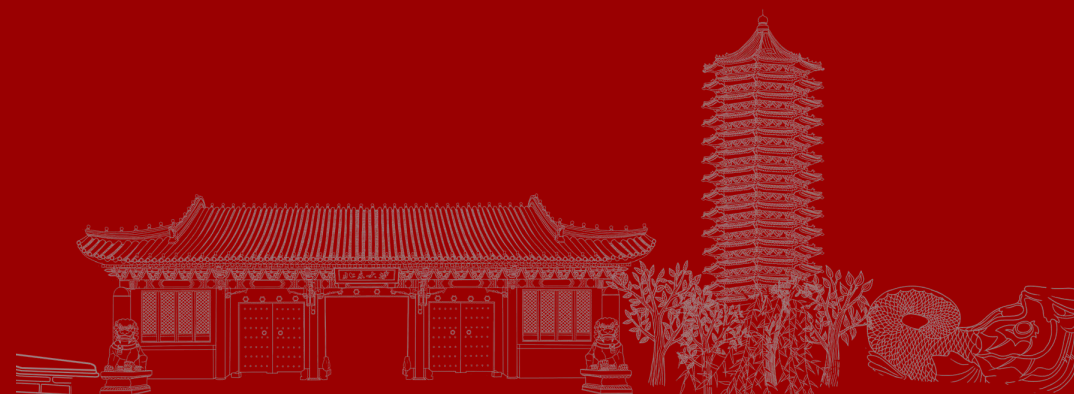
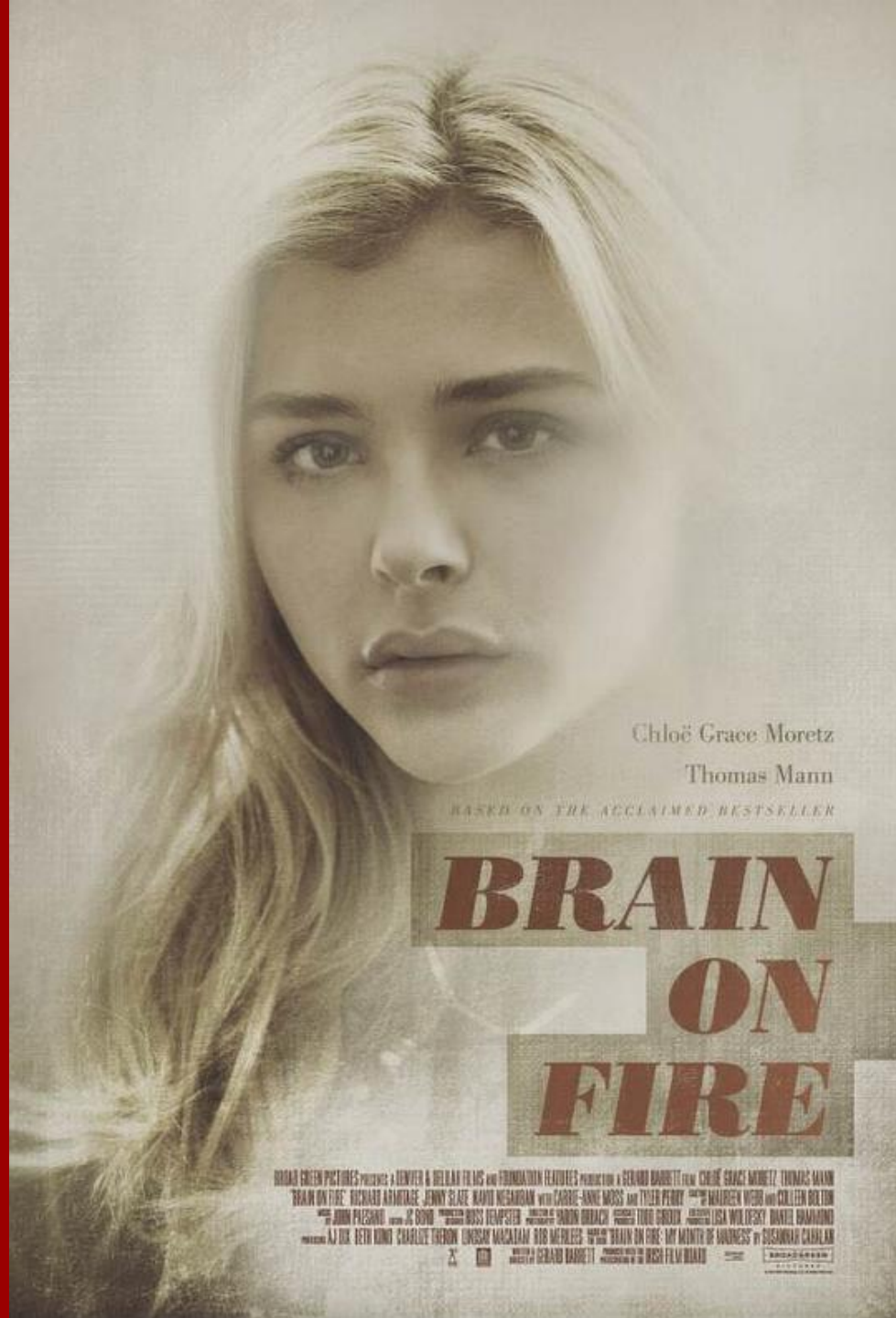


