



Schweizerisches Epilepsie-Zentrum

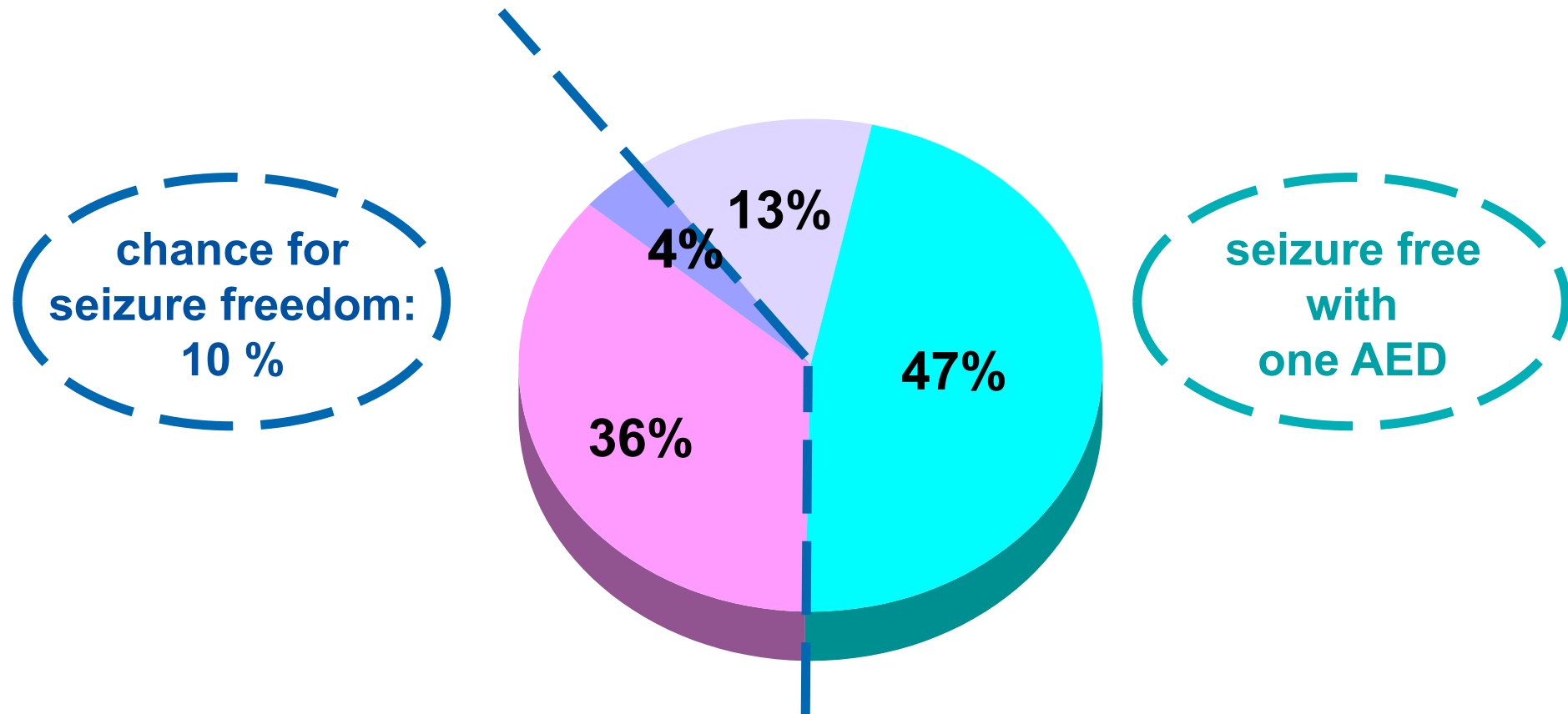
The challenge of medically intractable epilepsy

