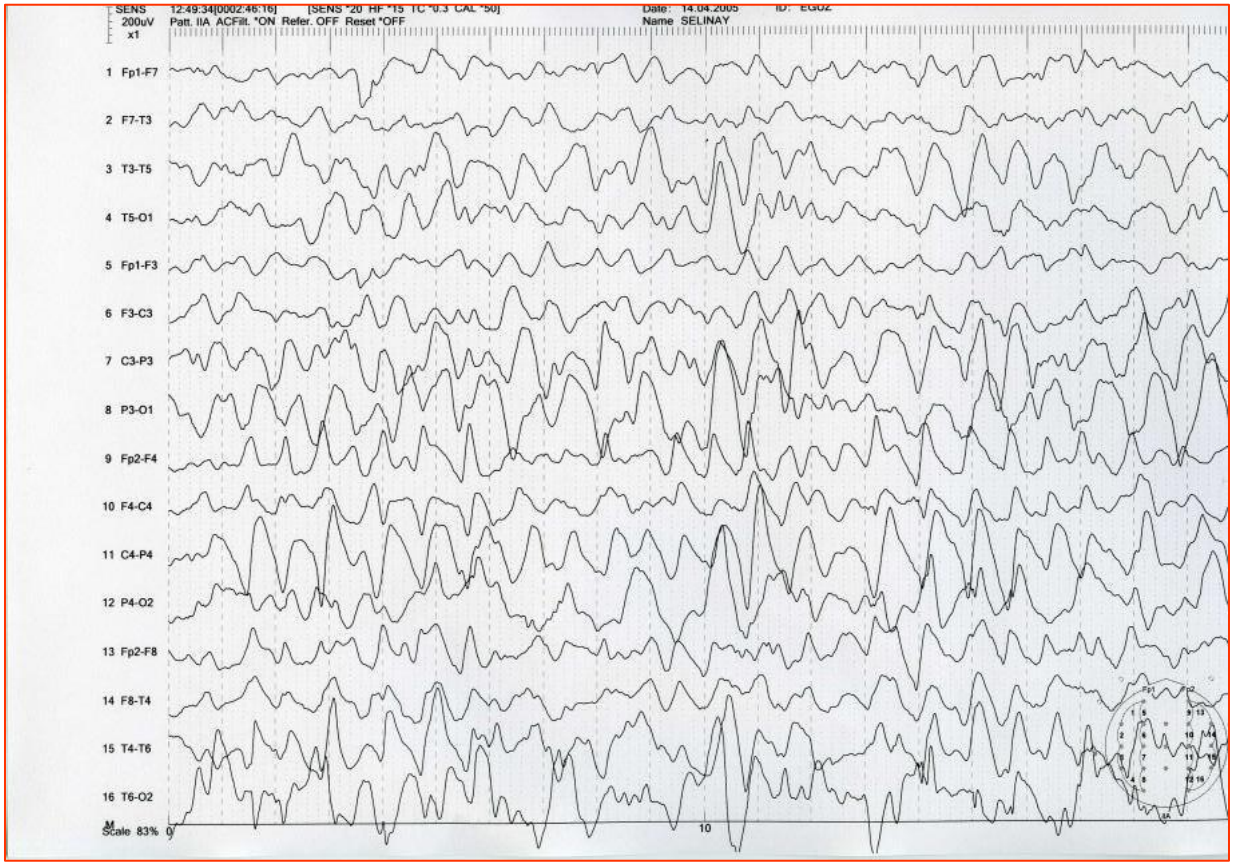
İKTAL EEG - SOL HEMİSFER BAŞLANGIÇLI NÖBET



İKTAL EEG-SOL BAŞLANGIÇLI NÖBET BİTİMİ VE SONRASINDA ZEMİN RİTMİNDE SÜPRESYON



YAVAŞ ZEMİN AKTİVİTESİ



FOKAL EPİLEPTİFORM AKTİVİTE: İKTAL ELEKTROGRAFİK LATERALİZASYON

- **Nöbet başlangıcında yüksek frekanslı (beta bandında) aktivite, neokortikal tutulumu düşündürür**
- Hipokampal nöbetler tipik olarak teta, bazende alfa frekansında ritmik aktivite ile başlar
- **Nöbet delta aktivitesi ile başlıyorsa foküs kayıt yerine uzaktır.**

EPİLEPTİFORM AKTİVİTELER

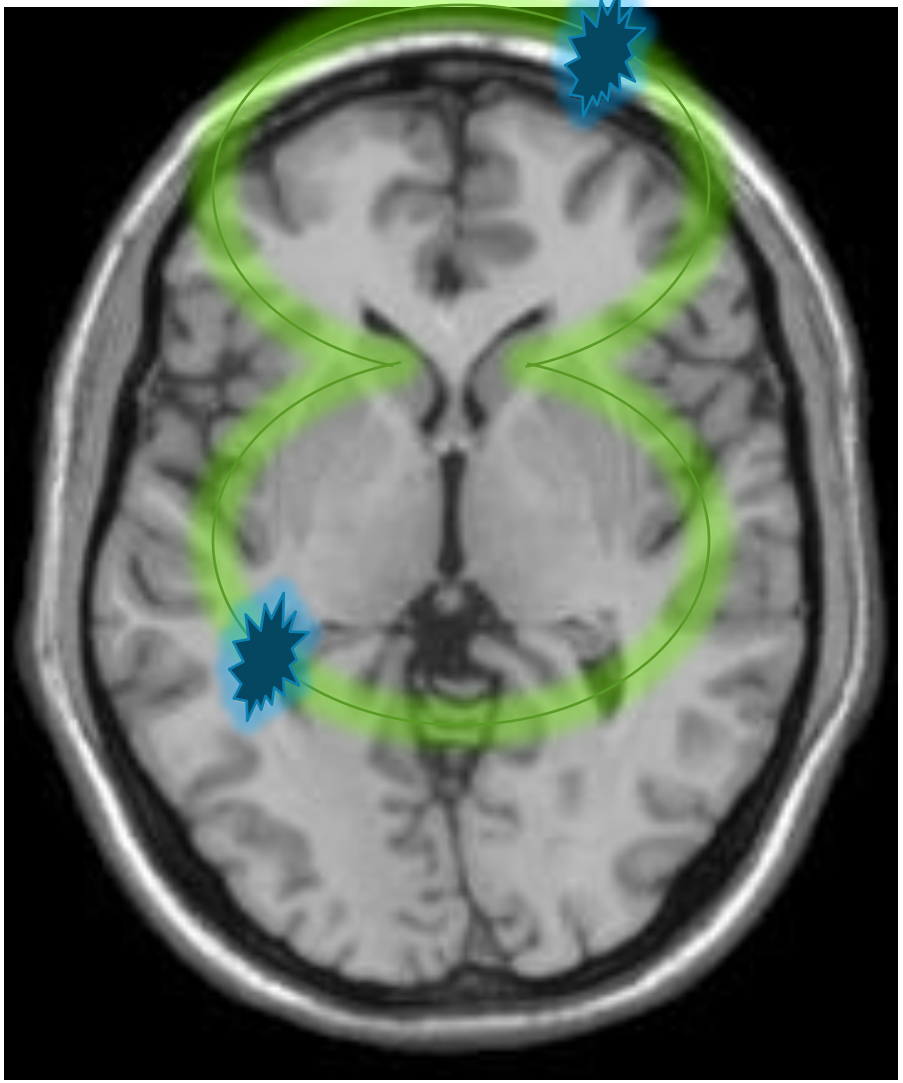
İnteriktal / İktal

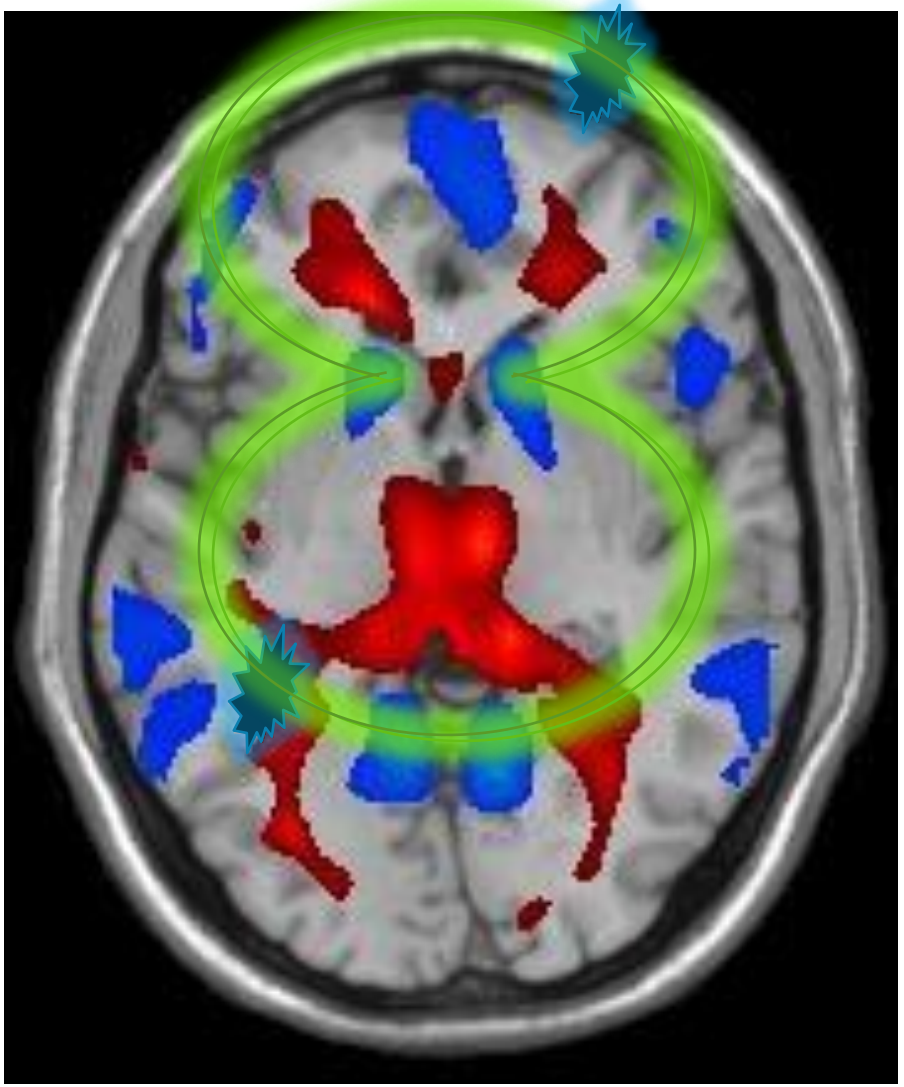
I. **Fokal**

II. **Jeneralize**

III. **Özgül Patternler**

Jeneralize Epileptiform Aktiviteler



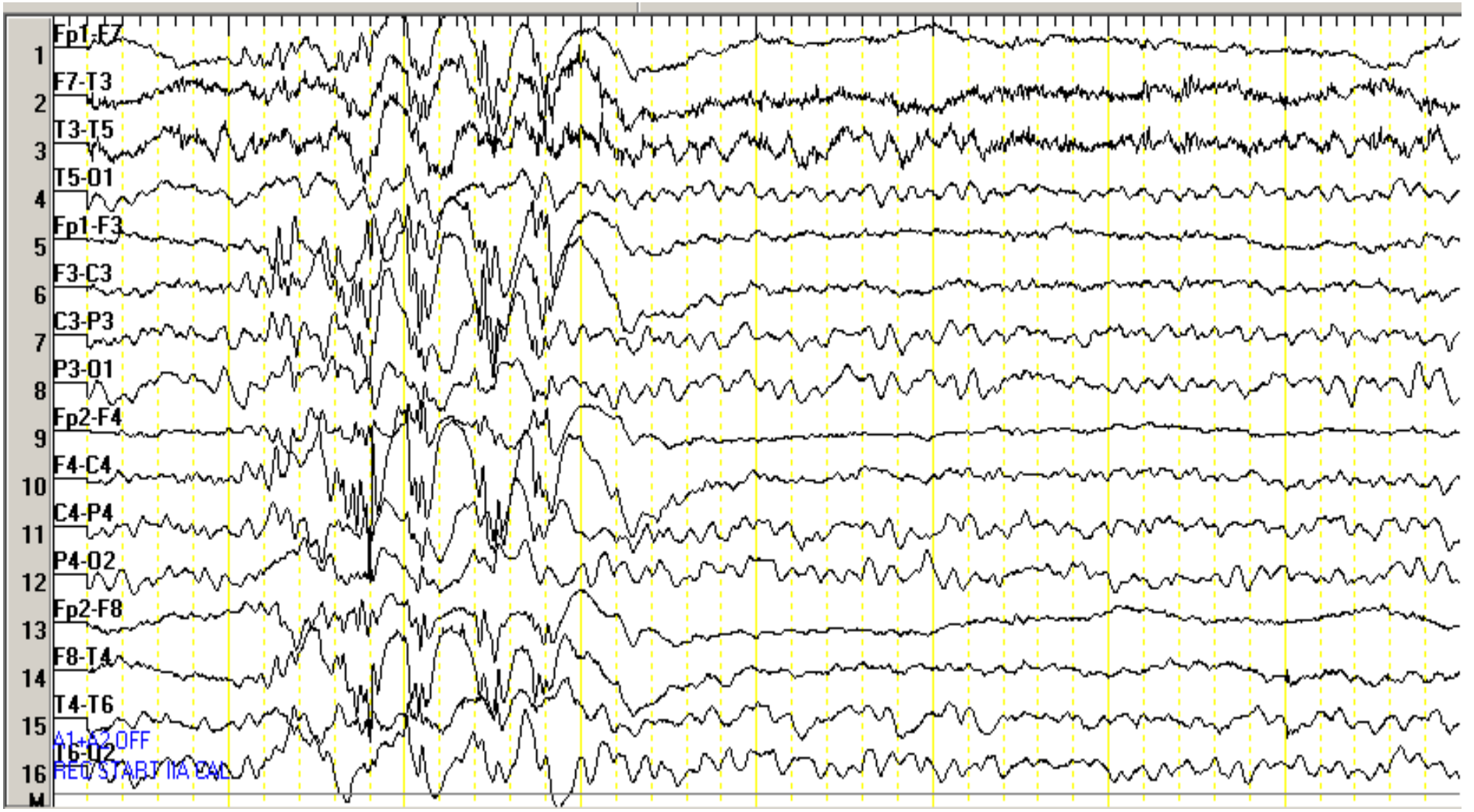


JENERALIZE EPILEPTIFORM AKTIVITELER

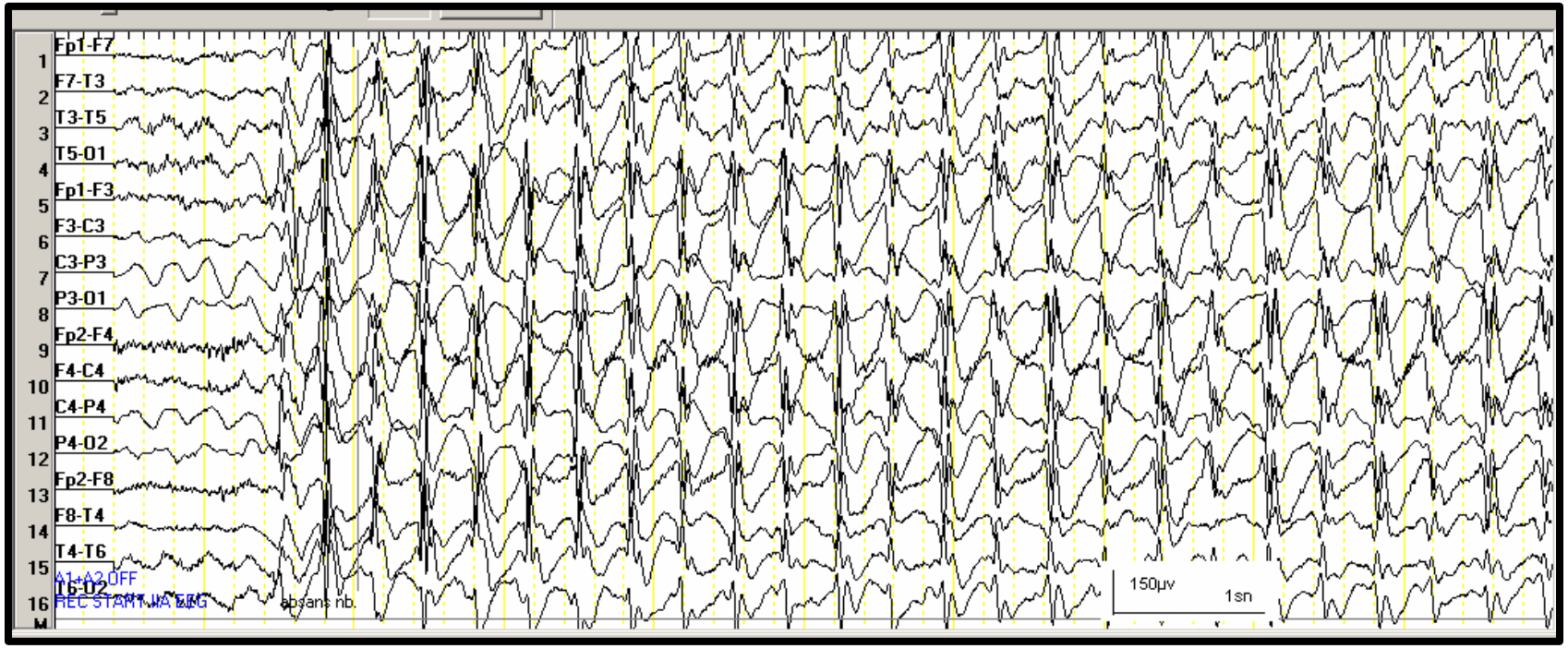
- Epileptiform aktivite her iki hemisferde tam / tama yakın ve eş zamanlı (< 200 msn) katılır
- Eş Zamanlı Başlangıç: Senkron / Asenkron
- İntrahemisferik amplitüd farklı olabilir

- Diken / Çoklu-diken / Yavaş Dalga
- Keskin / Yavaş Dalga Formları

JENERALİZE EPİLEPTİFORM AKTİVİTE



JENERALİZE EPİLEPTİFORM AKTİVİTE



JENERALİZE EPİLEPTİFORM AKTİVİTE

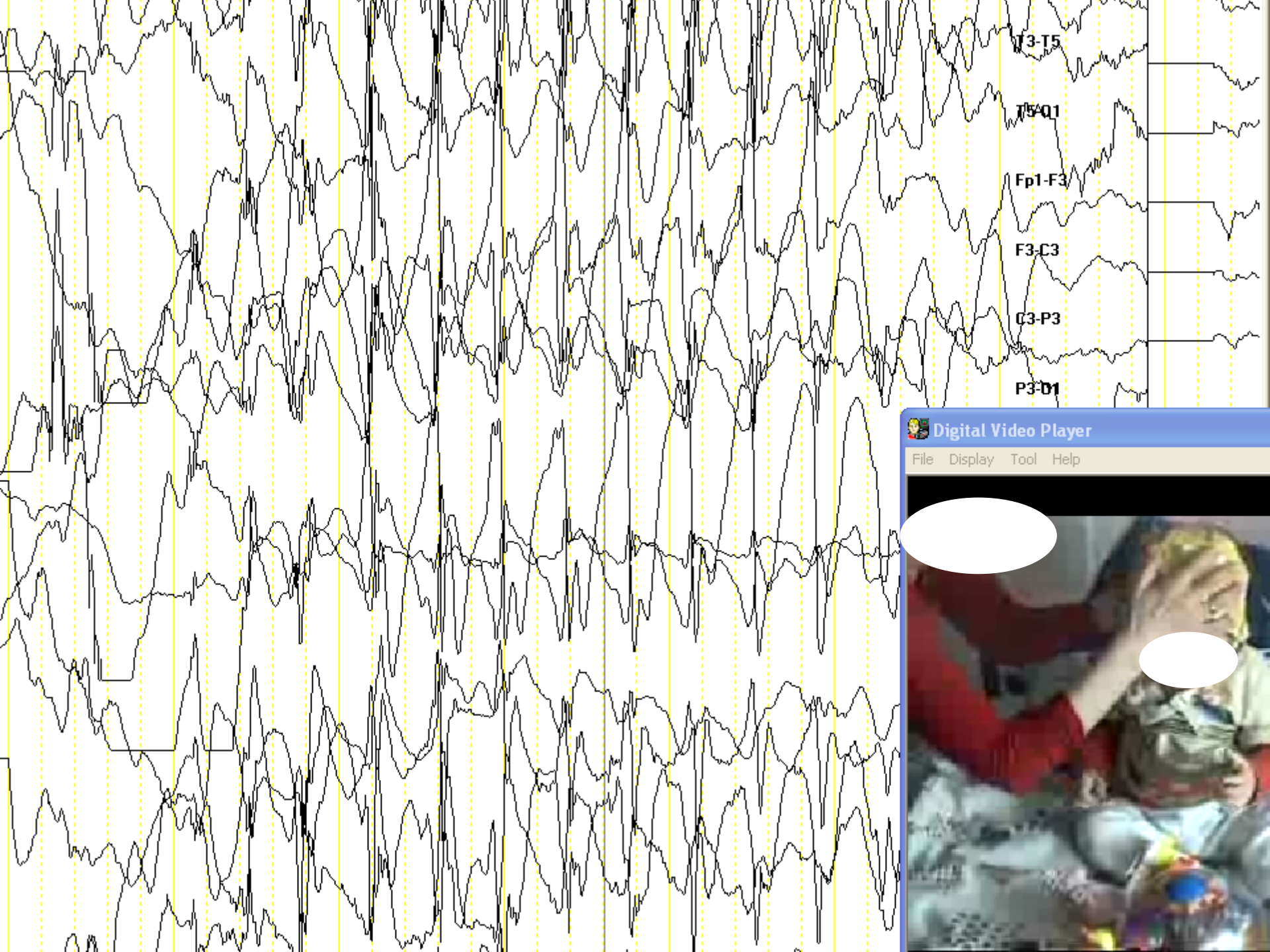
Yaygın kortikal subkortikal bozukluk

Yapısal Patolojiler

- Akut hasar (*anoksi, kafatravması,ansefalit*)
- Kronik (*postanoksik / postravmatik yaygın serebral hasar*)

