- Drug-Resistant Epilepsy (DRE) patients struggle with reaction times (RT), especially in complex tasks.
- Newly diagnosed epilepsy (NDE) patients' RTs differ from Healthy Controls (HC) only in complex tasks.
- Task complexity is crucial; higher cognitive demands lead to greater RT delays in both DRE and NDE.

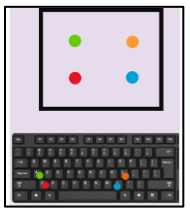
Reaction Times in Epilepsy Across Different Stages

Background: Seizures, along with cognitive and neuropsychological issues, significantly impact individuals with epilepsy. RT provides a basic measure of cognitive processing, reflecting broader cognitive functions. To better understand epilepsy's impact, it is recommended to study individuals with NDE separately, as they are less affected by antiepileptic medications, have fewer seizures, and a shorter duration of epilepsy.

In this study, we compared reaction times between DRE, NDE, and HC groups.

Methods:

4-Alternative Forced Choice Spatial Choice Task



Participants monitored a dot's location across four possible spots. They pressed a button to indicate its location and received color-coded feedback.

2-AFC Spatial Pattern Matching Task

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participants identified if two patterns of slashes were identical. Patterns were shown in pairs, and participants responded by pressing a button.

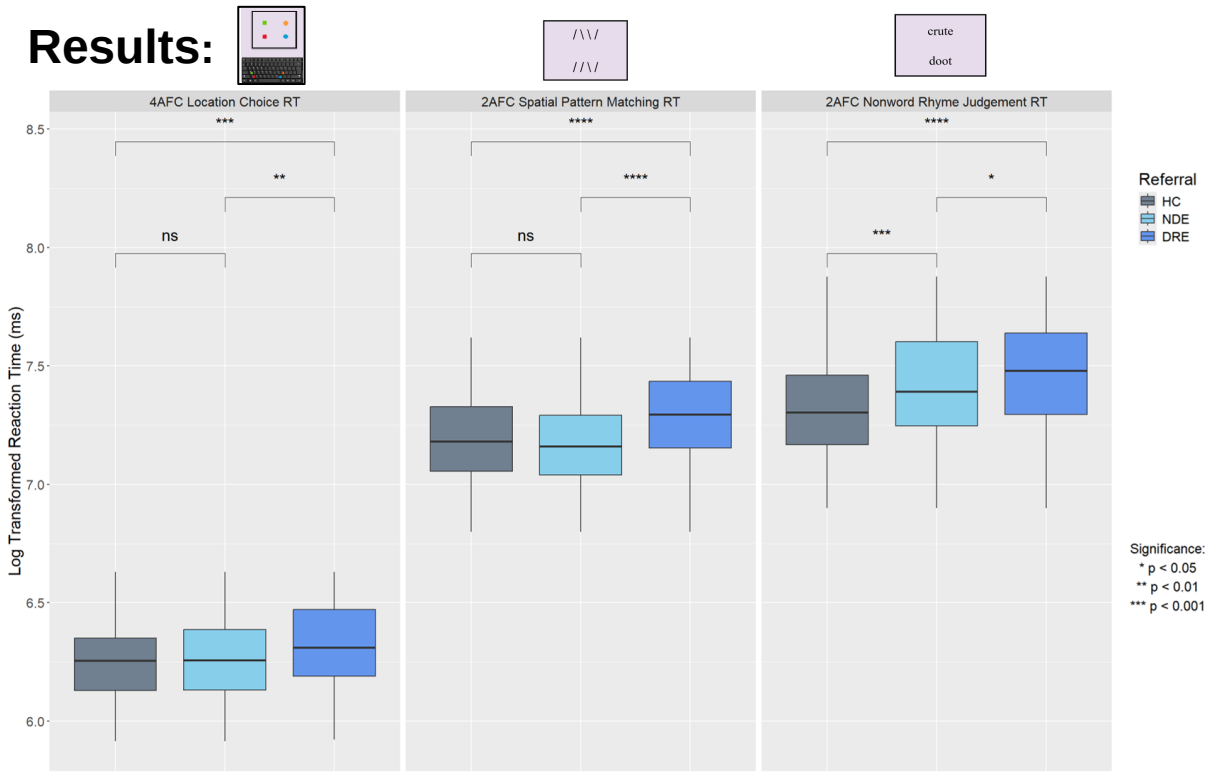
2-AFC Nonword Rhyme Judgment Task

crute

doot

Participants indicated whether two simultaneously presented nonword stimuli would rhyme if pronounced aloud.

Results:



	Healthy control group (n=137)	Newly diagnosed epilepsy (n= 133)	Drug-resistant epilepsy (n= 156)
Age (mean ± SD)	42 ± 13 Range (19 – 65)	34 ±13 Range (18- 64)	36 ±11 Range (18- 64)
Gender (female)	87 (63%)	73 (55%)	86 (55%)
IQ (mean ± SD)	110 ± 12	103 ±13	97 ±13

Discussion:

- DRE patients exhibit the slowest RTs, particularly in spatial and linguistic tasks.
- Greatest RT differences found between HC and NDE in the most complex tasks.
- RT deficits worsen with increased task complexity, highlighting cognitive challenges in DRE.
- Potential causes of RT slowing include ongoing seizures, polytherapy, and underlying epilepsy.
- Computer-based RT assessments are crucial yet underutilized in clinical practice.
- The notable RT slowing in DRE correlates with patients' reports of subjective mental slowing.

SCAN ME

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