

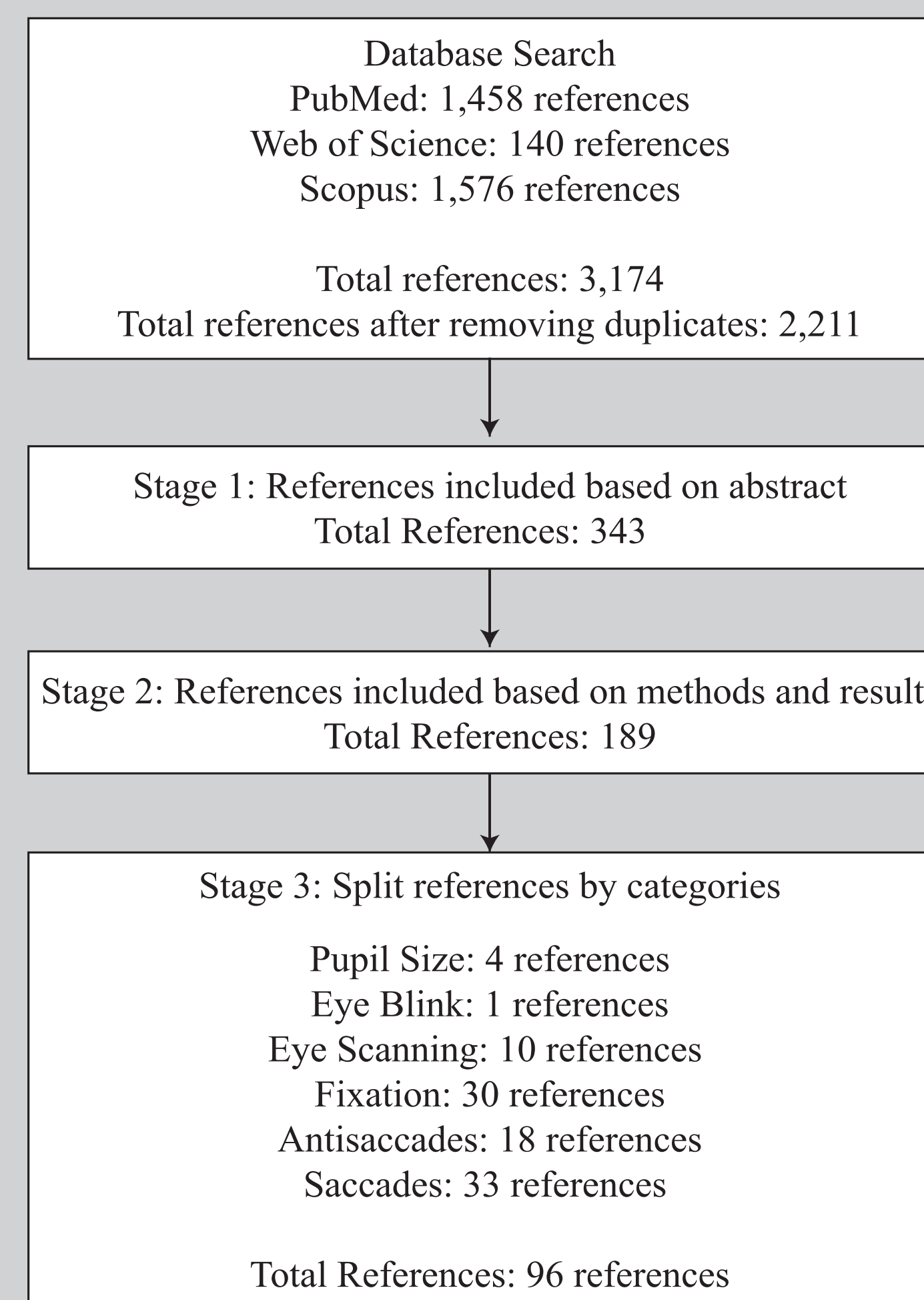
## INTRODUCTION

- It has been known since 1908 (Diefendorf & Dodge) that eye movements are different in people with schizophrenia.
- There is current interest in using oculomics for biomarkers in schizophrenia, with some diagnostic instruments claiming a 78% specificity (Morita et al 2019).
- We performed a meta-analysis of the literature to investigate replicability and robustness, and to identify subcategories of oculometric measurements that have most utility as a diagnostic tool.

