

# Frequency of neurocysticercosis among people with neurological clinical manifestations: An updated systematic review (1990-2023)

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# What is Neurocysticercosis (NCC)?

“Neurocysticercosis (NCC) is a zoonotic helminthic infection of the human central nervous system (CNS) caused by larval cyst of *Taenia solium*.” .....*Adapted from CDC*



Fig: *Taenia solium*

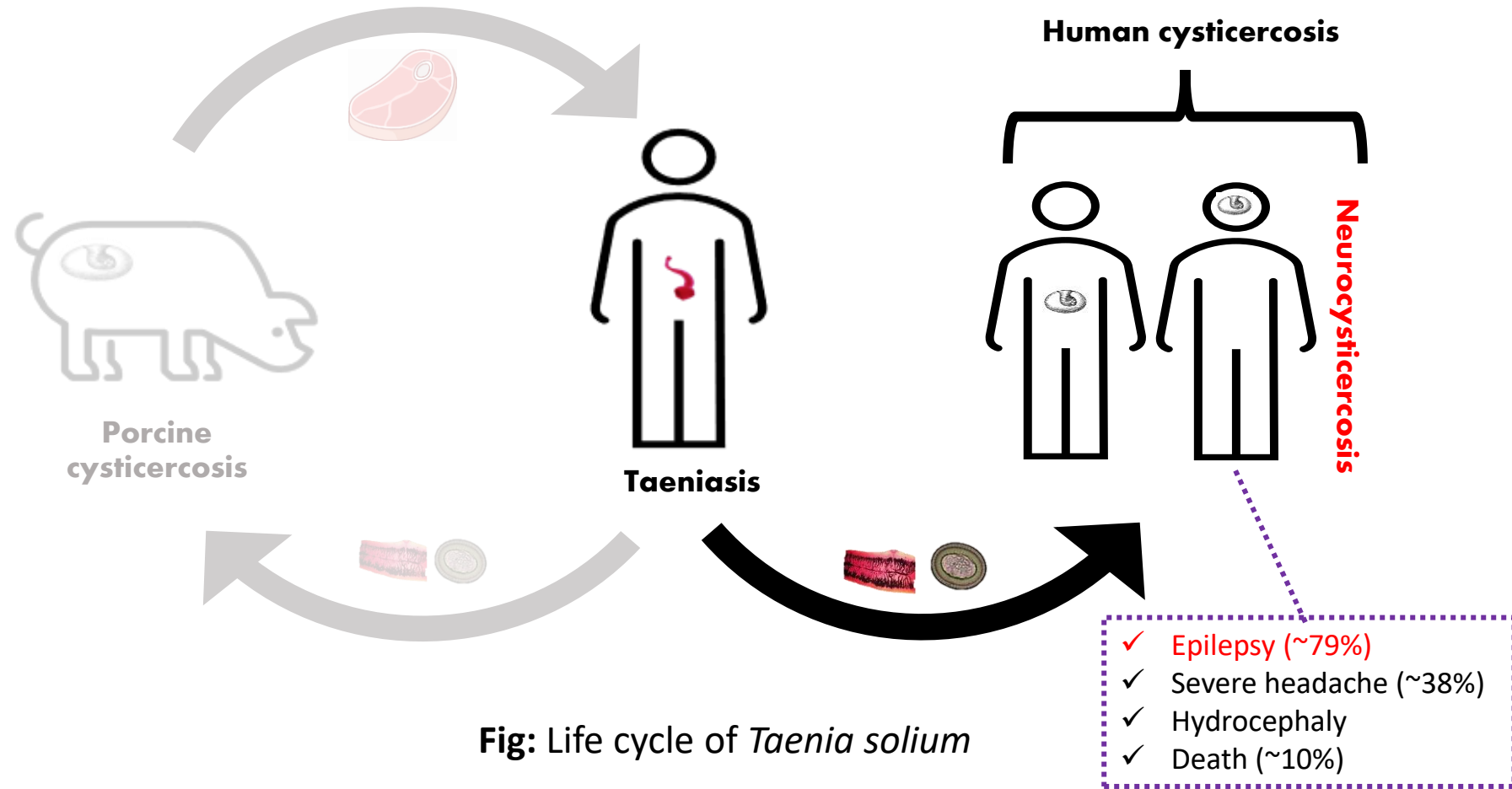


Fig: Life cycle of *Taenia solium*

# What are the challenges related to NCC?

- Reported in 70+ countries
- 1.24 to 2.8 million DALYs



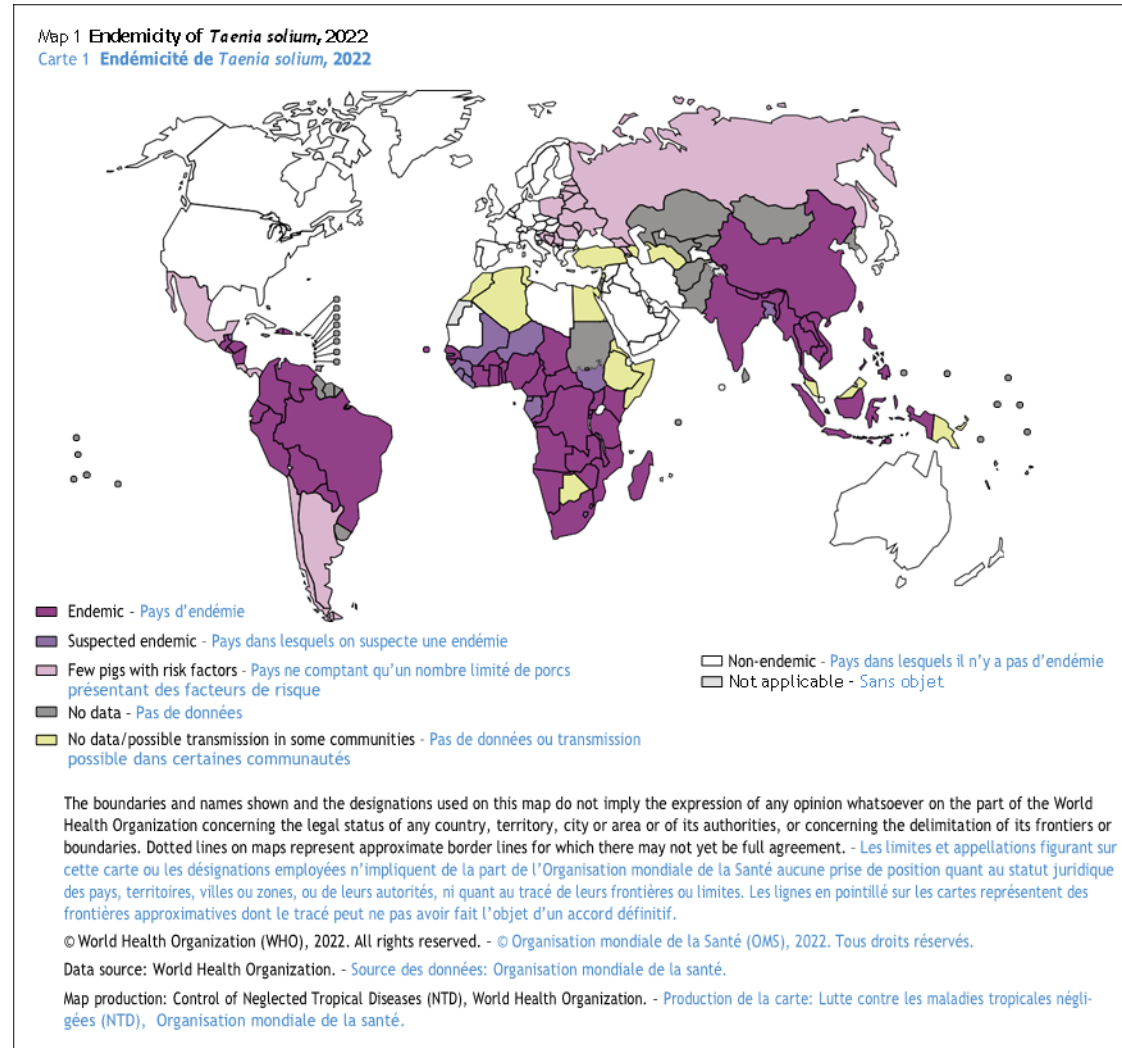
**Distribution Unknown**

- ✓ Pleomorphic disease
- ✓ No imaging-free rapid test