Brain on Fire

——Focus on rare neurological disorders

汇报人 刘家希

2024年5月28日



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01

Film Introduction



Movie trailer



Download from YouTube

Initial symptoms and diagnosis

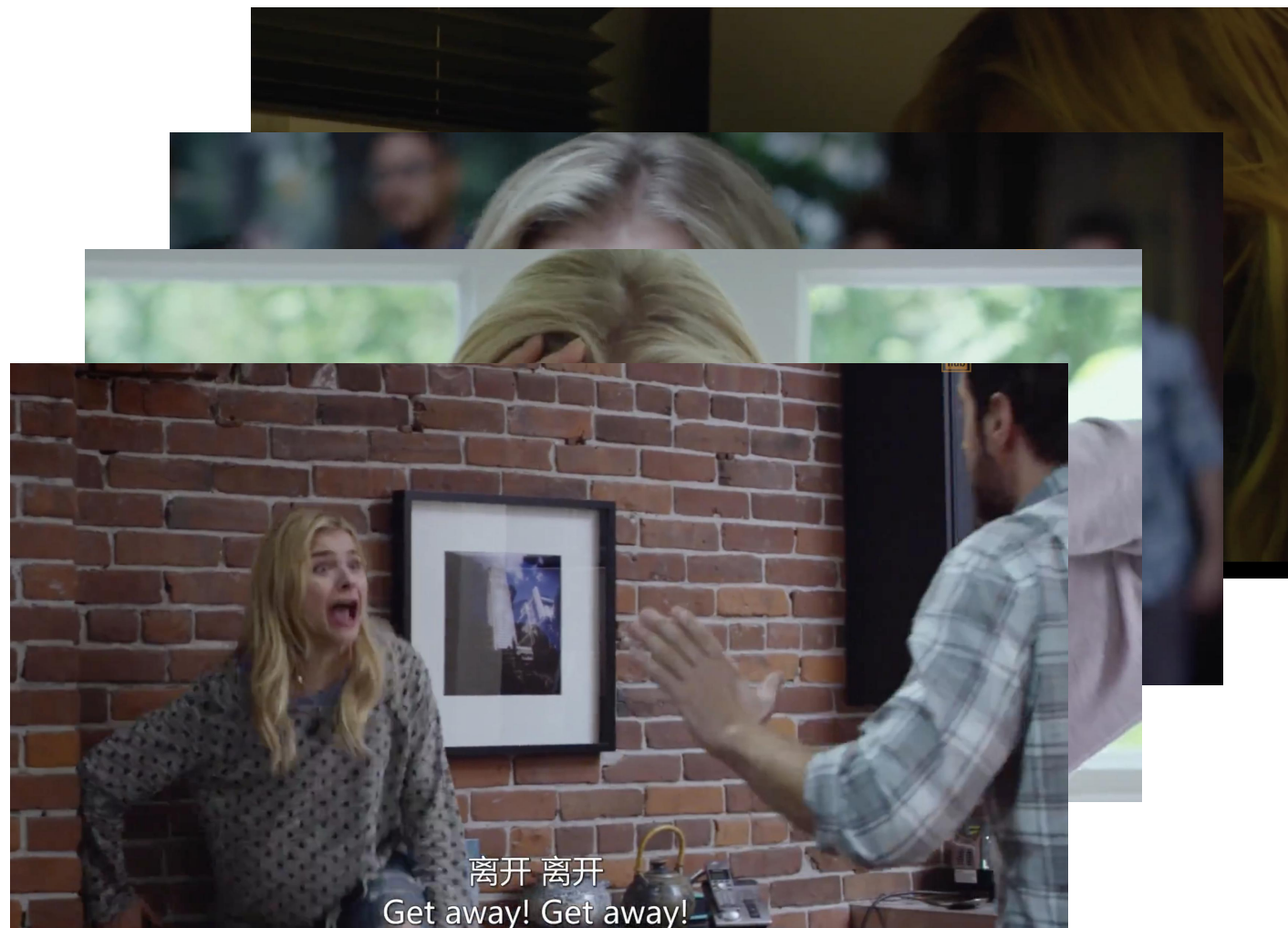
Symptoms

- perceptual disturbances
- fatigue
- unstable mood
- frank paranoia (偏执)



Diagnosis

- pregnancy
- Stress out
- withdrawal (戒断反应)



Late symptoms and diagnosis

Symptoms

- agitation (躁动)
- disorientation (定向障碍)
- seizure episodes (癫痫)



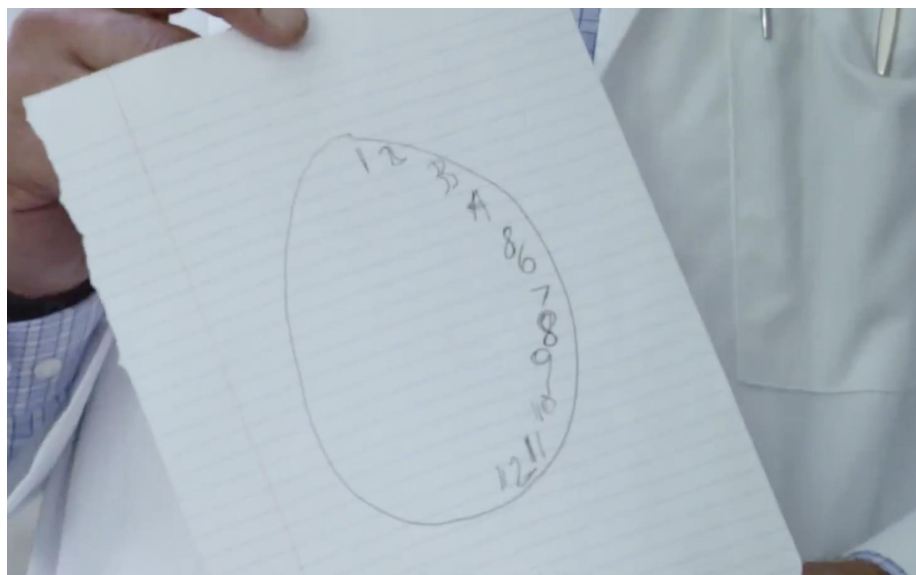
Diagnosis

- bipolar disorder (双相情感障碍)
- multiple personality (多重人格)
- schizophrenia (精神分裂)
-

—But, is this really true?