Prof. Thomas Grunwald, MD, PhD



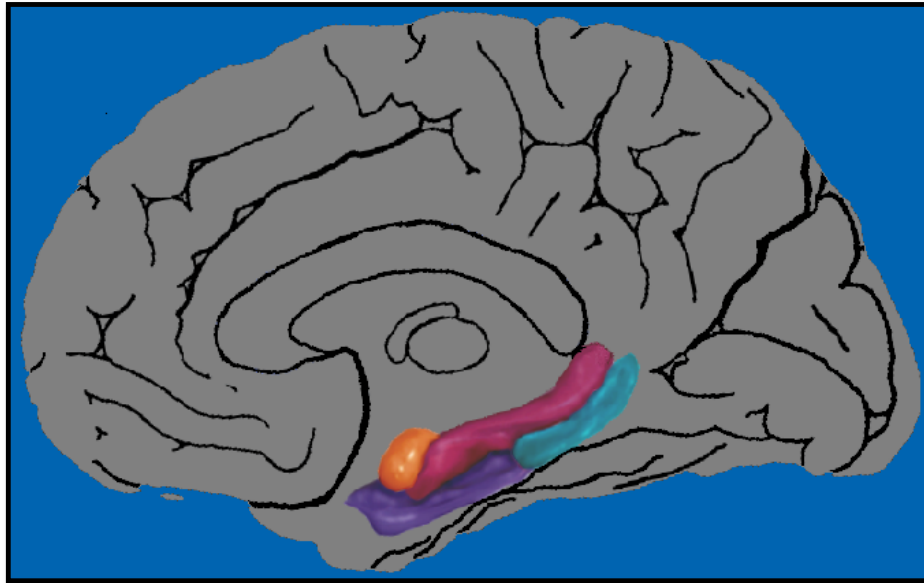
The Brain Forum – Jeddah, Saudi Arabia

Seizure control with drugs

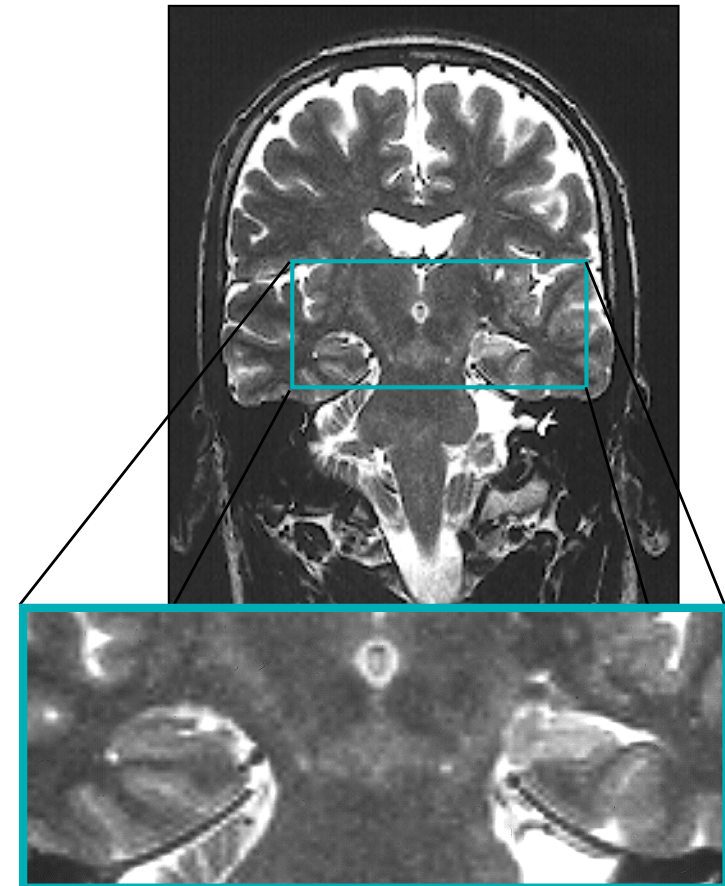


Kwan P, Brodie MJ. (2000) *N Engl J Med* 342, 314-319

Temporal lobe epilepsy

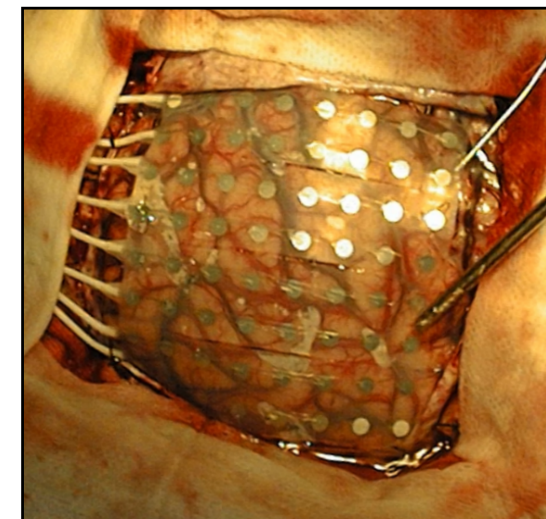
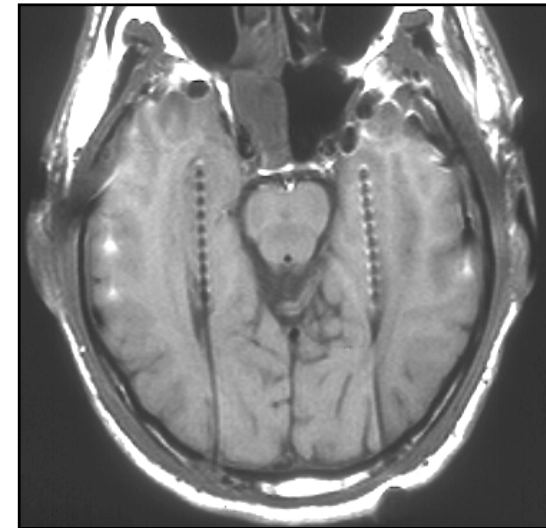
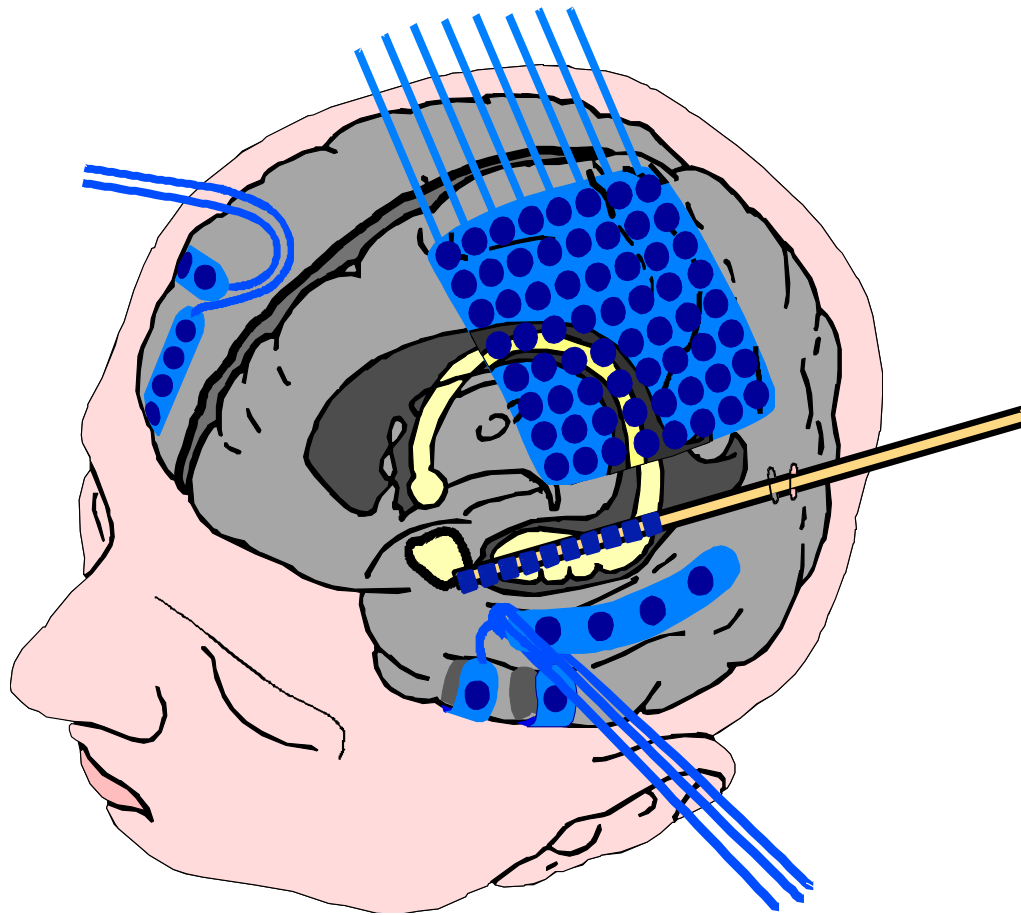


