# Epilepsy:
# Where do we make mistakes?

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# Burden:

- 50 million people world wide suffer from epilepsy
- 75% of which is in health resource- poor country
- Prevalence in developed country 600-700/100000
- Prevalence in developing country 800-1000/100000
- Prevalence in Bangladesh 860/100000

# Attitude:

- Superstitious believe
- Disease of the brain

# Diagnosis:

- History- Patient
  Observer
- Seizure vs Pseudo Seizure & overlapping
- Definitive diagnosis of epilepsy is often a problem
- 20-30% may be pseudo seizure/syncope
- 5% may have different diagnosis metabolic/febrile

# Diagnosis (cont):

Seizure types:

- CPS
- IGE & $2^0$GS
- CPS & Absence
- Syndromic
- Non convulsive status

# Investigations:

EEG:

- Not a routine test
- Very limited diagnostic value
- Normal does not exclude epilepsy (20%)
- Abnormal does not mean as well
- Technical aspect very poor
- Incorrect interpretation
- Always need clinical correlation

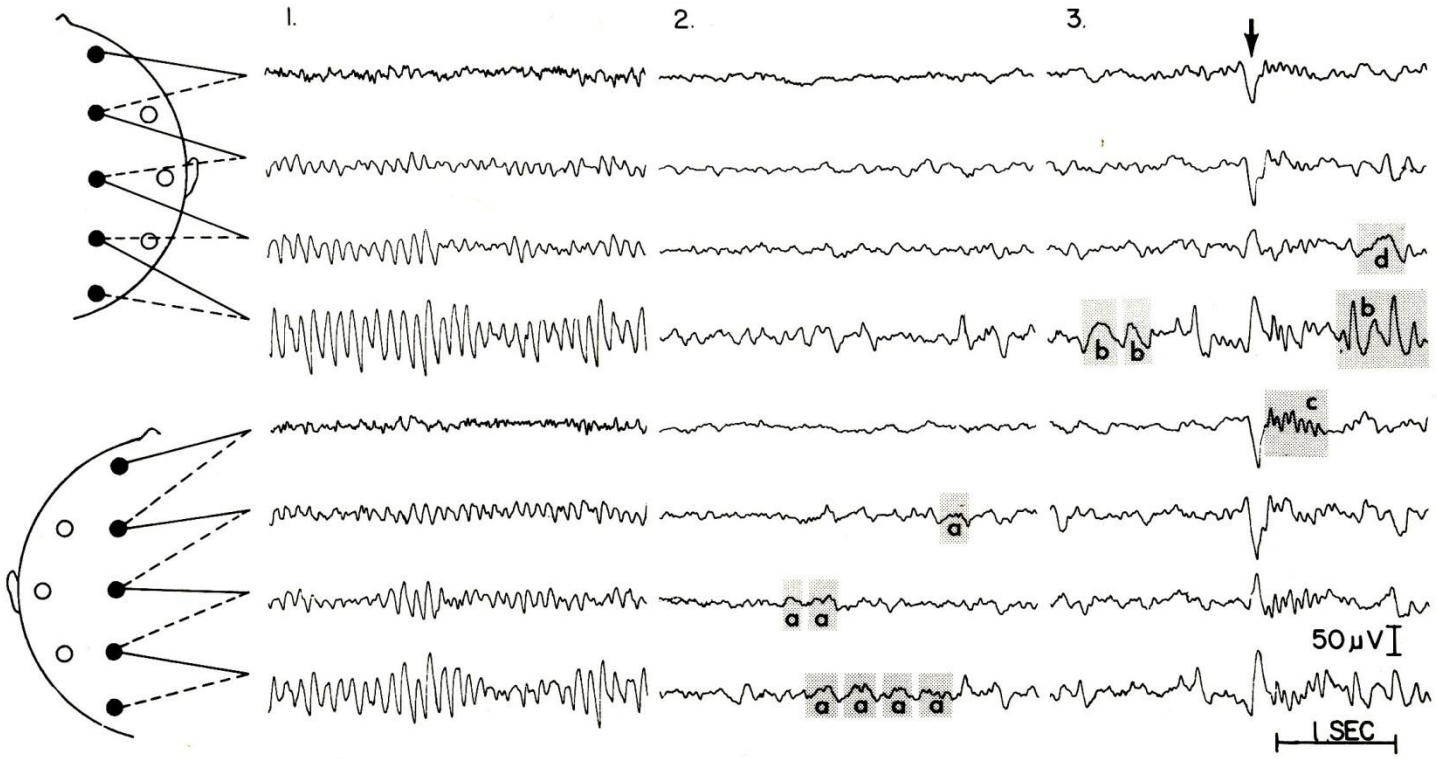



Fig. 12.1. Normal patterns of wakefulness and light sleep in an adult. 1. Stage W (wakefulness) with alpha rhythm and frontal beta rhythm; 2. Stage I (drowsiness) with irregular slow waves at 3–7 Hz (a); 3. Stage II (light sleep) with a V wave (arrow), POSTs (b), sleep spindles (c), and slow waves of 2–7 Hz (d).

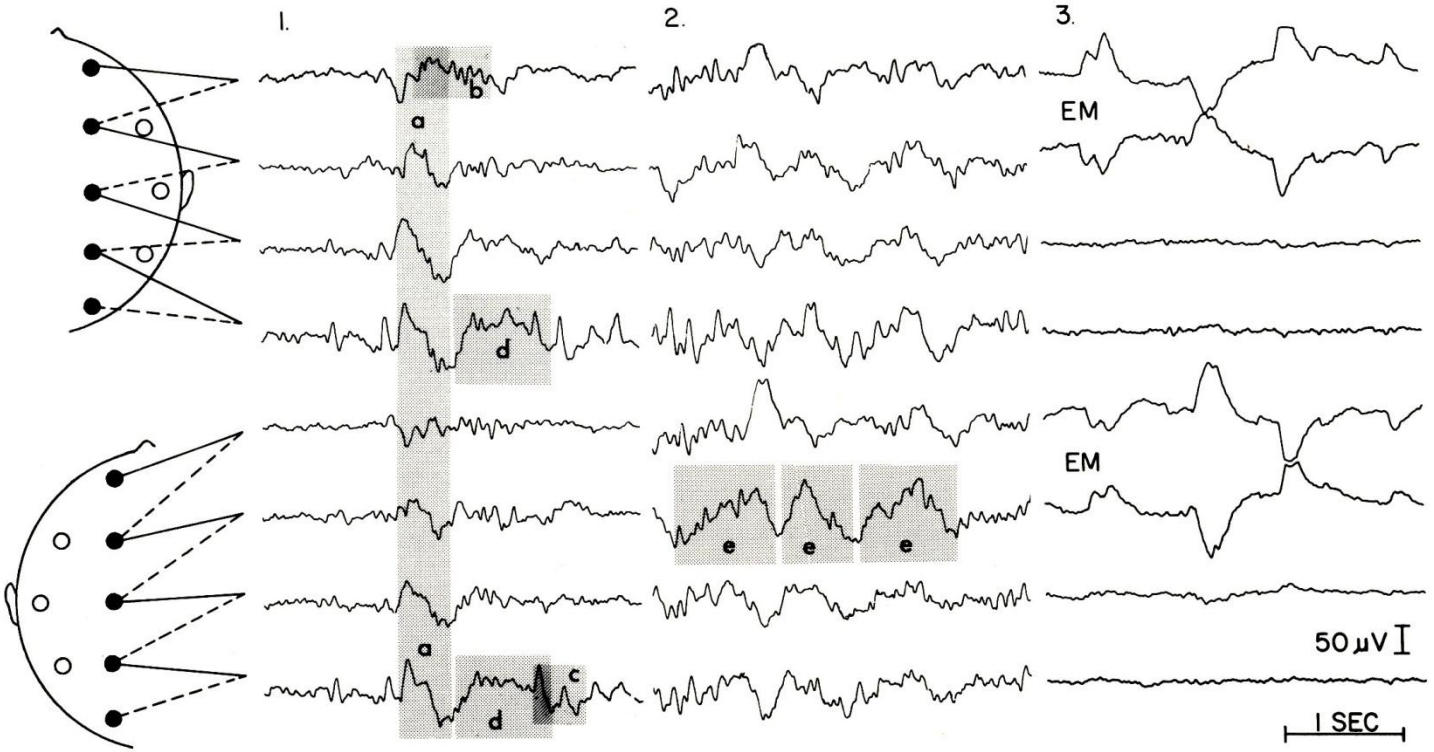



Fig. 12.2. Normal patterns of deep sleep and REM sleep in an adult. 1. Stage III (deep sleep) with a K complex (a), sleep spindle (b), POSTs (c), and slow waves of less than 2 Hz (d); 2. Stage IV (very deep sleep) with slow waves of less than 2 Hz and over 75 $\mu$V during over 50% of the recording (e); 3. Stage REM (rapid eye movement sleep) with eye movements indicated by eye movement monitors (EM) used during this part of the recording.