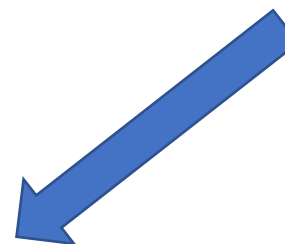
Final diagnosis



loop-sided clock



Brain biopsy



Anti-NMDA receptor encephalitis



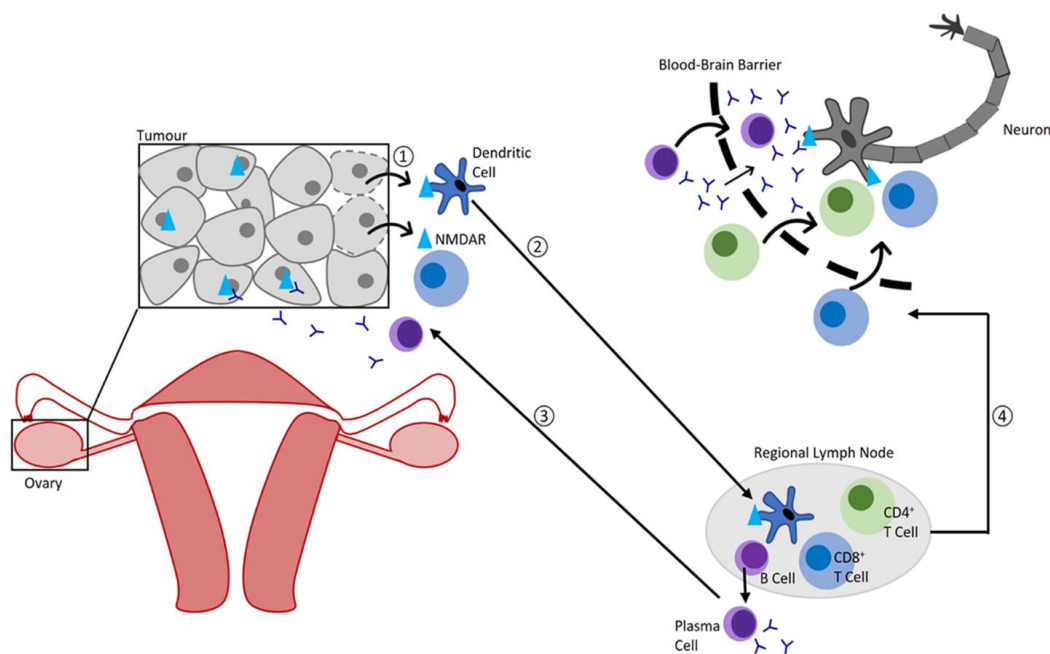
02

Disease Research



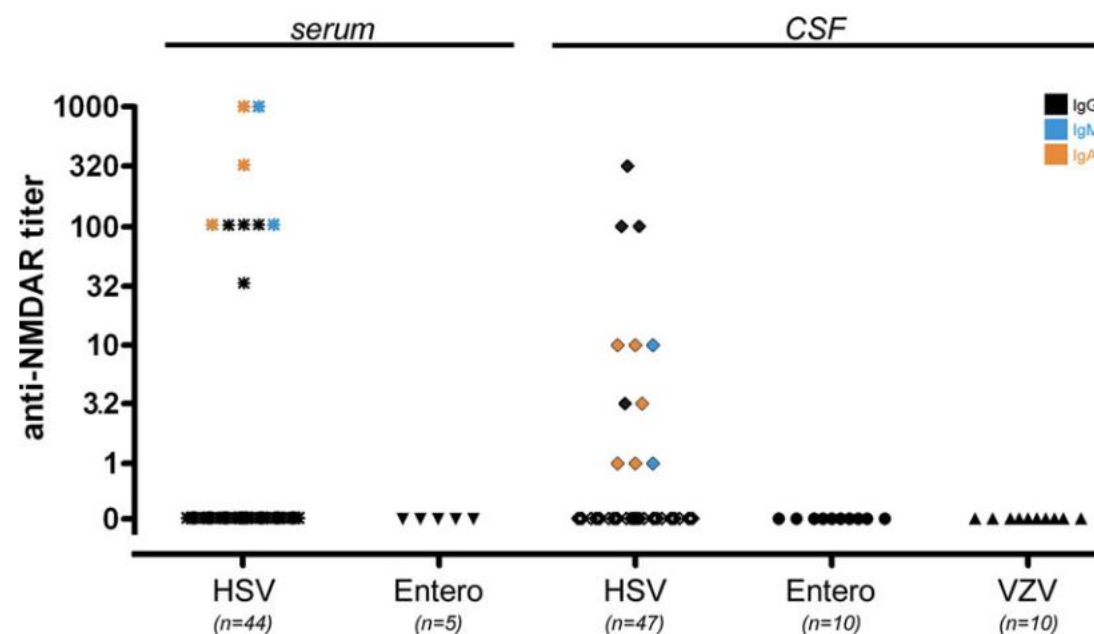
Antibody source

- Tumor



Arun et.al, 2017

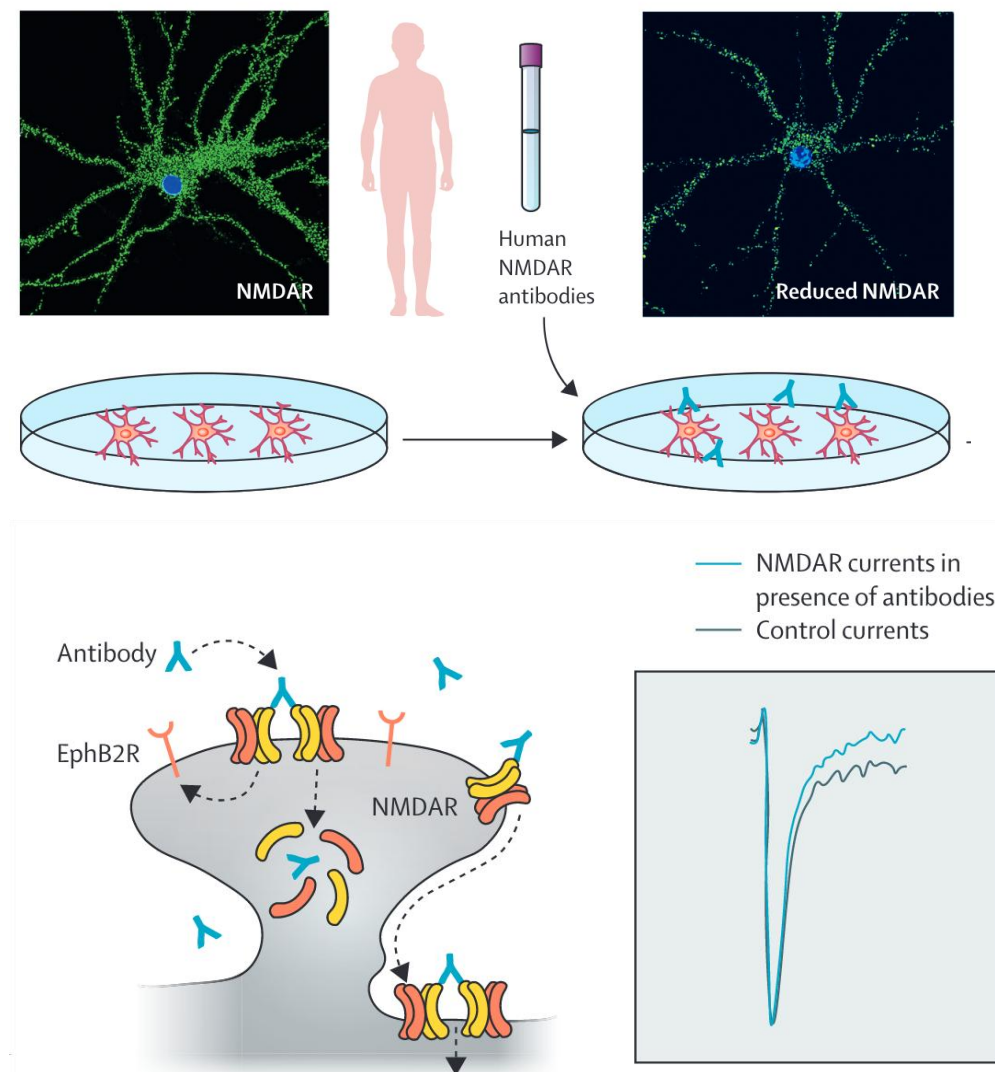
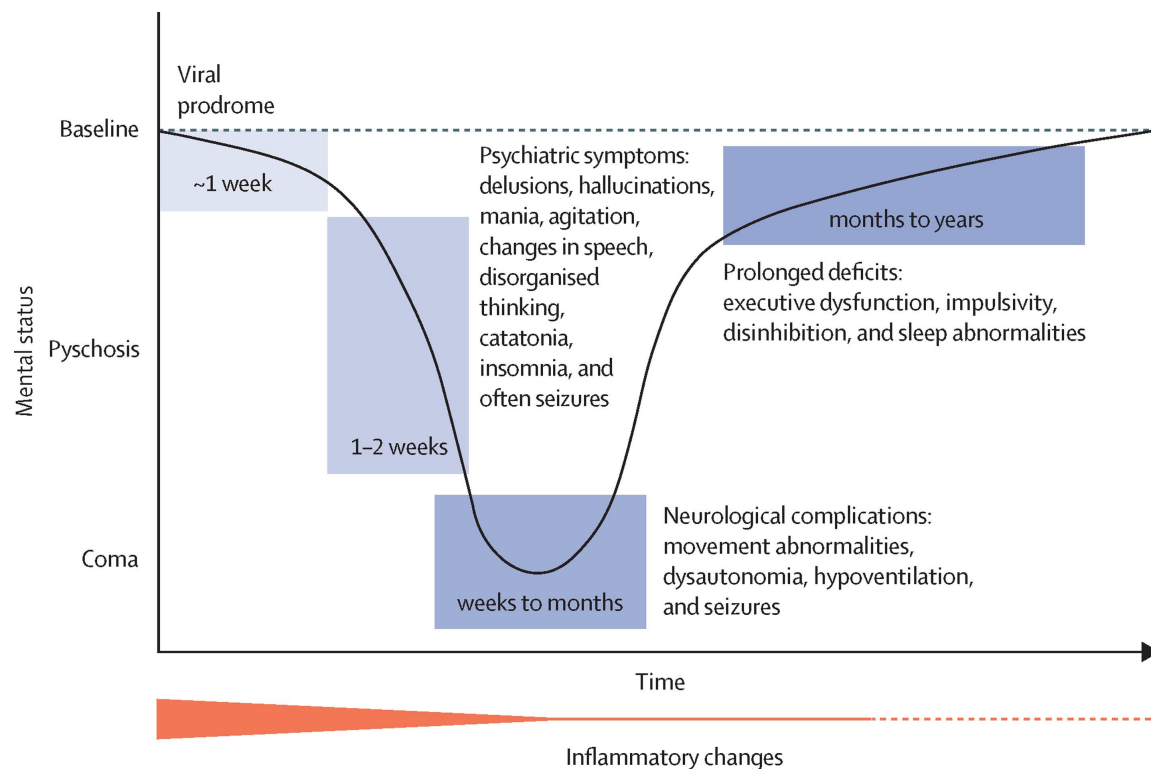
- Virus