pharmacoresistent
medial temporal lobe
epilepsy

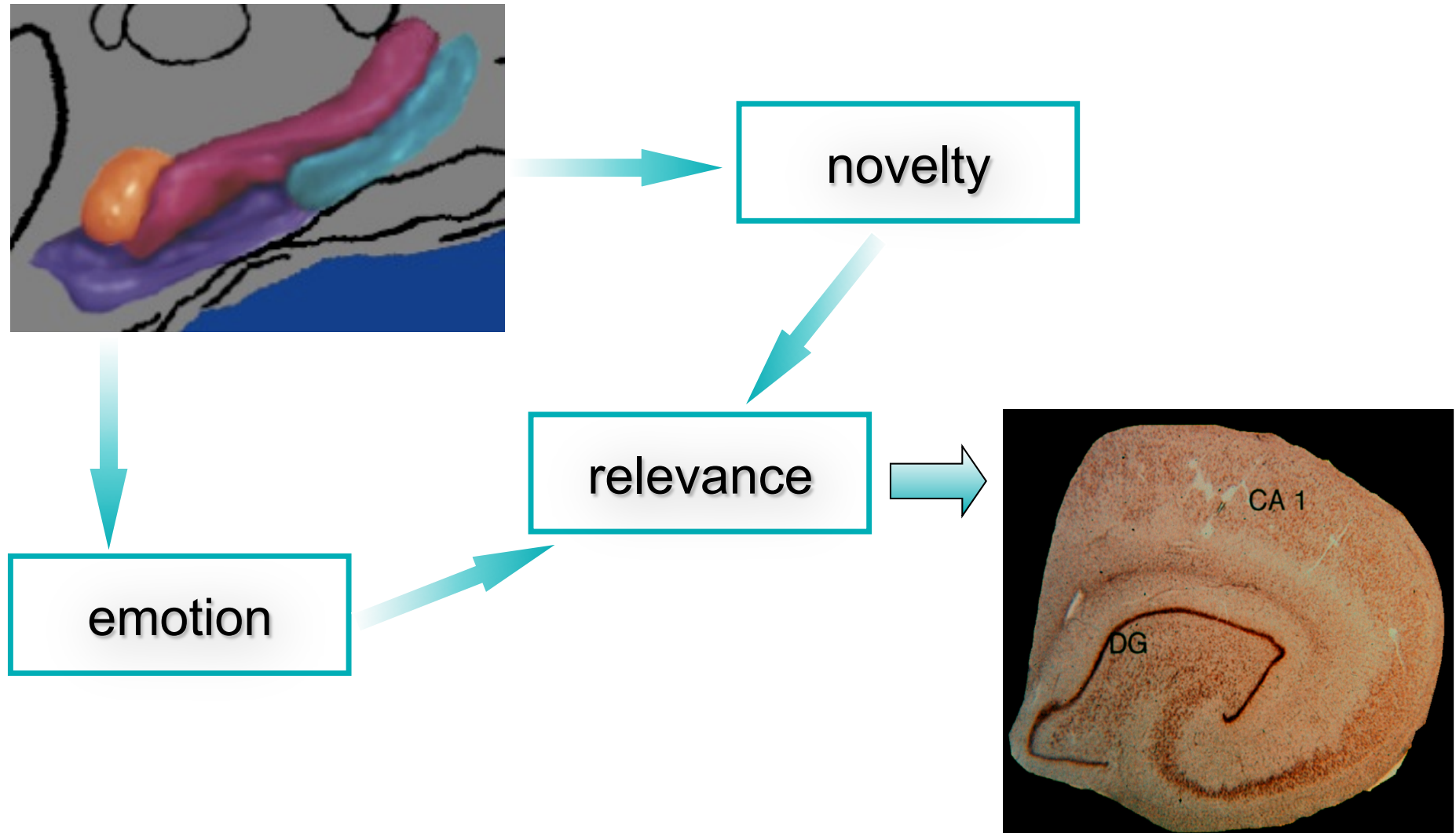


post-operative seizure freedom: 70 - 80%

Intracranial electrodes



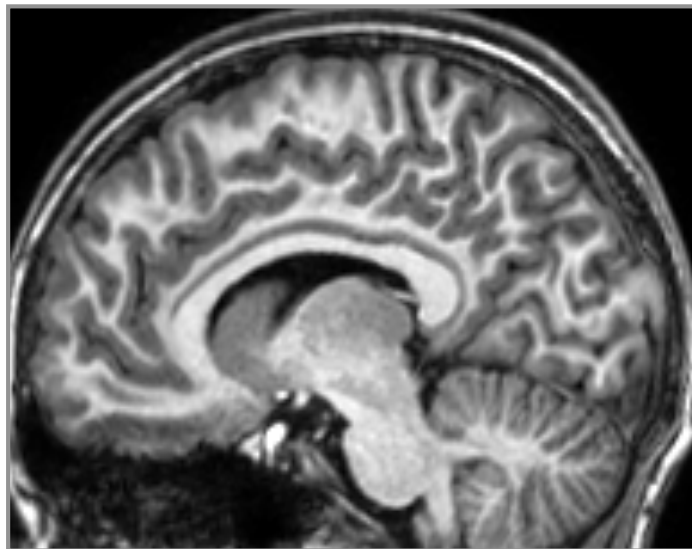
Memories



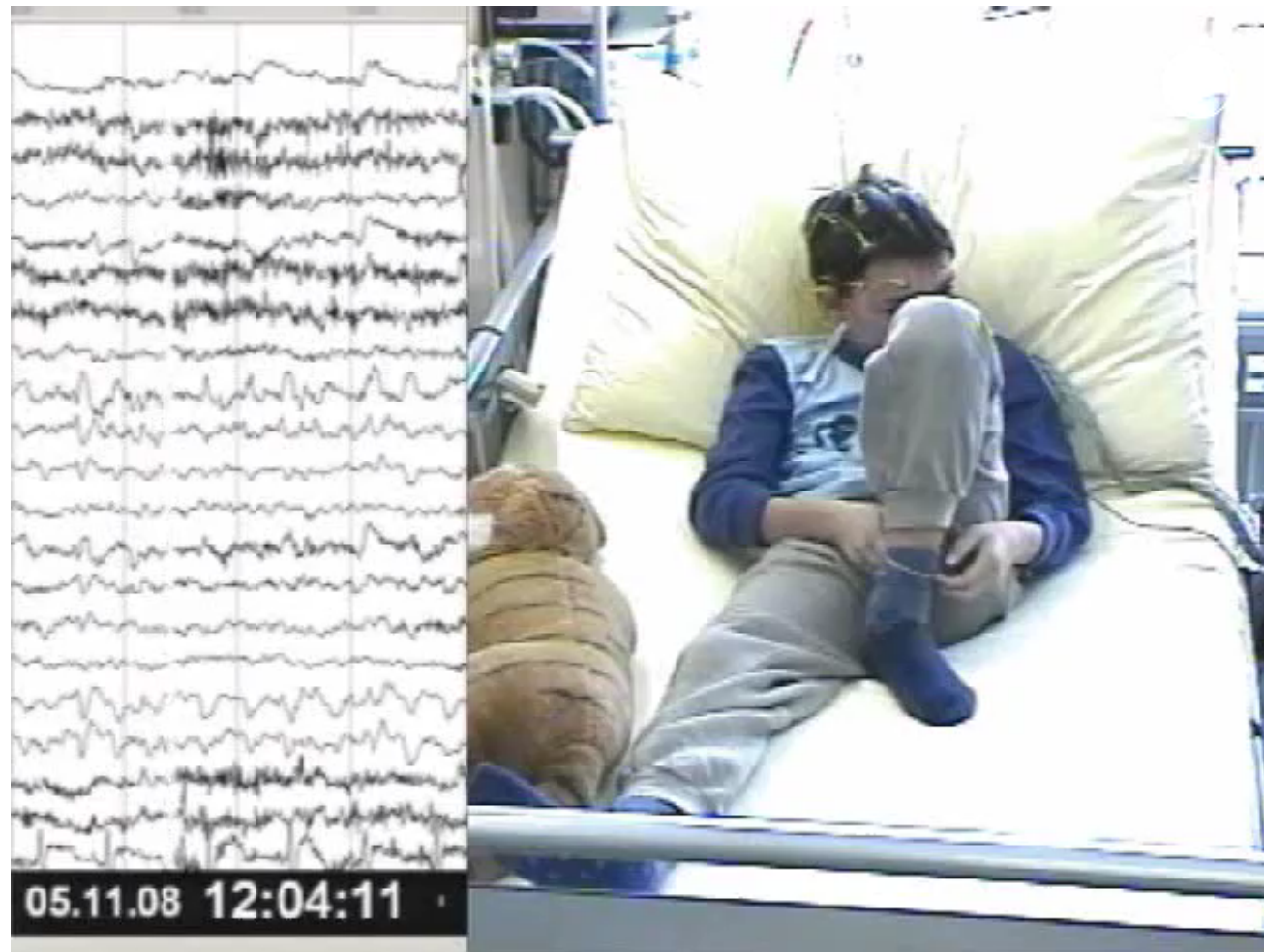
Case report: male, 11 y

History:

- gelastic seizures, sometimes with enuresis
- EEG: focal slowing over the right frontal lobe (F4/C4)
- MRI without pathological findings in spite of 4 exams from 2005 – 2008 in 3 different 3T-scanners

