

# Epilepsikirurgi i Danmark

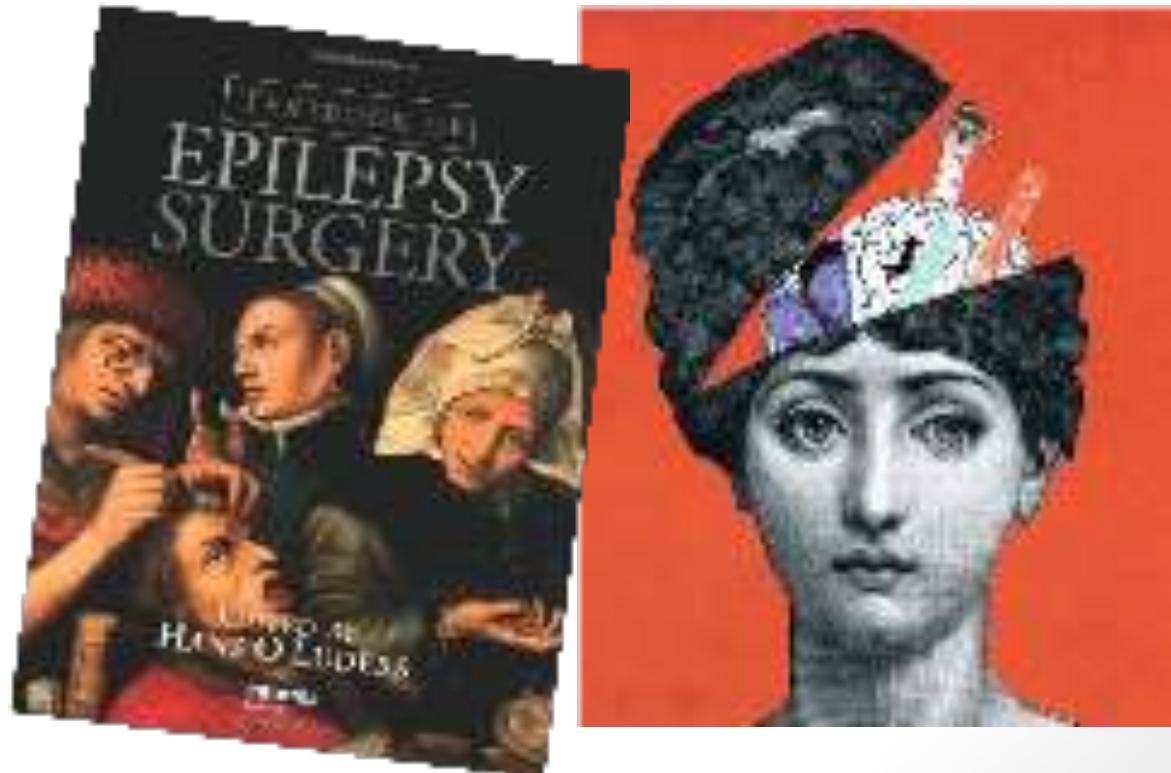
## resultater og fremtid



Odense d. 8. juni 2018  
Epilepsiforeningen

Lars H. Pinborg  
Overlæge, dr. med.  
Neurologisk klinik  
Rigshospitalet

Leder af det danske  
epilepsikirurgiprogram



# Tidlig behandling af epilepsi

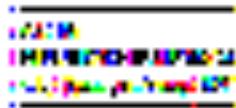


# Pionererne indenfor epilepsikirurgi



# Epilepsikirurgi i Danmark

• Indledning og teknologien



• Den dygtige kirurgi, tilpasset din epilepsi

• Nyheder og nyhedsbrev

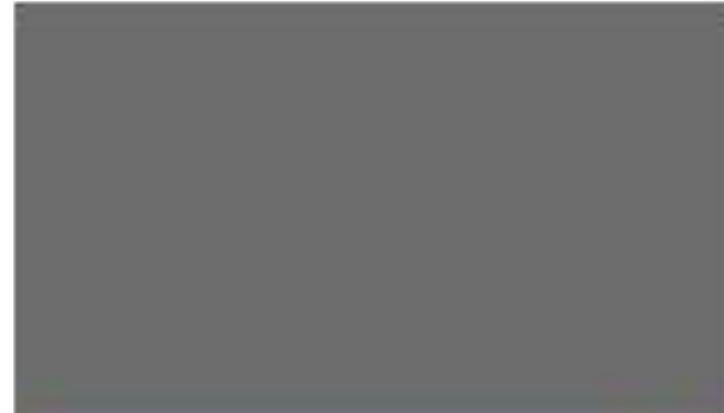
• Nyheder og nyhedsbrev  
om Dansk Epilepsiforening

• Nyhedsbrev

• Nyhedsbrev om Dansk Epilepsi-



• Indledning og teknologien



DEN FREMTID SÆTTER TÆLLESEGGERE  
AF EPILEPSIKIRURGI

2001

## Definition af epilepsikirurgi

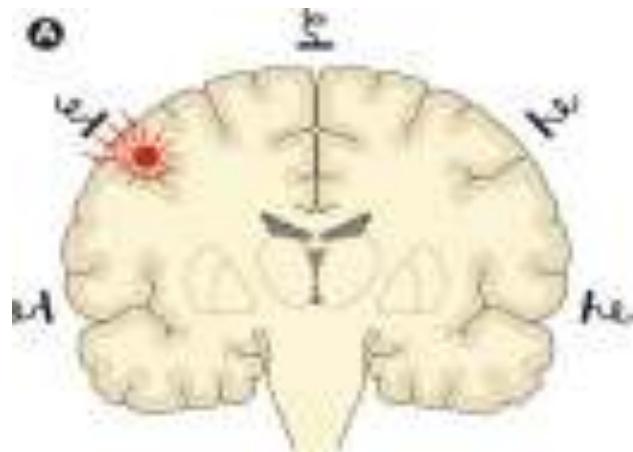
Ved epilepsikirurgi forstås en operation, som udføres på baggrund af medicinsk intrakraniell epilepsi med invaliderende epileptiske anfall, hvor en bagvedliggende sygdom (f.eks. malign tumor) ikke i sig selv giver anledning til operation.

Ny

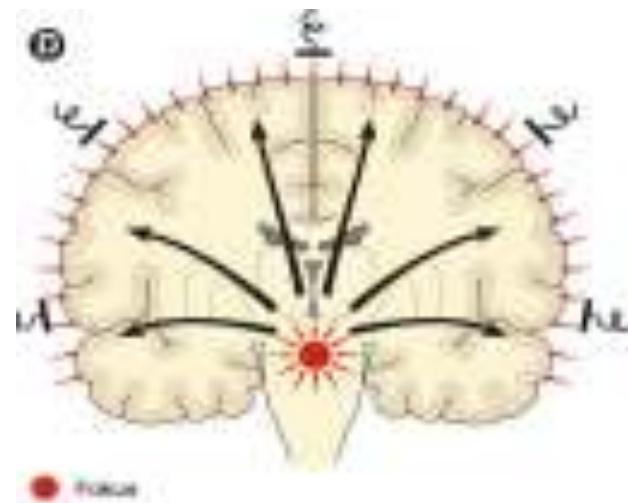


# Fra Sundhedsstyrelsens notat

- De "klassiske" kriterier for kirurgi er:
  - Lokaliseret fokus
    - *"Epilepsien starter ét bestemt sted i hjernen"*