Harald et.al, 2012

Course and pathogenesis

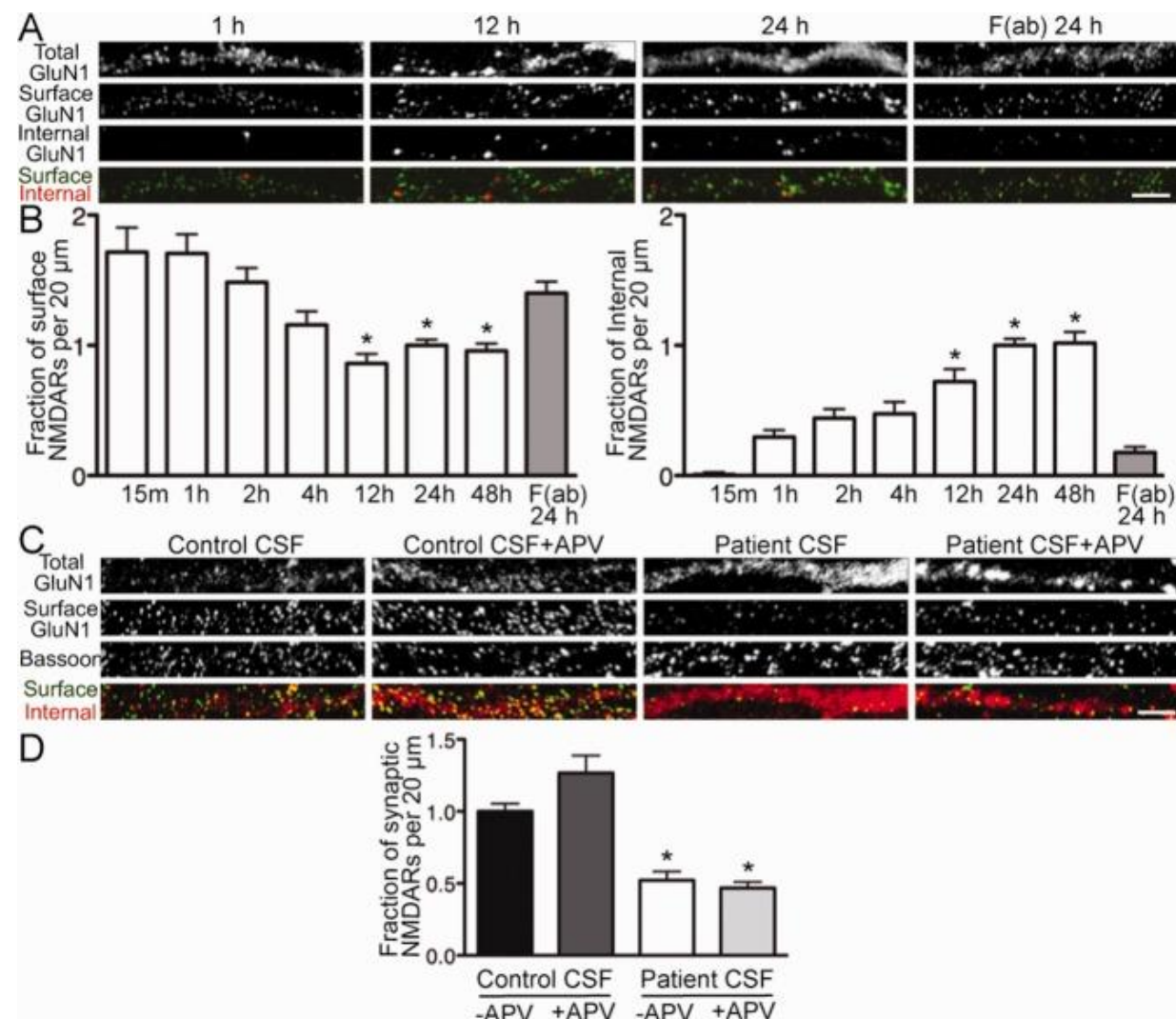
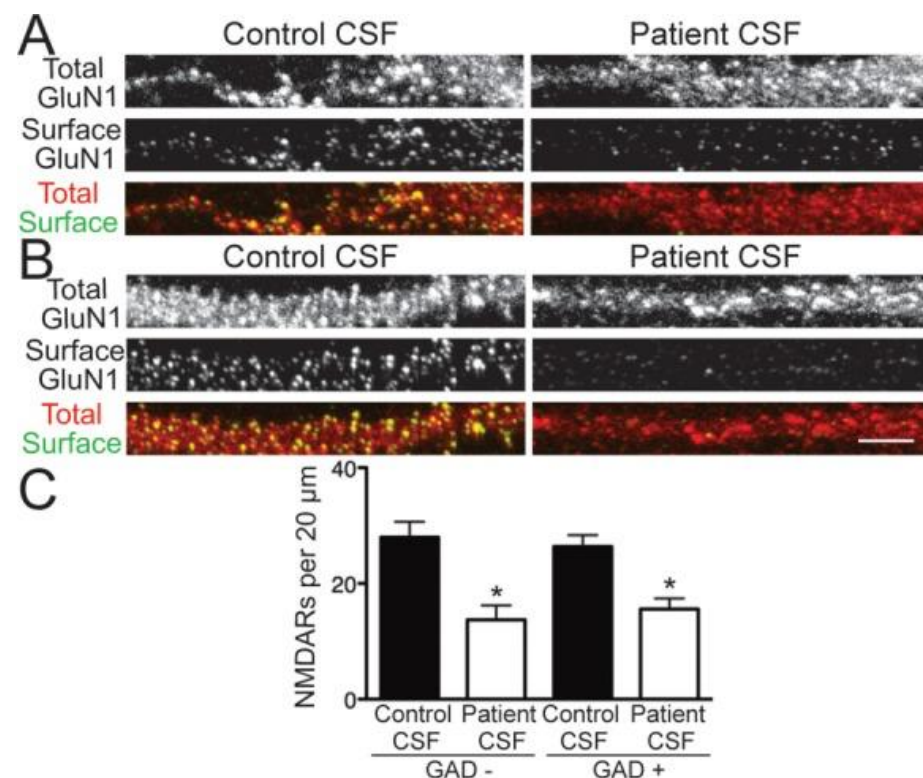
The four-stage course is characterized by a valley-like curve of mental status



