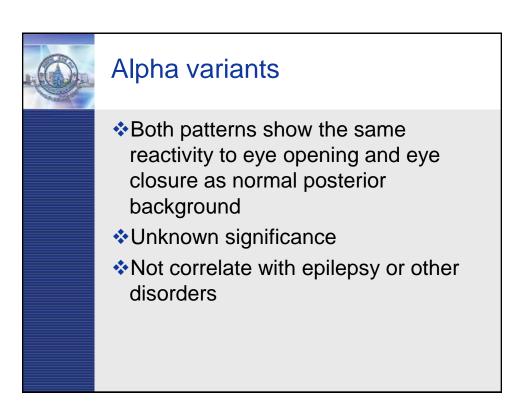


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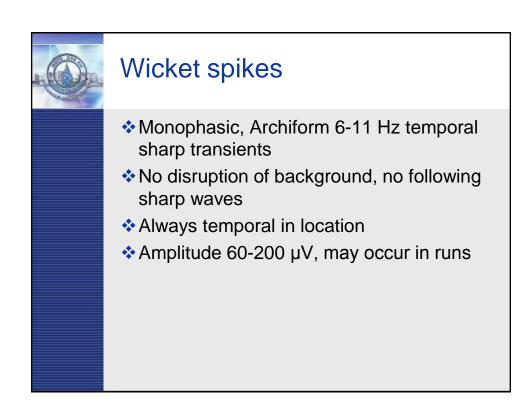
- Anterior to mid temporal single transients
- Wide spread electrical field
- Occur in drowsiness, light sleep
- Amplitude <50 uV, duration <50 msec</p>
- No disruption of background
- Unilateral or bilateral (if the record duration is long enough)

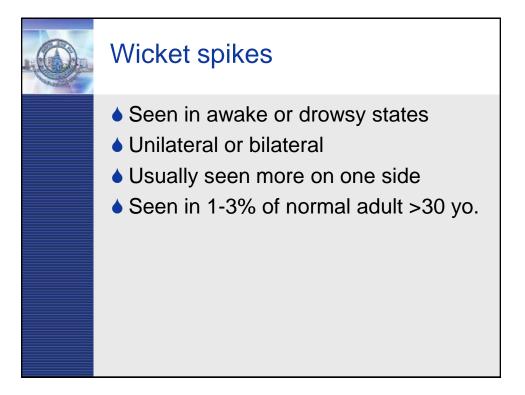


## Small Sharp spikes

- Occur in 3 to 20-25% of normal person, more common between age 30 -60 years old
- Also known as benign epileptiform transients of sleep (BETS)

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	F7 • FT9
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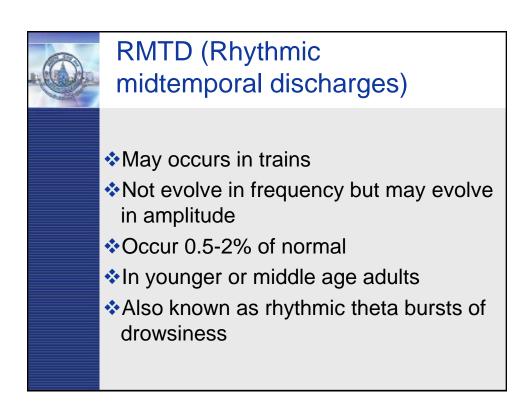




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- Rhythmic 4-7 Hz temporal burst of monophasic sharp transients with notched appearance
- Maximum over the midtemporal region
- May be some spreading to the parasagittal region
- Unilateral or bilateral
- Awake or drowsy states