Credit: Images of CT and MRI were created in : <https://gemini.google.com/>

Source: Ferrari et al (2024); Torgerson et al (2015) ; Donadeu et al (2022) (Map)

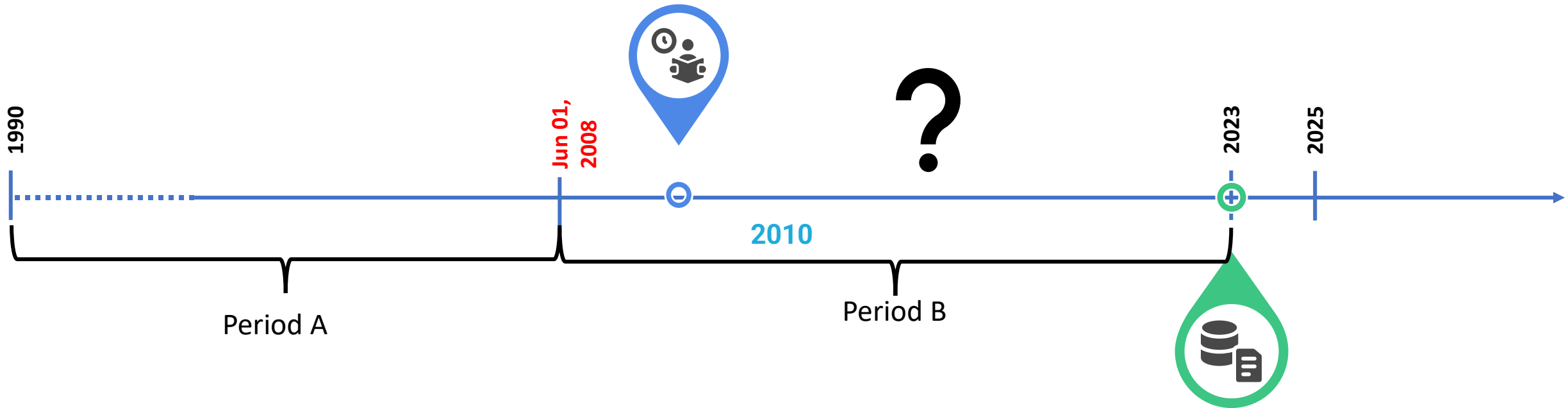


**Fig.** Map showing areas where *Taenia solium* is endemic

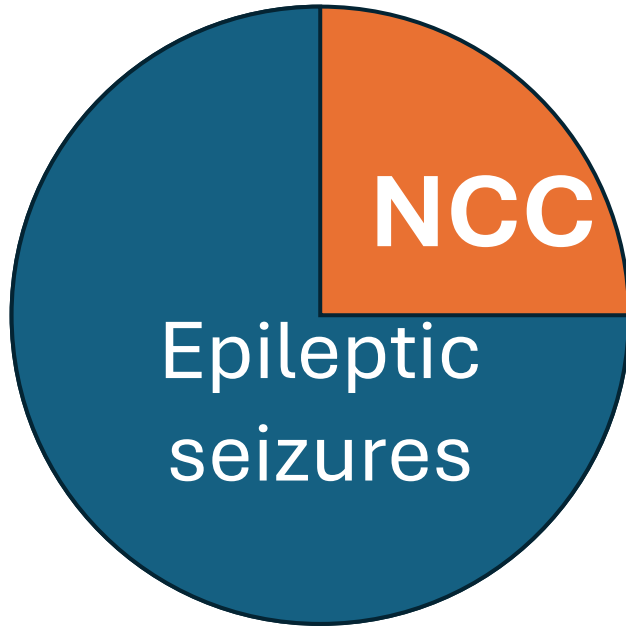
# What can we do? -Tracking NCC Prevalence