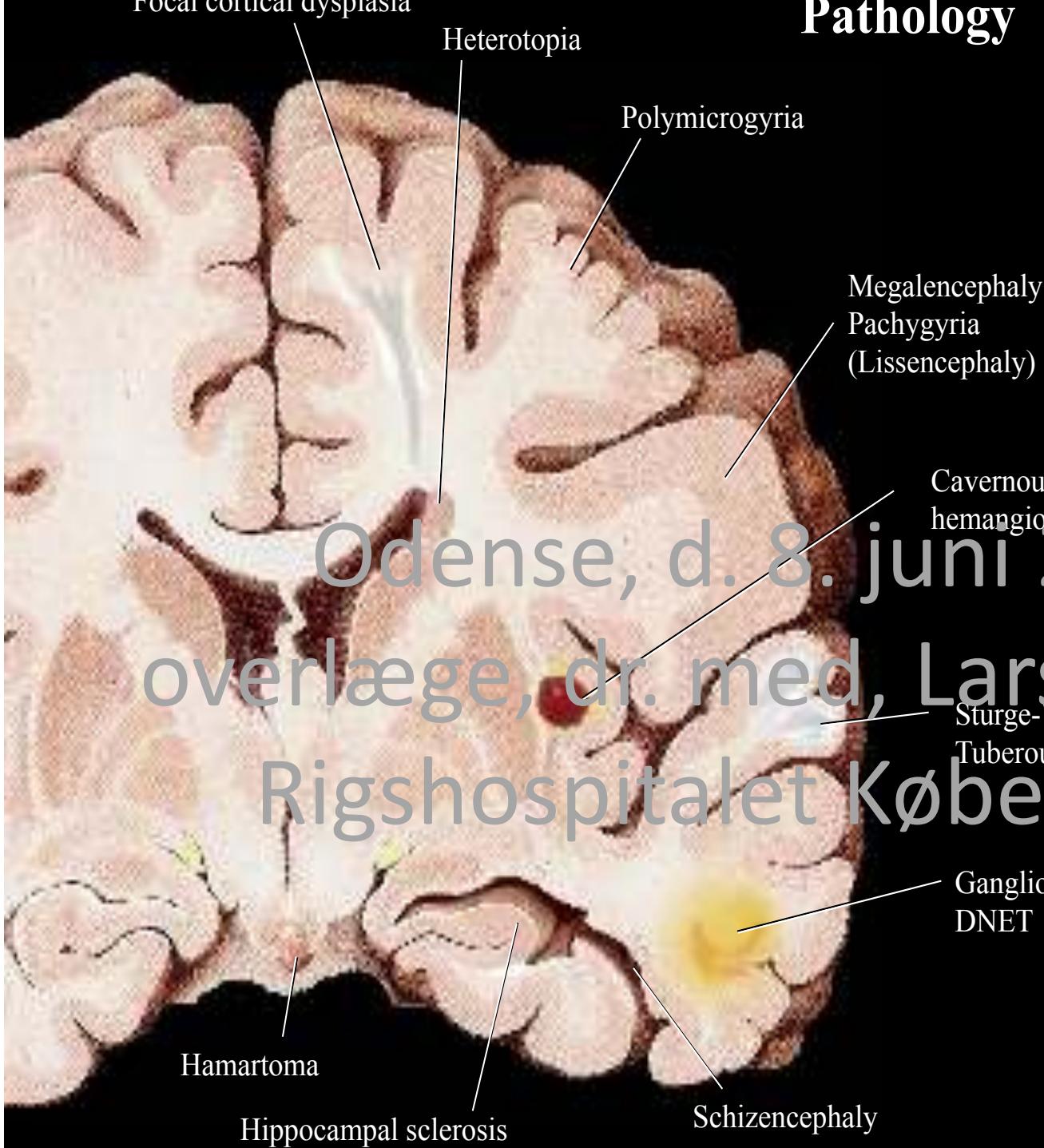


Fokal epilepsy  
60%



Generaliseret epilepsy  
40%

# Pathology



- Trauma (penetrating)
- Infarction/hemorrhage
- Encephalitis>Meningitis  
(Neurocysticercosis,  
Tuberculoma)

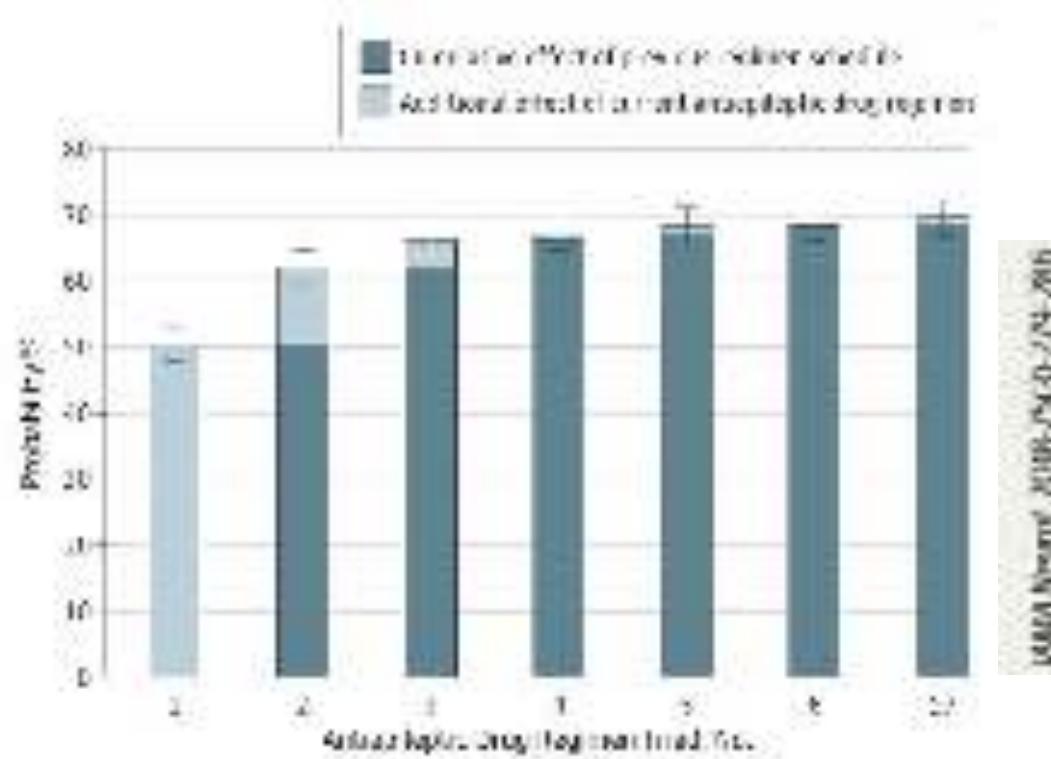


# Fra Sundhedsstyrelsens notat

- De "klassiske" kriterier for kirurgi er:
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  - Medicinsk intraktabel epilepsi
    - *"medicin mod epilepsi ikke virker"*



# Medicinsk intraktabel epilepsi



Hvis en patient har prøvet 2-3 lægemidler mod epilepsi, så er sandsynligheden for, at et nyt lægemiddel gør patienten anfaldsfri meget lille!

Ca. 30% af epilepsipatienter bliver ikke anfaldsfri på trods af bedst mulige behandling

Det bør ikke tage mere end 2-3 år at konstatere, at medicin ikke virker!



# Fra Sundhedsstyrelsens notat

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  - Lokaliseret fokus
    - *"Epilepsien starter ét bestemt sted i hjernen"*
  - Medicinsk intraktabel epilepsi
    - *"medicin mod epilepsi ikke virker"*
  - Epilepsianfald repræsenterer et alvorligt og svært handicap
    - *"At risikoen ved en operation (ubezag, død og handicap) står mål med det daglige tab i livskvalitet og risiko for fremtidig sygdom og pludselig død"*



# Epilepsikirurgi i Danmark

Dansk Epilepsi Selskab



Odense, d. 8. juni 2018

DEN FREMTIDIGET RETTEBEGÆRTELSE  
AF EPILEPSI

overlæge, dr med, Lars Pinborg

Rigshospitalet København

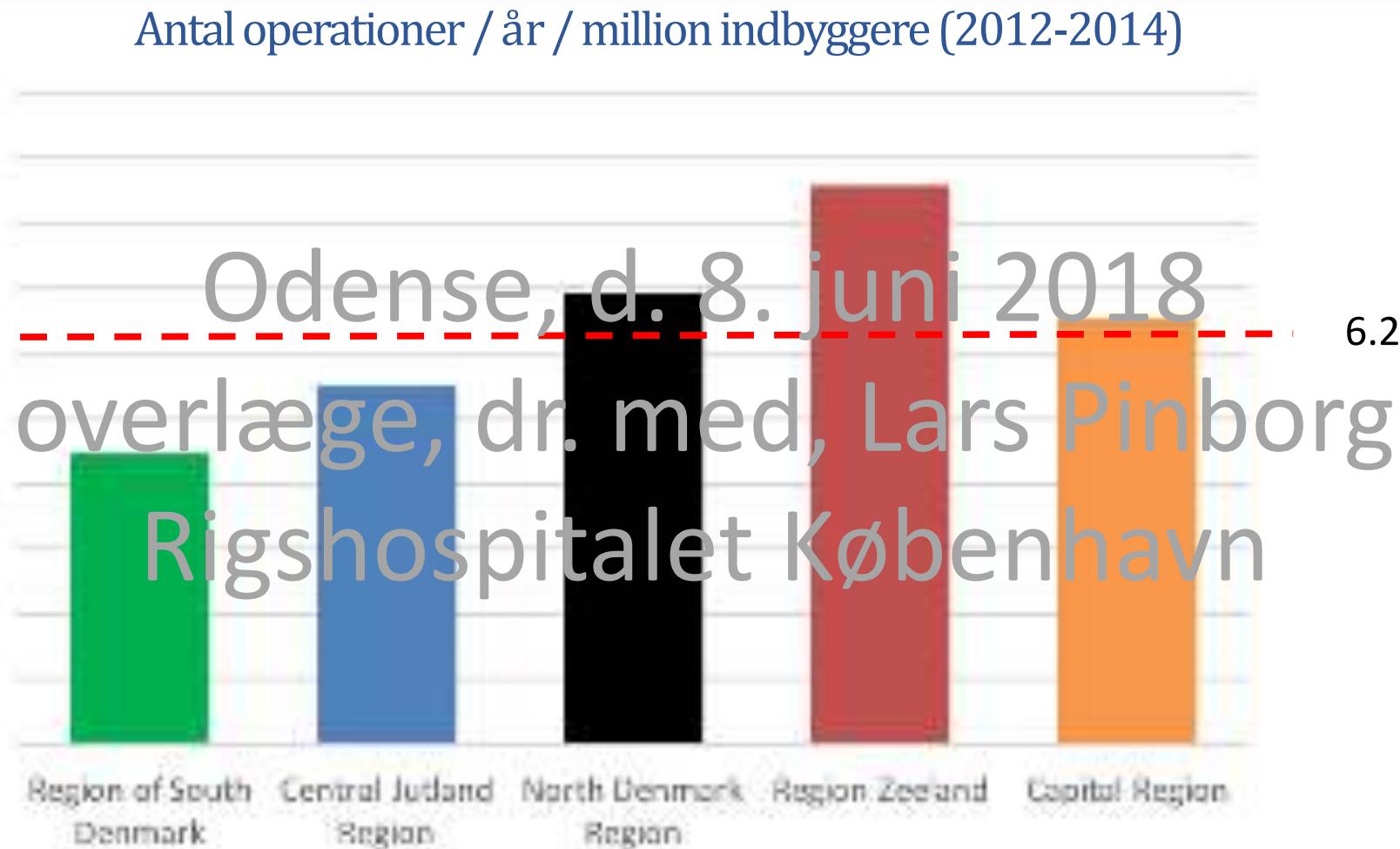
Home



Vi får henvist ca. 100 patienter og opererer ca. 35 patienter pr. år



# Er antallet af opererede patienter ulige fordelt i Danmark?



# Er antallet af opererede patienter i Danmark sammenligneligt med andre lande?



- DK: 6.2 pr. million
- SE: 5.2 pr. million
- NO: 5.7 pr. million
- FI: 8.1 pr. million
- US: 4.7 pr. million