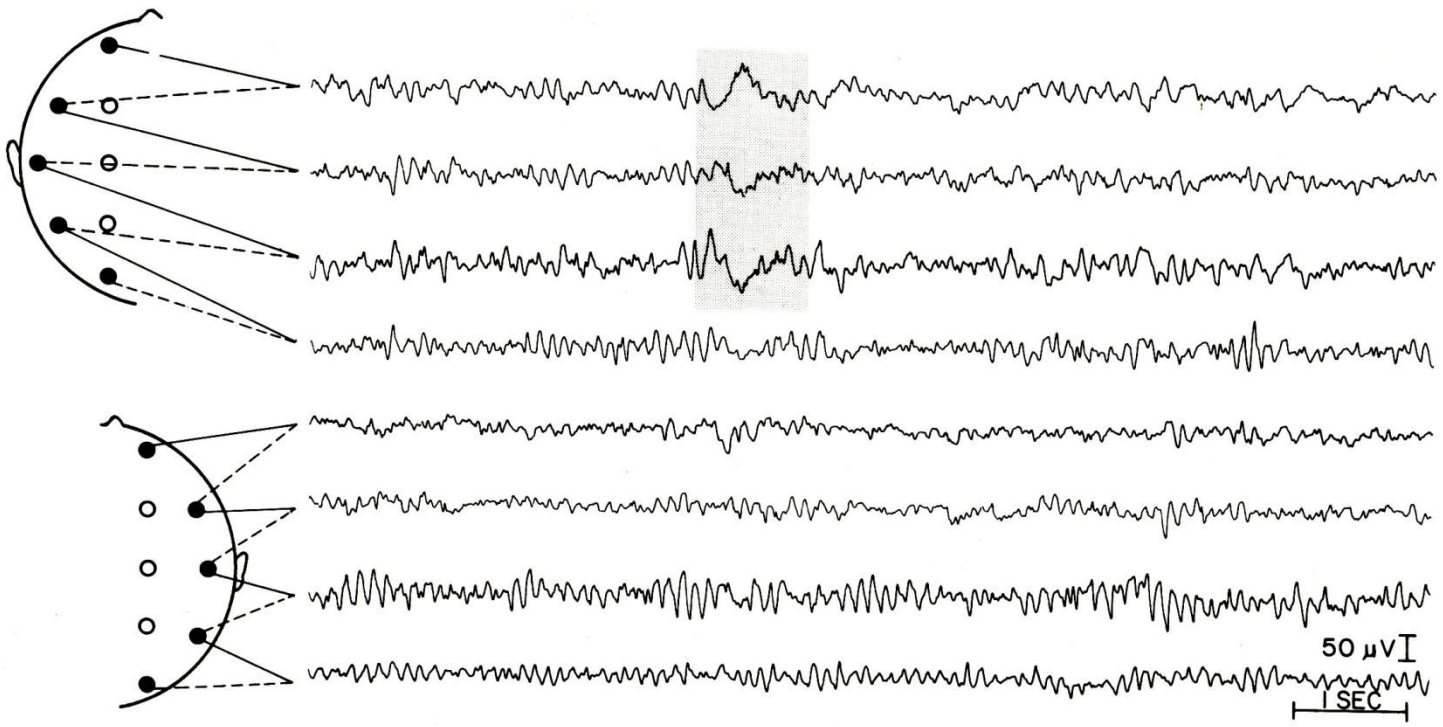



Fig. 13.1. Sporadic left temporal slow waves with sharp contours in 61-year-old subject without clinical abnormalities (shaded).