Dalmau et.al, 2019

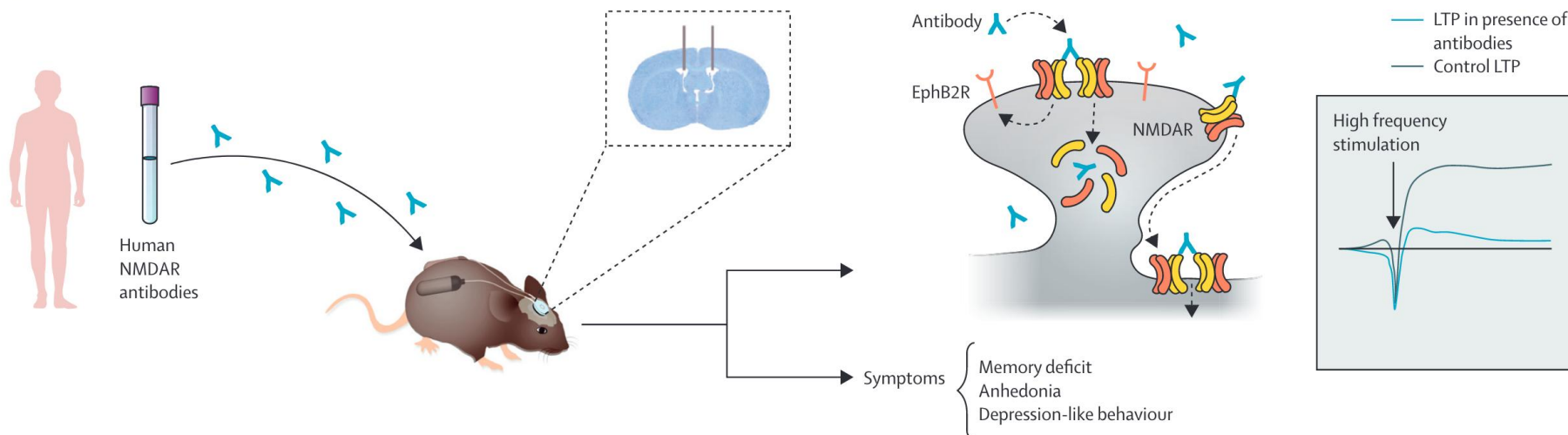
Mechanism verification

Antibodies in CSF mediate NMDAR downregulation through endocytosis of the receptor