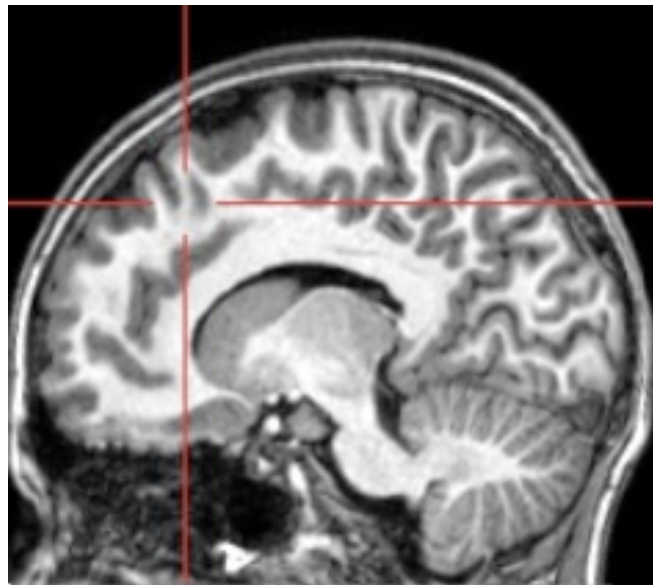


Case report: male, 11 y

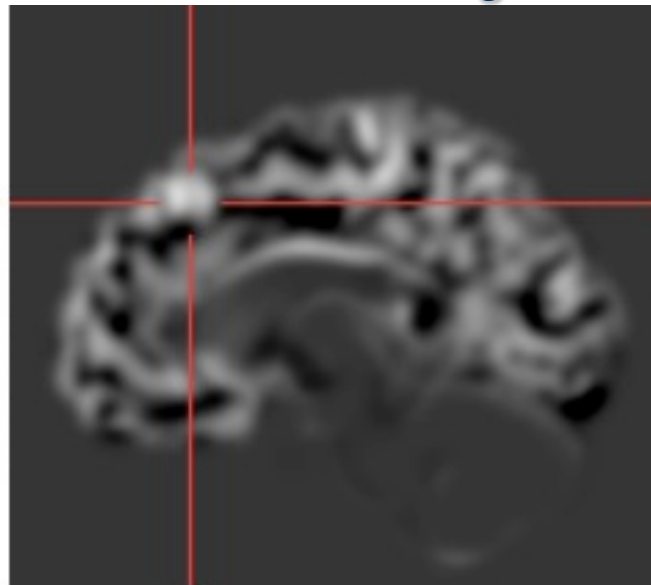


Case report: male, 11 y

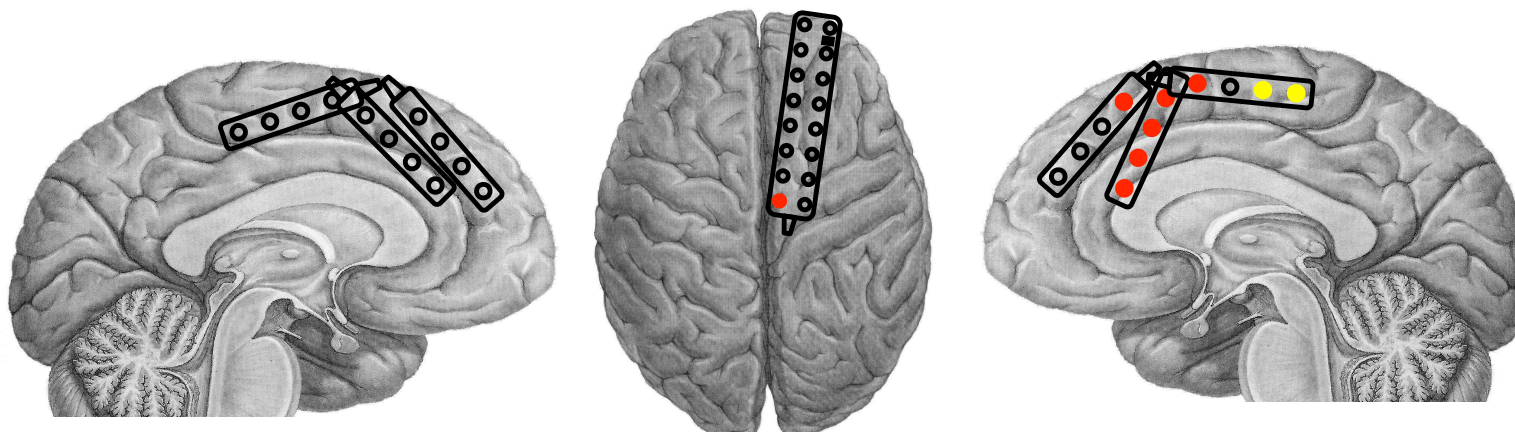
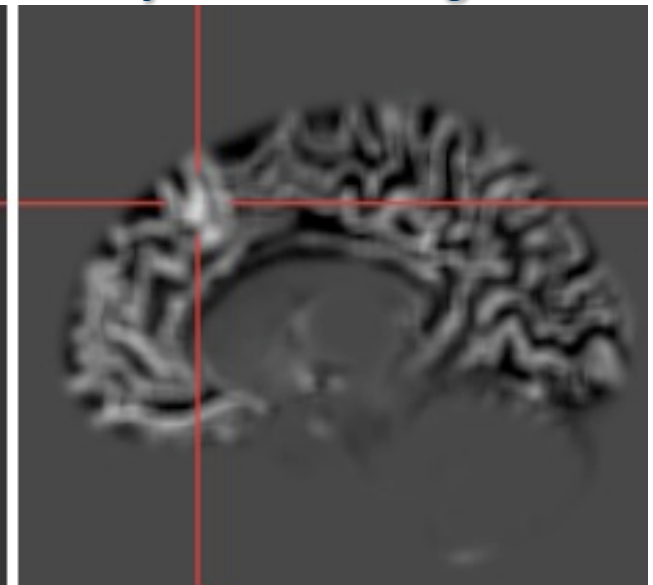
T1