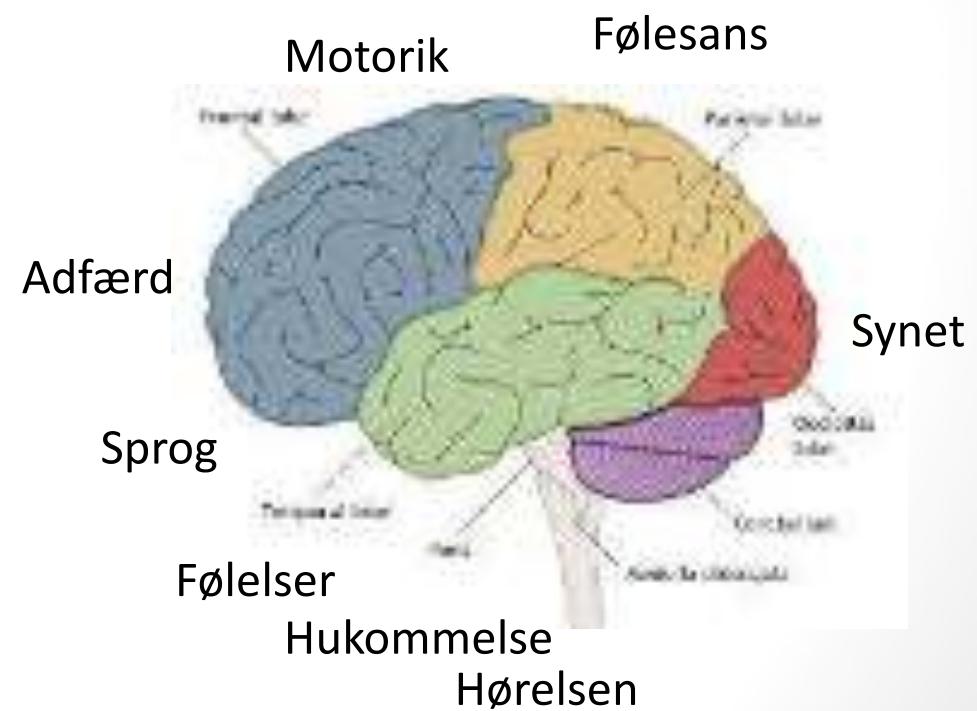


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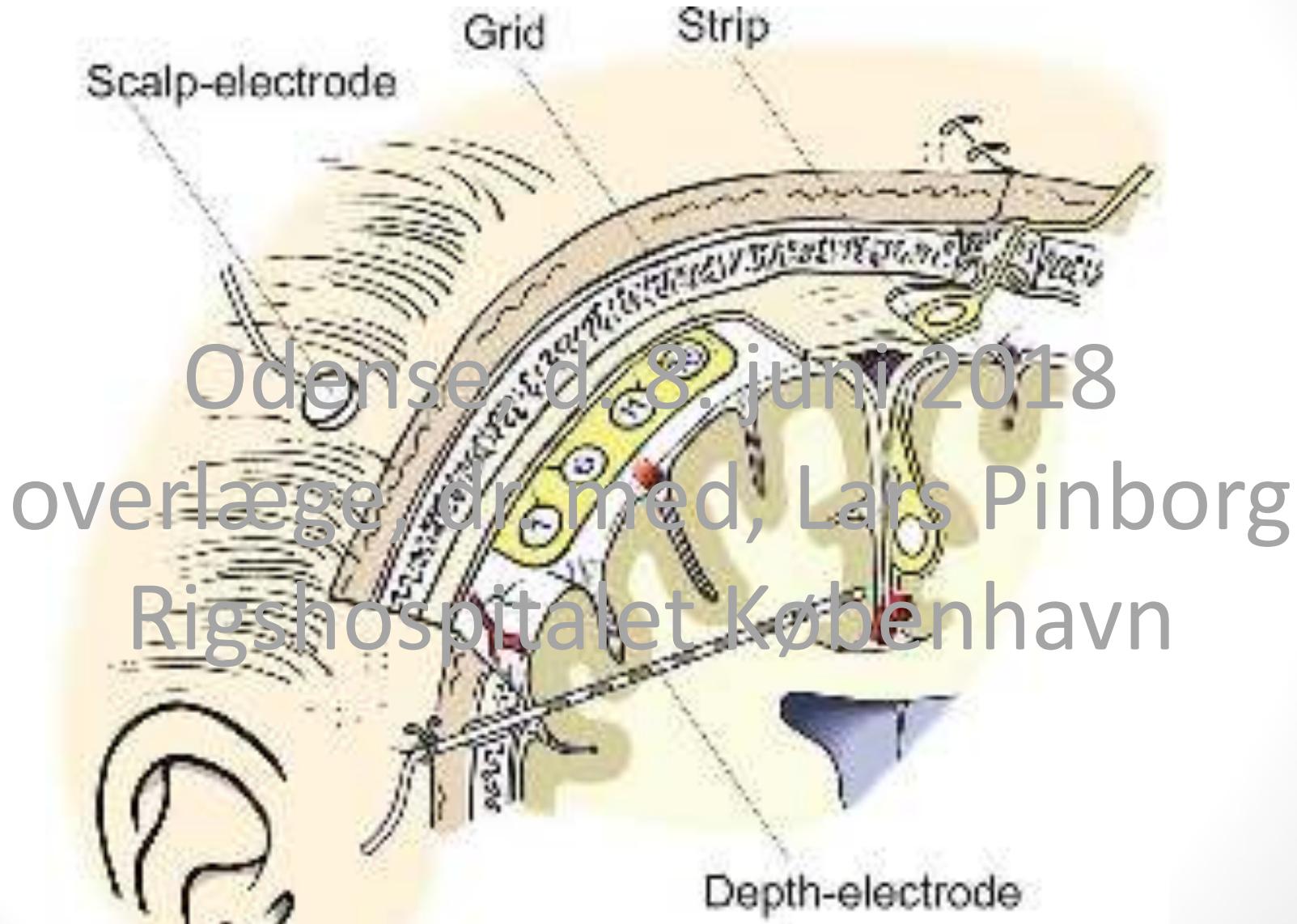


# Anfaldssemiologi

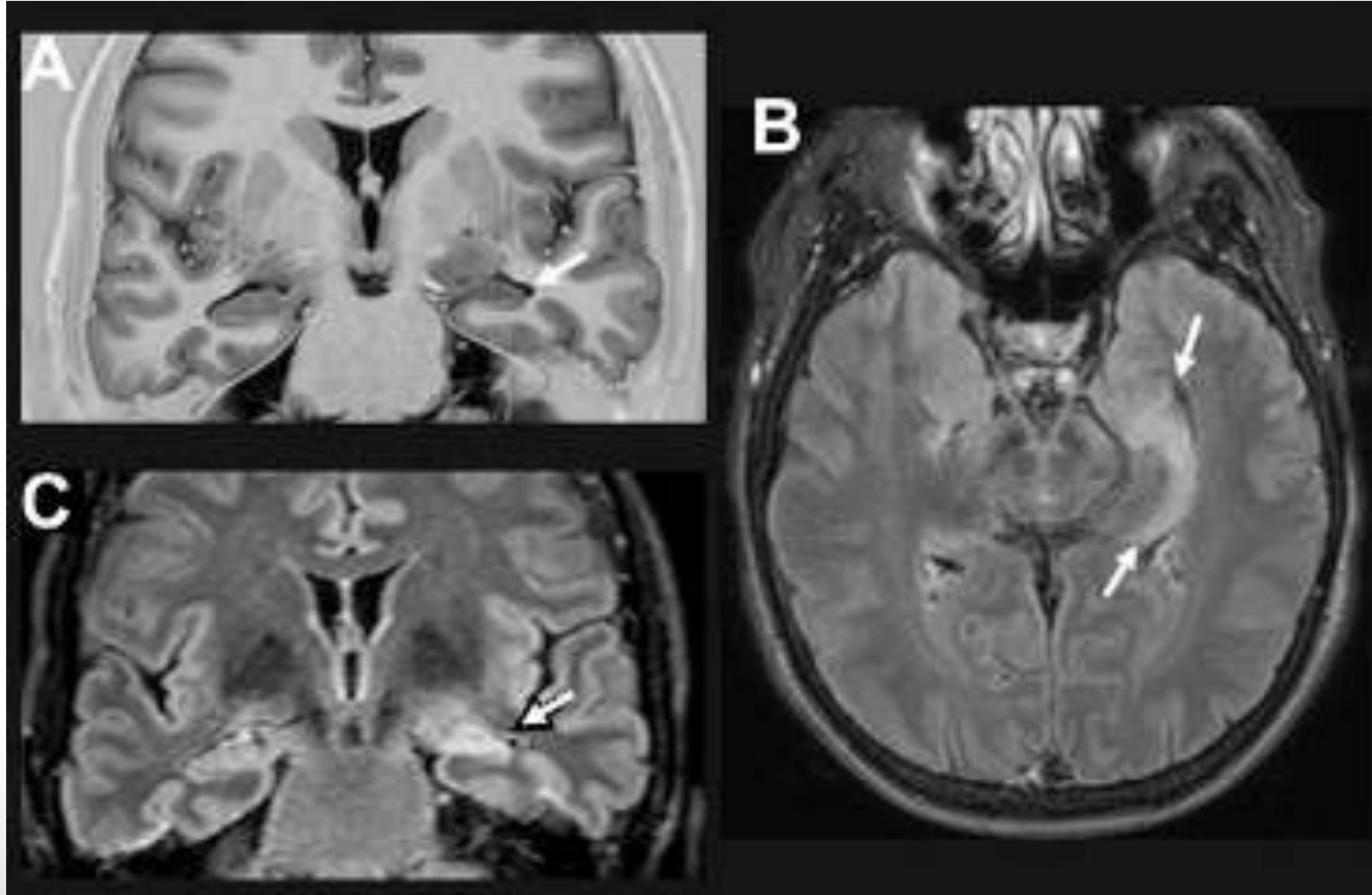
“De oplevelser patienten har ved indledningen til et anfall, og det andre kan se i forbindelse med anfaldet.”