Fonksiyonel Patolojiler

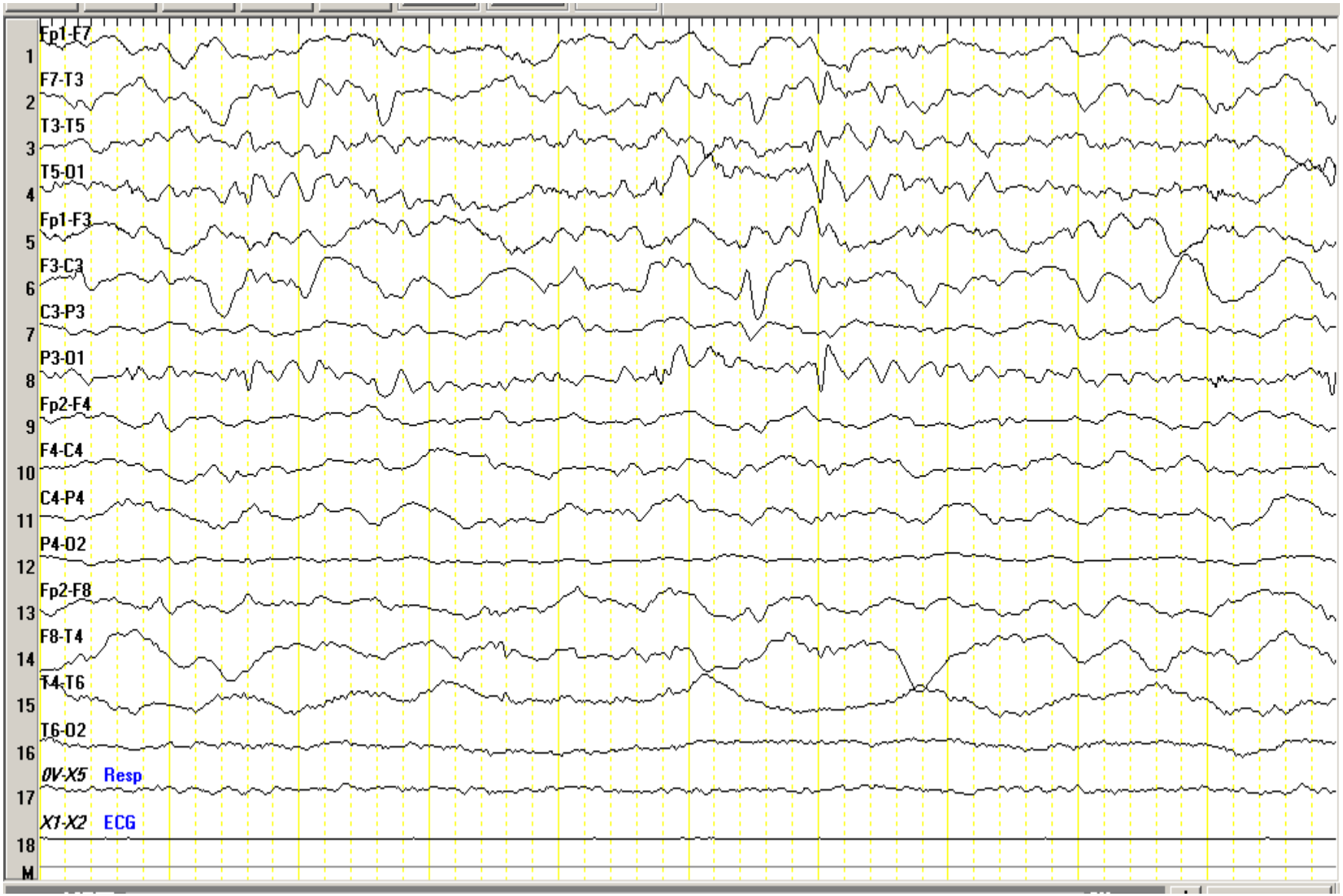
- Toksik/metabolik/ endokrin/elektrolit bozuklukları


T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Digital Video Player
File
Display
Tool
Help

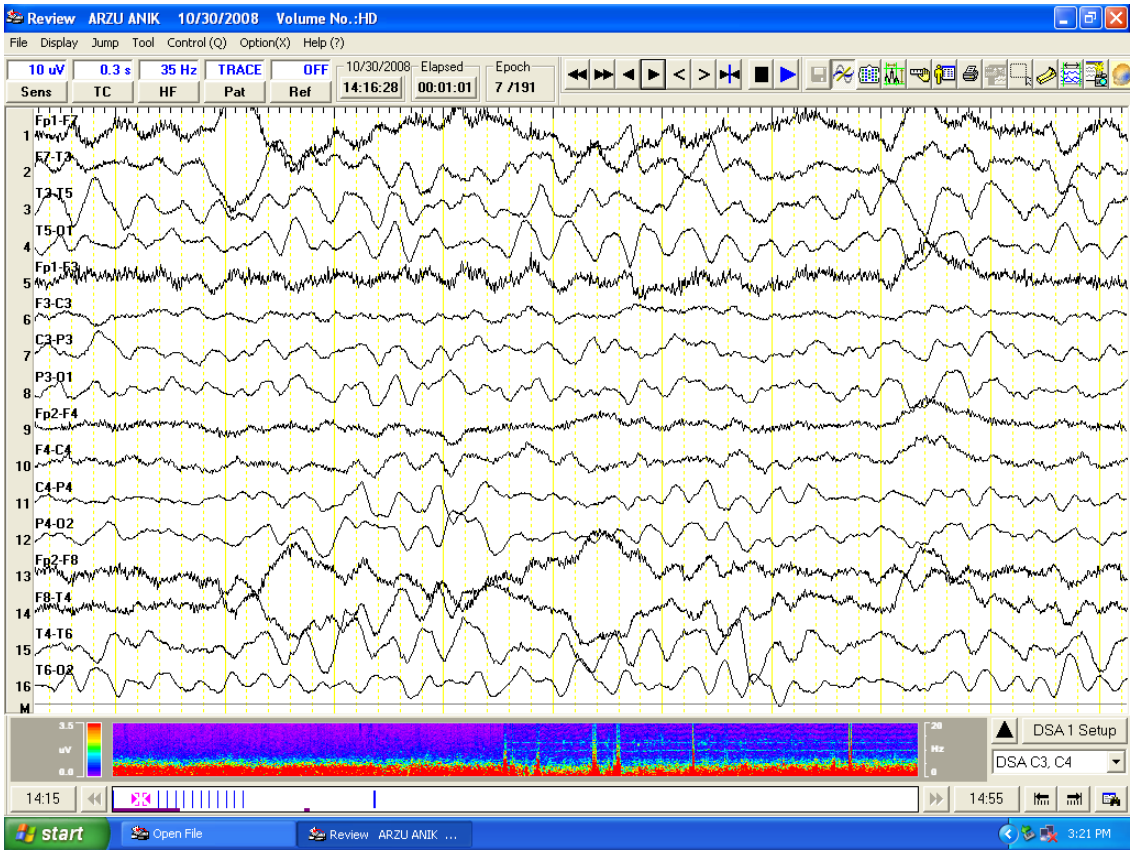
FOKAL YAVAŞ DALGALAR

- *Frekans ≤ 7 Hz*
- Bir veya birkaç elektrod alanında
- Hemisferlerde sınırlı beyaz cevher hasarını gösterir [kortikal tutulum ±)
- Fokal serebral işlev bozukluğu***
- Akut lezyonlar (SVO, travma)
- Supratentoryel tümör

FOKAL YAVAŞ DALGALAR: YAPISAL HEMİSFERİK DİSFONKSİYON



DIFFÜZ YAVAŞ DALGALAR: ANSEFALOPATI



DİFFÜZ YAVAŞ DALGALAR

Tanım: Frekans ≤ 7 Hz Her
iki hemisferde görülür
Belli bir alanda maksimum amplüd olabilir

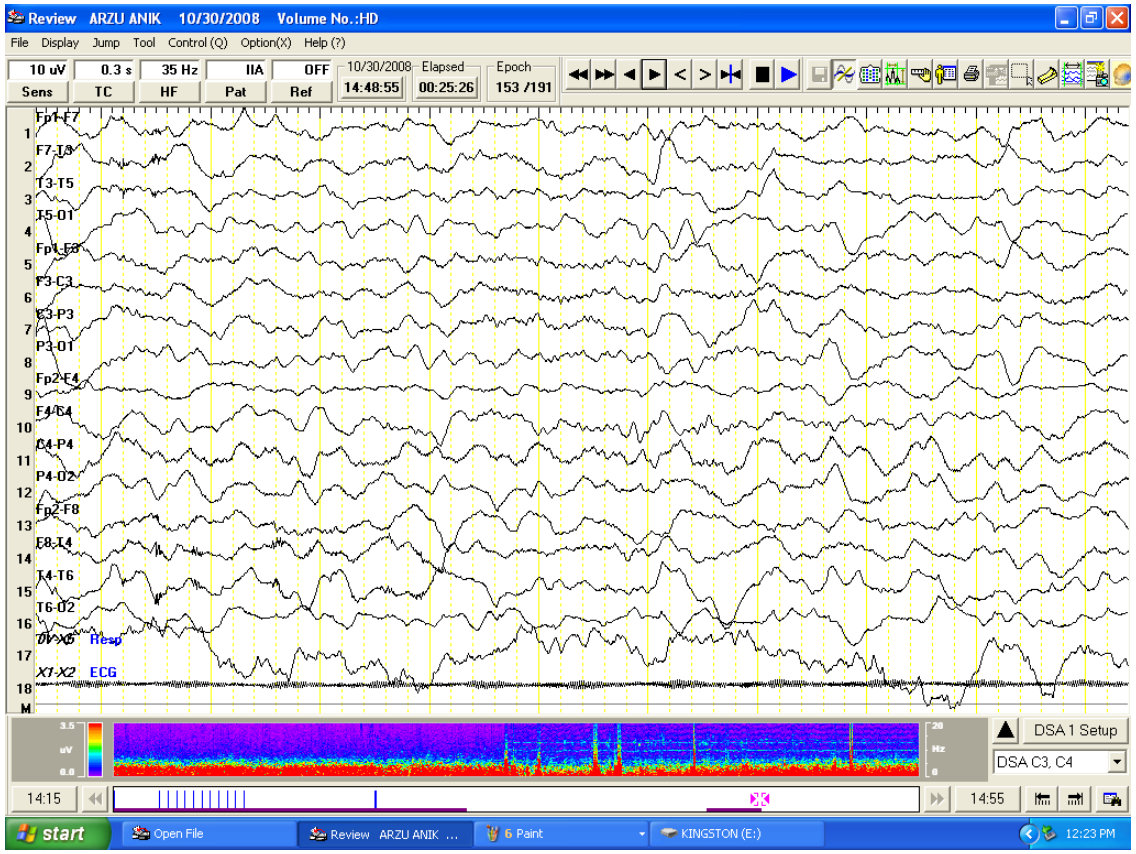
Fonksiyonel Patolojiler

- *Metabolik / toksik ansefalopatiler*
- *Hepatik / renal yetmezlik*

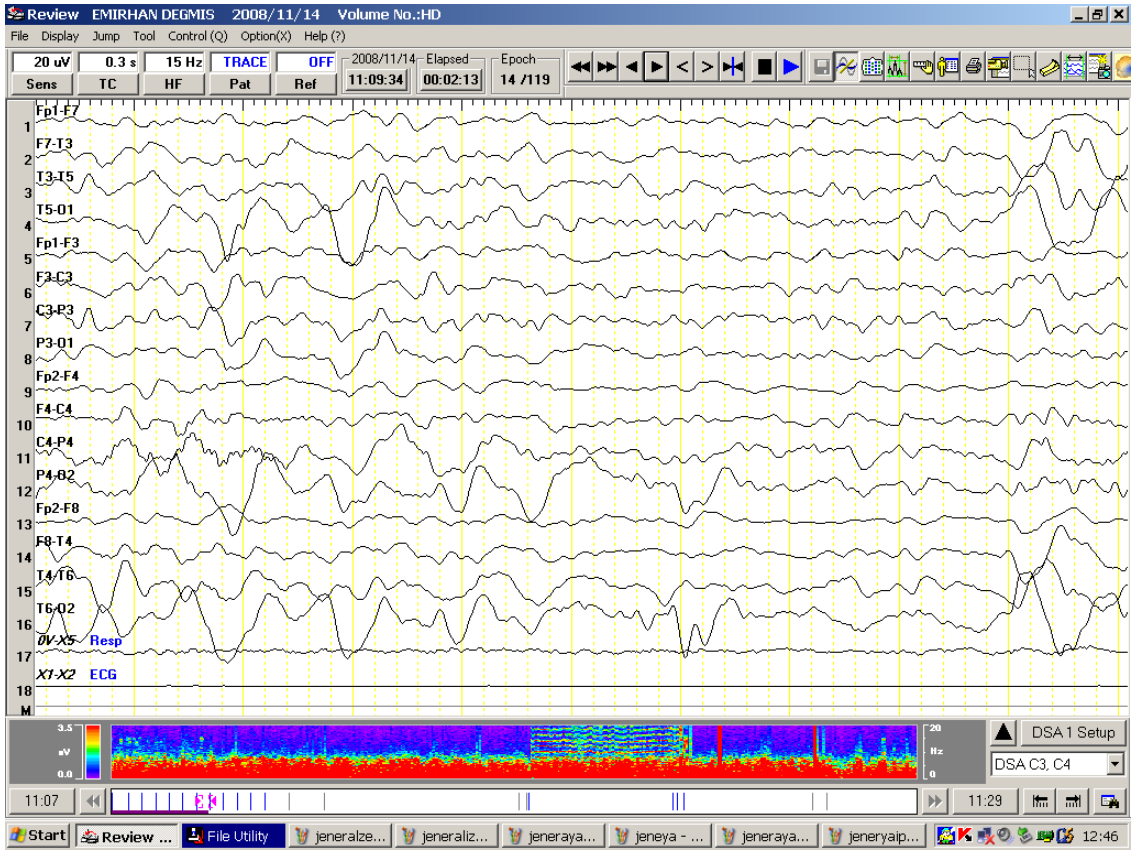
Yapısal Patolojiler

- *Post-anoksik ansefalopati*
- *Hidrosefali*
- *SSS dejeneratif hastalıkları*
- *Kafa travması*
- *Yaygın SVO*

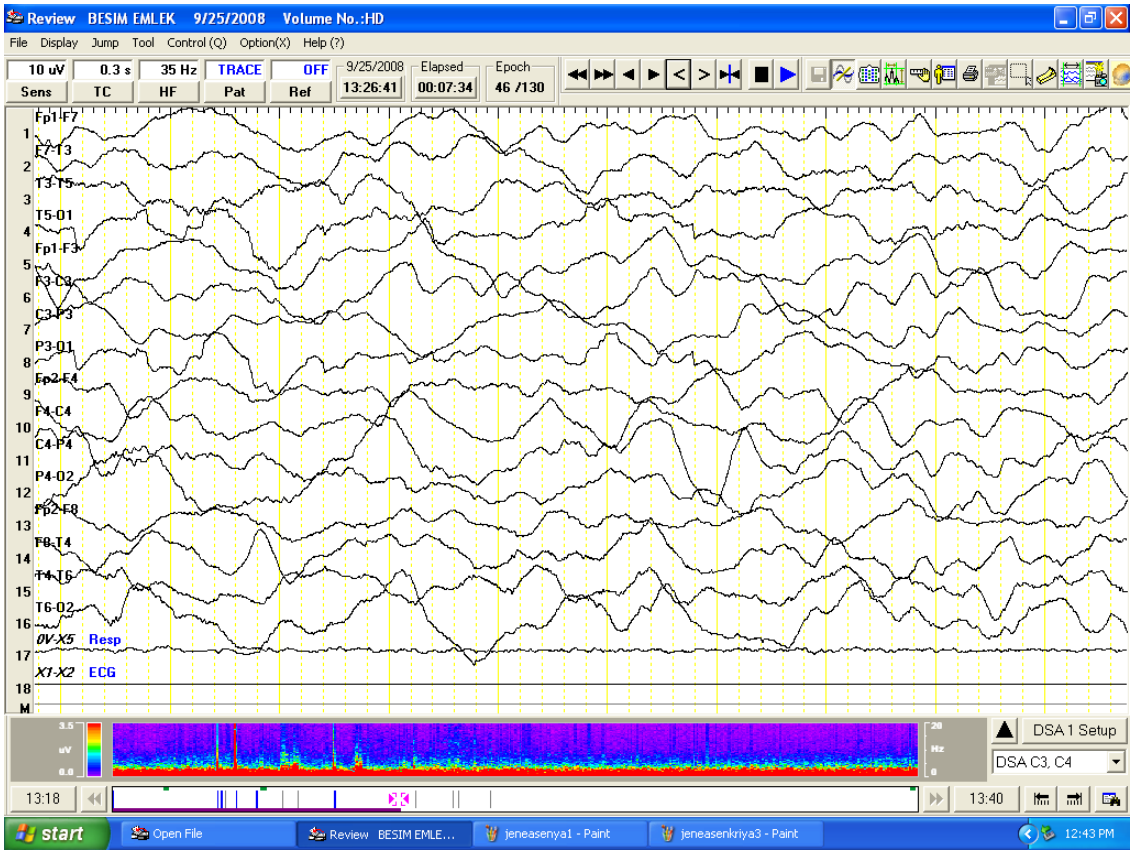
OKSIPITAL YAVAŞ DALGALAR : PATOLOJIK ? / NORMAL ?



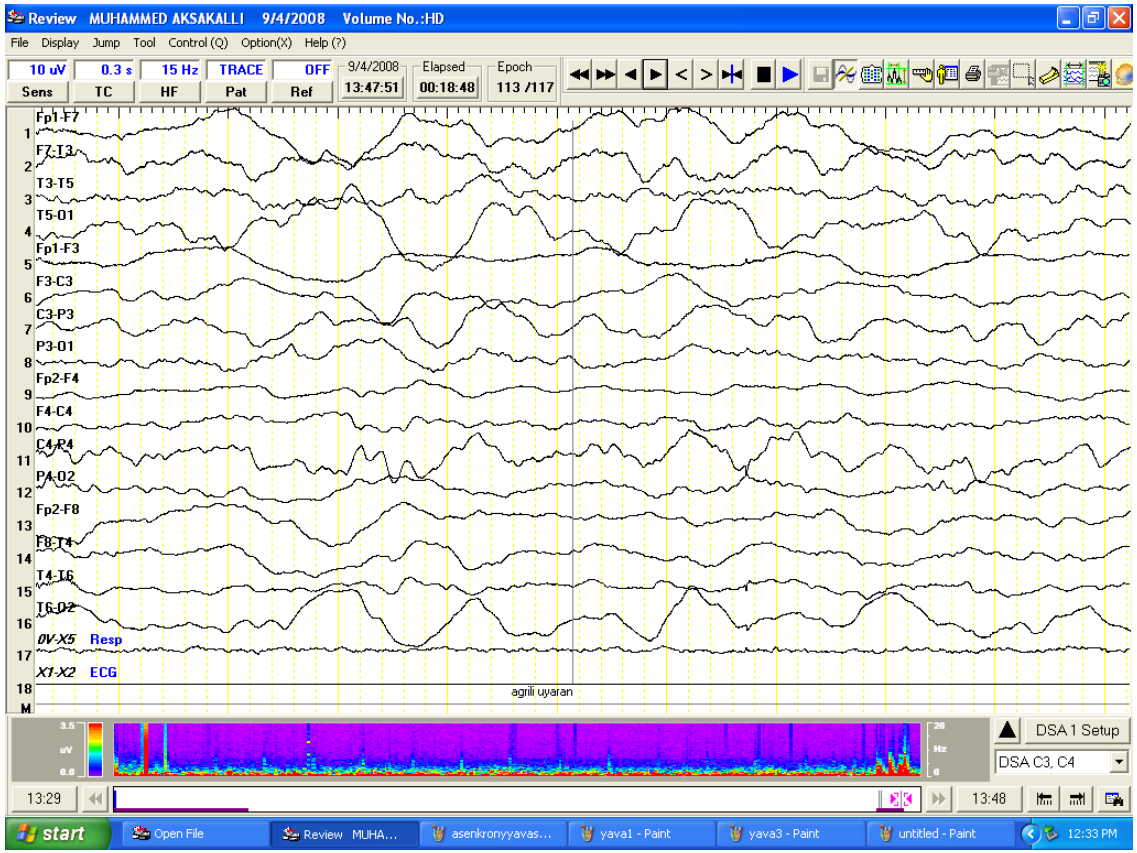
OKSIPITAL YAVAŞ DALGALAR : PATOLOJIK ? / NORMAL ?