extension image

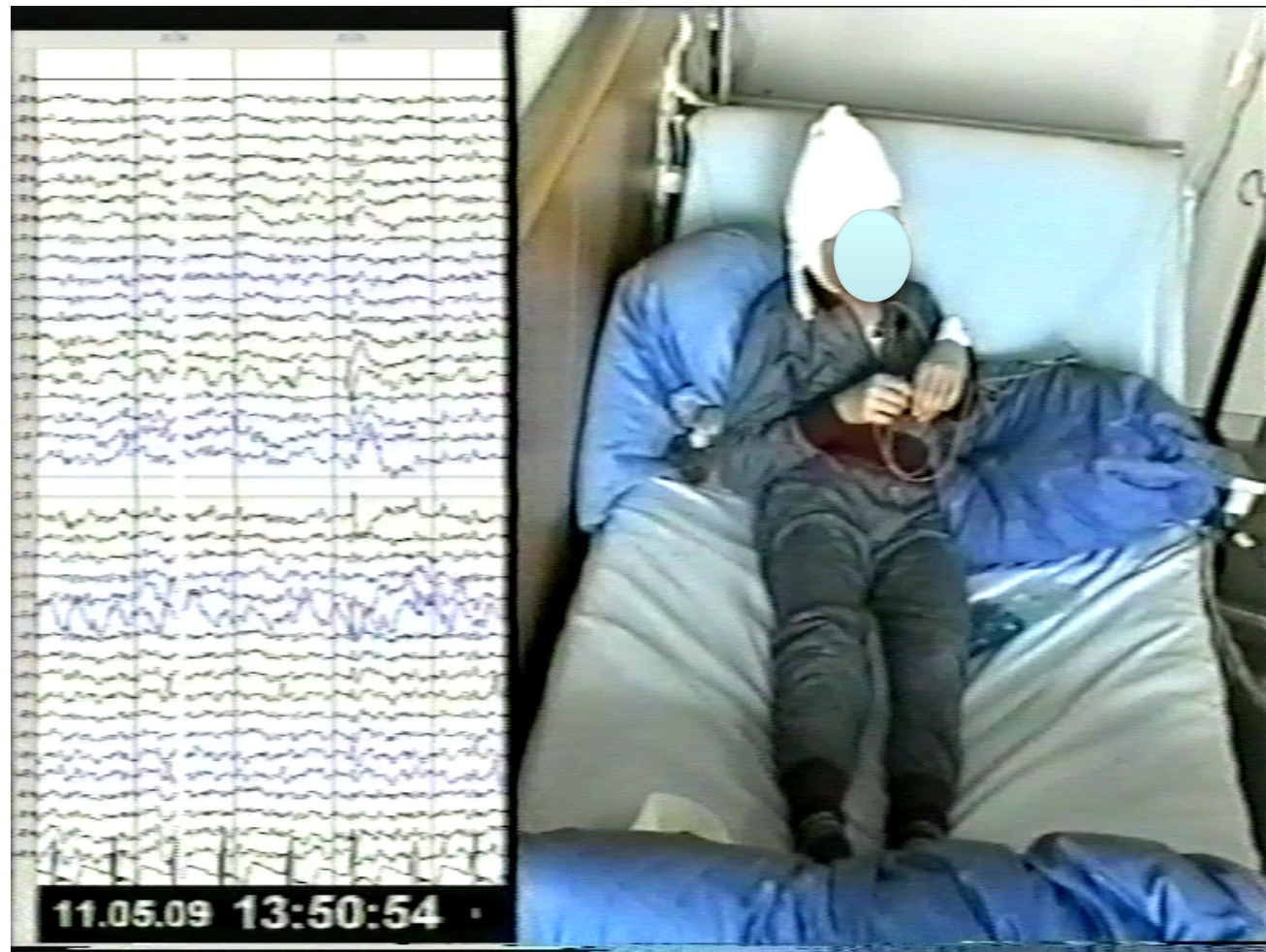


junction image

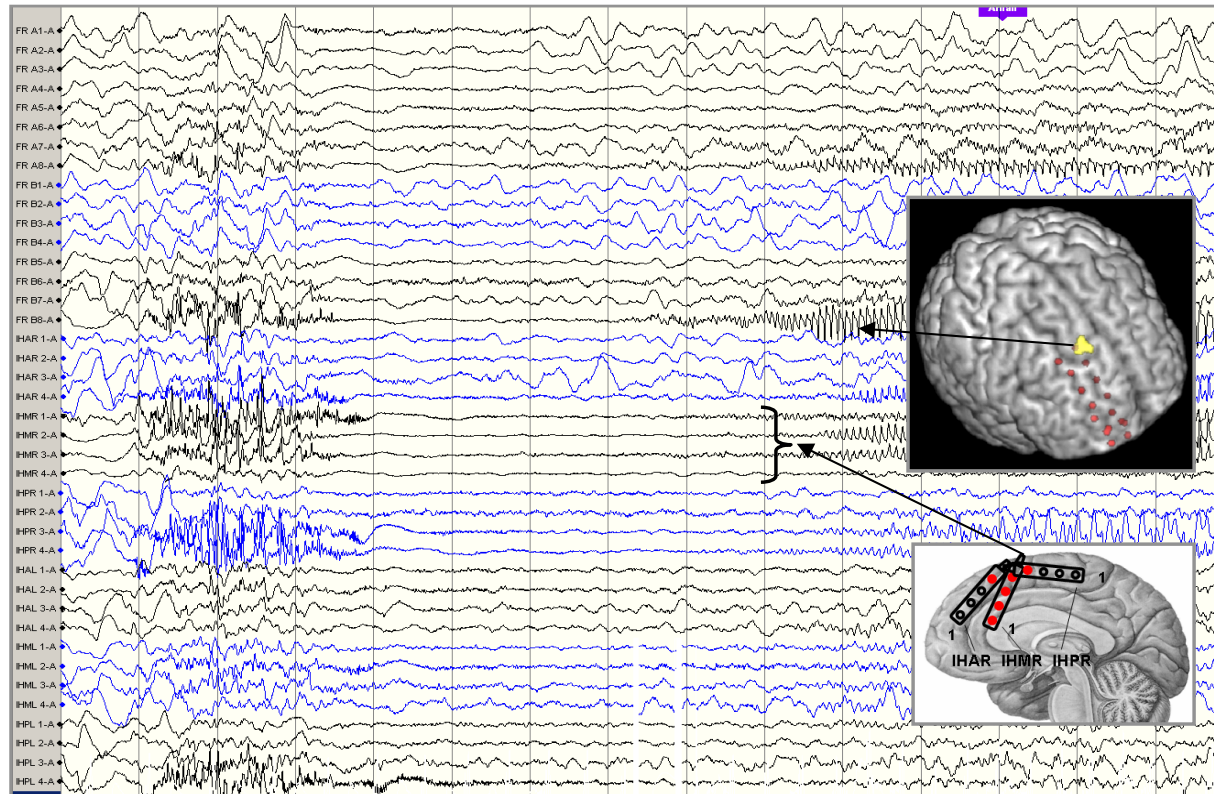


- seizure onset
- leg movements

Case report: M.S., 11 y



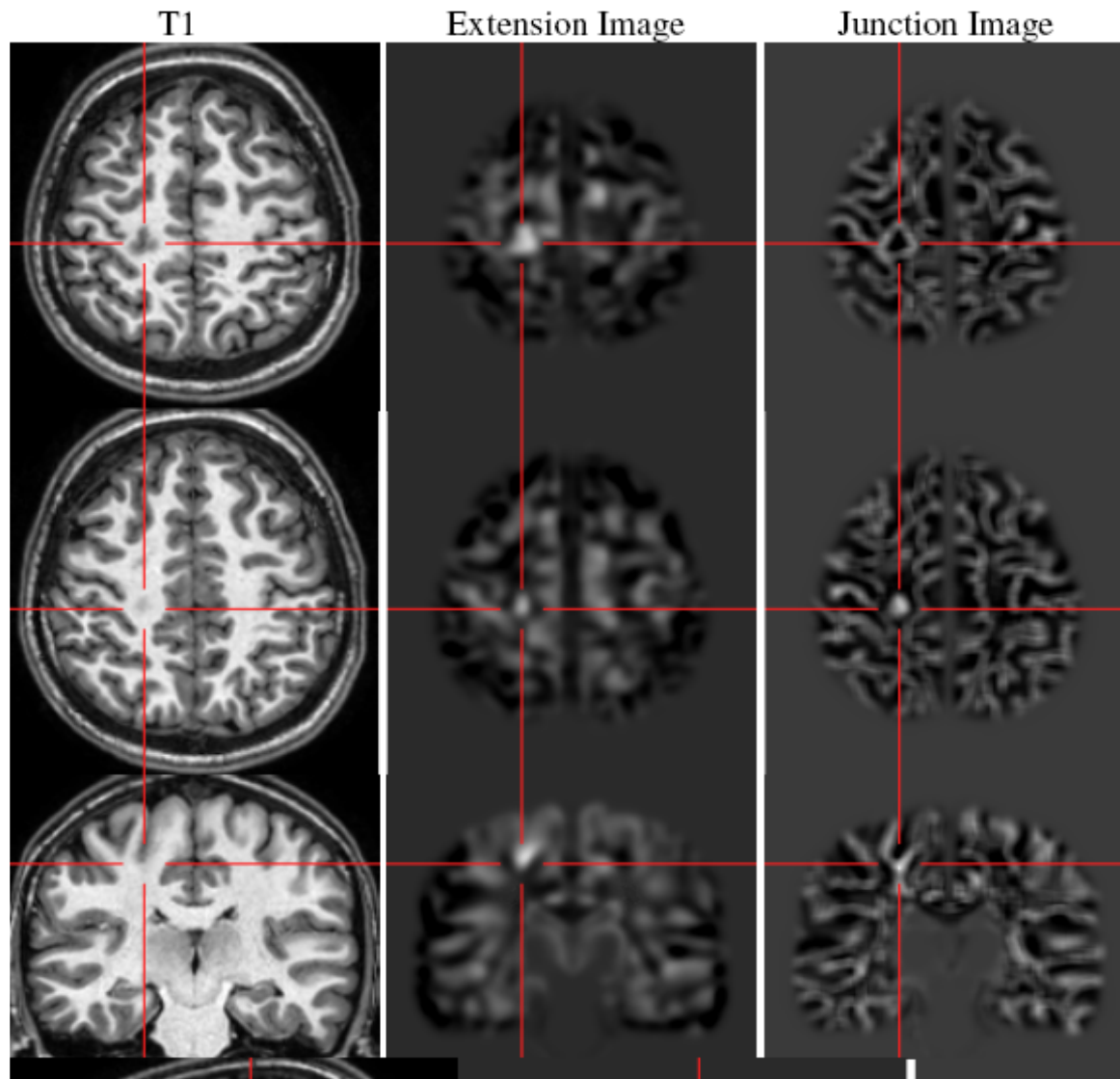