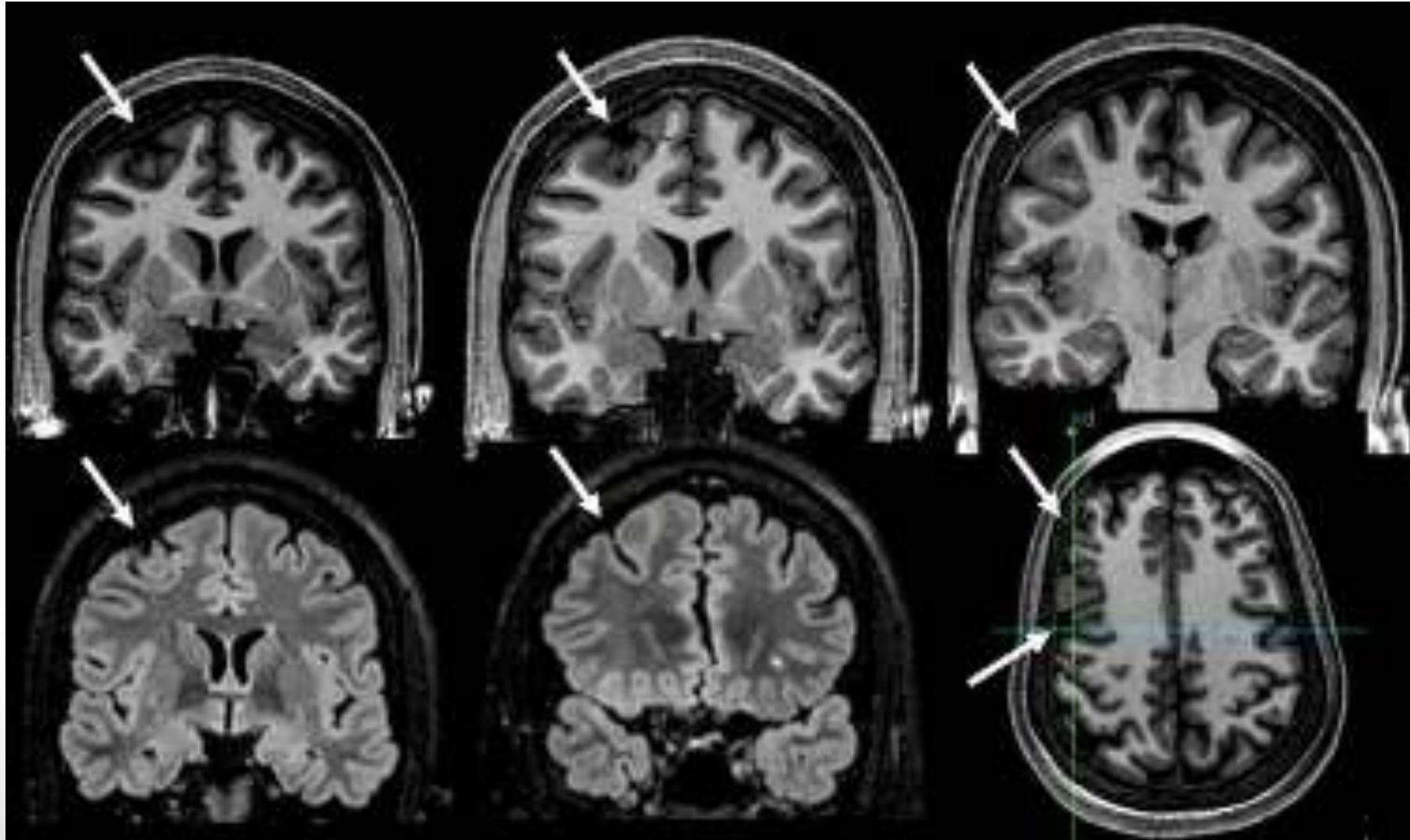
# EEG



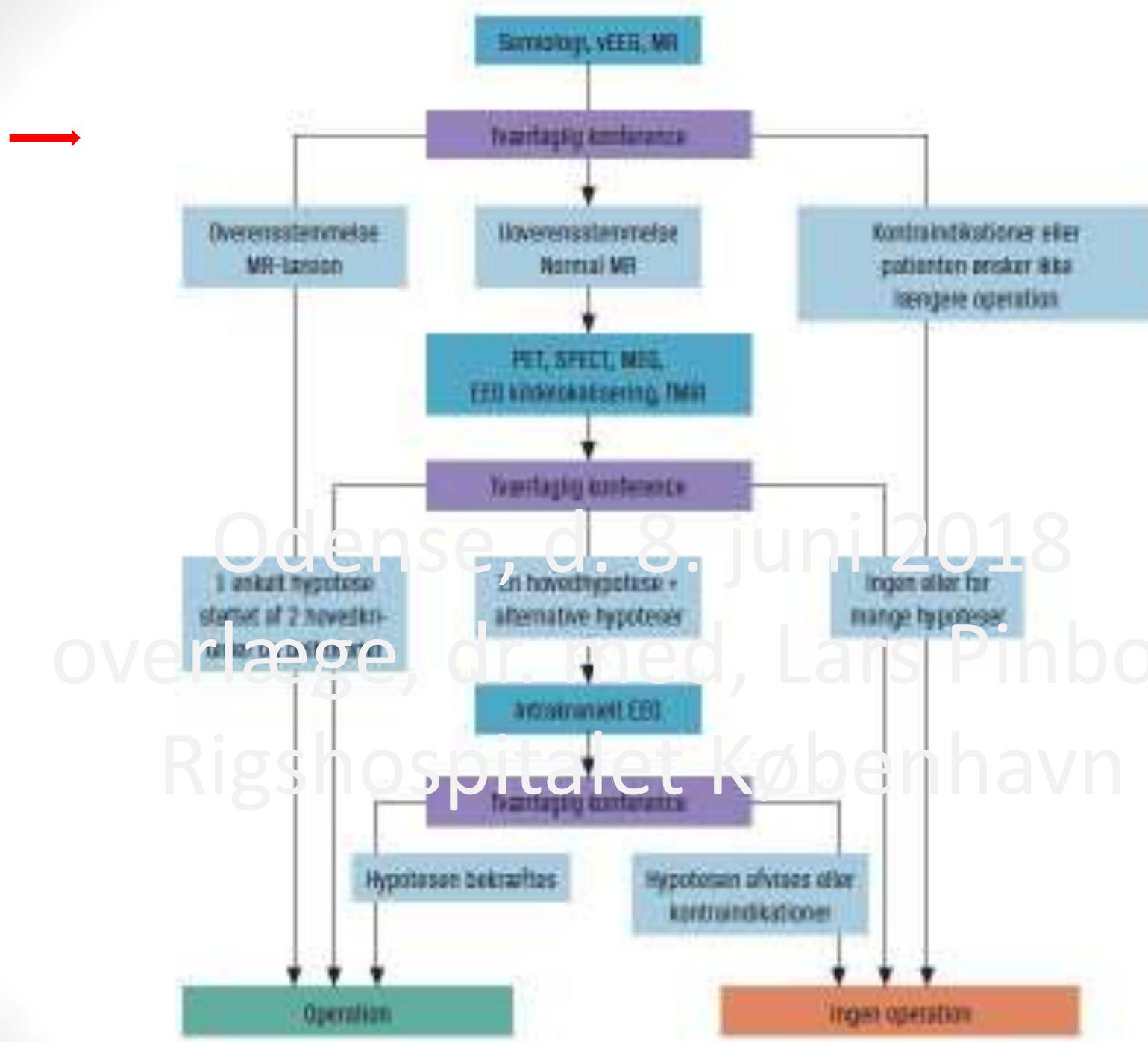
# MR scanning (hippocampus sklerose)