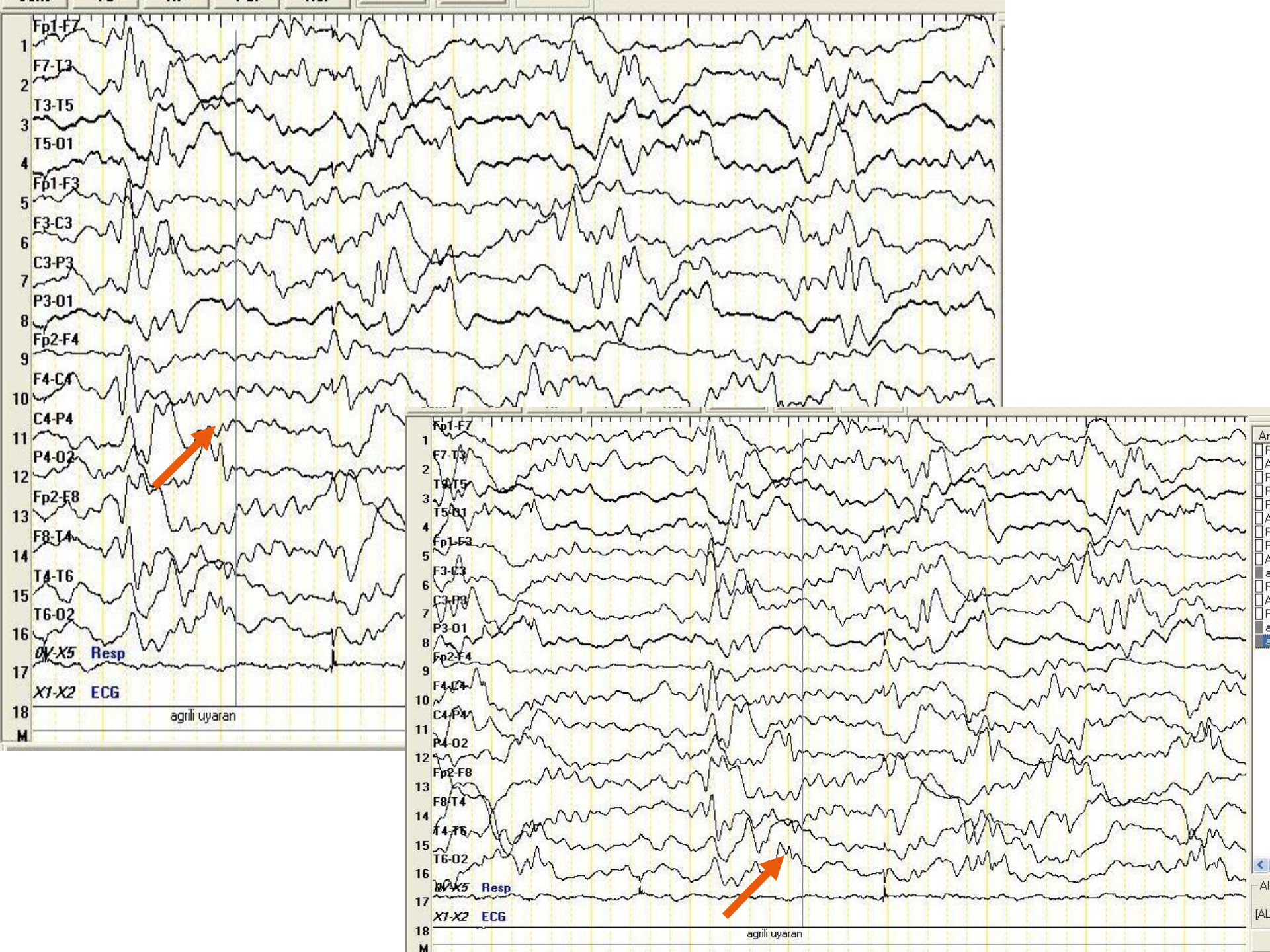


DIFFÜZ YAVAŞ DALGALAR: FEBRIL STATUS / ANSEFALIT



REAKTIVITE ?


Review MUHAMMED AKSAKALLI 9/4/2008 Volume No.:HD
File Display Jump Tool Control (Q) Option(X) Help (?)
10 uV 0.3 s 15 Hz TRACE OFF
Sens TC HF Pat Ref
9/4/2008 13:47:51
Elapsed 00:18:48
Epoch 113 /117
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
0V-X5 Resp
X1-X2 ECG
agrili uyaran
DSA 1 Setup
DSA C3, C4
13:29
13:48
start
Open File
Review MUHA...
asenkronyyavas...
yava1 - Paint
yava3 - Paint
untitled - Paint
12:33 PM

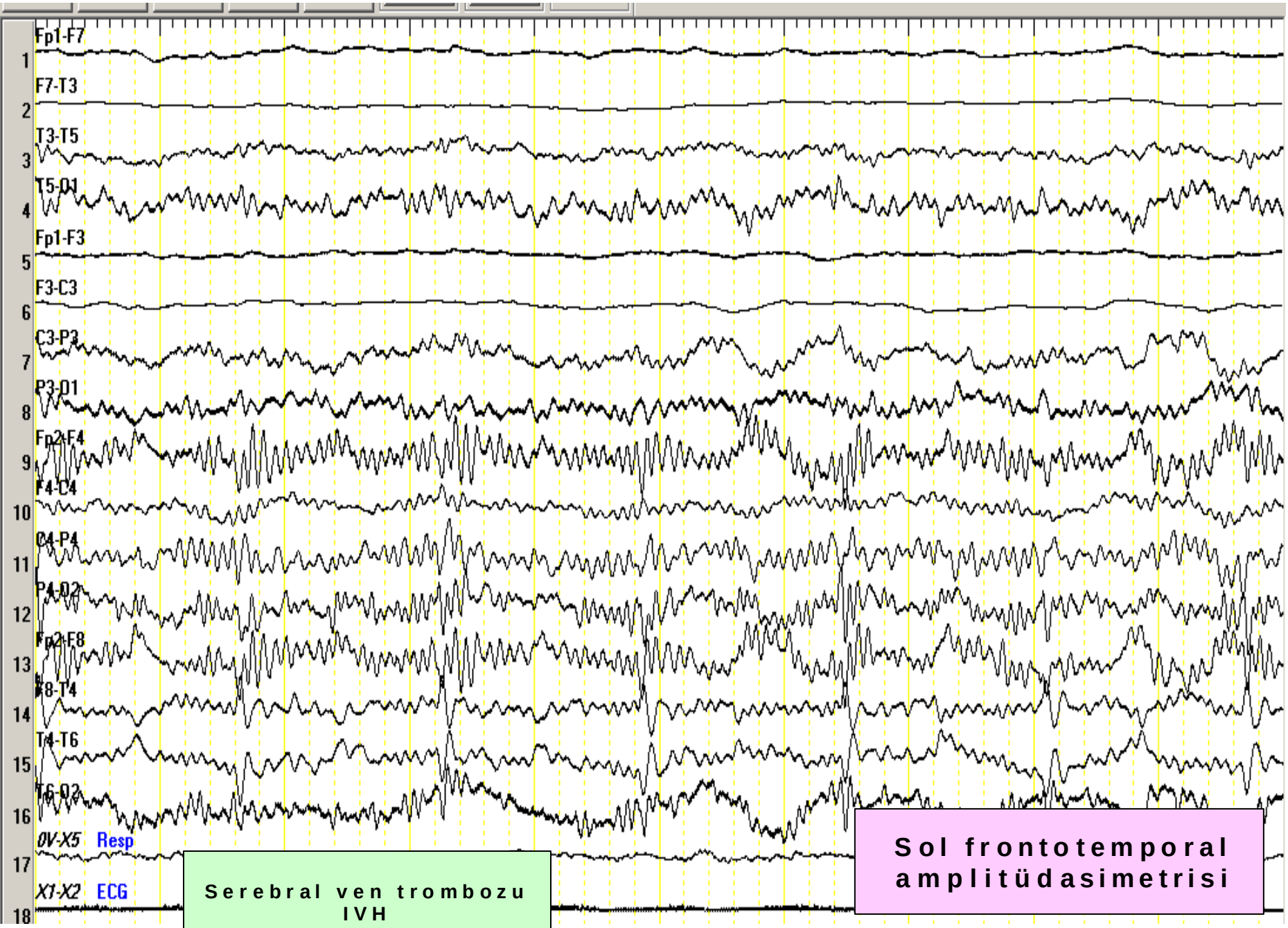

Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
DV-X5 Resp
X1-X2 ECG
agrili uyaran
M

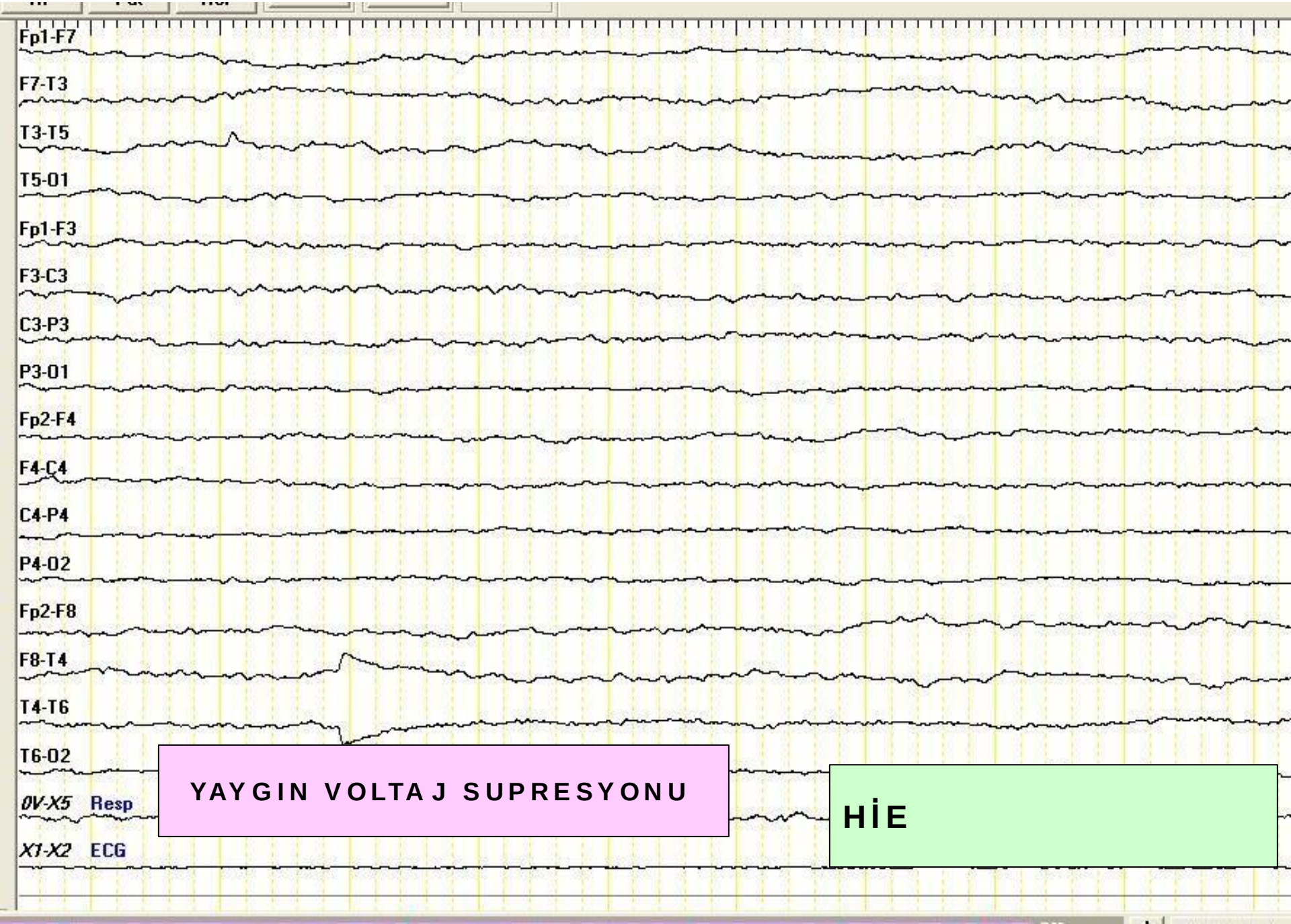
AMPLİTÜD ANORMALLİĞİ

** Lokalize amplitüd değişikliği (asimetri) alfa aktivitesinde ≤ %50

beta aktivitesinde ≤ %35 **asimetri NORMAL**

** Jeneralize amplitüd değişikliği


Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
OV-X5 Resp
X1-X2 ECG
Serebral ven trombozu
IVH
Sol frontotemporal
amplitüdasimetrisi


Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
0V-X5 Resp
X1-X2 ECG
YAYGIN VOLTAJ SUPRESYONU
HİE

ÖZGÜL PATTERNLER

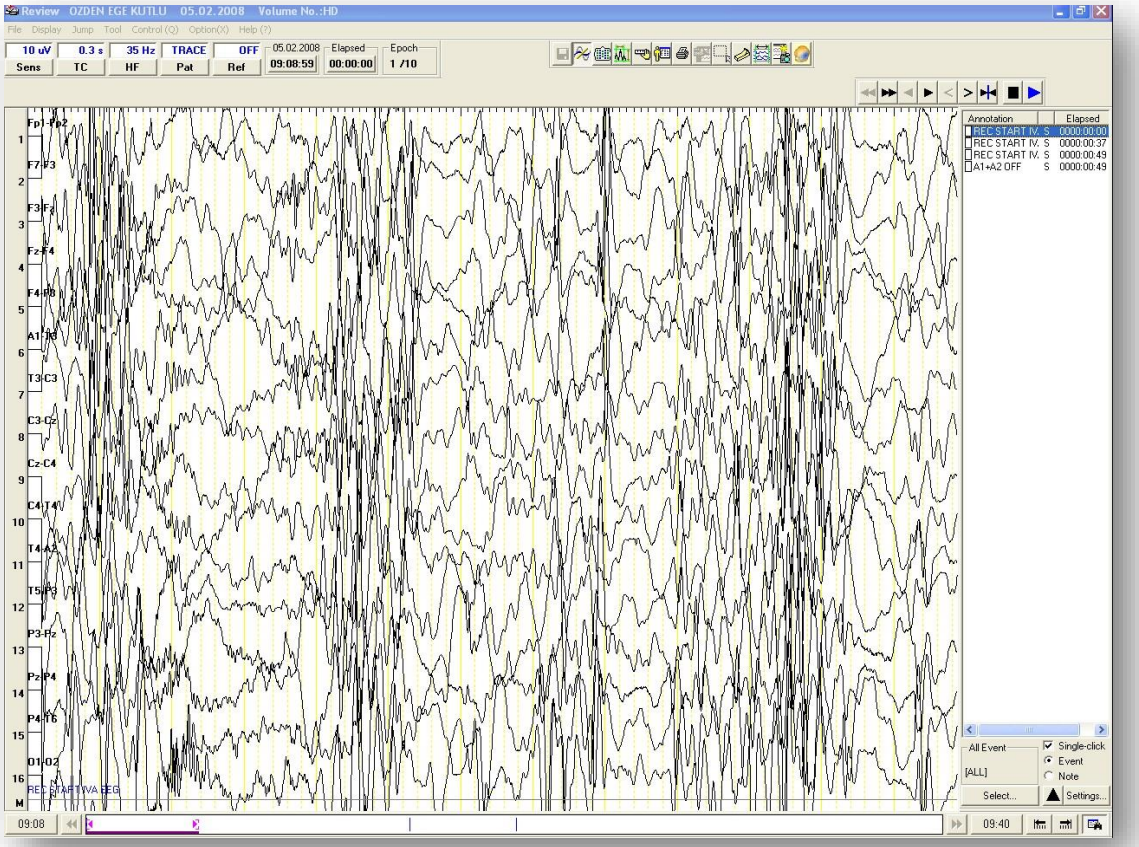
Epileptiform

- Hipsaritmi
- Modifiye Hipsaritmi
- Supresyon-Burst Hipsaritmi
- Elektro-dekremental Patern
- ESES

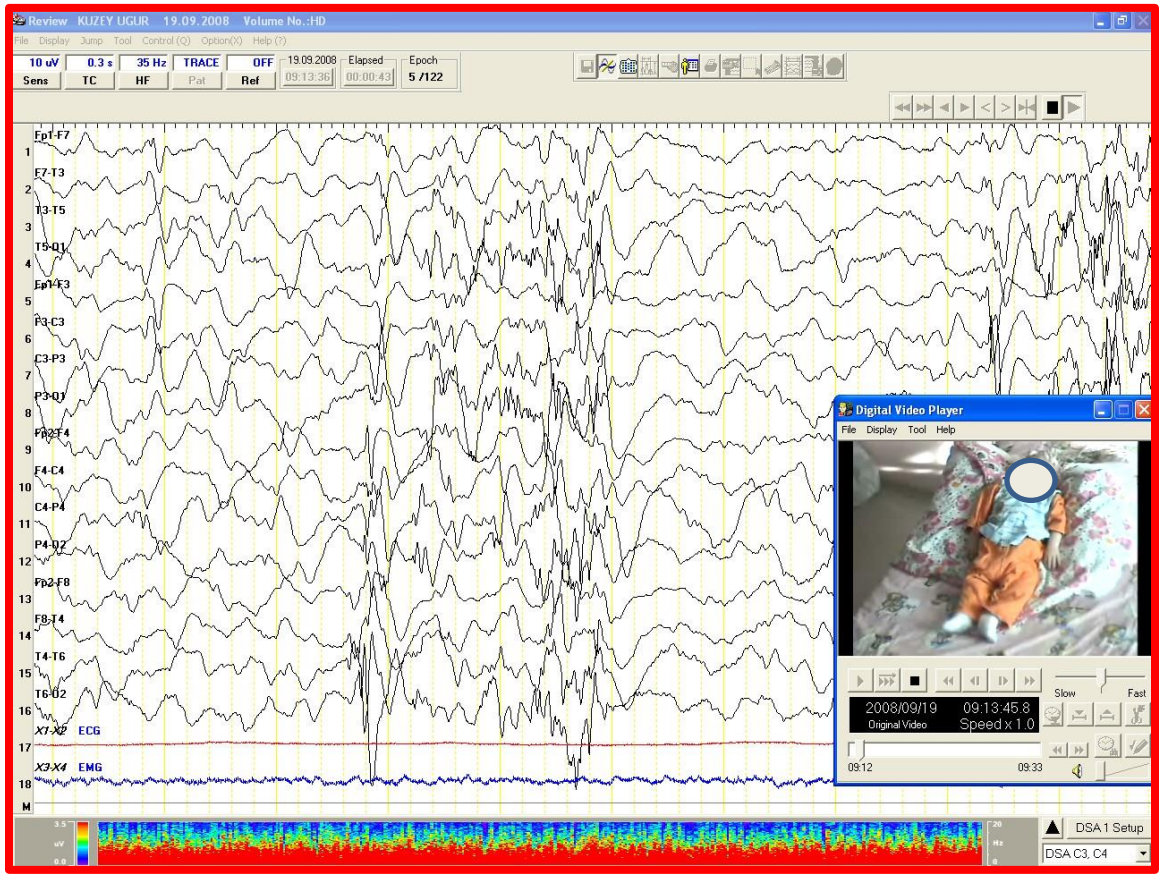
Epileptiform ??

- PLEDs / BİLEDs
- Periyodik Deşarlar
- Trifazik Dalgalar

HİPSARİTMİ


Review OZDEN EGE KUTLU 05.02.2008 Volume No.:HD
10 uV
0.3 s
35 Hz
TRACE
OFF
Sens
TC
HF
Pat
Ref
05.02.2008
09:08:59
Elapsed
00:00:00
Epoch
1 /10
Annotation
Elapsed
REC START IV. S 0000:00:00
REC START IV. S 0000:00:37
REC START IV. S 0000:00:49
A1+A2 OFF S 0000:00:49
Fp1-Fp2
F7-F3
F3-Fz
Fz-F4
F4-F8
A1-T3
T3-C3
C3-Cz
Cz-C4
C4-T4
T4-A2
T5-P3
P3-Pz
Pz-P4
P4-T6
O1-O2
All Event
[ALL]
Select...
Single-click
Event
Note
Settings...
09:08
09:40

ELEKTRODEKREMENTAL PATTERN



SUPRESYON BURST

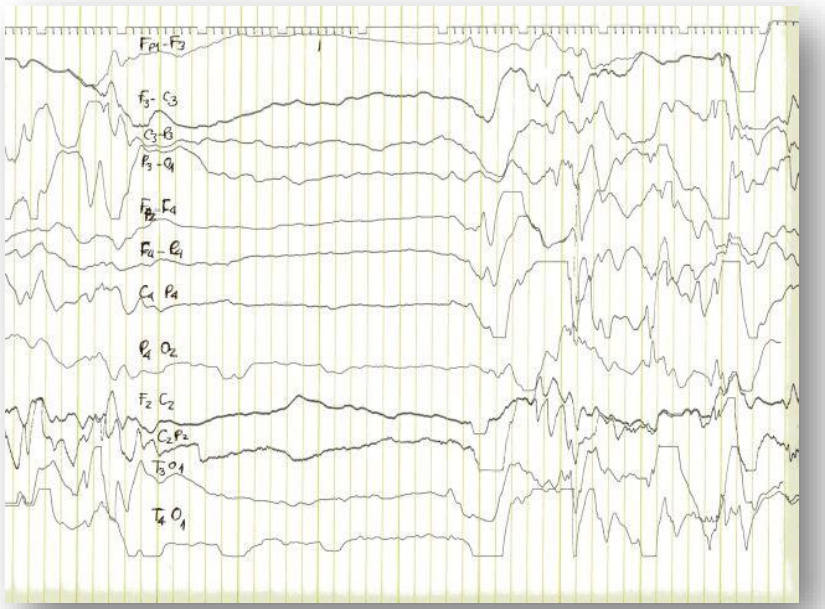
EEG:

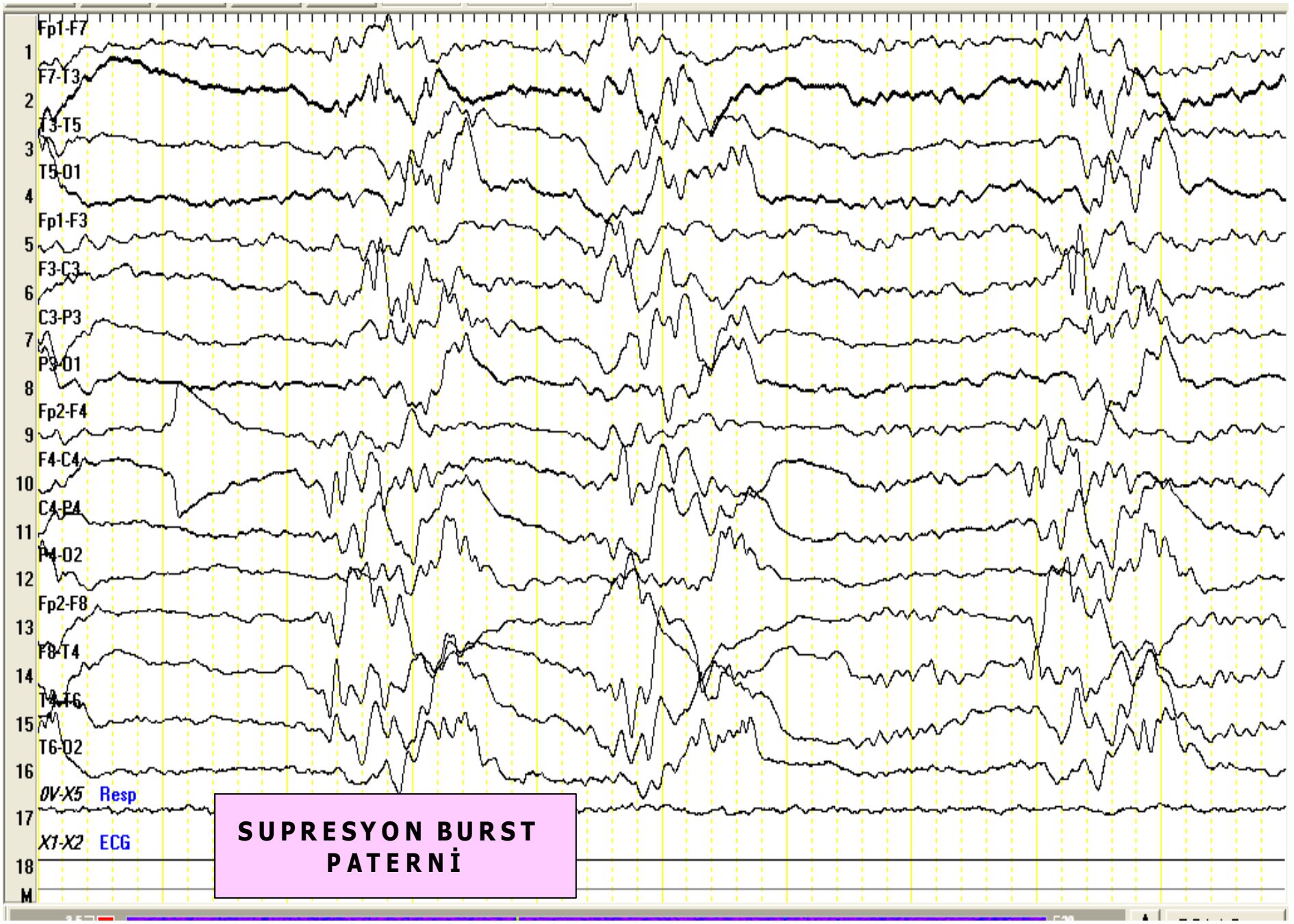
- **Supresyon-burst (SB)**

  Burst: 2-6 sn, yavaş dalga (150-350) + diken dalga aktivitesi

  Supresyon: 3-5 sn

- **Hipsaritmi**




Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
OV-X5 Resp
X1-X2 ECG
SUPRESYON BURST PATERNİ

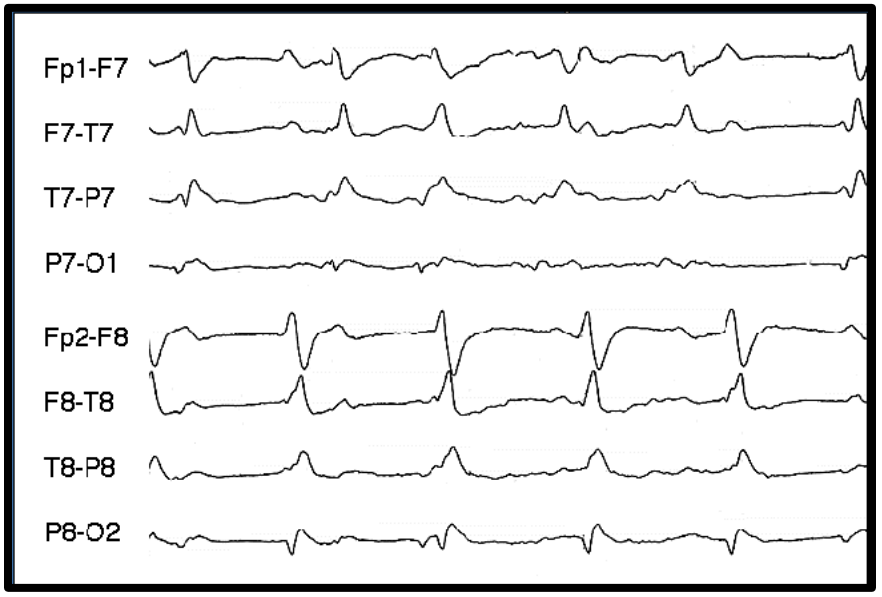
ÖZEL PATTERNLER

- Hipsaritmi
- Modifiye Hipsaritmi
- Supresyon-Burst Hipsaritmi
- Elektro-dekremental Patern

- PLEDs / BİLEDs
- Periyodik Deşarlar
- Trifazik Dalgalar

PERİYODİK LATERALİZE EPİLEPTİFORM DEŞARJLAR (PLED'LER- BIPLED'LER)

(NÖBET GÖRÜLME OLASILIĞI %58-100)



EPİLEPTİFORM MORFOLOJİDE BENİGN PATERNLER

- 14 ve 6 Hz Pozitif Börstler
- 6 Hz Diken ve Dalga Börstleri
- Küçük Keskin Dikenler
- Wicket Dalgaları
- Breach Ritim

ÇOCUKLUK ÇAĞI EEG'Sİ: TANIMLAR

Biyolojik Tanımlar

- Normal Elementler ve Varyantlar
- Patolojik Aktiviteler

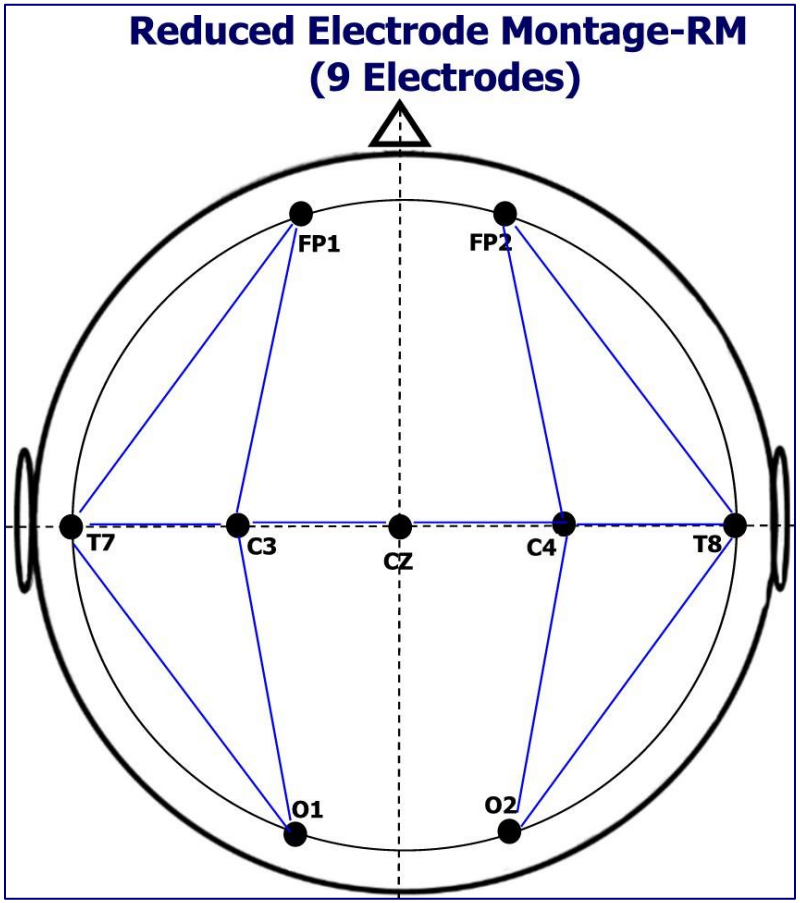
Teknik Tanımlar

- Çekim
- Montajlar

ARTEFAKTLAR

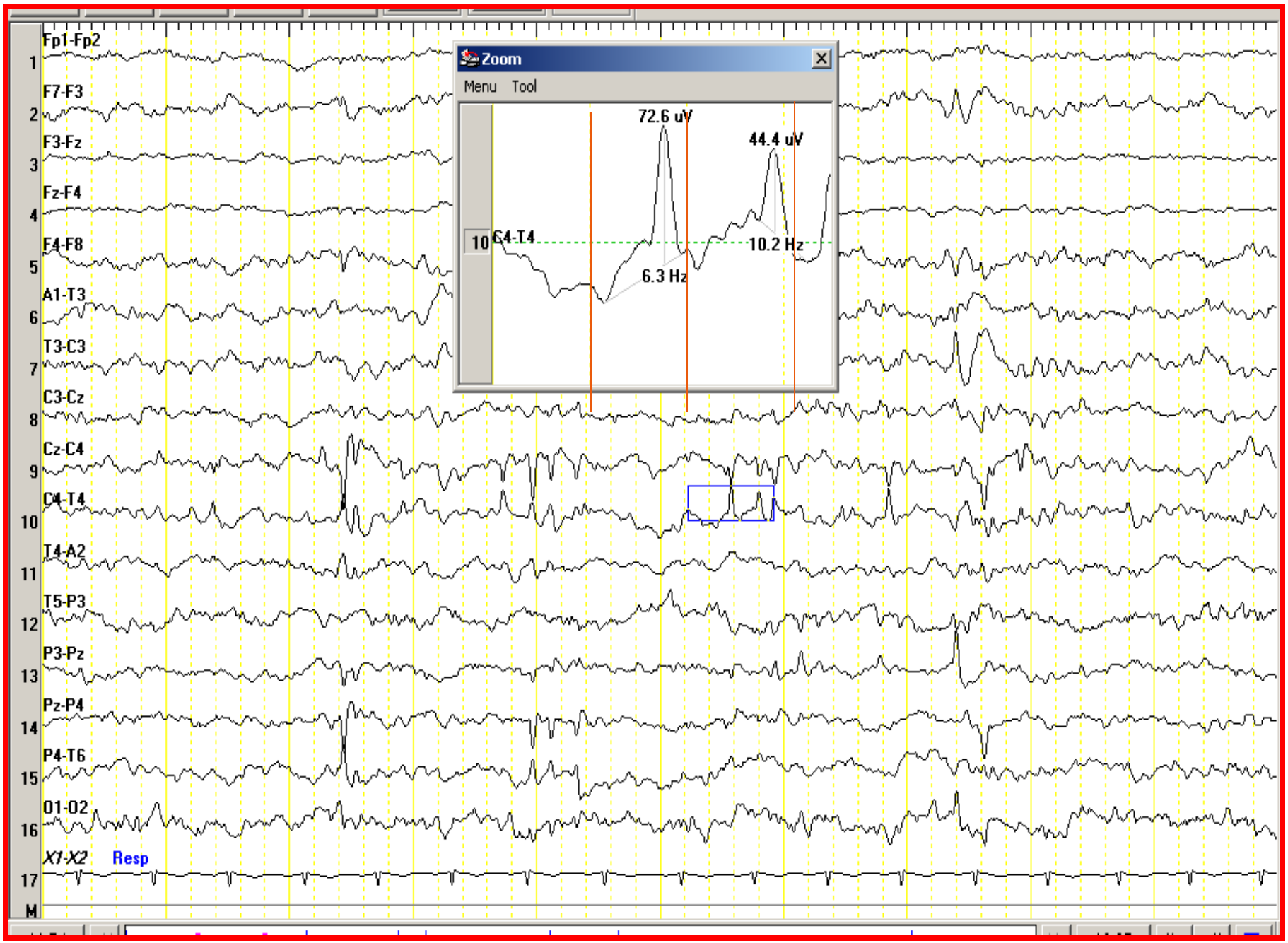
ELECTROENCEPHALOGRAPHY IN NEONATAL SEIZURES: COMPARİSON OF A REDUCED AND A FULL 10/20 MONTAGE

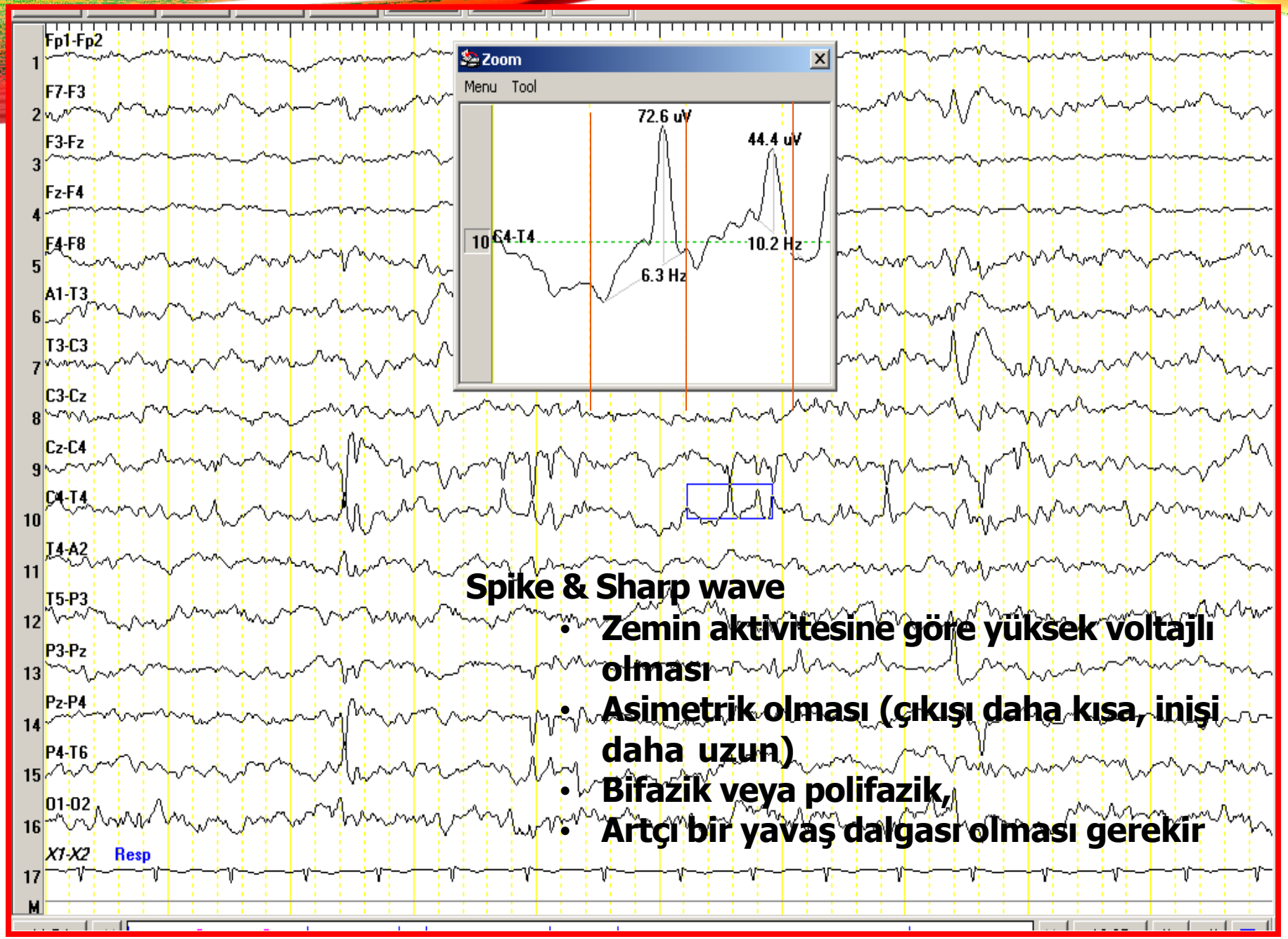
H. TEKGUL ET AL PEDİATR NEUROL 2005 ; 32: 155-61



ÇOCUKLUK ÇAĞI EEG'Sİ: TANIMLAR

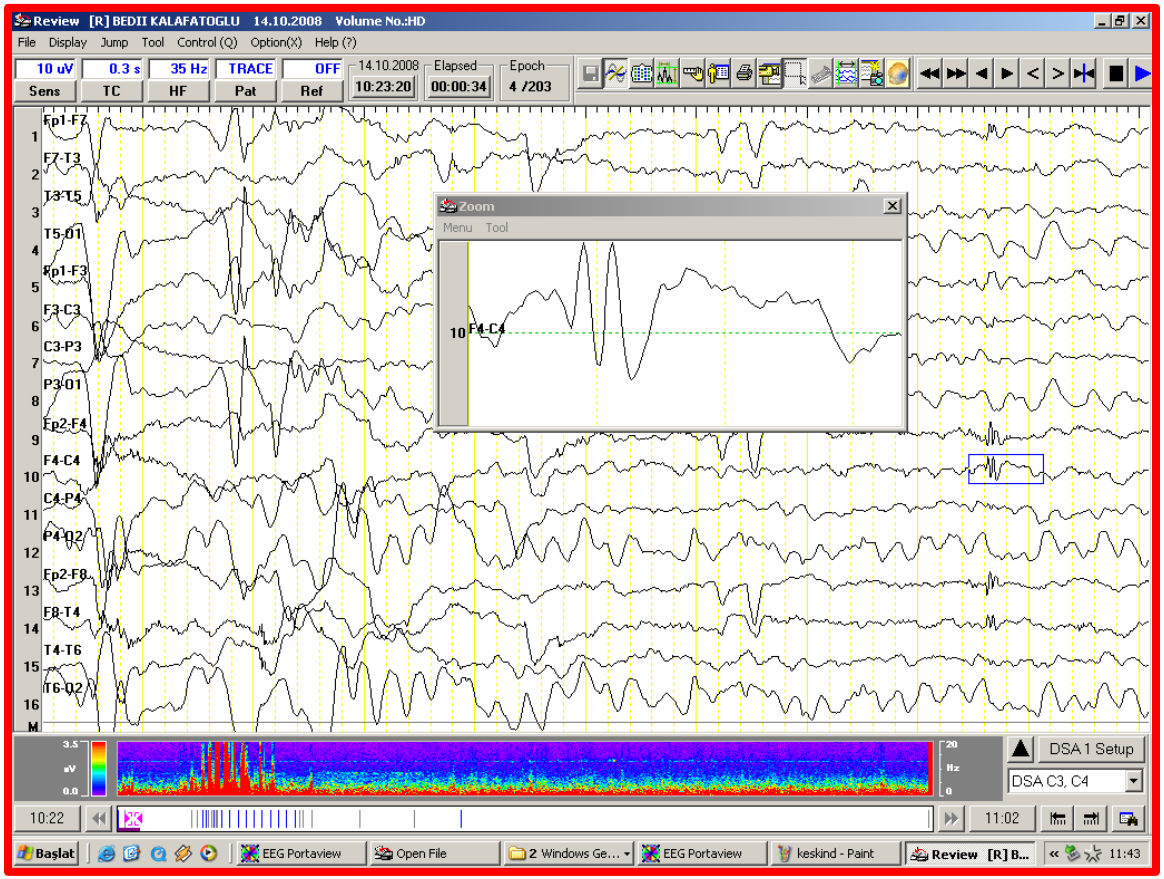
Pratik Uygulama

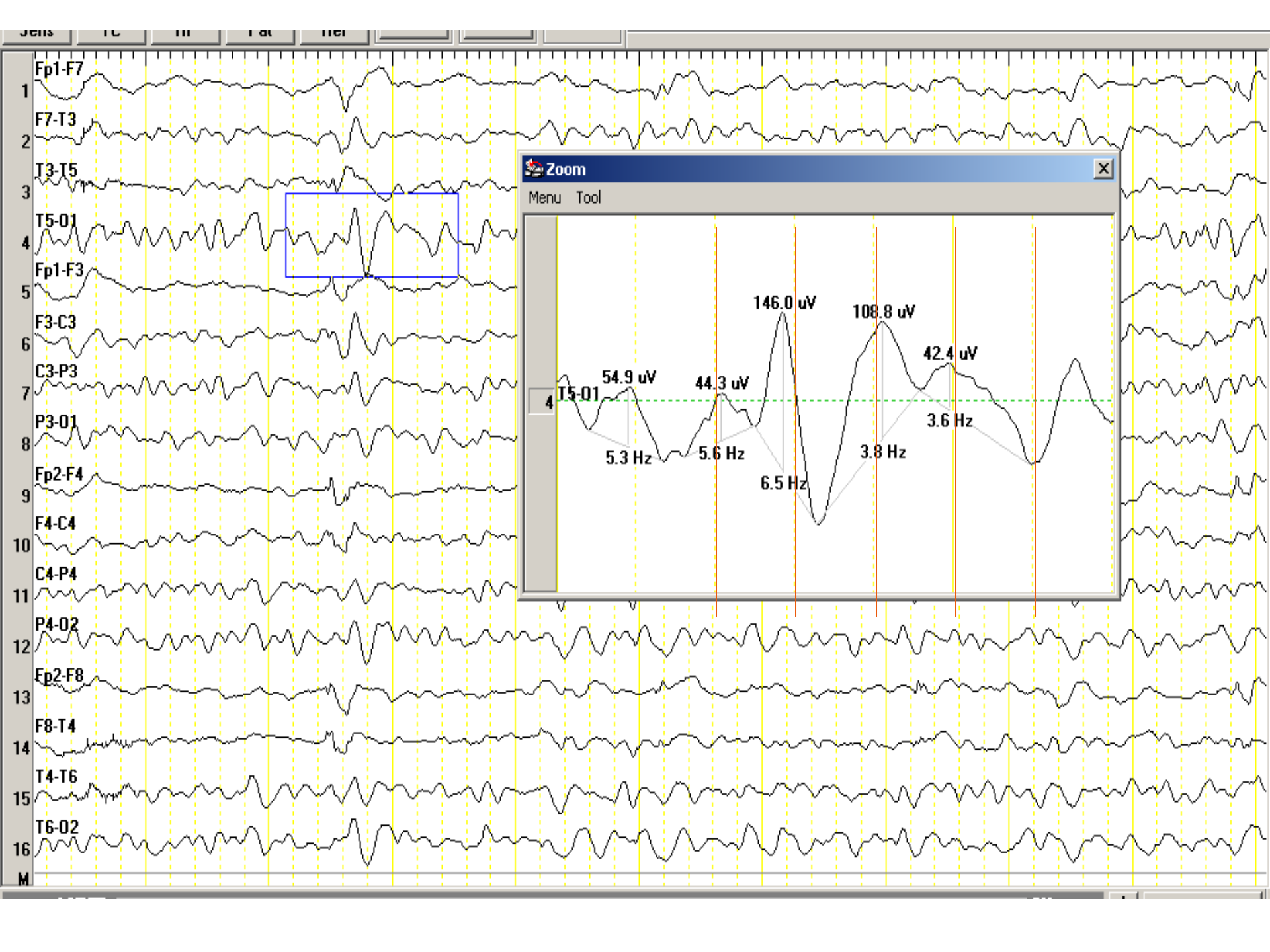

Fp1-Fp2
F7-F3
F3-Fz
Fz-F4
F4-F8
A1-T3
T3-C3
C3-Cz
Cz-C4
C4-T4
T4-A2
T5-P3
P3-Pz
Pz-P4
P4-T6
O1-O2
X1-X2
Resp
Zoom
Menu
Tool
72.6 uV
44.4 uV
10
C4-T4
6.3 Hz
10.2 Hz