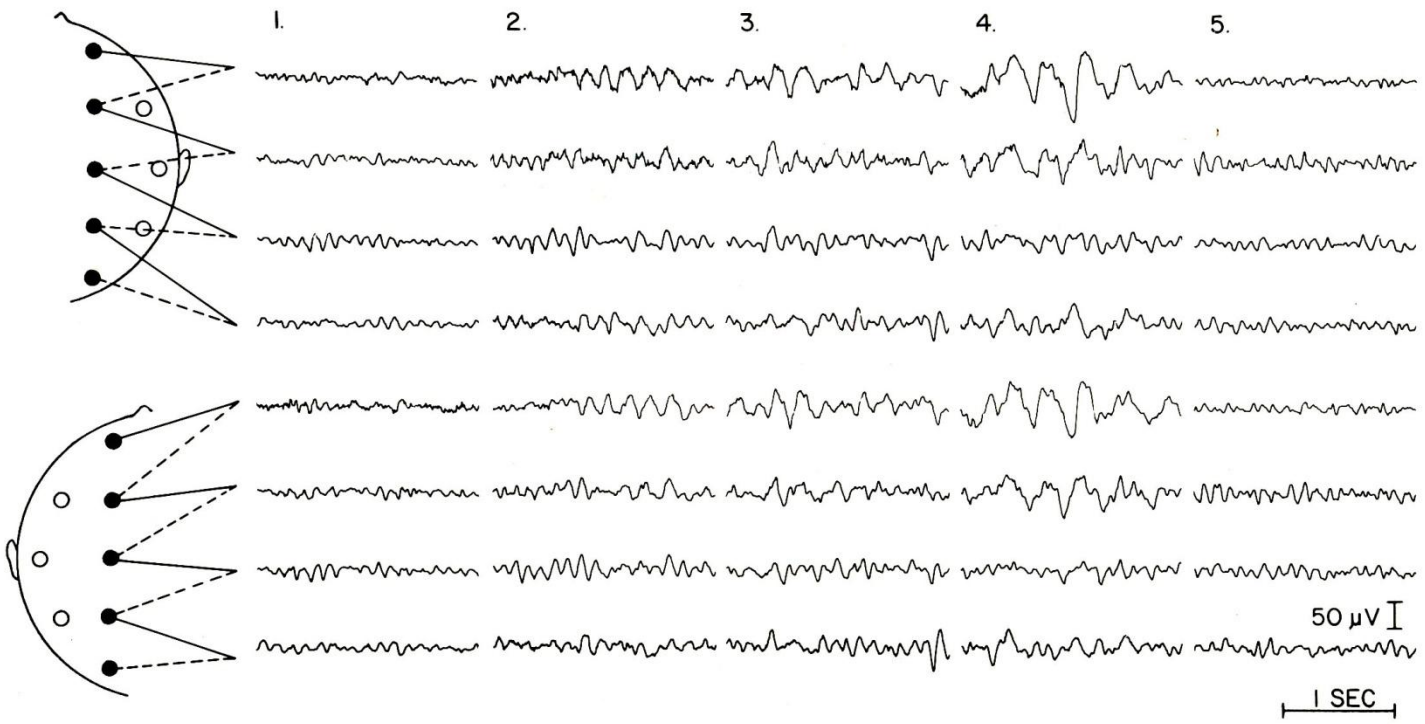



Fig. 14.1. Normal hyperventilation response in 45-year-old subject, 4–5 hours after the last meal. 1. Before hyperventilation: Normal EEG; 2. After 1 minute of hyperventilation: Rhythmical theta waves with frontal maximum; 3. After 2 minutes of hyperventilation: Theta and delta waves with frontal maximum; 4. After 3 minutes of hyperventilation: Fairly rhythmical delta waves, maximal frontally; 5. 1 minute after the end of hyperventilation: Return to initial EEG pattern.