Case report: M.S., 11 y



Epilepsy surgery

- extended lesionectomy; histology: FCD type IIb
- outcome: seizure free since 4 years

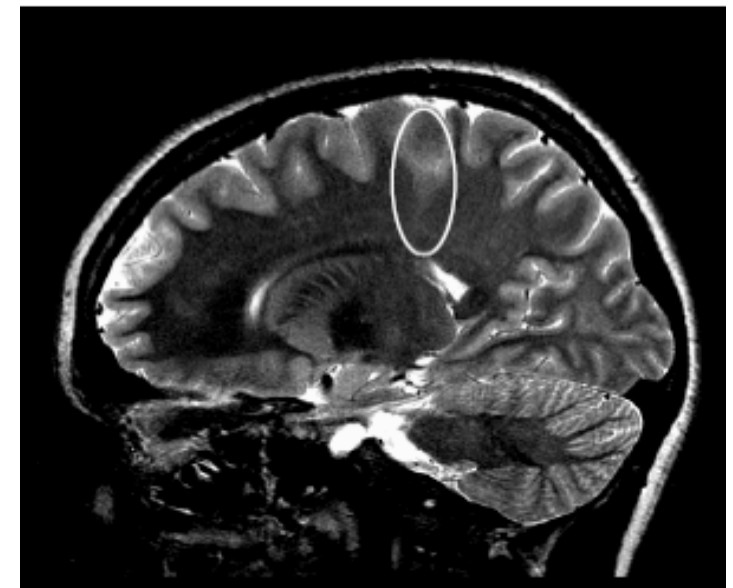
Case report: female, 16 y