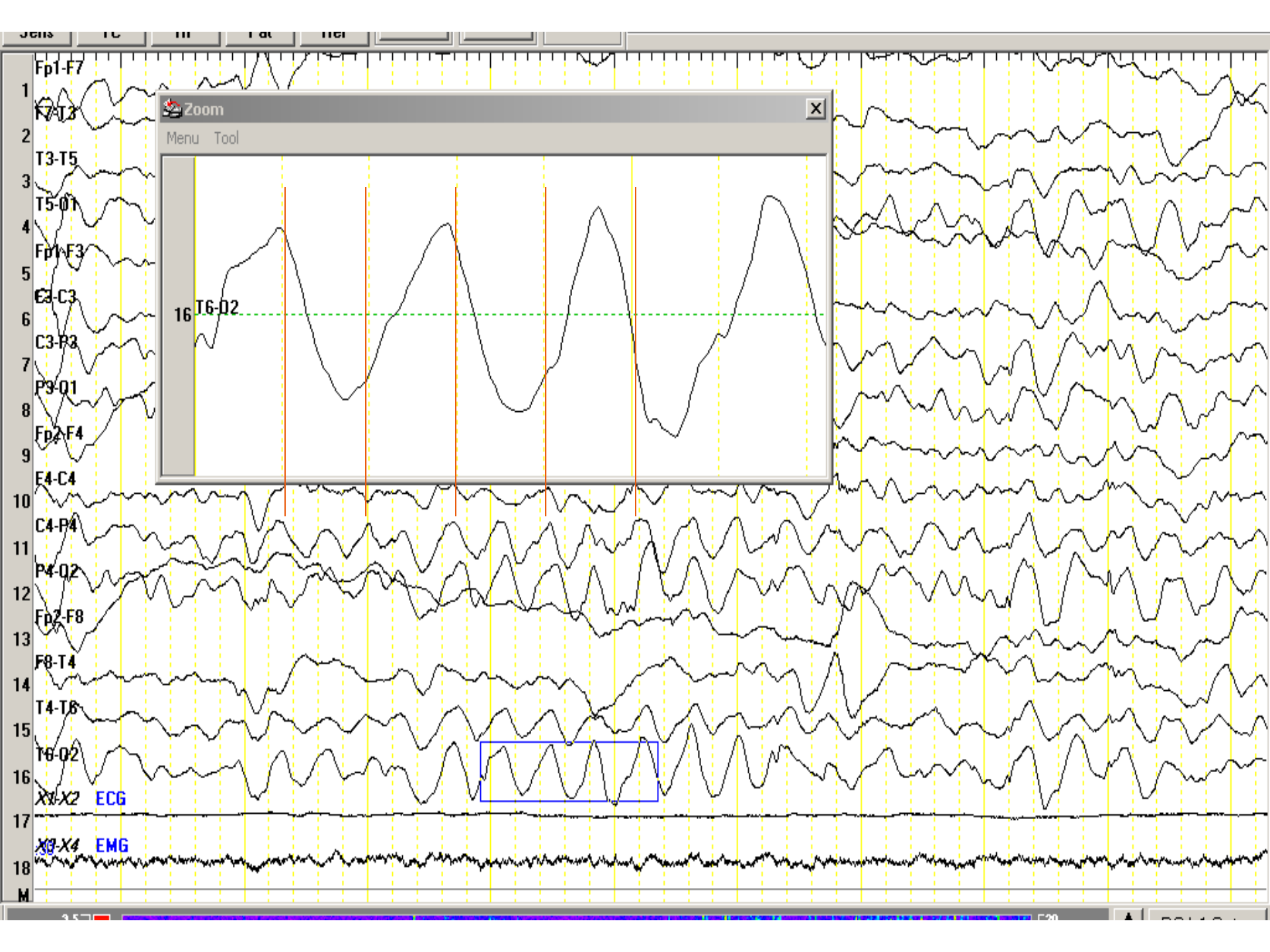


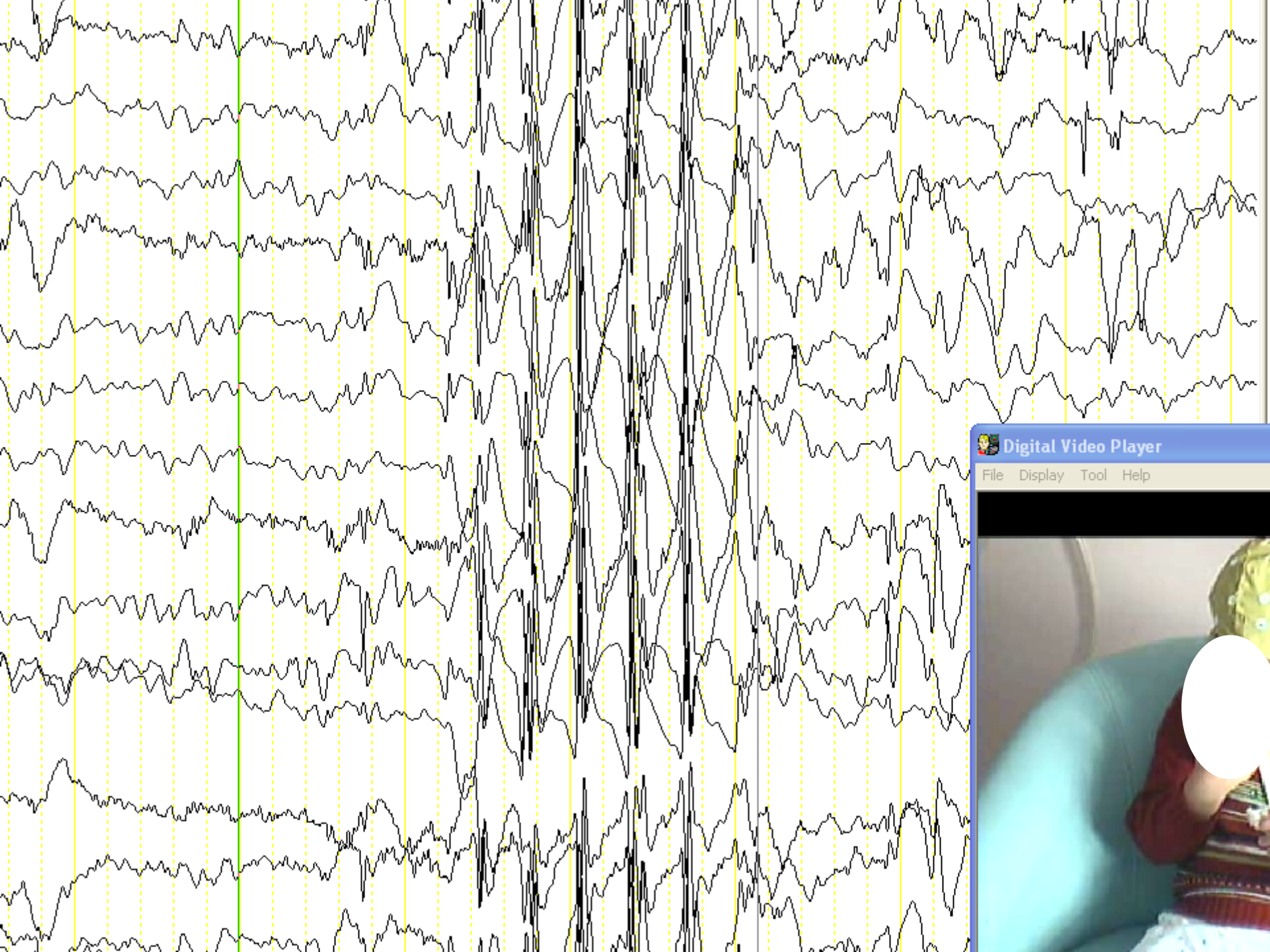
Spike & Sharp wave

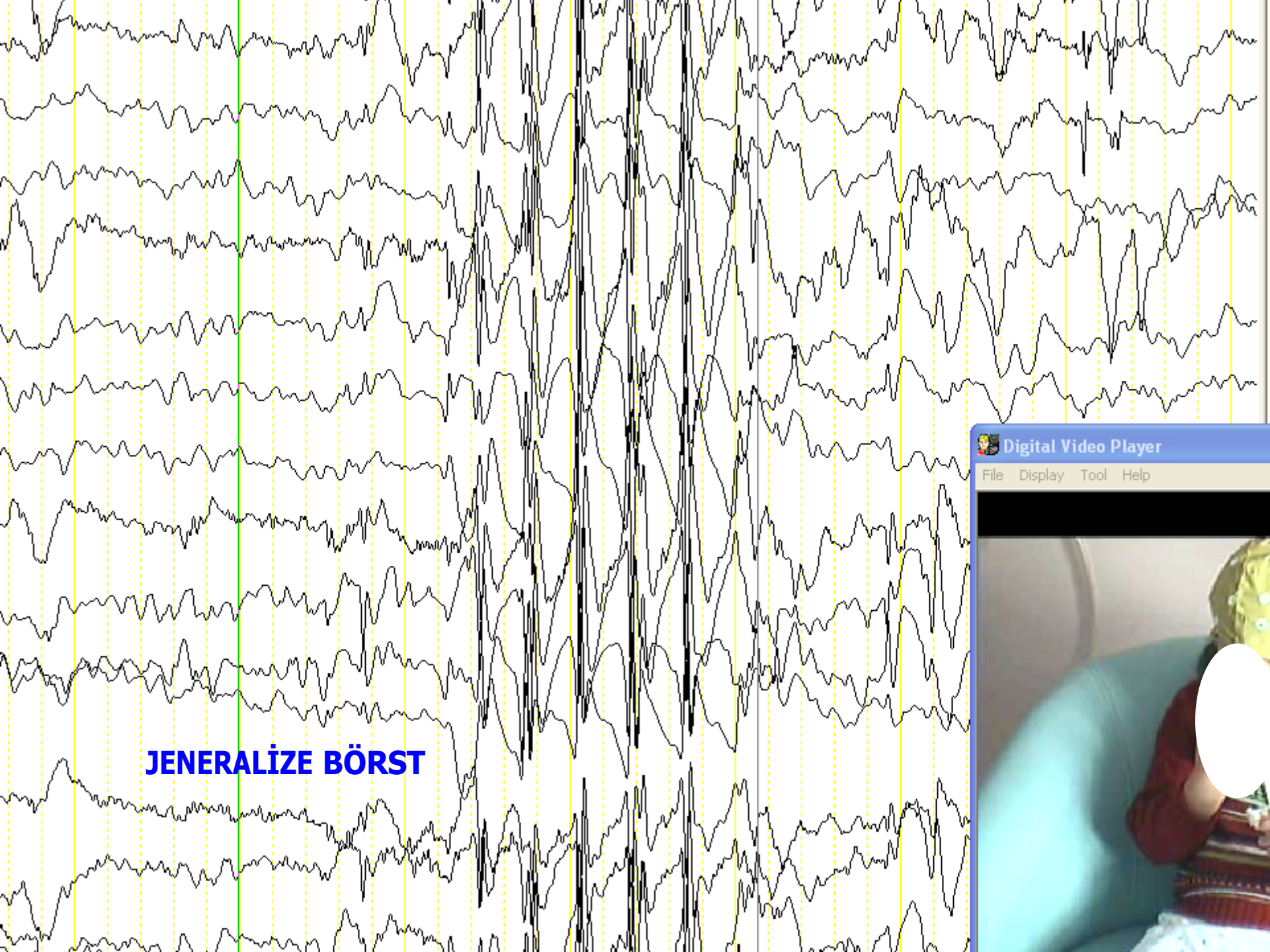
- **Zemin aktivitesine göre yüksek voltajlı olması**
- **Asimetrik olması (çıkışı daha kısa, inişi daha uzun)**
- **Bifazik veya polifazik,**
- **Artçı bir yavaş dalgası olması gerekir**

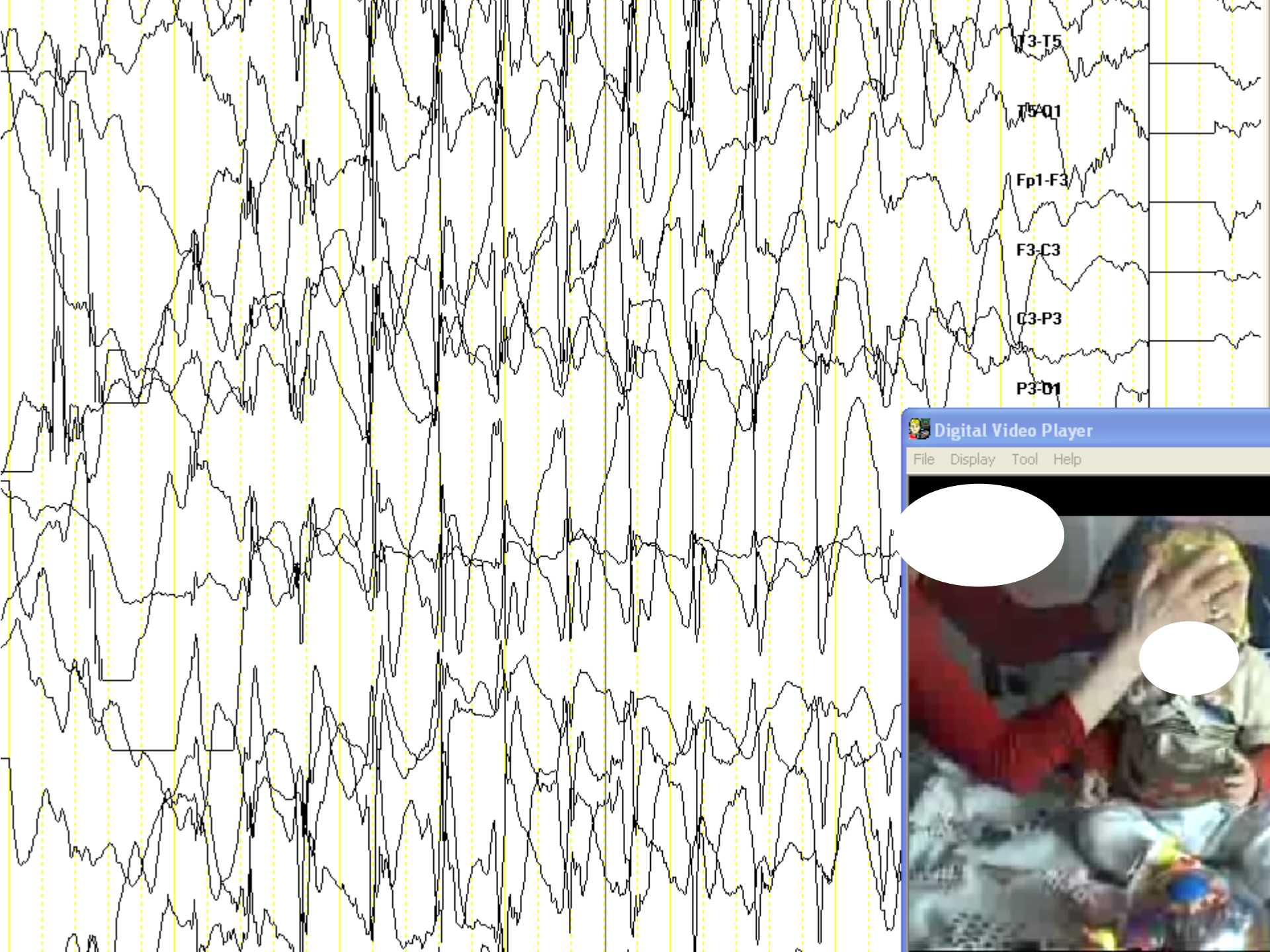

Review [R] BEDII KALAFATOGLU 14.10.2008 Volume No.:HD
File Display Jump Tool Control (Q) Option(X) Help (?)
10 uV
0.3 s
35 Hz
TRACE
OFF
Sens
TC
HF
Pat
Ref
14.10.2008
10:23:20
Elapsed
00:00:34
Epoch
4 /203
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
Zoom
Menu Tool
10 F4-C4
DSA 1 Setup
DSA C3, C4
10:22
11:02
Başlat
EEG Portaview
Open File
2 Windows Ge...
EEG Portaview
keskind - Paint
Review [R] B...
11:43

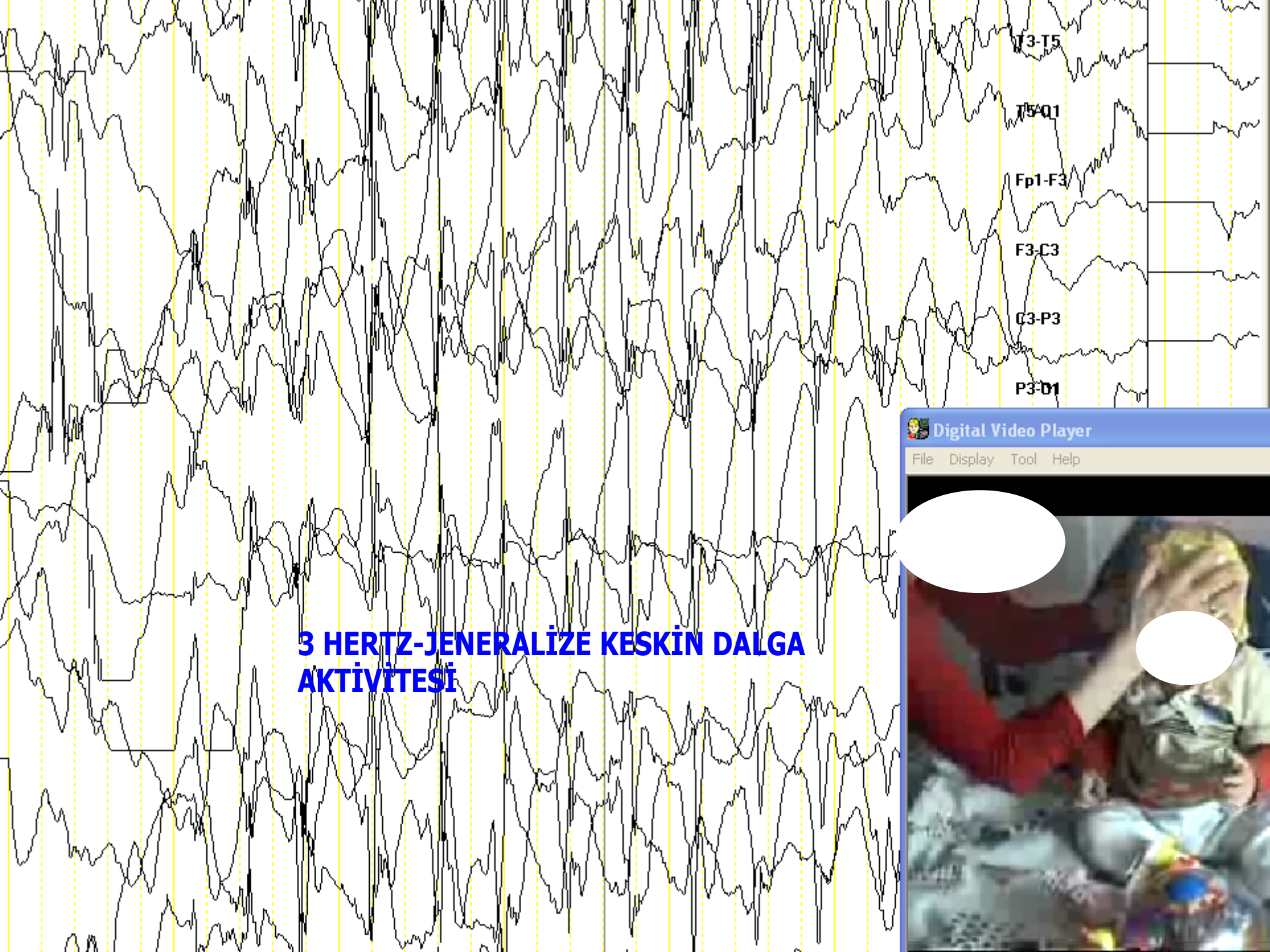

Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
Zoom
Menu
Tool
T5-O1
54.9 uV
44.3 uV
146.0 uV
108.8 uV
42.4 uV
5.3 Hz
5.6 Hz
6.5 Hz
3.8 Hz
3.6 Hz