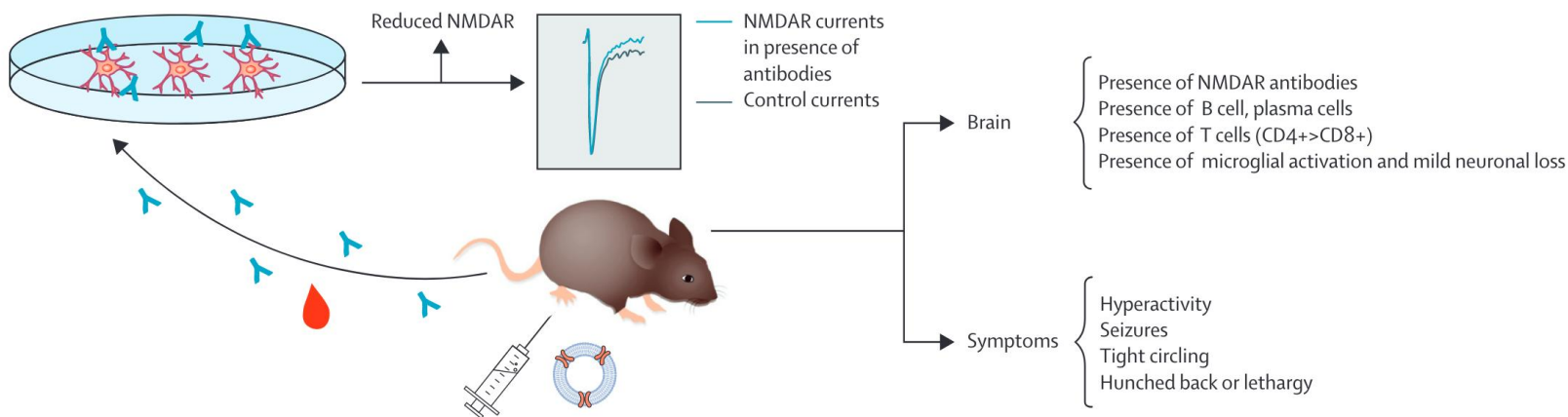
Establish animal models

B



passive immunity

C

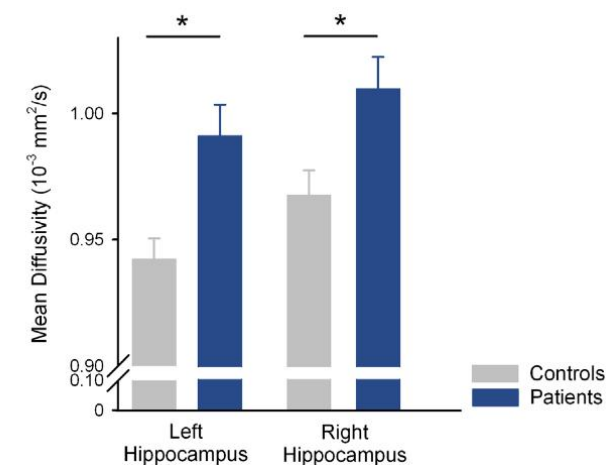
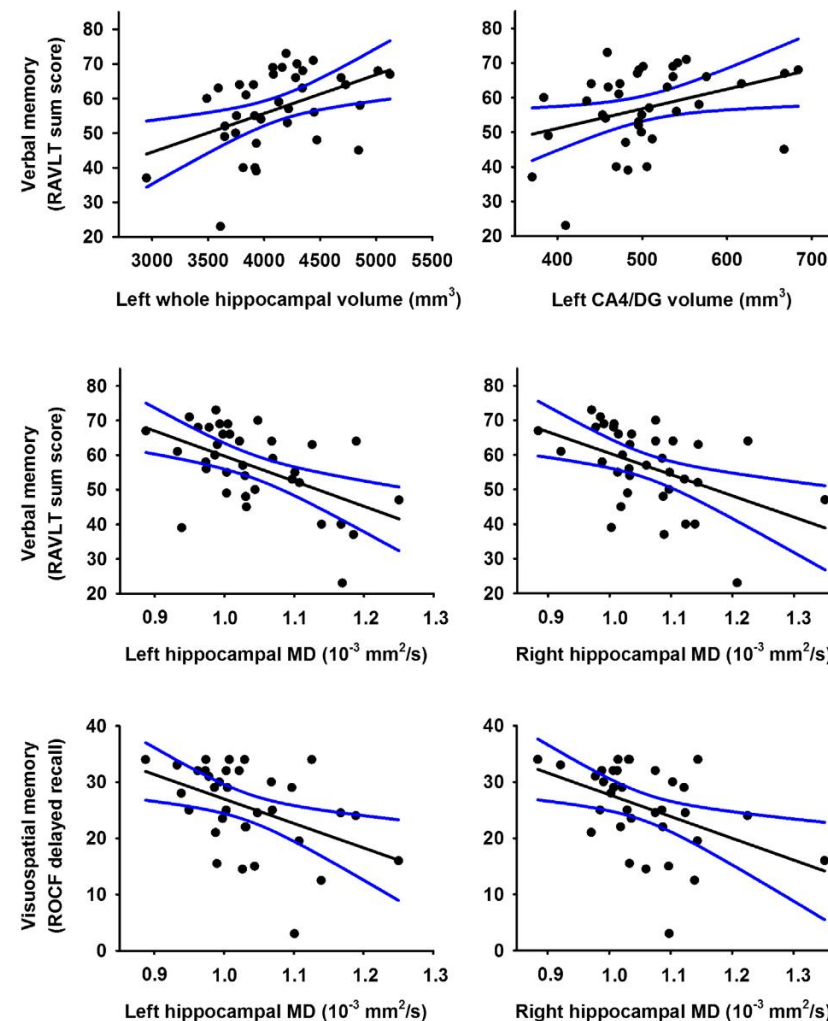
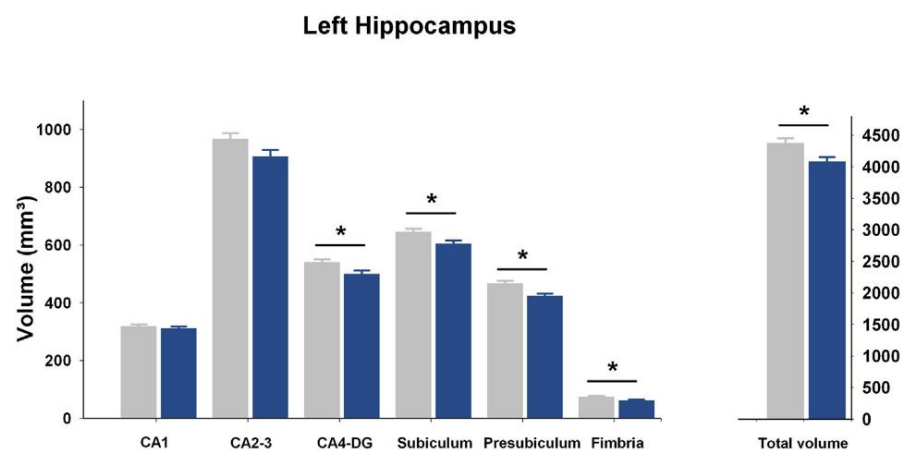
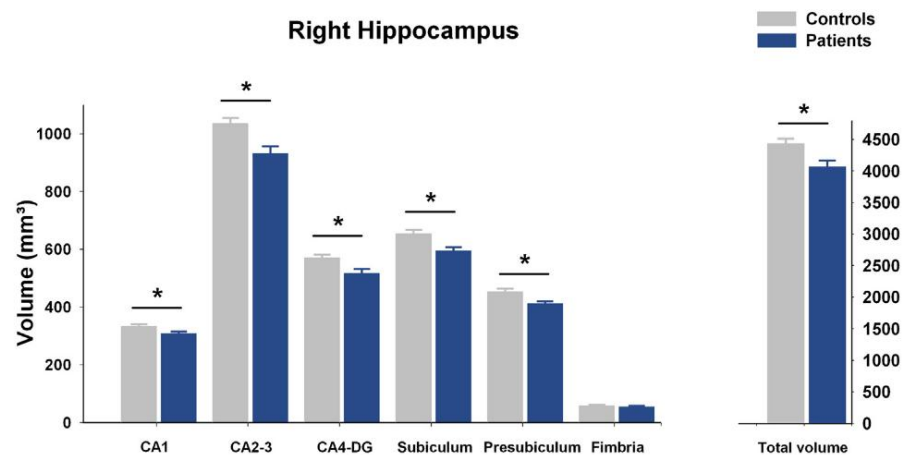