- Depend on published data
- NCC among people with epileptic seizure

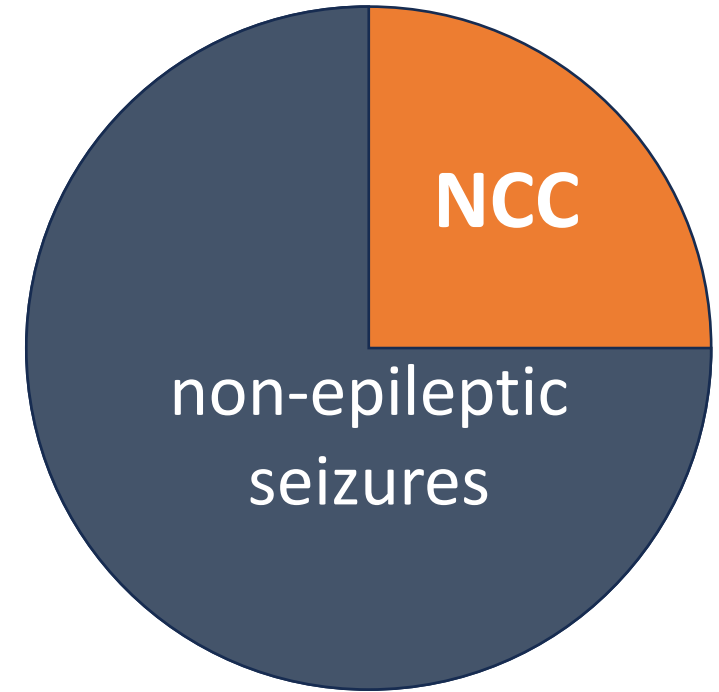
Meta-analysis estimates  
**29% (95%CI: 23% – 36%)**  
NCC in PWES (Ndimubanzi et al., 2010)



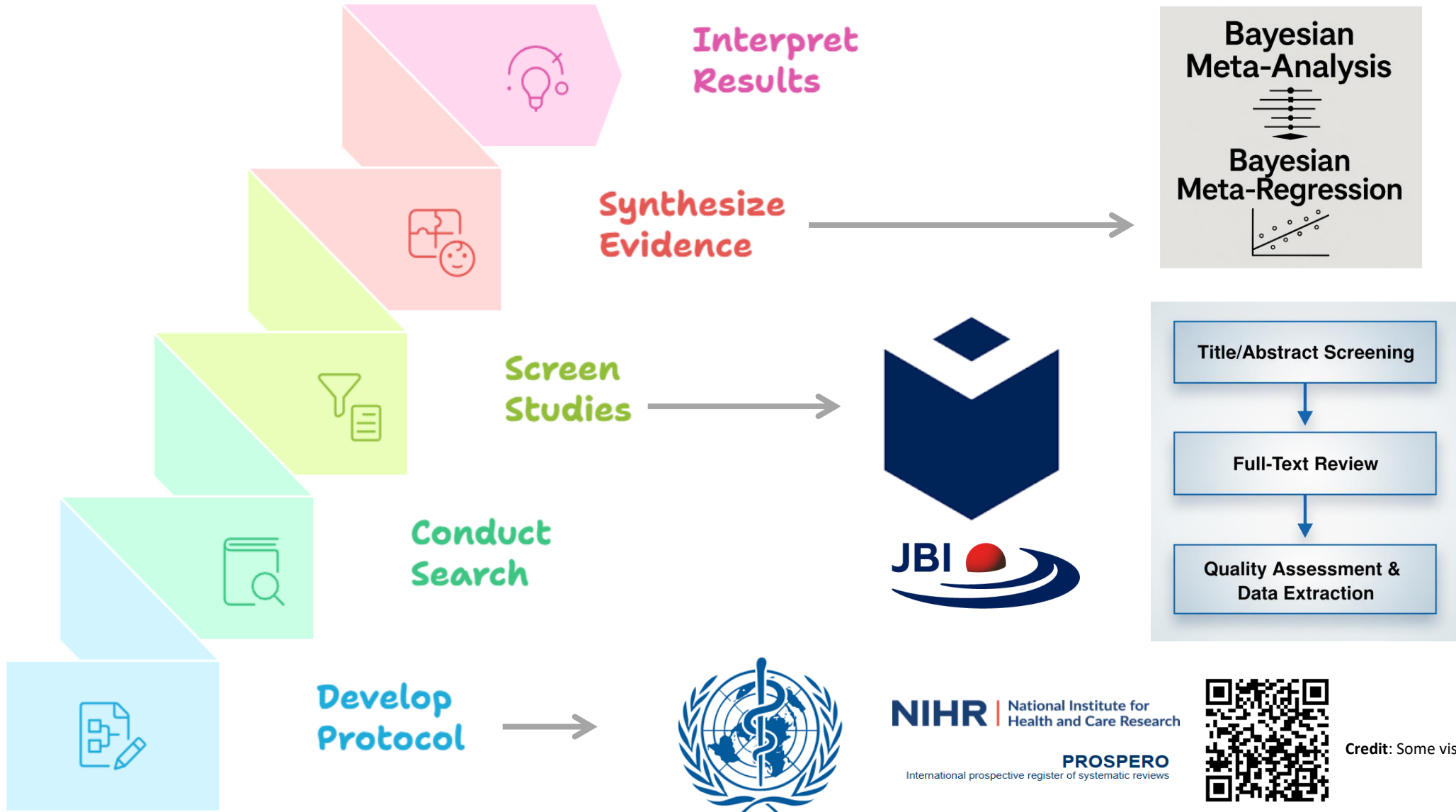
# Specific objective our study?