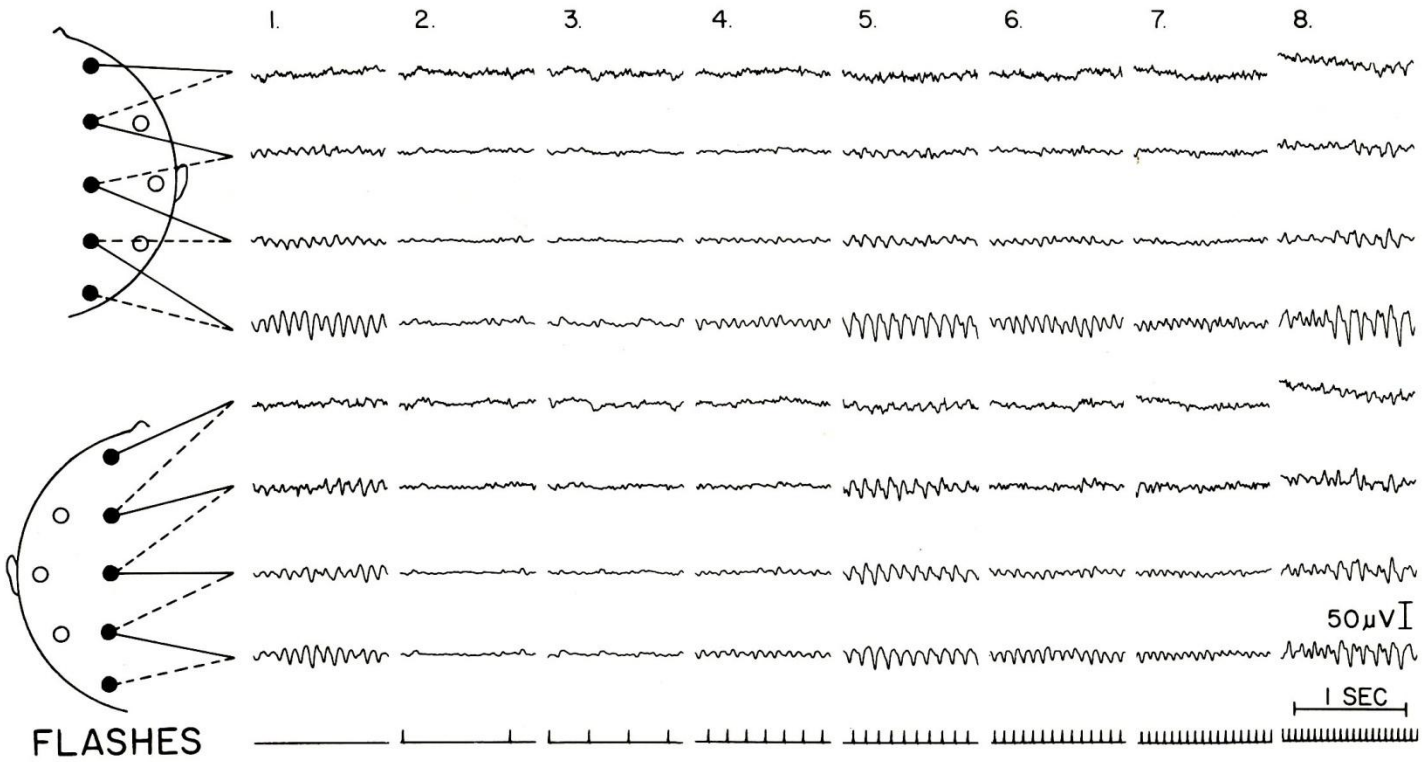



Fig. 14.2. Normal responses to photic stimulation in a 58-year-old subject with closed eyes. Flashes are indicated on the bottom line. 1. Before stimulation: Normal EEG with posterior alpha rhythm; 2. to 8. During photic stimulation at rates of 1, 3, 6, 9, 12, 15 and 18 Hz. Note that the posterior responses have the highest amplitude at a rate near that of the alpha rhythm (Part 5) and at twice that rate (Part 8).