Seizures since the age of 4

Seizure semiology:
tingling then movements of
the left arm, then leg

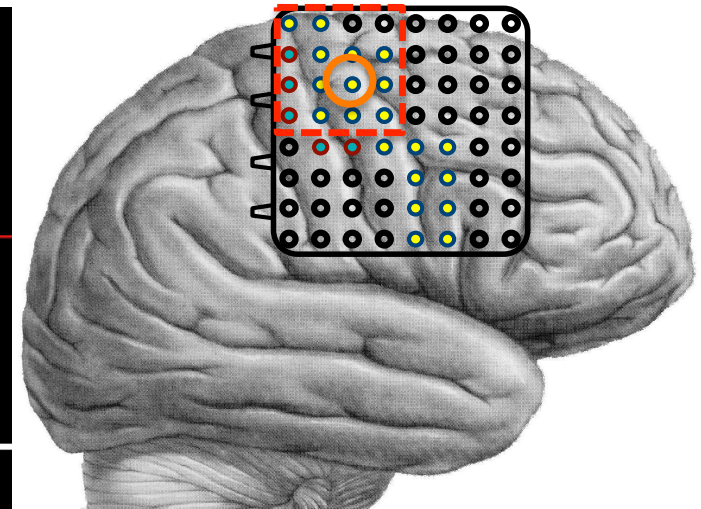
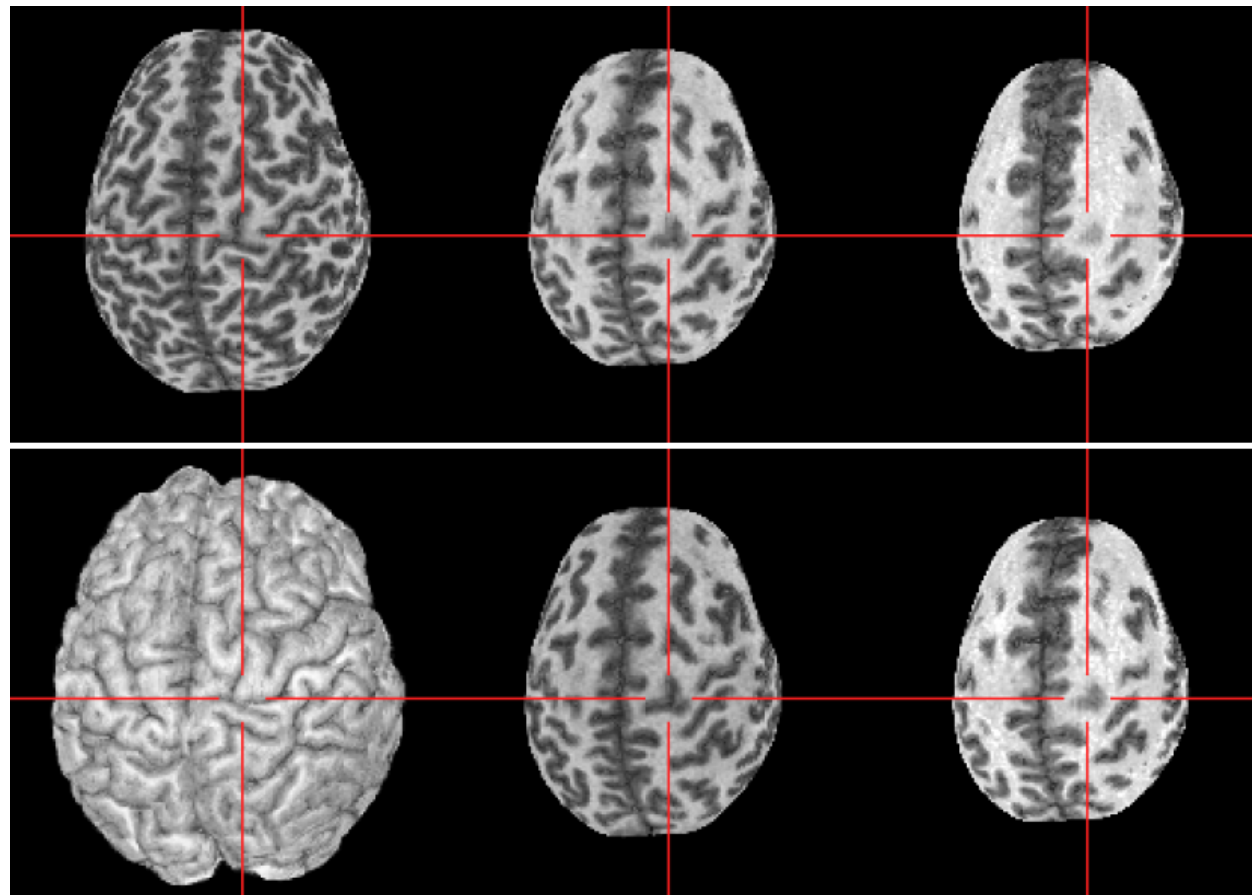
Personal and family
history: negative