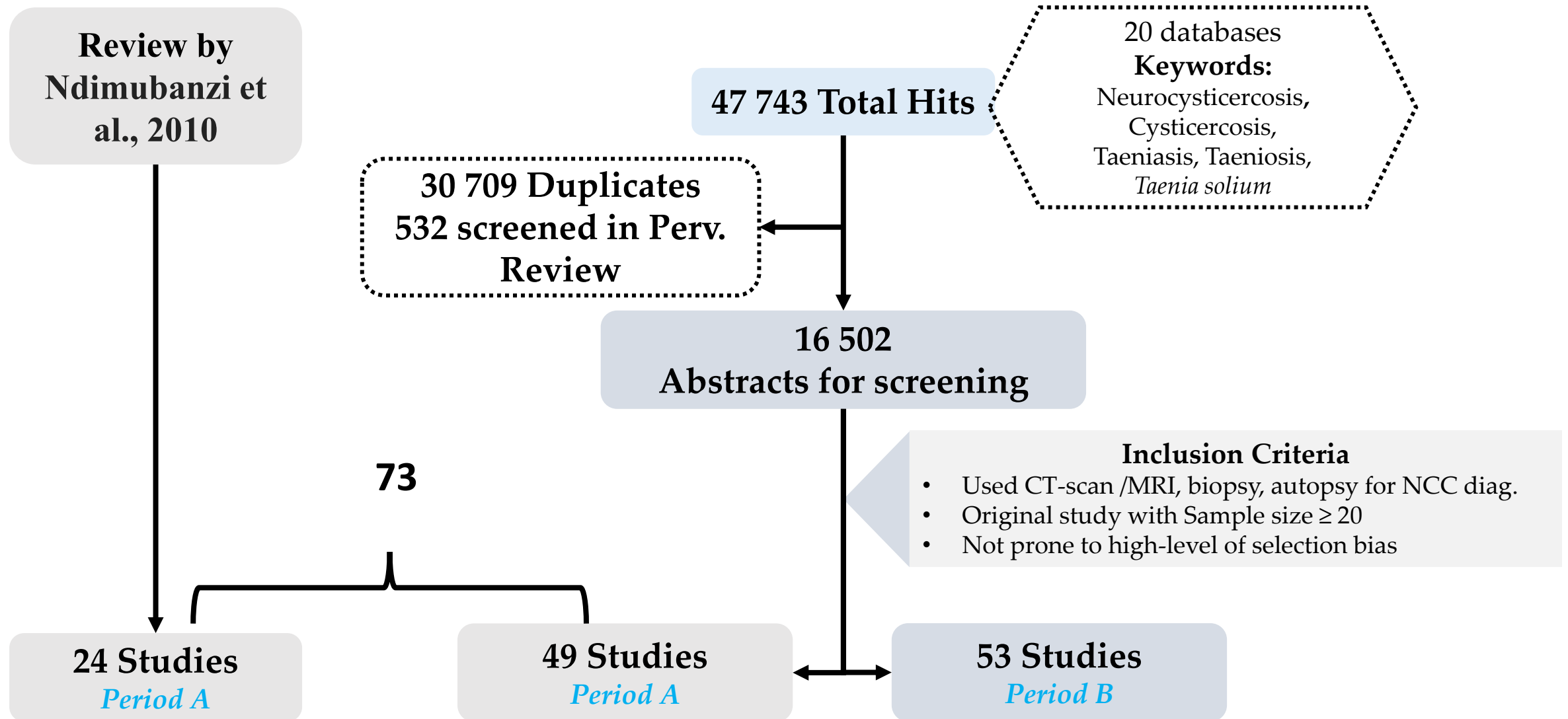
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