active immunity

Hippocampal Damage

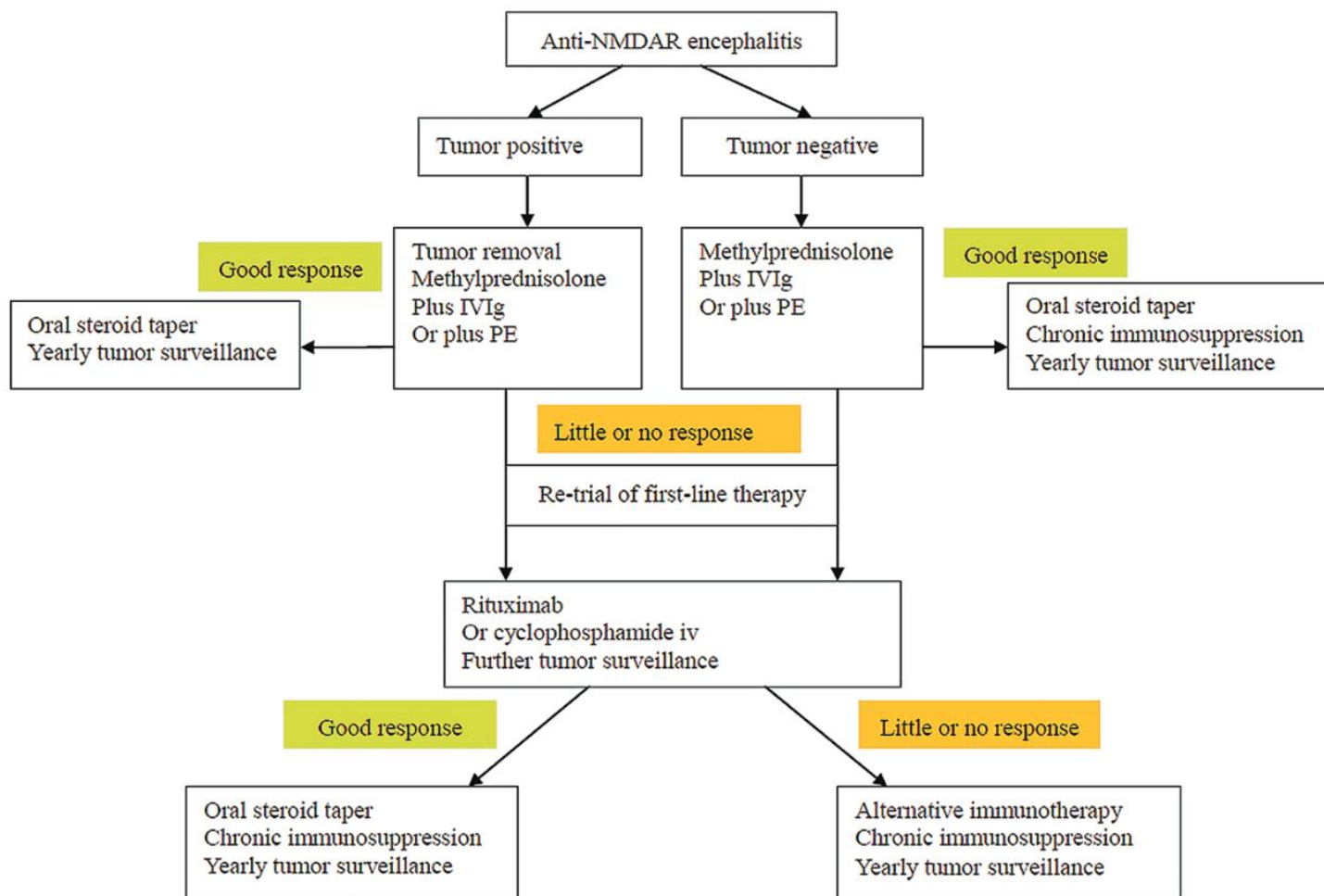
resting-state fMRI

**Impairment of
verbal and
visuospatial
memory**



Carsten et.al, 2016

Possible cures



First-line therapy

- glucocorticoids, GCs
- therapeutic plasma exchange, TPE
- intravenous immunoglobulin, IVIG