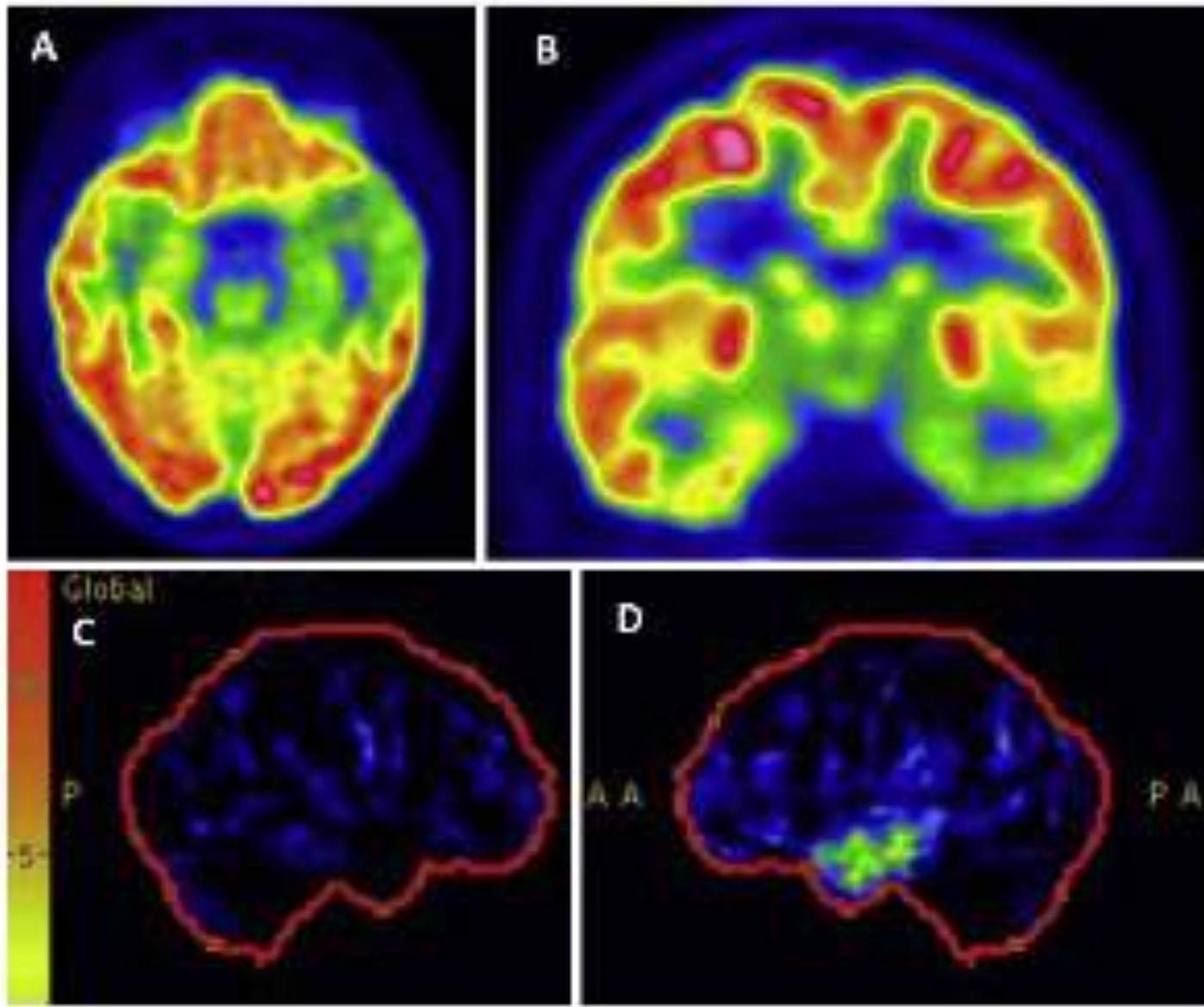
# MR skanning (fokal kortikal dysplasi)



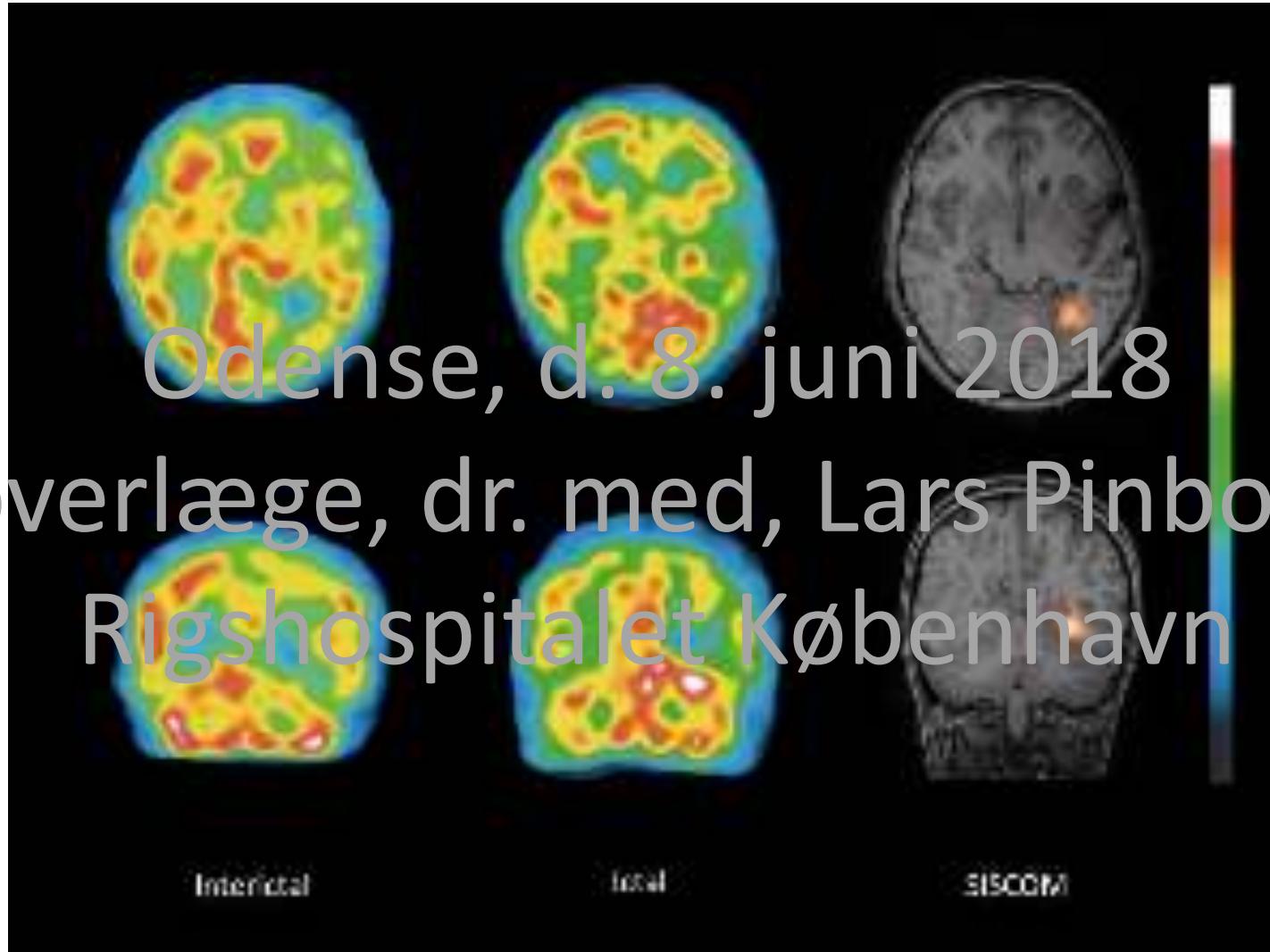
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# [<sup>18</sup>F]FDG-PET