Curative epilepsy surgery impossible



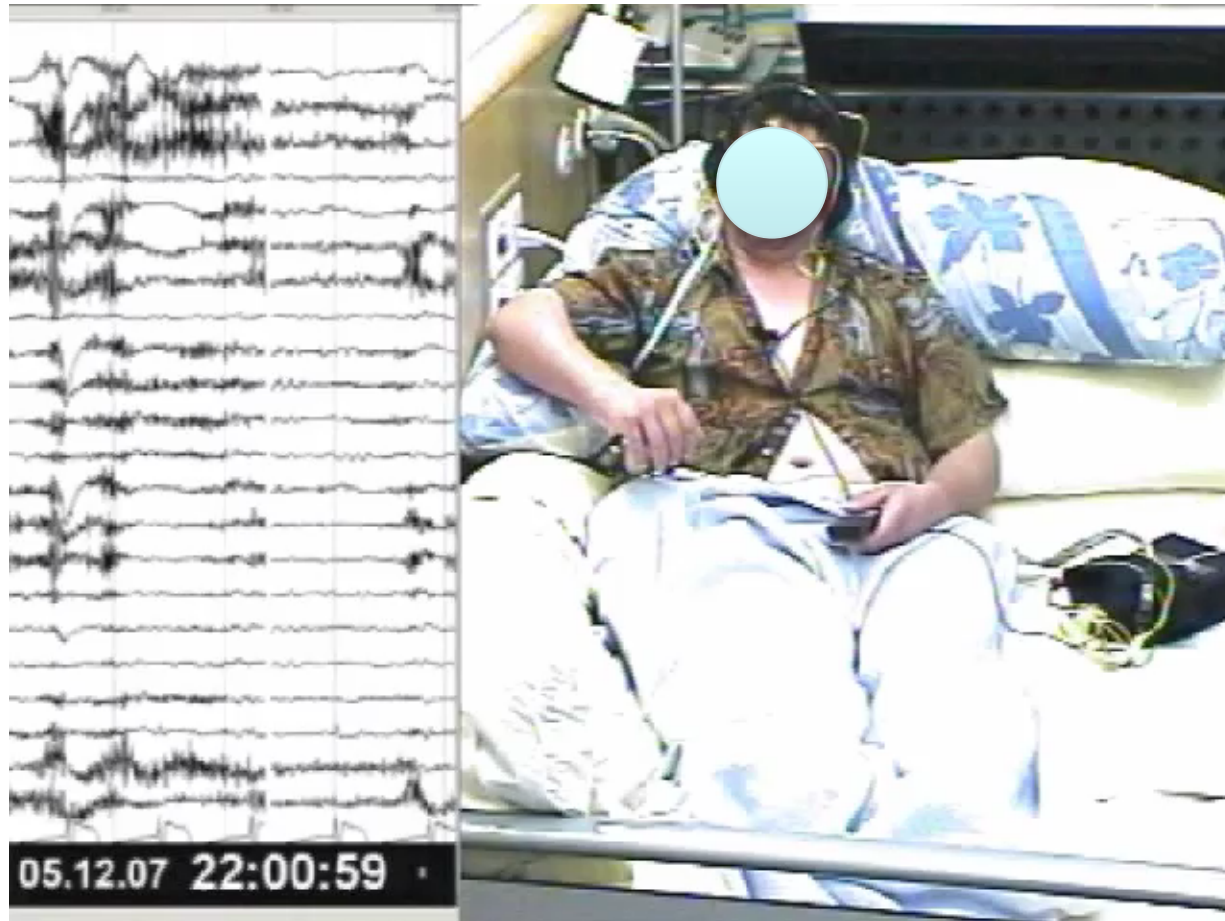
Schweizerisches Epilepsie-Zentrum



-  motor cortex
-  sensory cortex
-  lesion
-  ictal onset



Secondarily generalized seizures



	Saudi Arabia	Switzerland
prevalence	270 000	80 000
seizure free by AED	180 000	54 000
+ seizure free by OP	+ 27 000	+ 8 000
mortality rate (MR) (OECD, 2011)	3.9/1000	7.8/1000
deaths/y in epilepsy vs. "normal" deaths/y	3 159 vs. 1 053	1 872 vs. 624

Deaths related to epilepsy

→ suicides

→ burns

→ idiosyncratic AED reactions

→ drowning

→ adverse events of AED

→ asphyxiation

→ trauma

→ aspiration

→ status epilepticus

→ S.U.D.E.P

What we need - and can do

- ➡ reach more patients
- ➡ new AEDs (considering neurophysiology and genetics in humans)
- ➡ research in epilepsy surgery and presurgical evaluations
- ➡ seizure detection and prediction technology
- ➡ personalized care in diagnostics and treatment



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