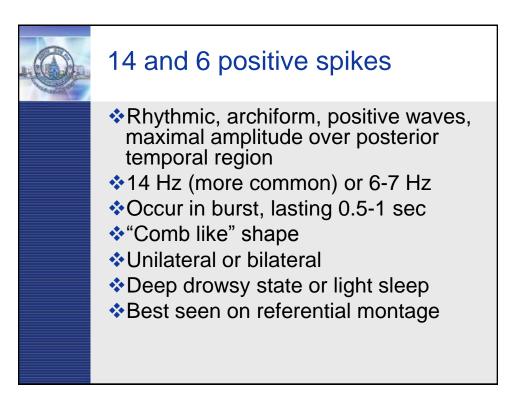


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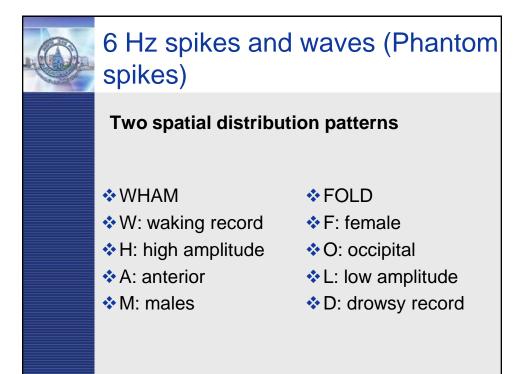


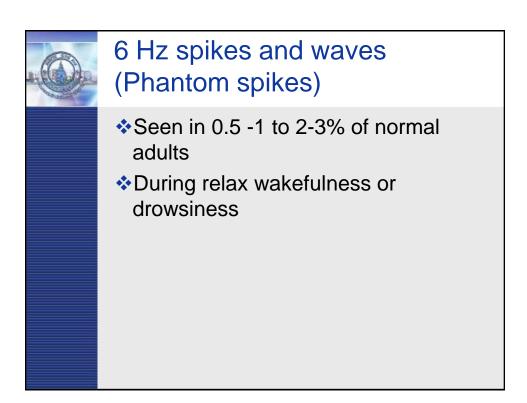
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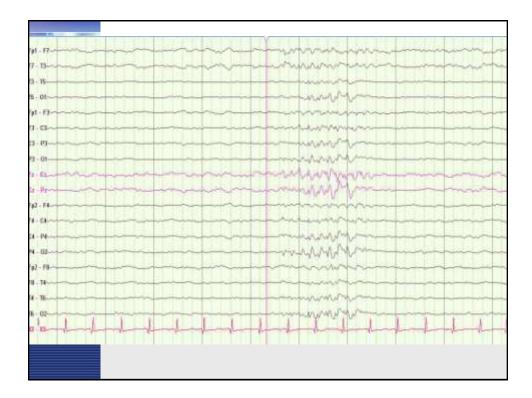
# 6 Hz spike and waves (Phantom spikes)

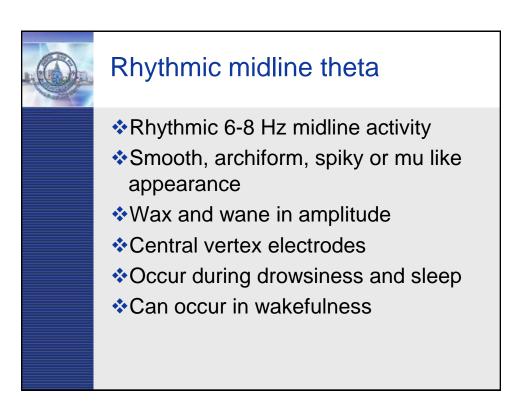
- Burst of 5-7 Hz slowing intermixed with low amplitude sharp transients
- Burst last 1-2 seconds
- Awake or drowsy states
- Sharp transients are very small do not map out nicely