# SISCOM-SPECT

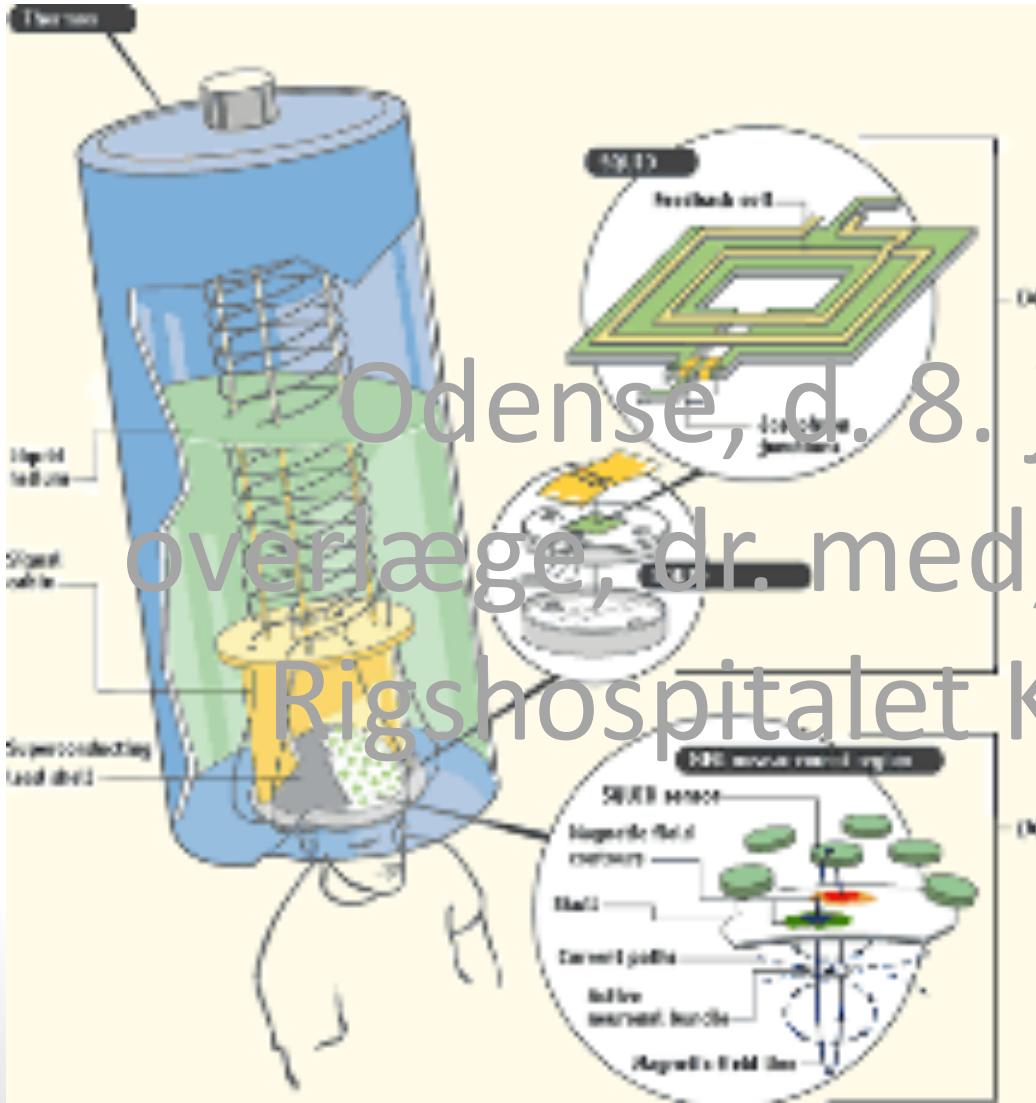


# HD-EEG (256 kanaler)

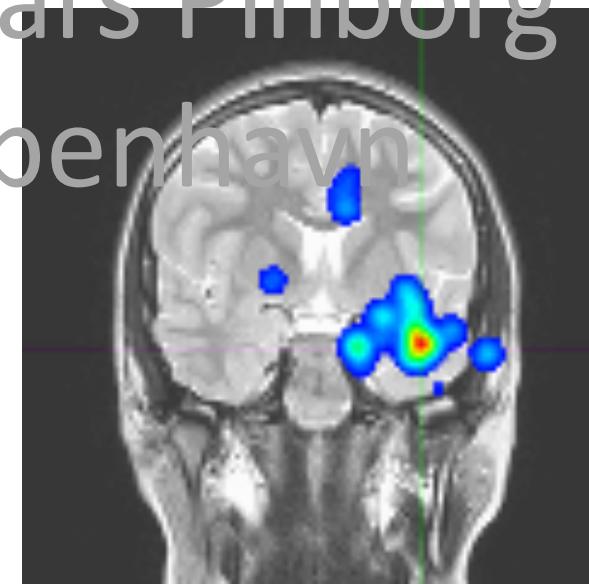
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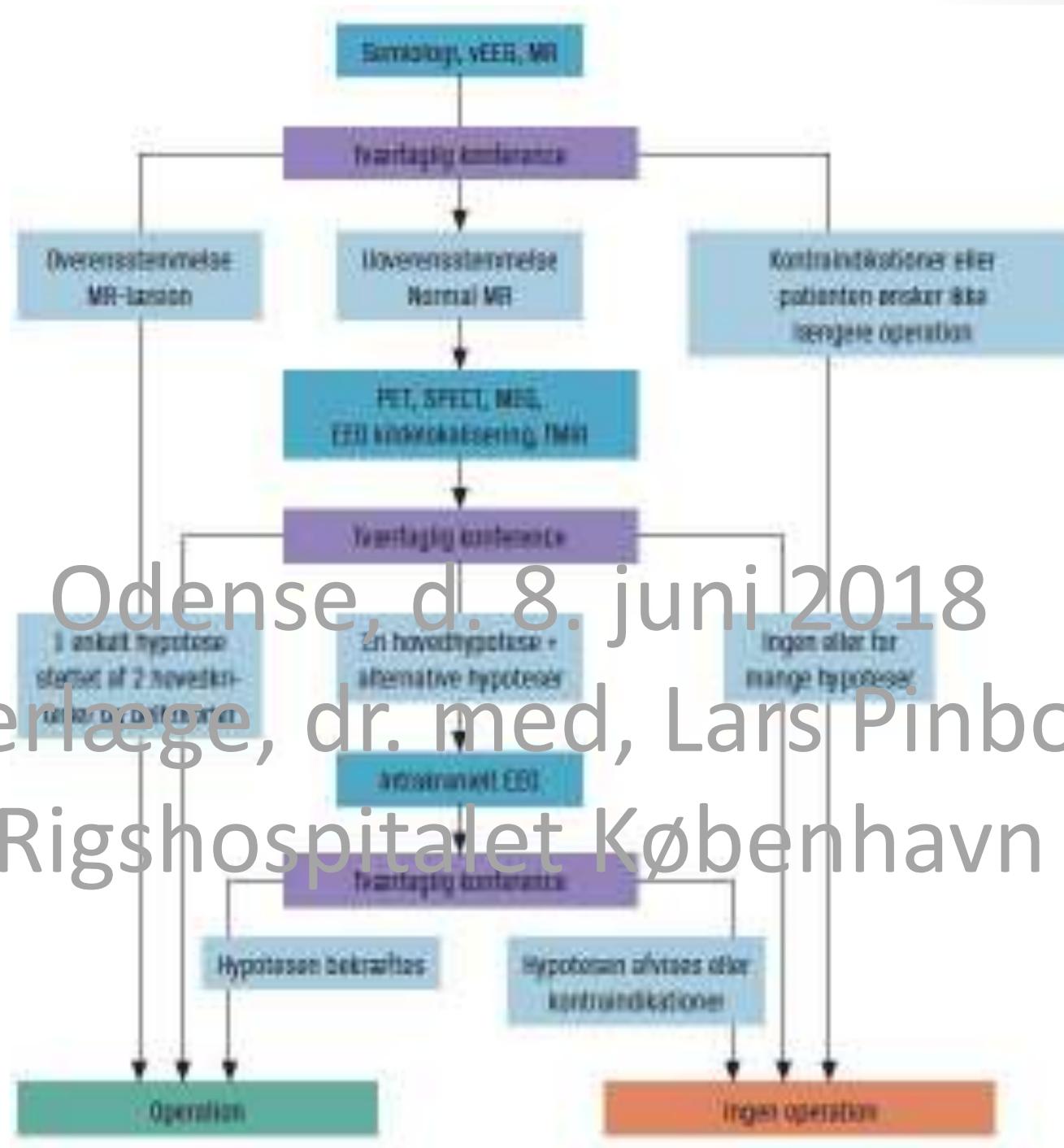
# MEG



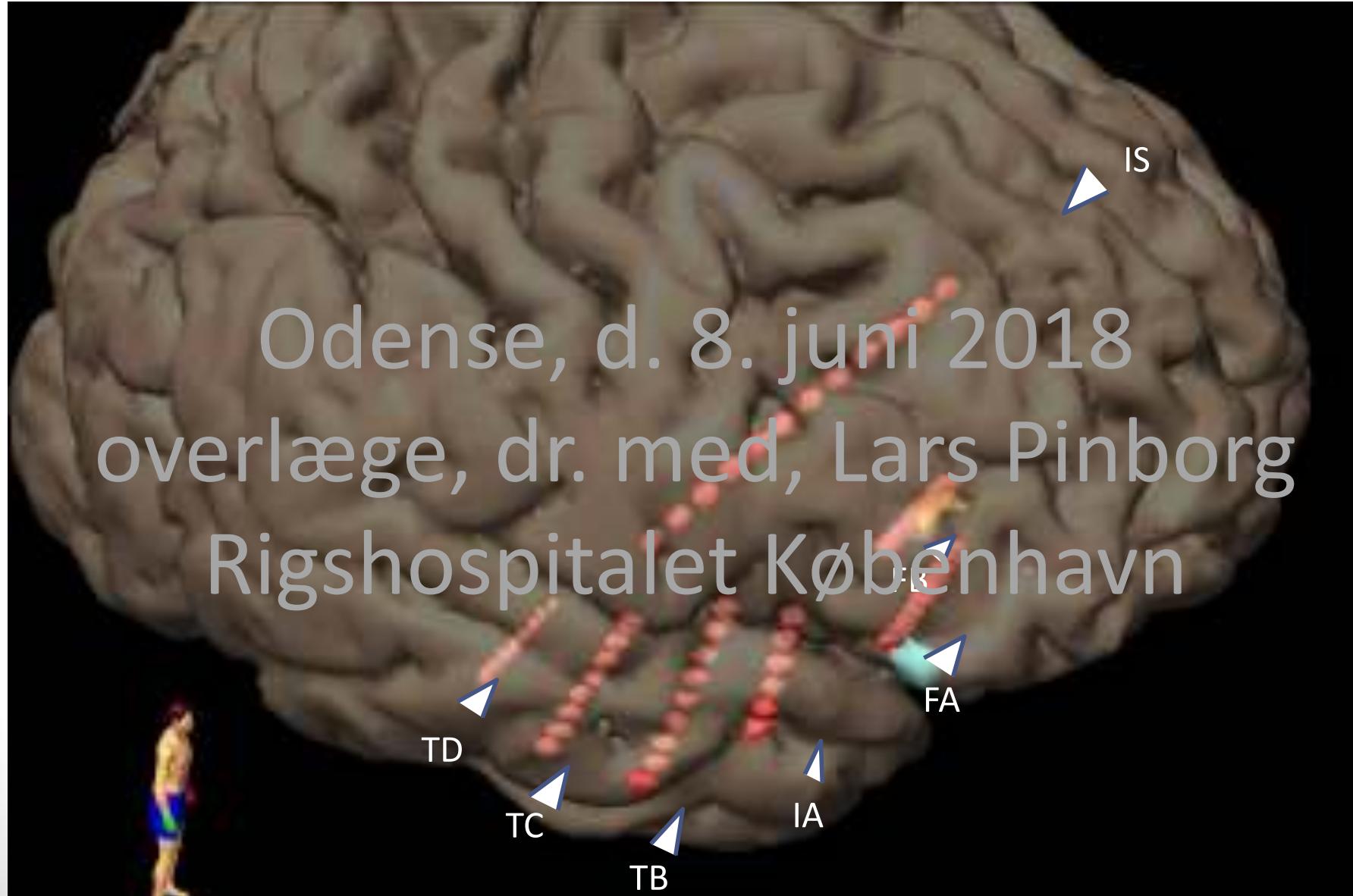
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# Elektroder placeret i hjernen



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Rigshospitalet København



## Efficacy of the Danish epilepsy surgery programme

**R. H. D.  $\pm$  1.5%<sup>1</sup> | N. T.  $\pm$  5%<sup>1</sup> | S. R.  $\pm$  5%<sup>1</sup> | S. J.  $\pm$  5%<sup>1</sup> | I. R.  $\pm$  5%<sup>1</sup>**  
**I. H.  $\pm$  5%<sup>1,2</sup>**



James E. Murphy, Inc., Represented by  
John J. "Jackie" Piscitelli, Esq.,  
Piscitelli & Piscitelli, Newark.