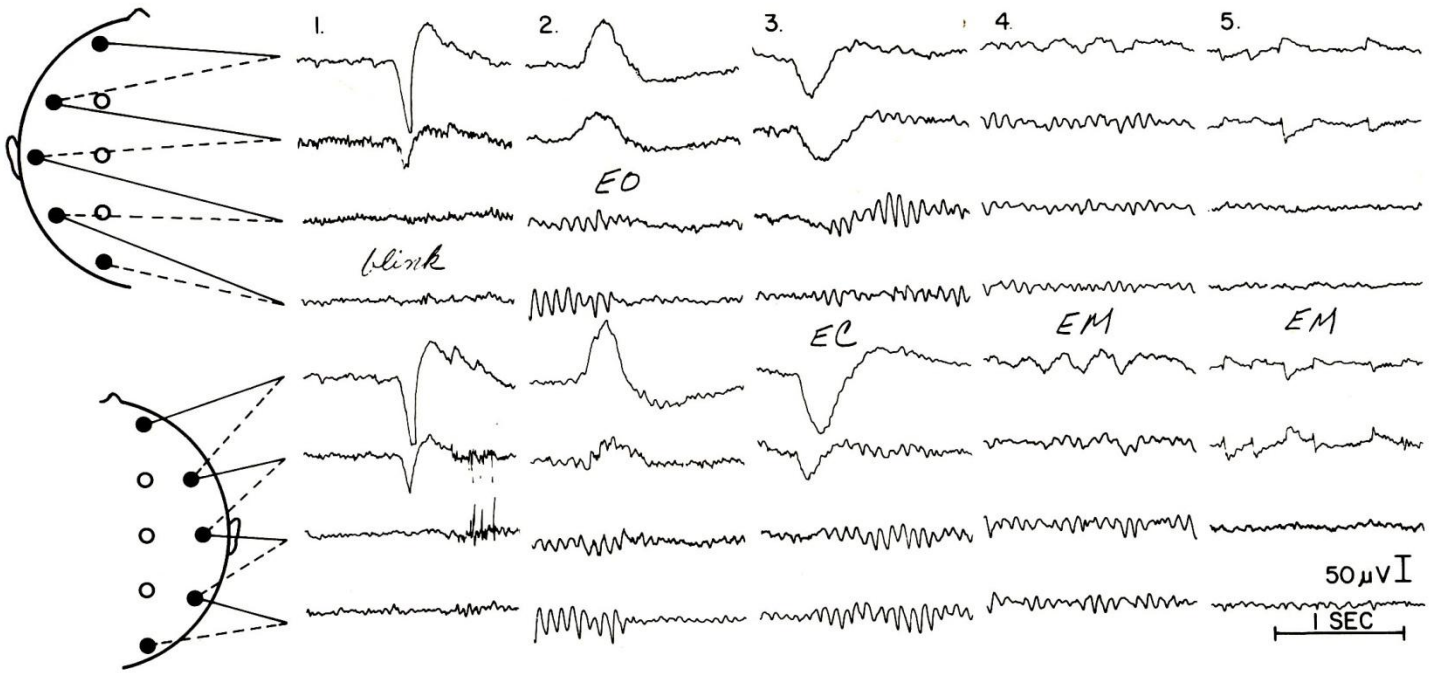



Fig. 6.1. Eye movement artifacts. 1. Blink, 2. eye opening (EO), 3. eye closing (EC), 4. rhythmical slow eye movements (EM), 5. saccadic eye movements (EM) preceded by spicules due to contraction of lateral eye muscles. Tracings show the technician's notations made during the recording to identify the cause of the artifacts.