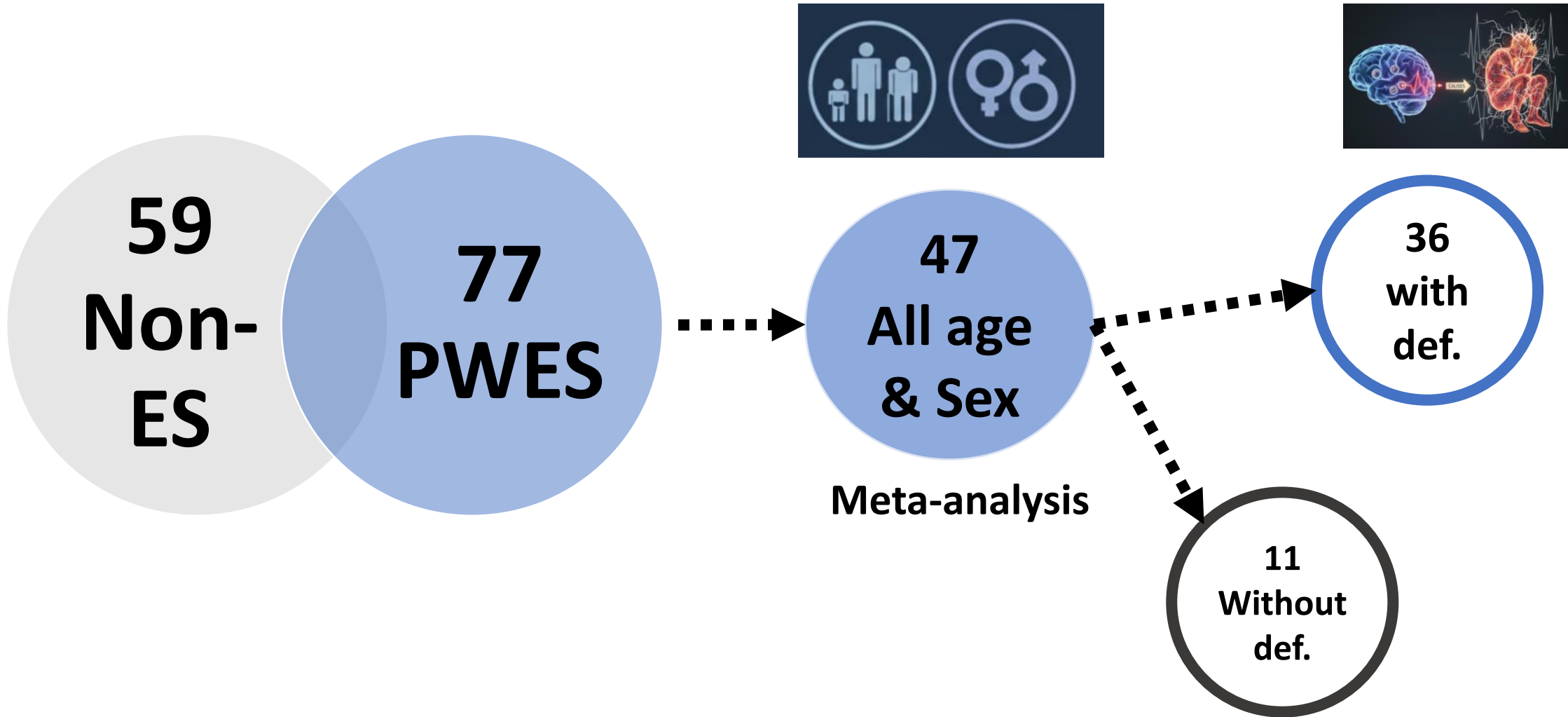
# How we did our study? – Systematic review