“*Worried about your future? Don't be.*  
“*You can't “fix” your past,  
but you can change your future.*  
“*Remember, a tomorrow is created  
by the choices you make today.*

Table 2. High-molecular-weight hyaluronic acid (HA) and low-molecular-weight HA (LMW-HA) production by *Escherichia coli* K-12 strains with different *hyal* genes and their growth performance in LB medium.

Most of us and millions of other people have experienced at least one or two instances of emotional abuse in our lives. Some of us have suffered from it for years. Some of us have been fortunate, our partners were kind or considerate and there never seemed to have been any problem.

**Results.** The median age of the patients with primary glioma was 47 years (2-81 years), and 50% were men. Median age at diagnosis was 49 years (20-70 years). The mean disease-free survival rate was 38% (95% CI 30-46%). The median overall survival rate was 50% (95% CI 40-59%). The 5-year survival rate was 17% (95% CI 10-24%). The 10-year survival rate was 10% (95% CI 4-16%). The 15-year survival rate was 6% (95% CI 2-10%). The 20-year survival rate was 3% (95% CI 1-6%). There was no significant difference in survival rates between patients with glioma grade II and III ( $P = 0.1$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade III and IV ( $P = 0.05$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade II and IV ( $P = 0.001$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade III and IV ( $P < 0.001$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade II and III ( $P = 0.001$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade III and IV ( $P < 0.001$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade II and IV ( $P < 0.001$ , log-rank test). There was no significant difference in survival rates between patients with glioma grade III and IV ( $P < 0.001$ , log-rank test).

## REFERENCES

而为数甚少，而且都是“新发现的”或“尚未发表”的。

• 1573045710

Full-scale urban planning and building regulation, though, is not the only way to manage sprawl. Appropriate zoning can help prevent urban sprawl, whether it's an urban growth boundary, a strategy to contain sprawl, or a zoning ordinance that limits sprawl.

and "normal" D-formation values to define a "labor of love" model, it has a mixed message. & there are real problems in trying to make such a statement as "normal" or "abnormal" when it comes to the concept of "normality". The general rule being - "normal" is very subjective. 100% of the world's 7.225 billion people will not fit into the "normal" box. The last sentence is true because 100% is 100 billion."



# Vigtigste resultater

- 65% bliver fri for anfald med bevidsthedspåvirkning
- 54% bliver helt fri for anfald
- Ca. 10% oplever ingen forbedring

Odense, d. 8. juni 2018

- Det går bedst for patienter med tindingelapepilepsi og dårligst for patienter med pandelapepilepsi

Overlæge, dr. med, Lars Pinborg  
Rigshospitalet København

- Tallene er fuldt ud på højde med de bedste internationale epilepsikirurgicentre



# Træerne vokser *dog* ikke ind i himlen !

Odense, d. 8. juni 2018

TABLE 1 Pre-surgical demographic and clinical data in relation to site of operation.

	Feature	Tumour	Middle Temporal	Lateral Temporal	Stimulated	Other
Total	209 (100%)	206 (99.5%)	4 (2%)	2 (1%)	2 (1%)	0 (0%)
Familial sex	79 (38, 7%)	51 (16, 7%)	11 (28, 3%)	7 (29, 1%)	7 (50, 0%)	3 (21, 4%)
Glaucoma (%)	26 (12, 5%)	22 (11, 0%)	3 (20, 0%)	7 (59, 2%)	0 (0%)	2 (14, 3%)
Depressive disorder	33 (15, 5%)	25 (11, 4%)	2 (11, 1%)	2 (18, 2%)	0 (0%)	6 (42, 9%)
Right hemisphere	76 (37, 0%)	47 (40, 7%)	7 (46, 7%)	14 (59, 2%)	3 (17, 1%)	0 (0%)
Median, 1-6-3 quartile	Encephalotomy duration (year)	19, 9 & 31	20, 9 & 33,0	12, 7 & 31	17, 7 & 26,3	20, 1 & 25
→	Drug-resistance duration (years)	11, 4 & 20,1	13, 5 & 25,5	11, 2 & 19,1	10, 4 & 17	6,5, 2,5 & 20,5
→	Age at surgery	35, 29 & 48	36, 22,8 & 46	28, 25,5 & 31,5	29, 23,8 & 36	31,5, 29,8 & 37,5
All CT at resection	2, 2 & 3	2, 2 & 3	2, 2 & 2,5	2, 2 & 3	2, 2 & 3	0 (0%)
All CT in total	5, 4 & 7	5, 4 & 7	5, 4 & 6	5, 5, 3,8 & 7,7	6, 4 & 7	0 (0%)

Others: Patients operated in the central, parietal, occipital and maxillary regions. Risk factors: family history of epilepsy (first degree relatives), brain tumours, head trauma and meningoencephalitis. Depressive disorders: patients diagnosed with moderate and major depressive disorder and treated with antidepressants and/or psychotherapy.

AED: anti-epileptic drugs.



# Risici forbundet med epilepsikirurgi

- Elektroder ind i hjernen: En patient er død i relation til en blødning.
- Operation: Tre patienter ud af 169 udviklede ved operationen en blødning medførende halvsidej lalmelse med symptomer  
    > 1 mdr
- Affektive symptomer.  
    Forud for kirurgi 20% behandlingskrævende depressiv episode  
    Efter kirurgi 12% behandlingskrævende depressiv episode

Odense, d 8 juni 2018  
overlæge, dr. med, Lars Pinborg

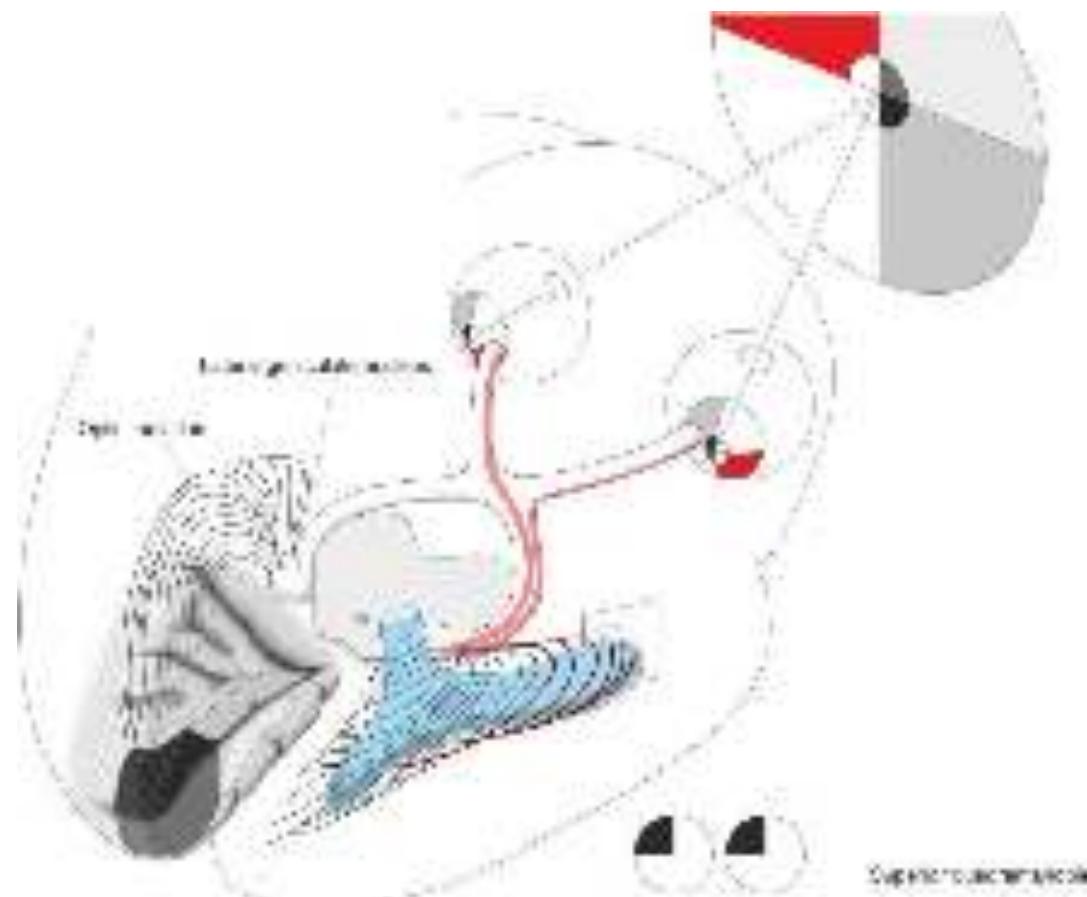
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## Visual field defects after temporal lobe resection for epilepsy<sup>a,c</sup>

Alvilds T. Steensberg<sup>a,f</sup>, Anne Sophie Oiser<sup>b</sup>, Minna Litman<sup>c</sup>, Bo Jespersen<sup>d</sup>,  
Miriam Kelko<sup>a,b,e</sup>, Lars H. Finboeg<sup>c,f</sup>