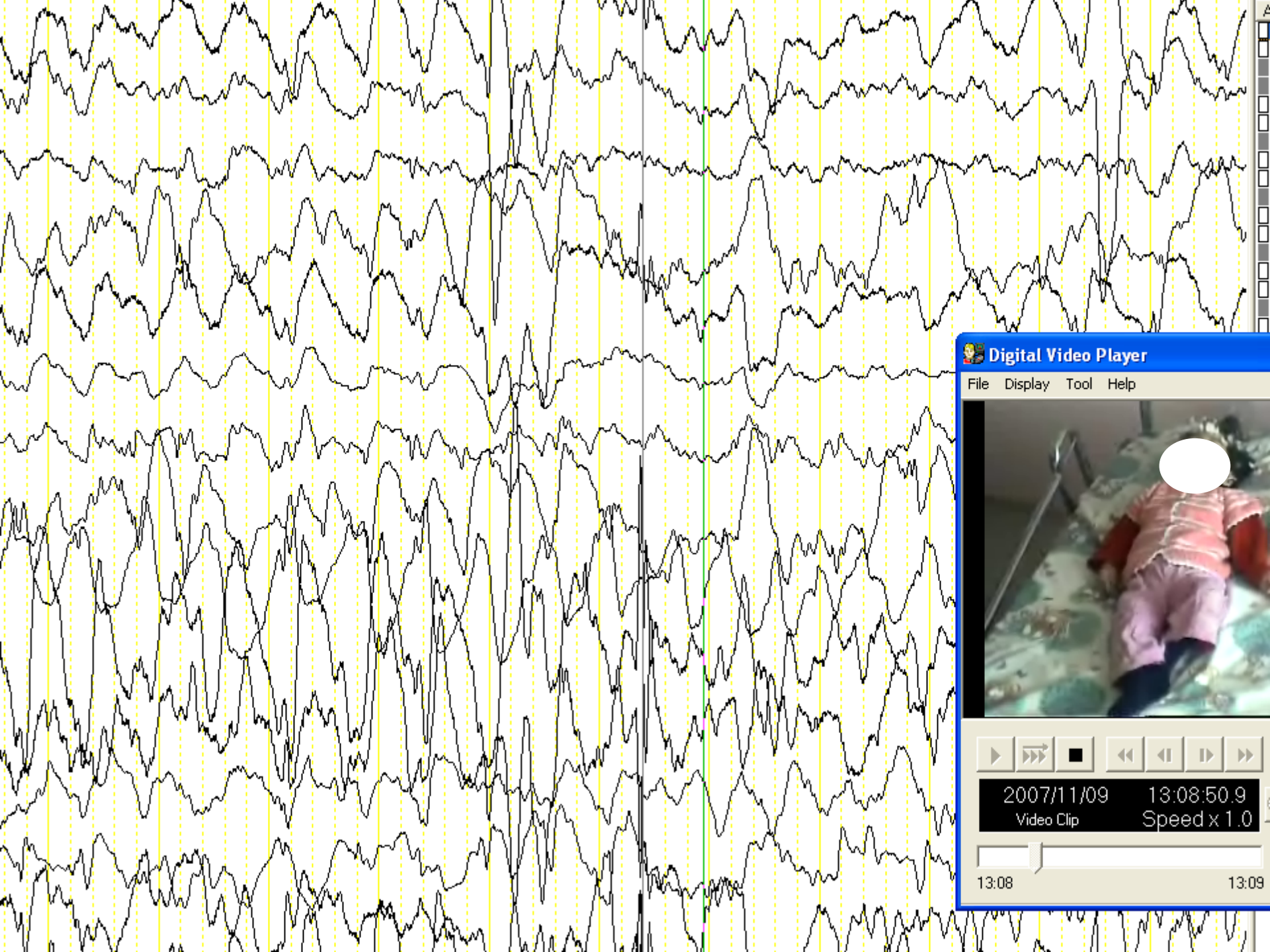

Zoom
Menu Tool
16 T6-O2
Fp1-F7
F7-T3
T3-T5
T5-O1
Fp1-F3
C3-C3
C3-P3
P3-O1
Fp2-F4
F4-C4
C4-P4
P4-O2
Fp2-F8
F8-T4
T4-T6
T6-O2
X1-X2 ECG
X3-X4 EMG


Digital Video Player
File
Display
Tool
Help

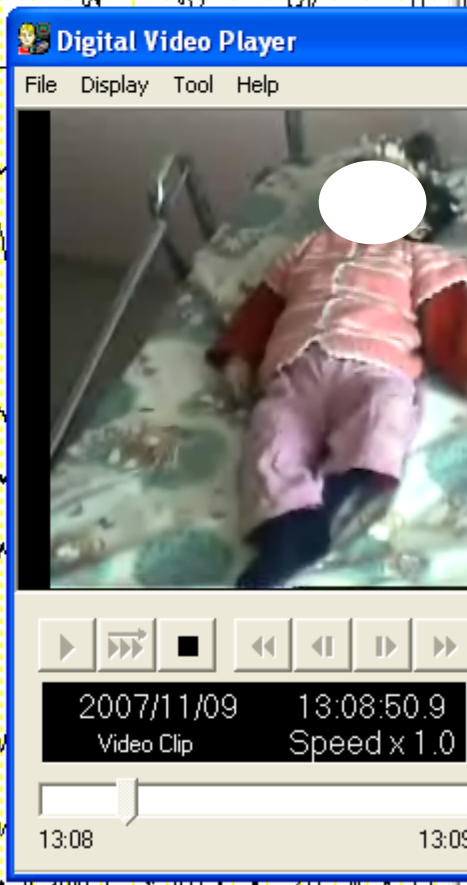

JENERALİZE BÖRST
Digital Video Player
File
Display
Tool
Help

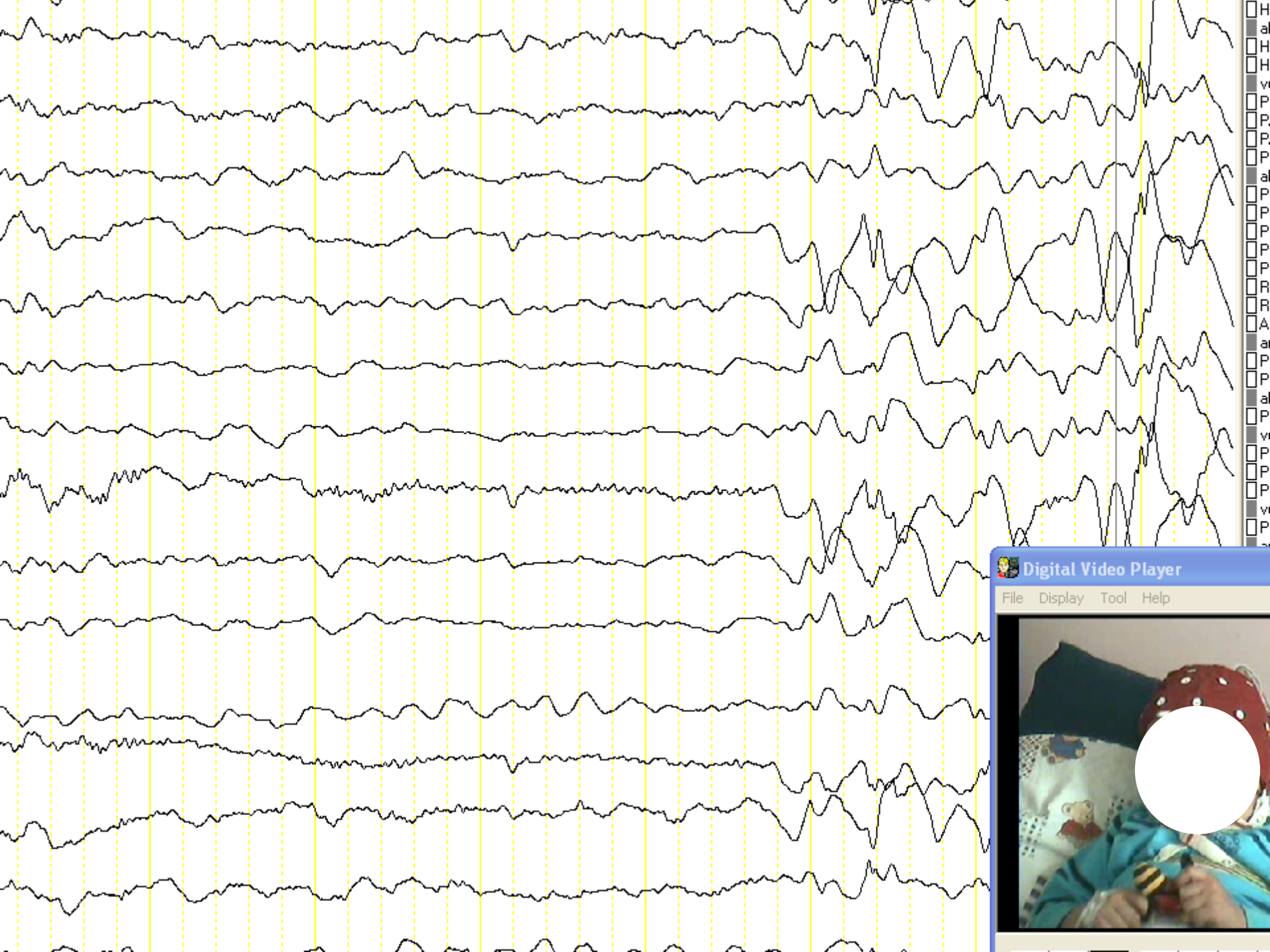

T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Digital Video Player
File
Display
Tool
Help

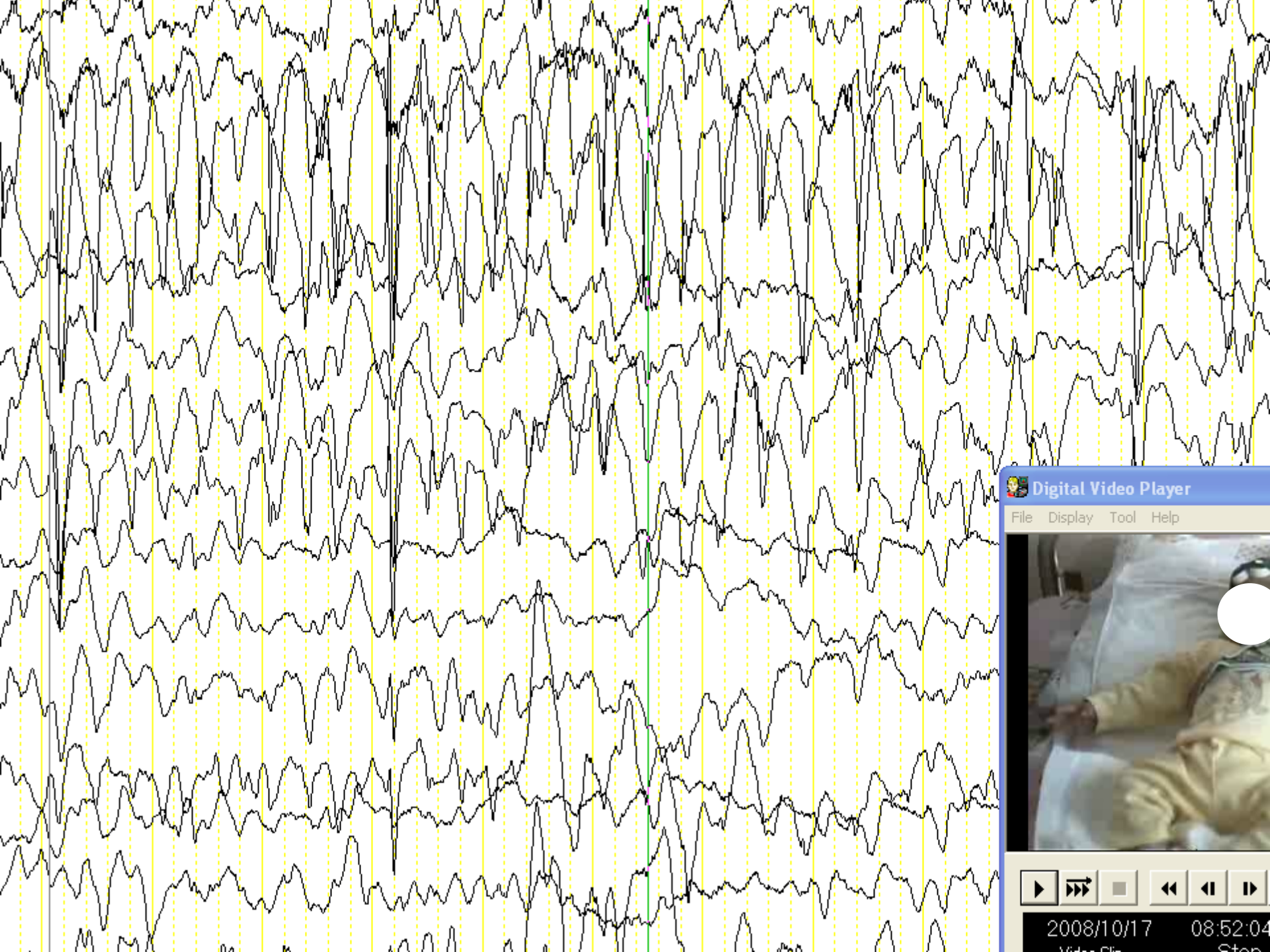

T3-T5
T5-O1
Fp1-F3
F3-C3
C3-P3
P3-O1
Digital Video Player
File Display Tool Help
3 HERTZ-JENERALİZE KESKİN DALGA AKTİVİTESİ

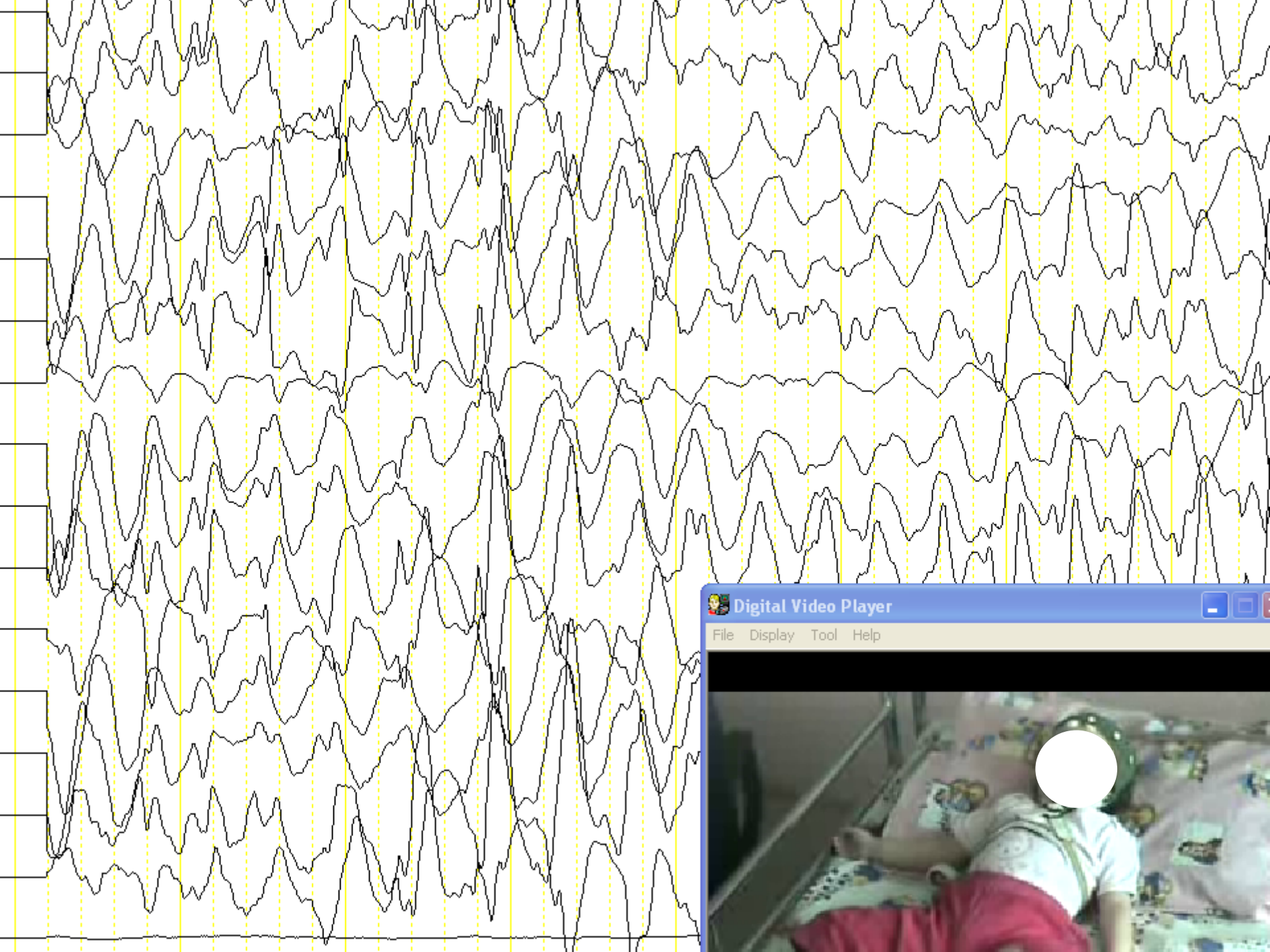

Digital Video Player
File
Display
Tool
Help
2007/11/09
13:08:50.9
Video Clip
Speed x 1.0
13:08
13:09