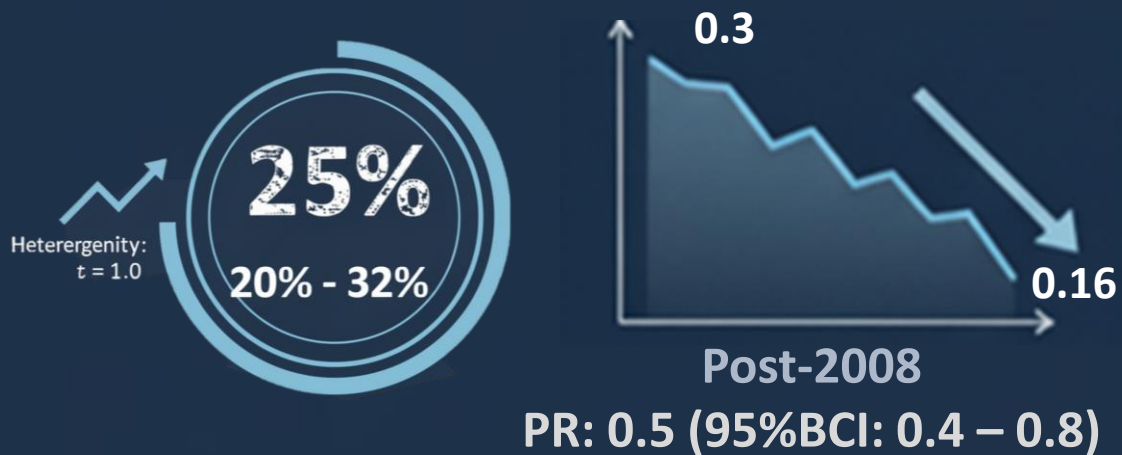
# What have we found? – Study selection



# What have we found? – Study characteristics



# NCC among people with epileptic seizures (36 studies)



Post-2008  
**40% - 50%**



# NCC among other study groups (59 studies)



**Asymptomatic: 8% - 29%**



**PW Headache: 4% - 28%**



**PW Imaging: 1% - 24%**



**I (Hospitalized): 0.5 - 2.3/10<sup>5</sup> PY**



## In a nutshell.....

- Variable NCC proportions across study populations
- **Meta-analysis was NOT possible** for any study population other than PWES

We call for ---

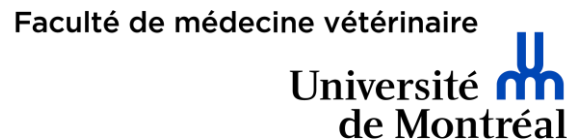
- **Better quality data** →  $\text{Pr}(\text{NCC} | \text{Non-ES})$ 
  - **Imaging-free diagnostic test**
- NCC proportions among PWES declined after 2008, the magnitude of the reduction was similar in all WHO regions.

## References

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  - <https://aistudio.google.com/>
  - <https://gemini.google.com/>
  - <https://steemit.com/>

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