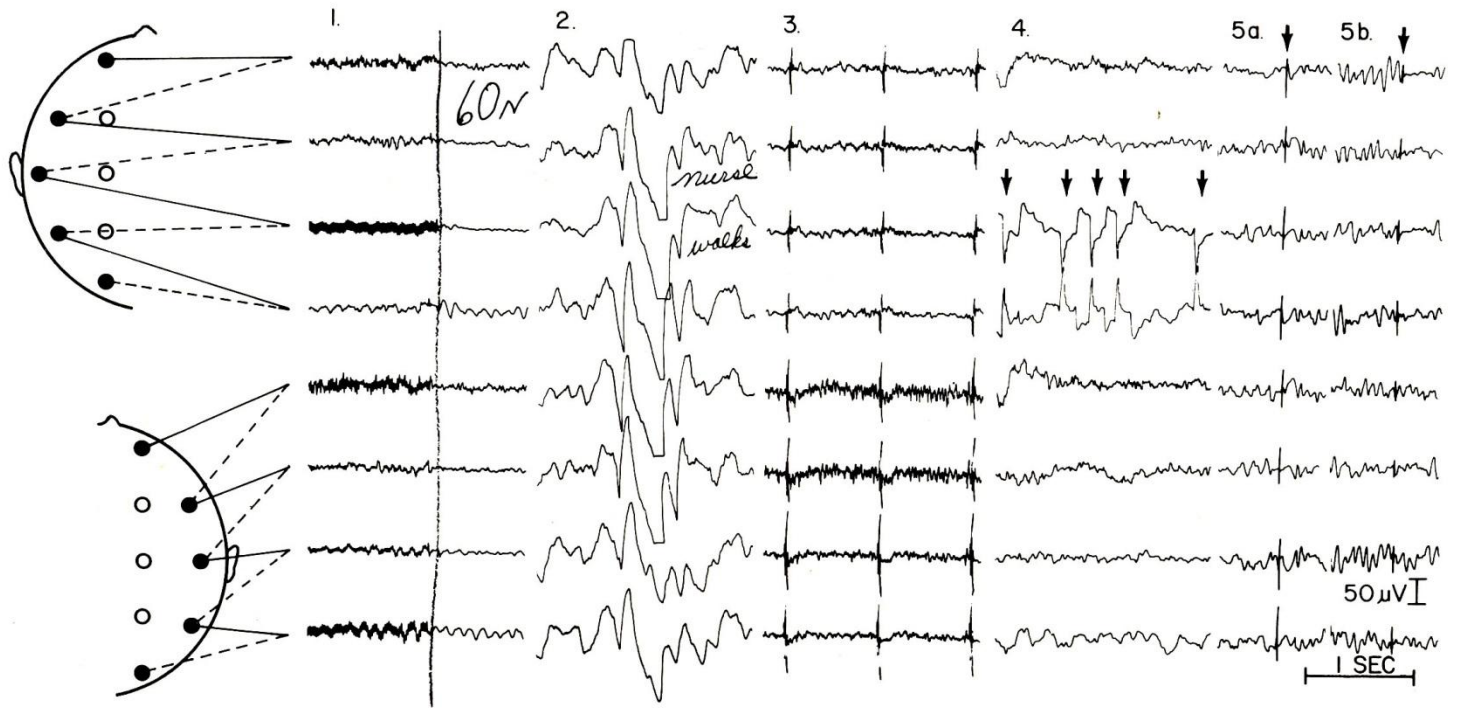



Fig. 6.3. Nonbiological artifacts. 1. 60 Hz interference before and after turning on the 60 Hz filter (60∿); 2. Artifacts induced by a nurse walking near the patient; 3. Cardiac pacemaker artifacts; 4. 'Electrode popping' artifacts (arrows) from the left posterior temporal electrode making poor contact; 5a. and 5b. 'Paper stop' artifacts (arrows) due to intermittent failure of paper drive.

# Neuro Imaging:
## (MRI/CT of Head)

- Not a routine test
- Indicated in partial and $2^0$GS
- EEG & MRI /CT- one cannot replace the other

# Treatment strategy:

When to start antiepileptic drug (AED) ?

Indications:

- Atleast 2 seizure within last 6 month
- One seizure with brain lesion
- One seizure with EEG abnormality
- Risky job
- Seizure with MR/Psychiatric disease

# How to select AED?

- Type of seizure
- Price
- Availability
- Toxicity
- Drug interaction
- Special situations: Elderly & children, women in child bearing age

# How to start AED?

- Start low go slow
- Mono vs polytherapy

# When & how to stop AED?

- Atleast 2/3 yr after the last attack
- Slow withdrawn taking 3-6 month
- EEG

# Counseling:

Bridging of confidence between patient, parents & physician

- Thread bear discussion about the disease
- Precaution
- Drug response
- Importance of drug compliance
- Side effects
- Daily activity
- Outcome

# Conclusions:

- Epilepsy is a common disease
- Treatment needs definitive diagnosis
- EEG is often incorrectly interpreted
- Please treat the patient not the EEG
- Drug selection is the key of successful treatment
- With appropriate treatment vast majority can maintain normal life

Vincent van Gogh
Netherlands
artists

Sir Isaac Newton
UK
Scientists

Napoleon Bonaparte
France
France Army and Political leader

Alexander the great
Greece
Ancient Greek kingdom

Alfred Nobel
Sweden
Chemist

Leonardo Da Vinci
Italy
Greatest painter

Aristotle
Greece
Greek Philosopher

Richard Burton
UK
Hollywood actor

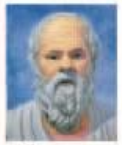
Lord Byron
UK
British poet

Martin Luther
Germany
German Monk

Hitler
Austria
Politician

Charles Dickens
UK
English Novelist

Julius Caesar
Italy
Politician



Socrates
Greek
Greek Philosopher


বিজয়ের এর সূর্য মিশে আছে যেমন
লাল-সবুজের ঐ পতাকায়,
তেমনি মিশে আছে.....
আমাদের শোণিতে...আমাদের সত্ত্বায়

# THANK YOU