L KESKİN DALGA BÖRST /DEŞARJ
İTESİ

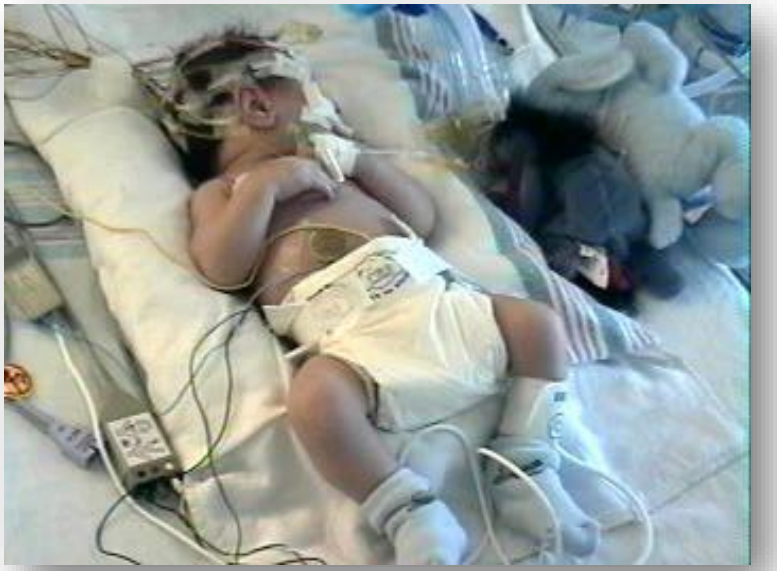



Digital Video Player
File
Display
Tool
Help

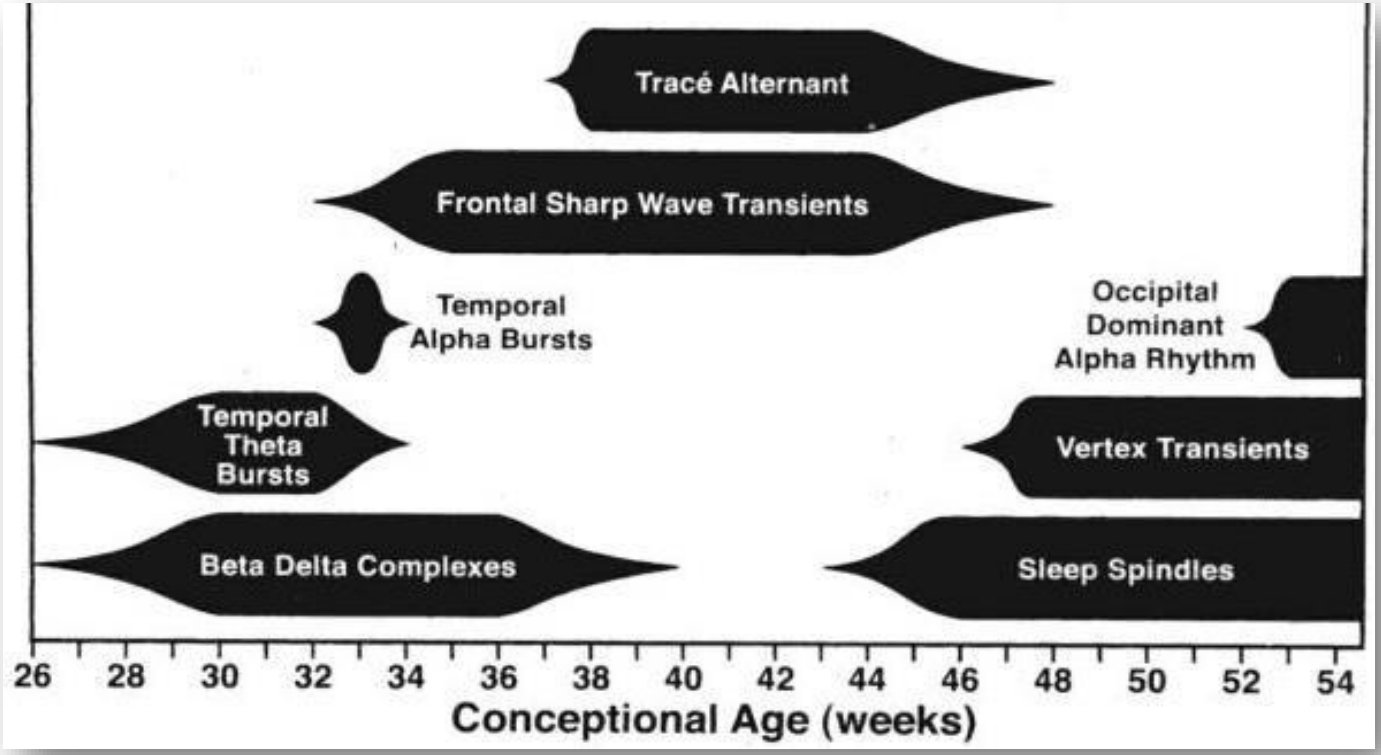

Digital Video Player
File
Display
Tool
Help
2008/10/17
08:52:04


Digital Video Player
File
Display
Tool
Help

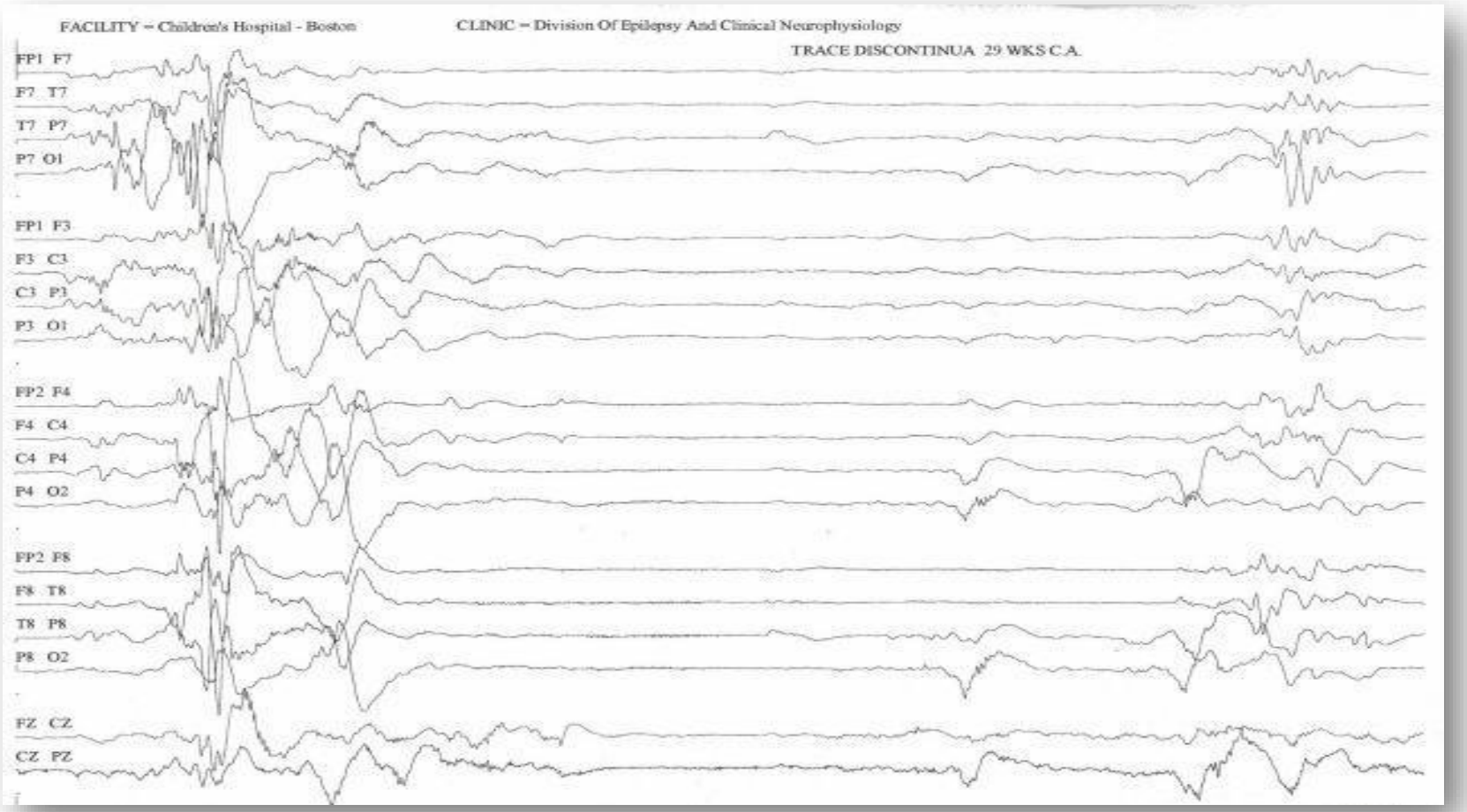
NEONATAL EEG



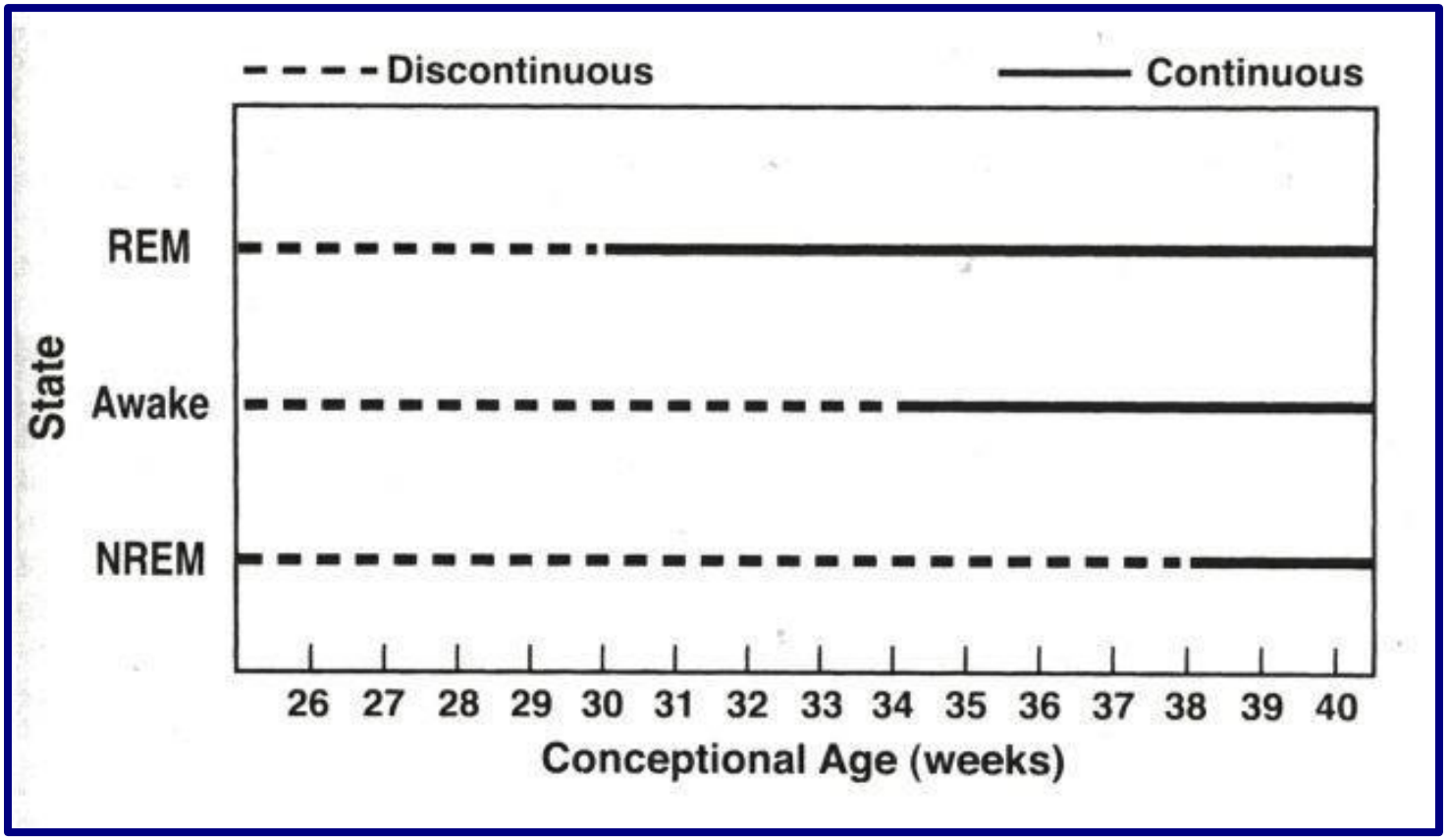
NEONATAL EEG:
TEMEL GELİŞİMSEL İŞARETLER



PRETERM N-EEG:
TRACE DİSCONTİNUE -KESİKLİ AKTİVİTE



PRETERM N-EEG:



PRETERM N-EEG: DELTA BRUSH - BETA DELTA KOMPLEKS

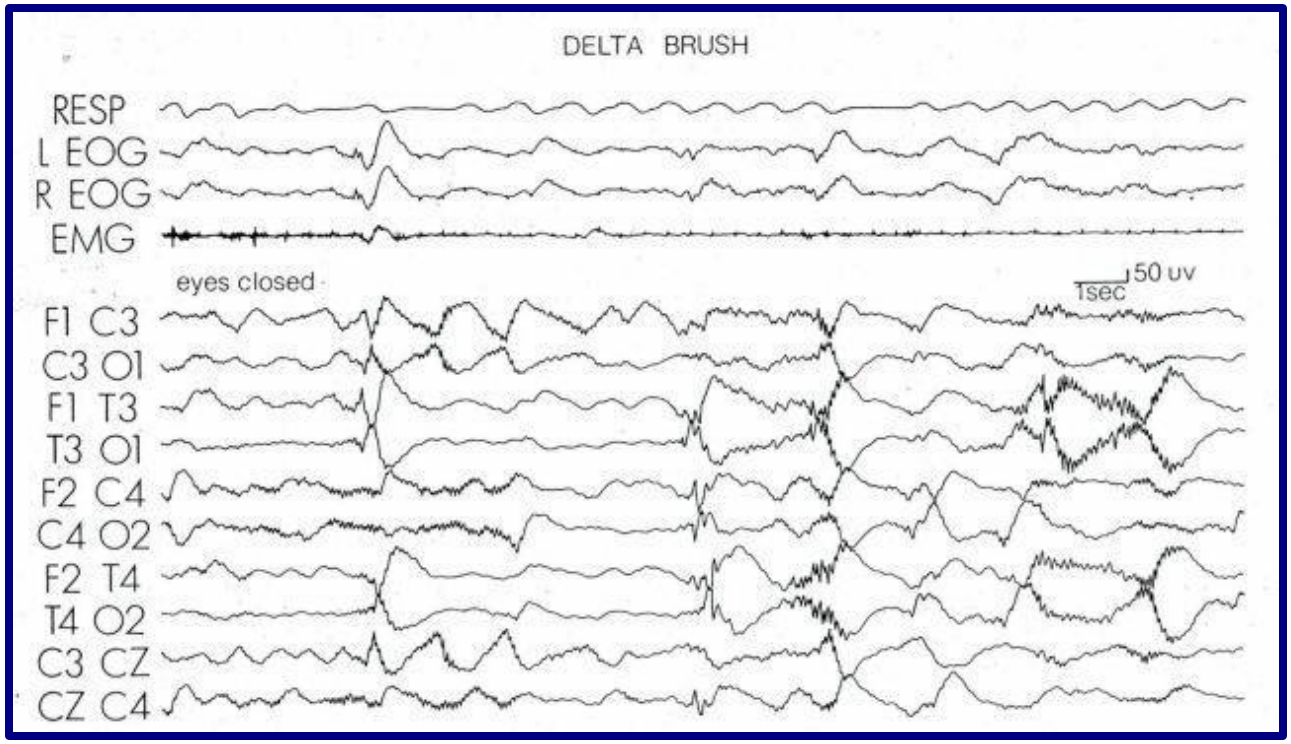
Tanım: Yavaş dalgalar (0.3-1.5 Hz) üzerine yerleşmiş hızlı aktivite (8-20 Hz)

- 28.hf görülmeye başlar, 32. Hf belirgindir
- Rolandik ..... Oksipital

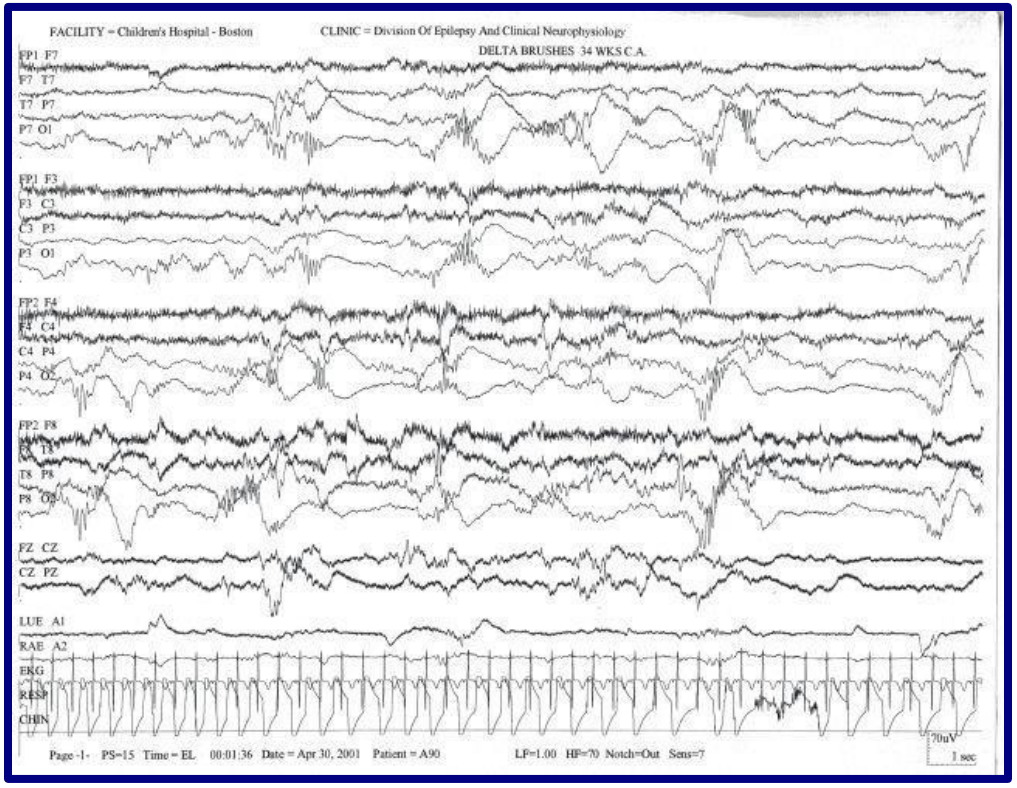
Patolojik Tanım: **Term: > 2 / 10 sn**

Klinik İlişki: **Dismatürite**

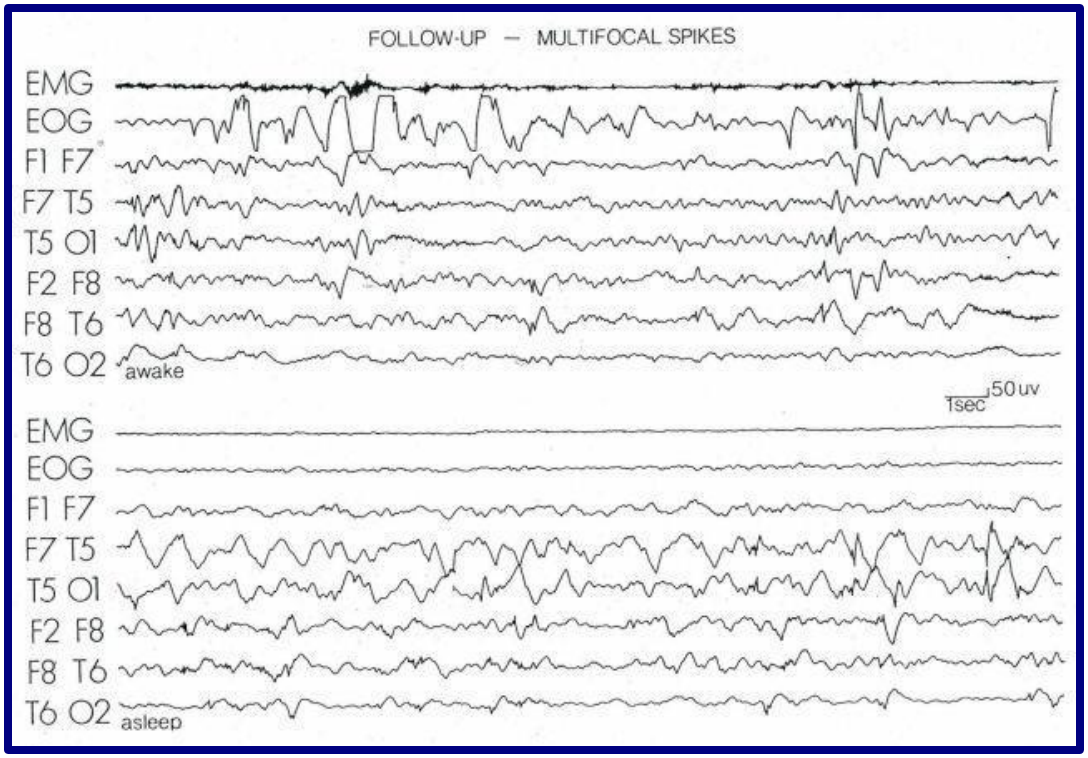
PRETERM N-EEG: DELTA BRUSH - BETA DELTA KOMPLEKS



PRETERM N-EEG: DELTA BRUSH - BETA DELTA KOMPLEKS



SHARP TRANSİENTS: GEÇİCİ KESKİN DALGA AKTİVİTELERİ



SHARP TRANSİENTS: GEÇİCİ KESKİN DALGA AKTİVİTELERİ

	Sharp Transient	Abnormal
Amplitüd	< 75 mikrovolts	> 75 mikrovolts
Süre	<100 msn	> 150 msn
Çıkış tarzı	Random Bilateral	Değişik, ısrarlı Unilateral
Frekans	İnterval: dk	İnterval: sn
Morfoloji	Mono-difazik	Polifazik
Evre	NREM	Tüm evreler

TERM N-EEG: NORMAL PATERNLER

(1) Uyanıklık Paterni

(2) Miks Patern

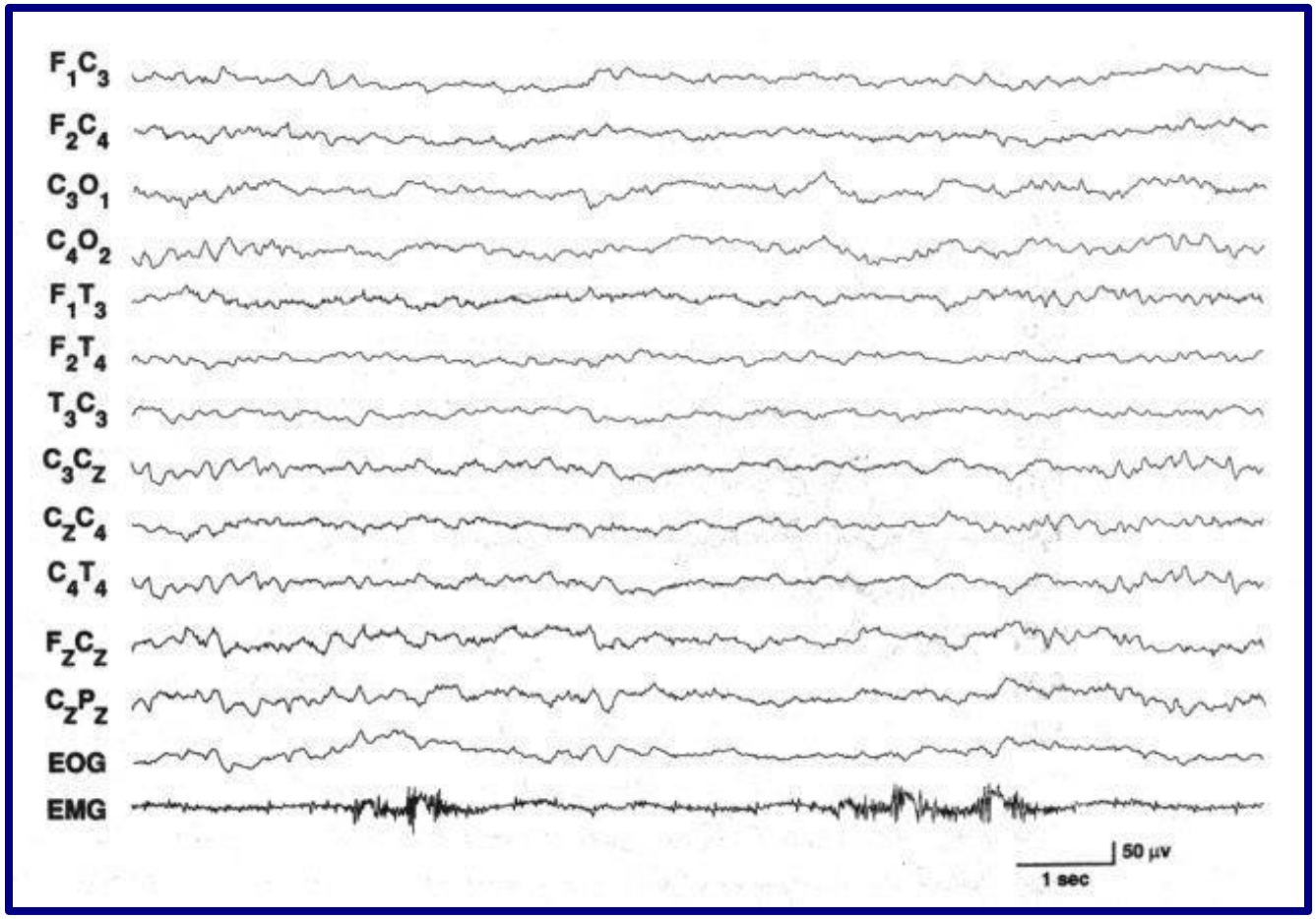
(3) Düşük Voltaj İrregüler Patern

(4) Yüksek Voltajlı Yavaş Uyku Paterni

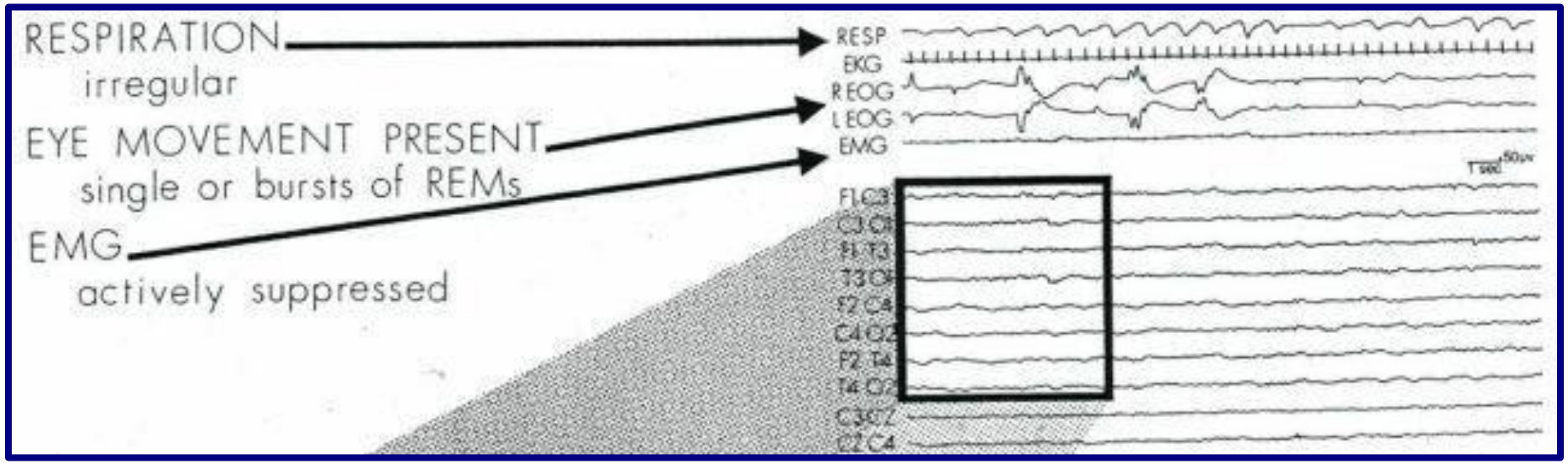
(5) Trace Alternant

(6) Geçiş Paterni (Transitional-indeterminate)