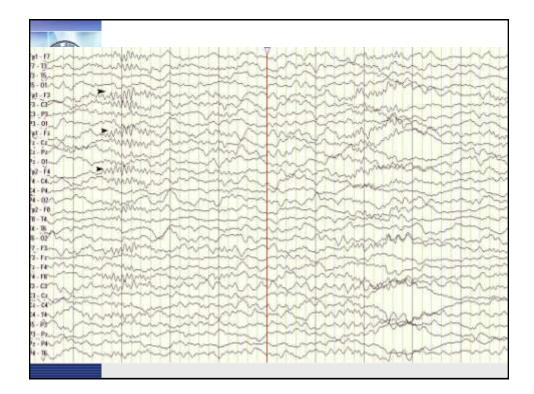


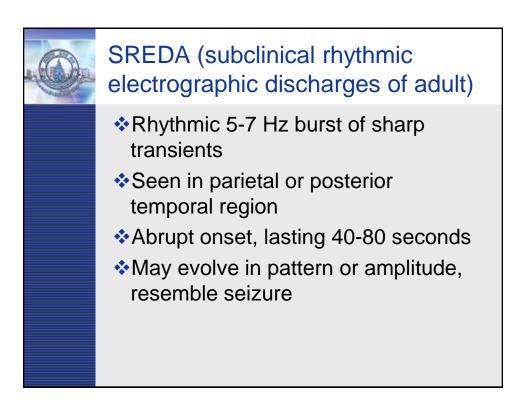


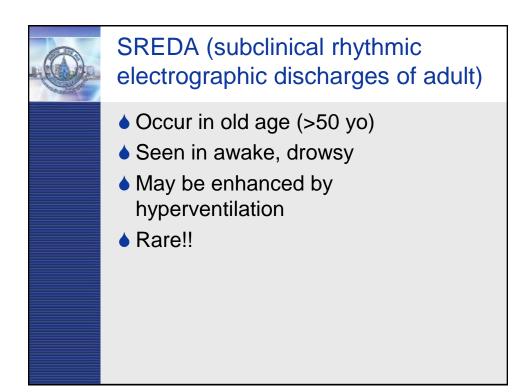
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	FP2-F8	
	F8 - T8	
	T8 · P8	
	P8 - O2	
	FP1-F3	
	F3 - C3	
	C3 - P3	
	P3-01	
	FP2-F4	
	F4 · C4	
	C4 - P4	
	P4 · O2	
		1 SEC. Ι 150 μV





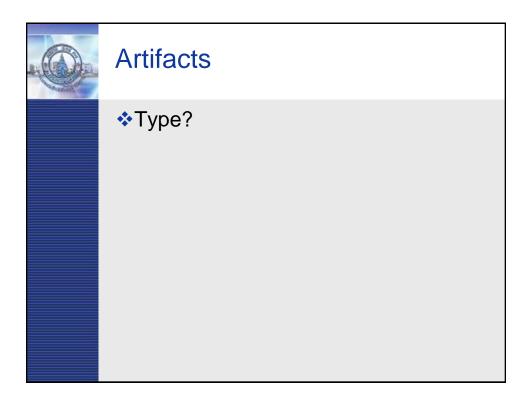


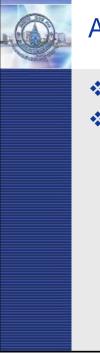




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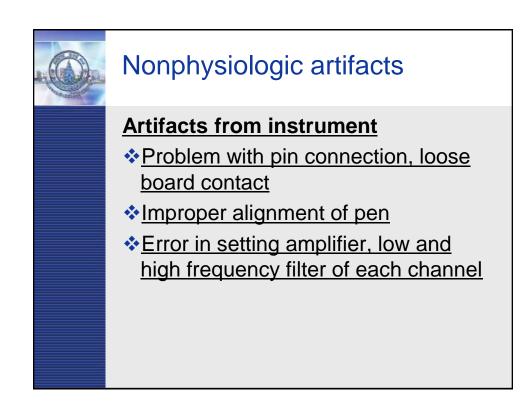
## Artifacts

Nonphysiologic artifacts
Physiologic artifacts

# Nonphysiologic artifacts

#### Artifacts from instrument

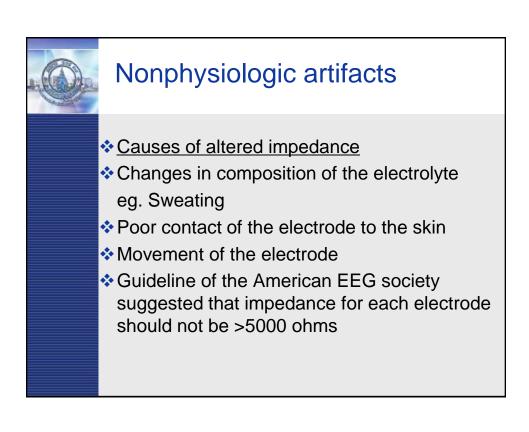
- Amplifier's Noise
- Small random fluctuation of the electricity within the amplifier
- Seen only when sensitivity is low 1-2 uV/mm
- Amplifier's noise should not exceed 2 uV