Second-line therapy

- rituximab, RTX
- cyclophosphamide, CTX



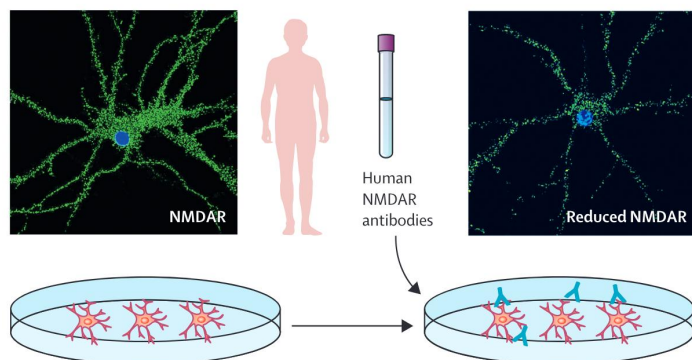
03

Discussion

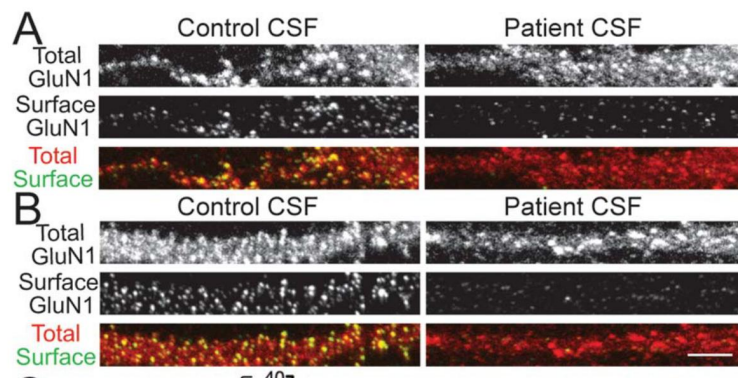


Discussion

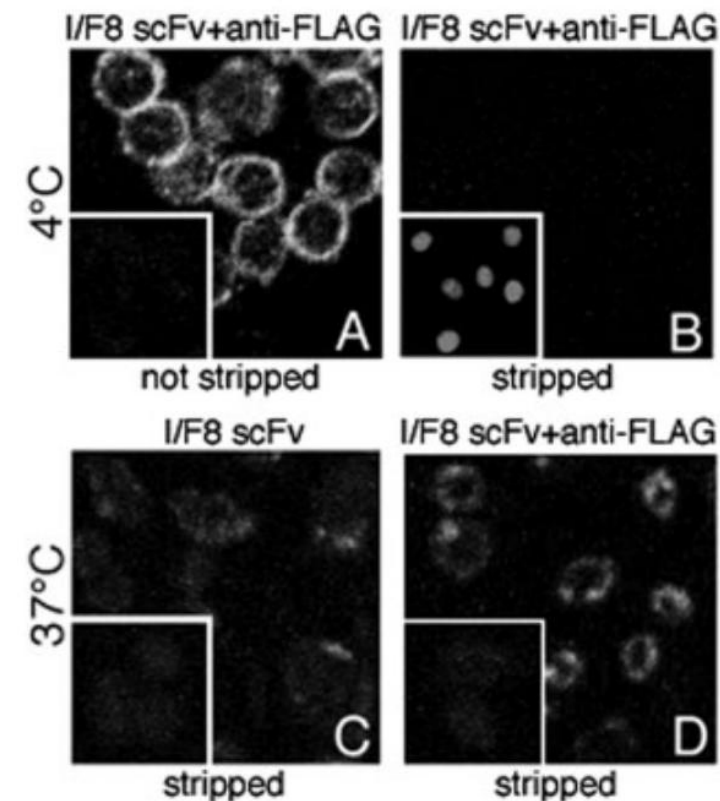
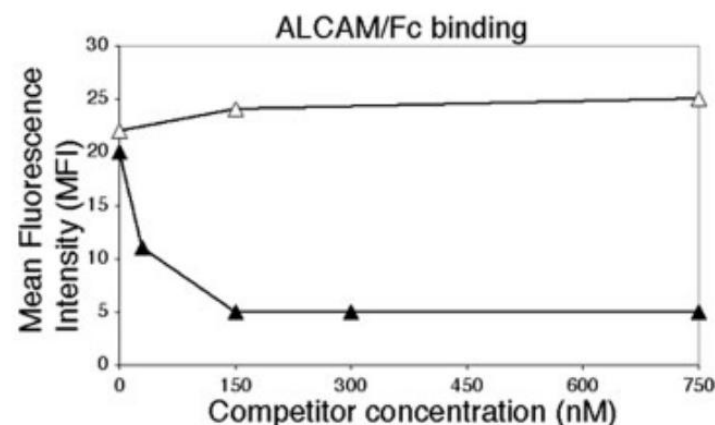
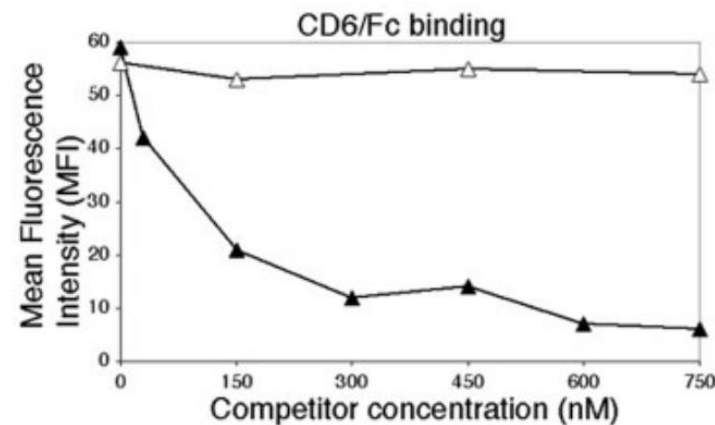
- Does immunofluorescent labeling of membrane proteins itself reduce the amount of membrane proteins?



Dalmau et.al, 2019



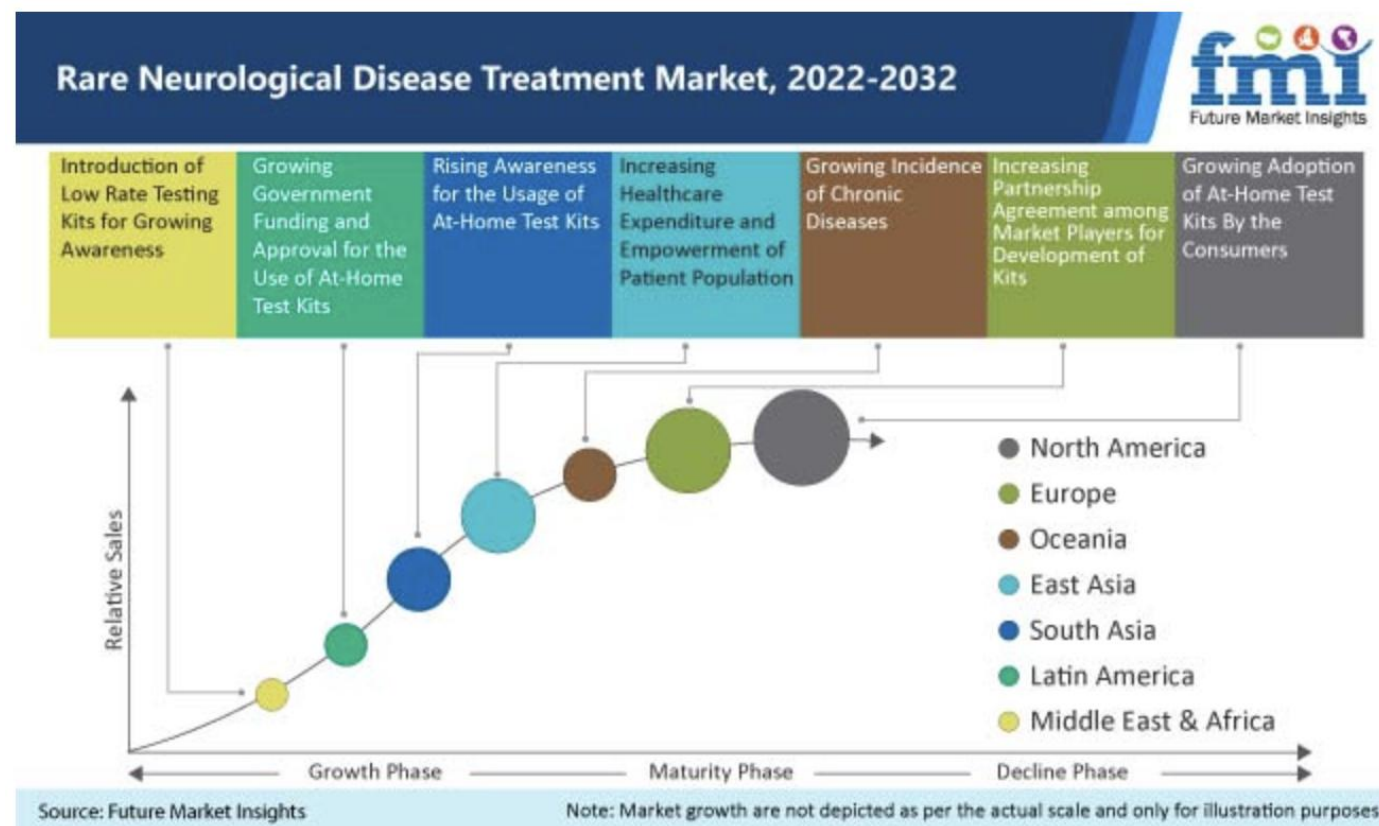
Moscato et.al, 2014



Tiziana et.al, 2005

Discussion

- Importance of focusing on rare neurological disorders
- Rare disorders often lack research funding and public awareness.
- Patients face prolonged diagnostic journeys and limited treatment options.
- Studying rare diseases can lead to breakthroughs in understanding more common conditions.
- Enhances quality of life and access to healthcare resources for affected individuals.



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Q & A



谢谢大家



北京大学
PEKING UNIVERSITY

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主讲人 刘家希

2024年5月28日