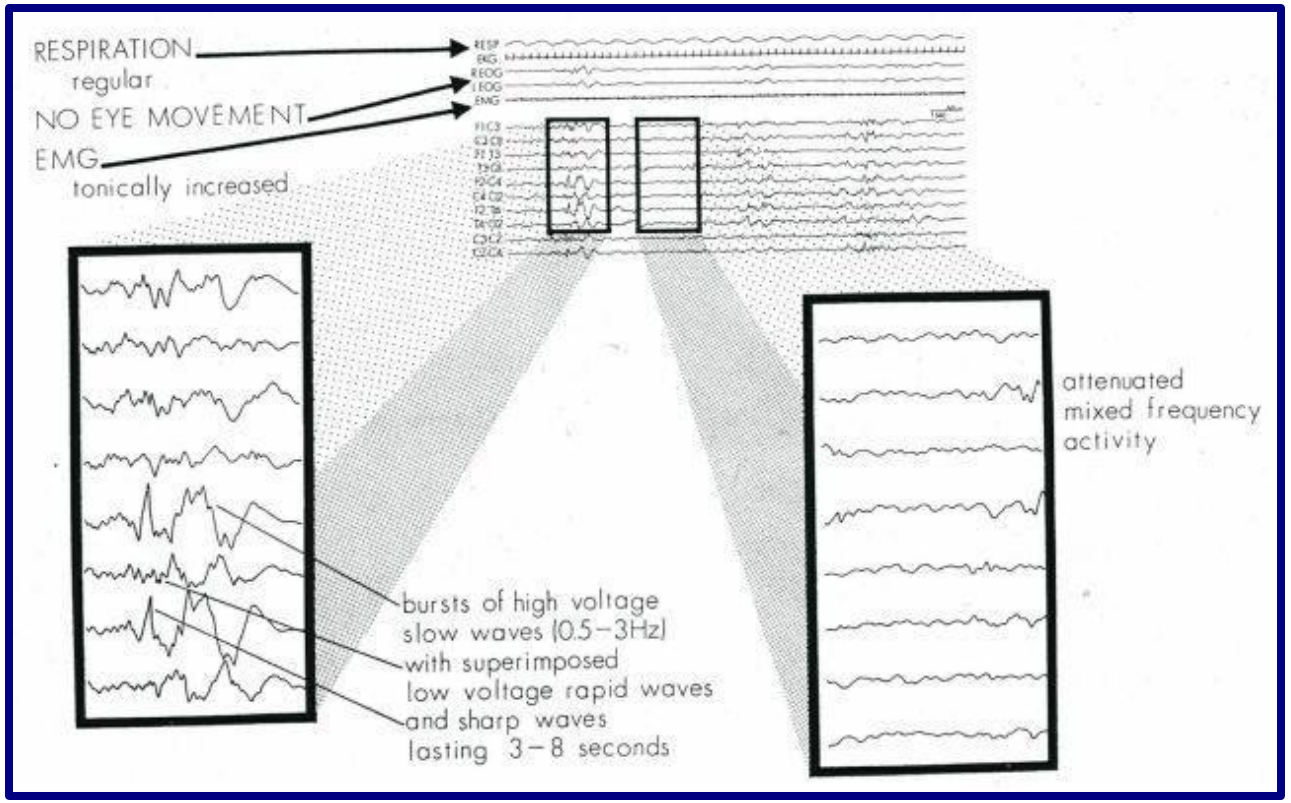
TERM N-EEG: UYANIKLIK PATERNİ



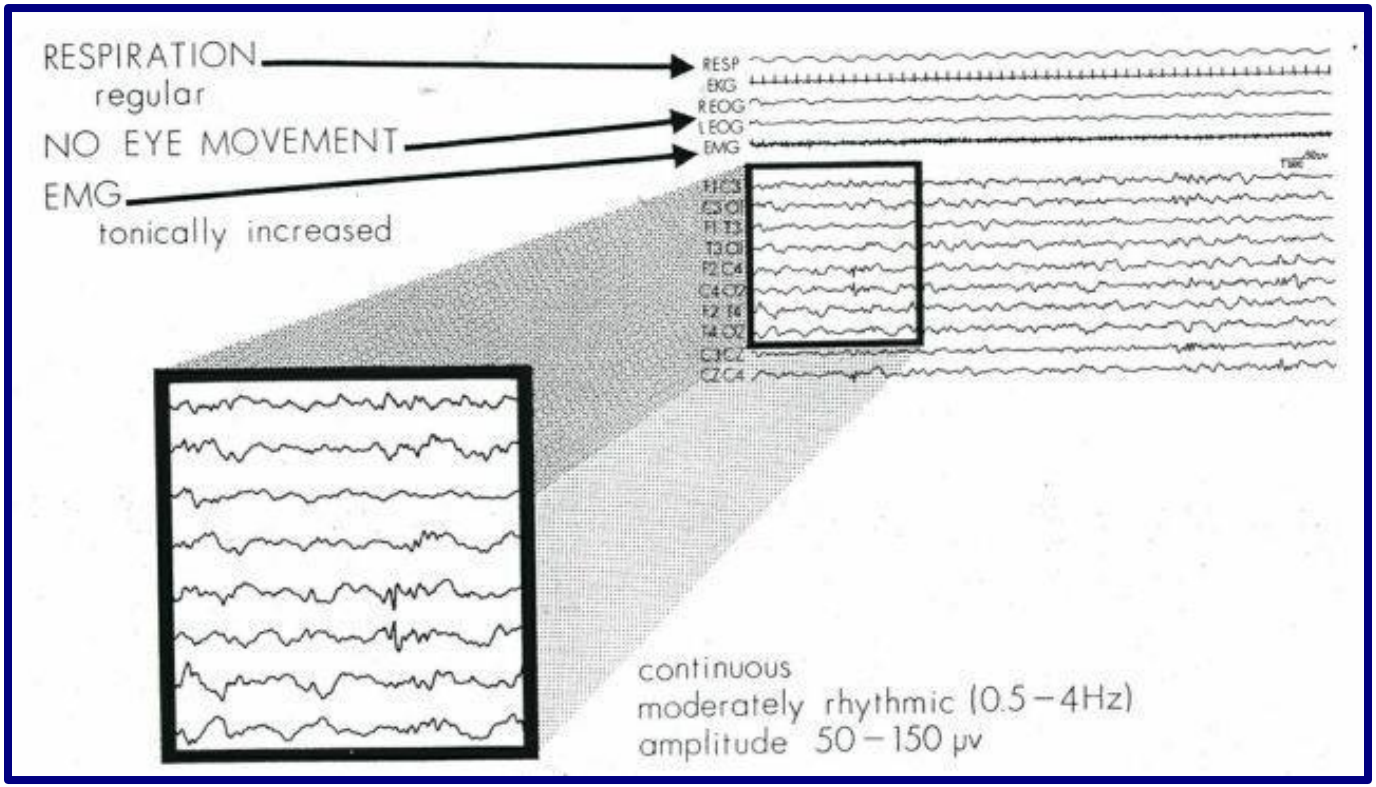
TERM N-EEG:
DÜŞÜK VOLTAJ İRREGÜLER PATERN (REM 2)

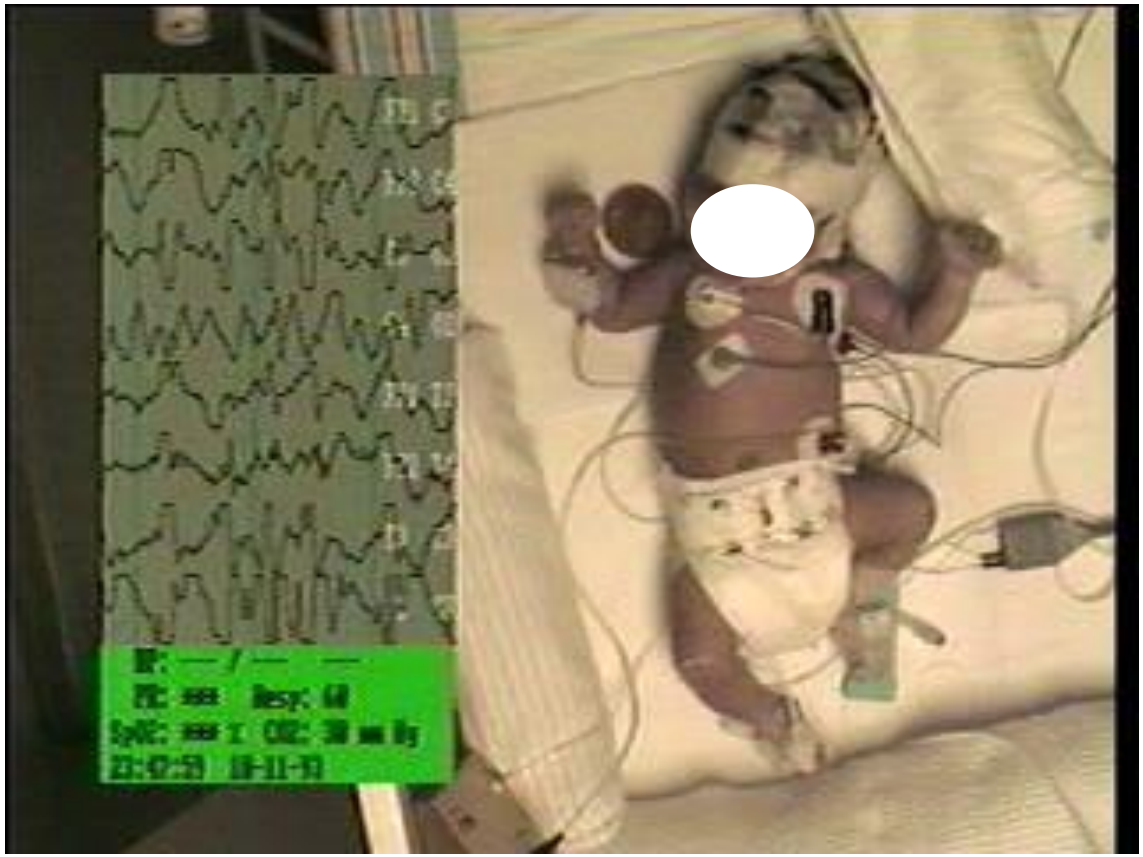


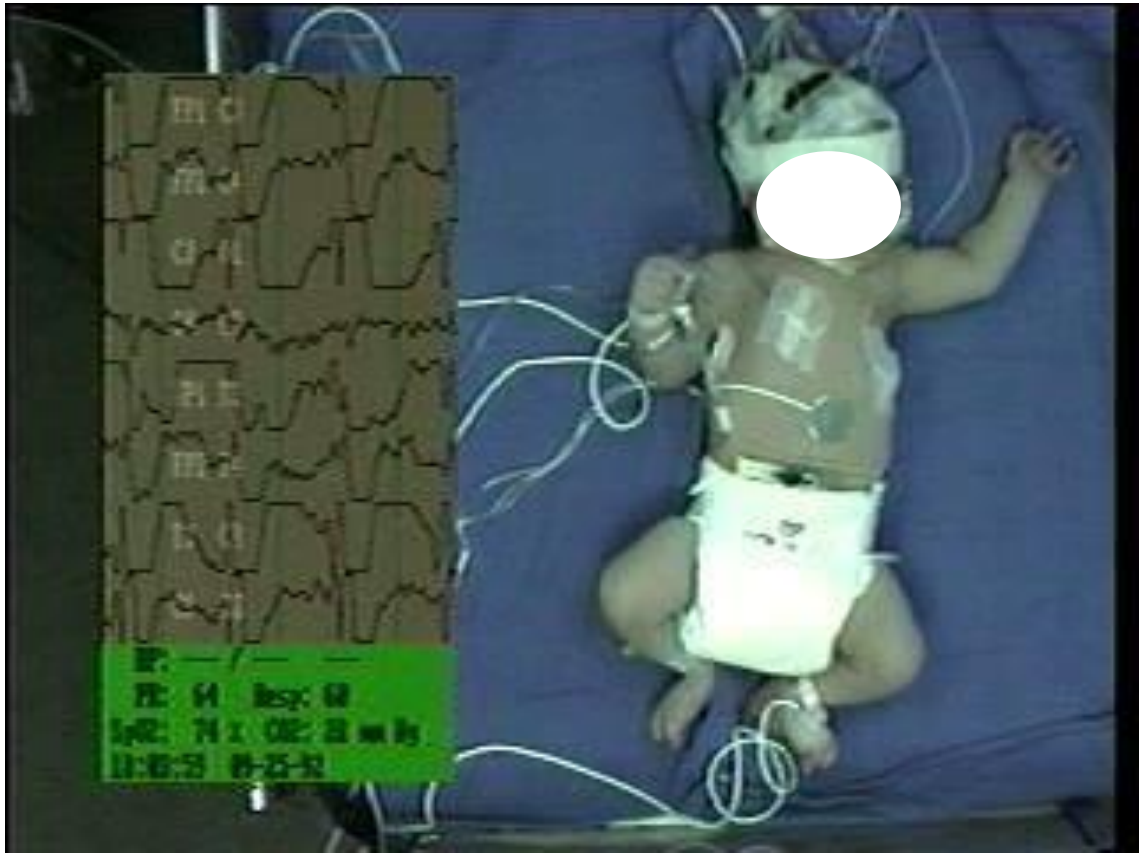
TERM N-EEG: TRACE ALTERNANT (EPİZODİK PATERN)

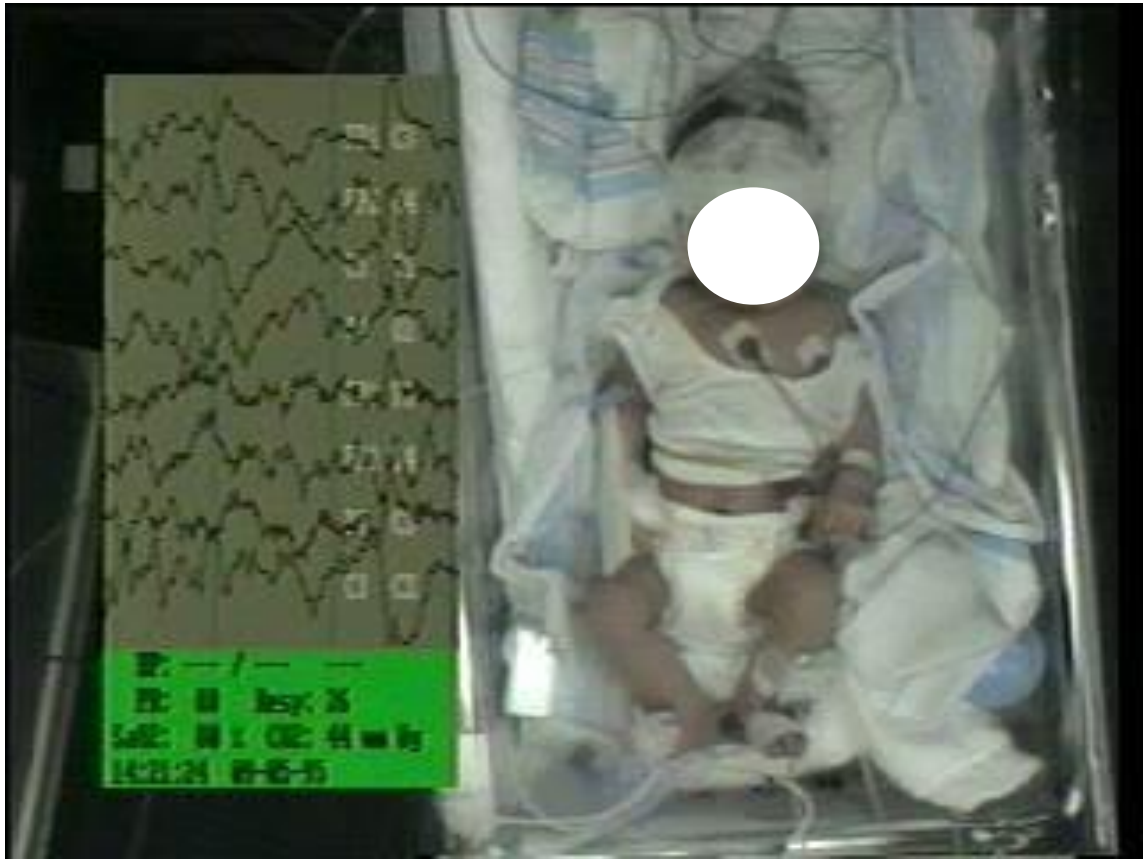


TERM N-EEG: YÜKSEK VOLTAJLI YAVAŞ UYKU PATERNİ



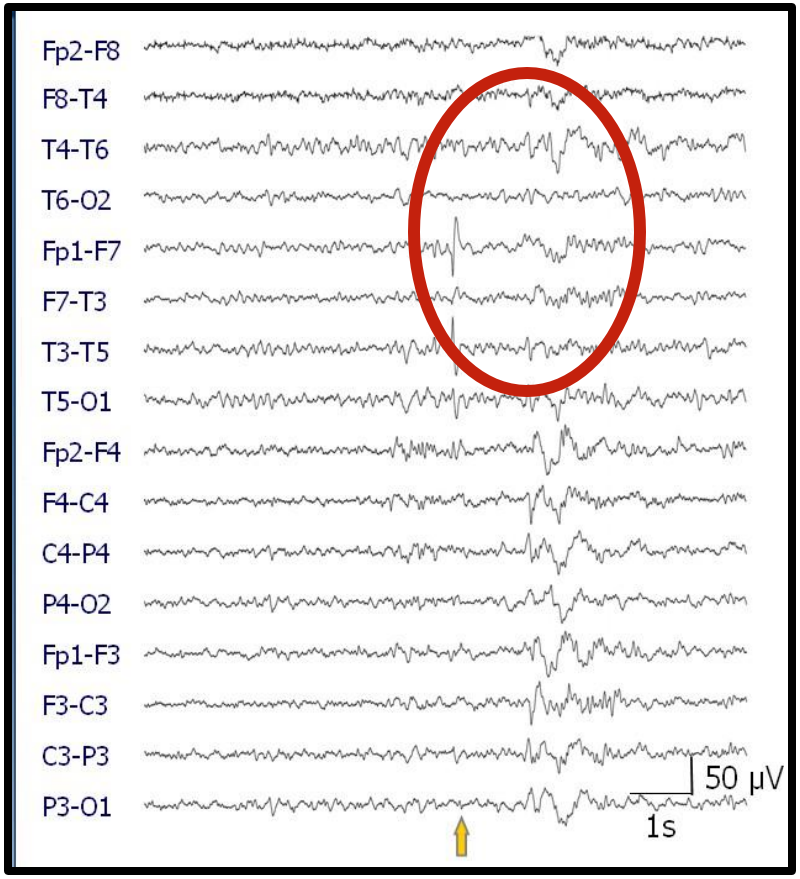






FOKAL EPİLEPTİFORM AKTİVİTE: İNTERİKTAL

UZAK FAZ KARŞILAŞMASI



JENERALİZE EPİLEPTİFORM AKTİVİTE

Yaygın Kortikal / Subkortikal Bozukluk

1. Yapısal

- Akut hasar (anoksi, kafatravması,ansefalit)
- Kronik [postanoksik/posttravmatik yaygın serebral hasar, progresif myoklonus epilepsi

2. Fonksiyonel

- Toksik/metabolik/ endokrin/elektrolit boz
- (hipoglisemi, renal ansefalopati)
- Primer jeneralize epilepsiler