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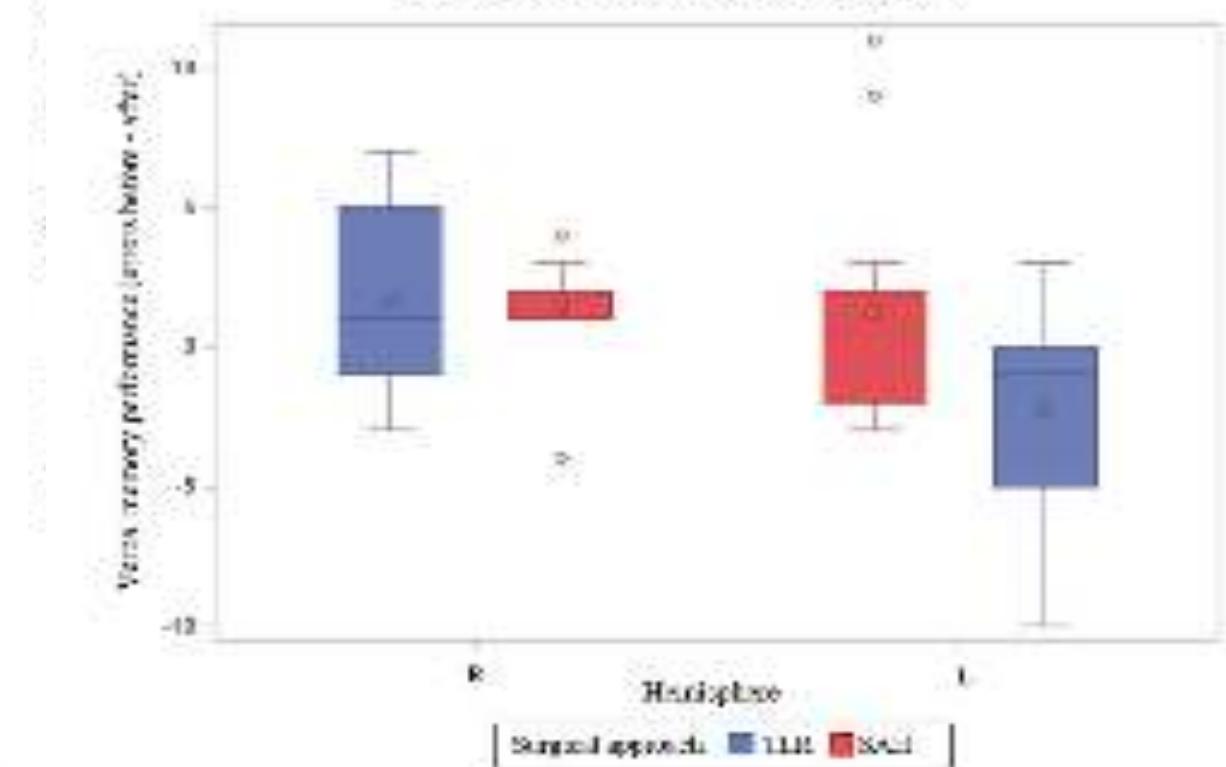
journal homepage: [www.elsevier.com/locate/ebehav](http://www.elsevier.com/locate/ebehav)



## Verbal learning and memory outcome in selective amygdalohippocampectomy versus temporal lobe resection in patients with hippocampal sclerosis

Mette Thrane Foged<sup>a</sup>, Kirsten Vinter<sup>b</sup>, Louise Stanning<sup>c</sup>, Troels W. Kjær<sup>d</sup>, Brice Ozanne<sup>e</sup>, Sándor Beniczky<sup>f,g,h</sup>, Gálf R. Paulson<sup>a</sup>, Flemming Find Madsen<sup>b</sup>, Lars H. Pinborg<sup>a,h,i</sup>, the Danish Epilepsy Surgery Group

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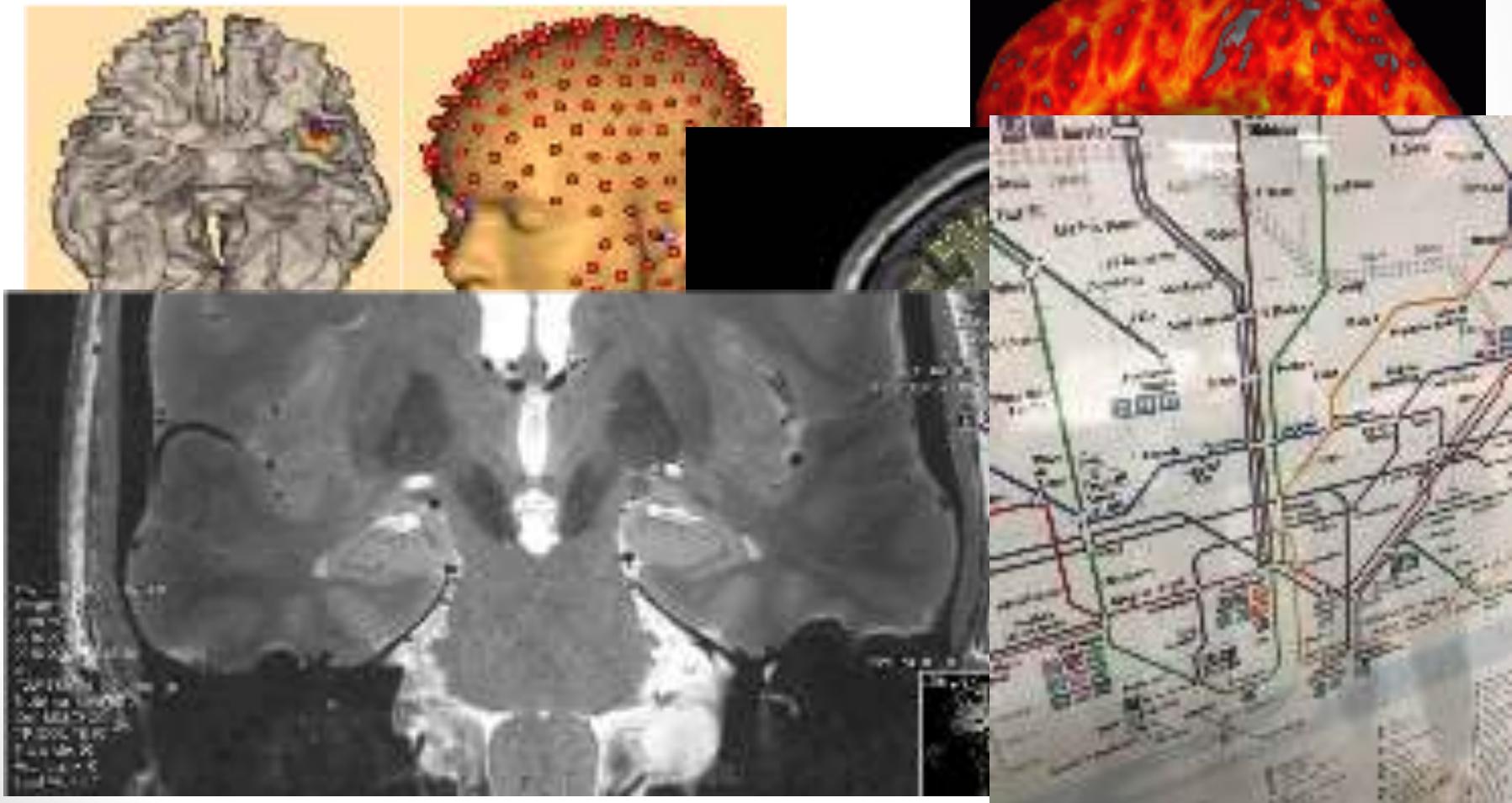


# Hvordan skal vi forbedre den fremtidige indsats ?

- Vi skal blive bedre til at finde det sted i hjernen, hvor epilepsien starter
- Vi skal indføre nye smartere metoder til at fjerne det syge hjernevæv
- Patienterne skal informeres tidligere om alternative muligheder til medicinsk behandling



# Vi skal blive bedre til at finde det sted i hjernen, hvor epilepsien starter

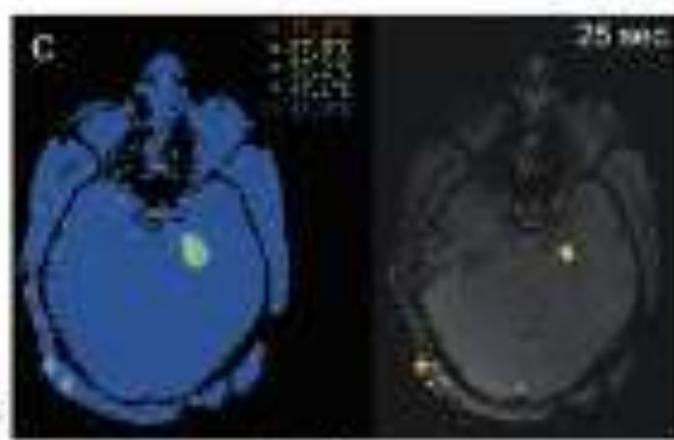
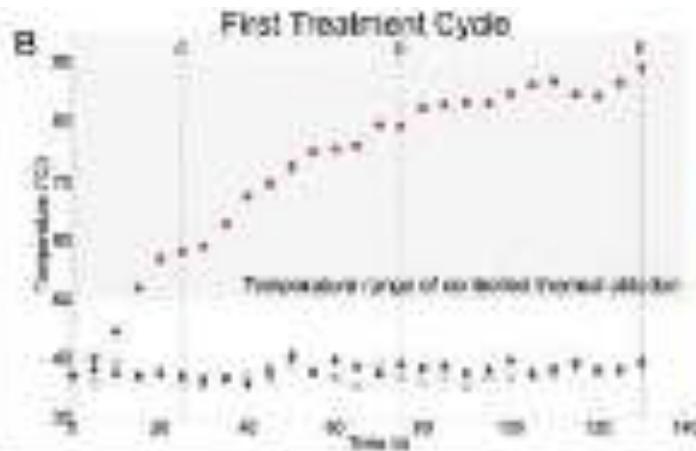


# Vi skal indføre nye smartere metoder til at fjerne det syge hjernevæv



- Meget mindre indgreb, mere målrettet, giver nye muligheder  
– men ikke nødvendigvis flere helt anfallsfri patienter!





Frist Treatment Estimate



Odense, d. 8. juni 2018  
overlæge, dr. med, Lars Pinborg

Rigshospitalet København



# Patienterne skal informeres tidligere om alternative muligheder til medicinsk behandling herunder kirurgi