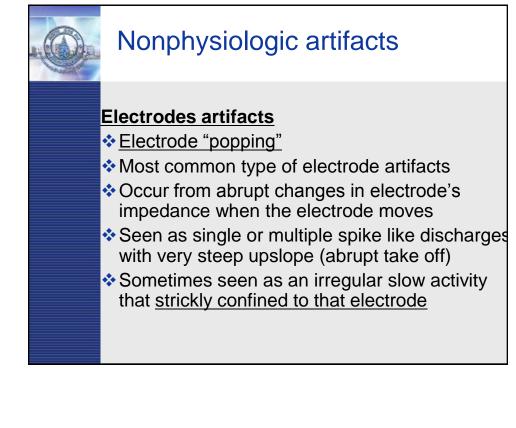


## Nonphysiologic artifacts

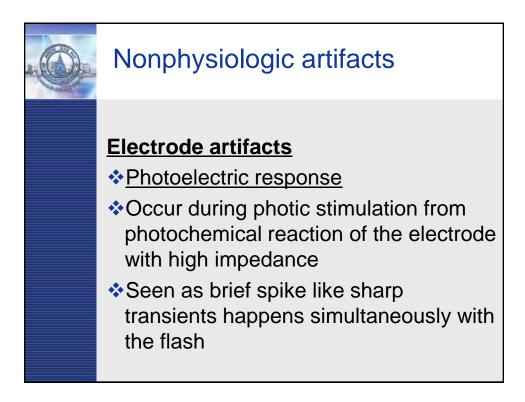
### Electrode artifacts

- Electrodes' impedance mismatch
- When using differential amplifier, the amplifier will receive signals from 2 electrodes, which impedance between 2 electrode should match quite well to reduce artifacts



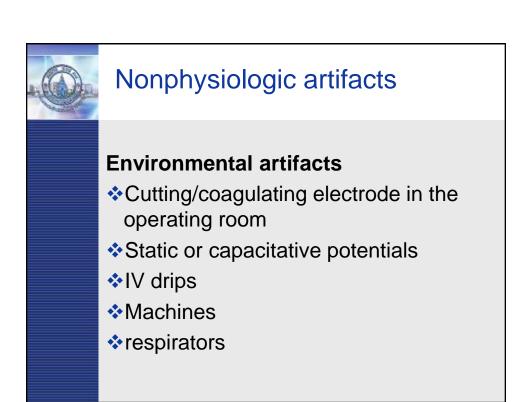


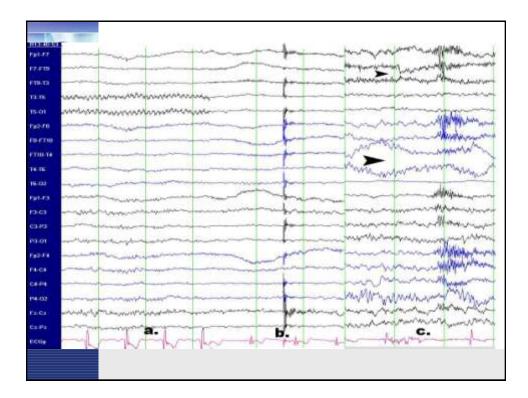
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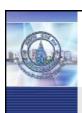


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## Physiologic artifacts

## EKG

- Ocular artifacts
  - Arise from steady (DC) potentials in the eyeball and sometimes together with EMG potentials from muscles in/around the orbit
  - Positive pole towards cornea and negative pole towards retina
  - Lateral rectus spikes