## METHODS

- Inclusion/Exclusion Criteria**
- Published from 1990 to present
  - Healthy controls
  - Schizophrenia patients
  - Eye movement data
  - Visual stimuli
  - Mean & standard deviation
  - No EOG
  - No pediatric population

- Keyword Search Terms**
- Schizophrenia
  - Eye movement
  - Fixation
  - Saccades
  - Gaze
  - Pupil
  - Pursuit
  - Blink



Adjusted Cohen's D

$$(\text{prevailing sign}) \times \frac{(M_1 - M_2)}{\sqrt{[(SD_1^2 + SD_2^2) / 2]}}$$

## ACKNOWLEDGEMENTS

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## RESULTS

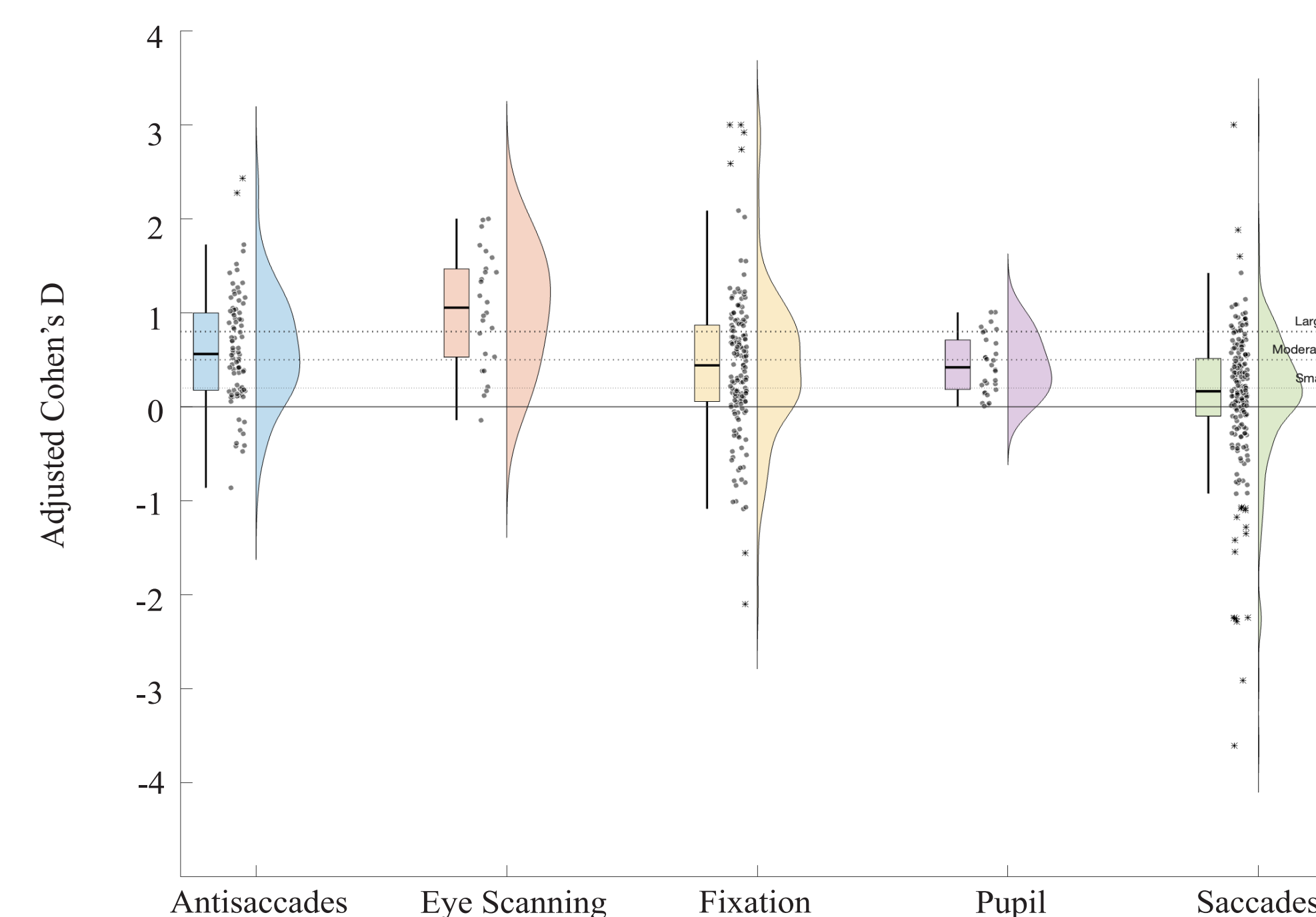
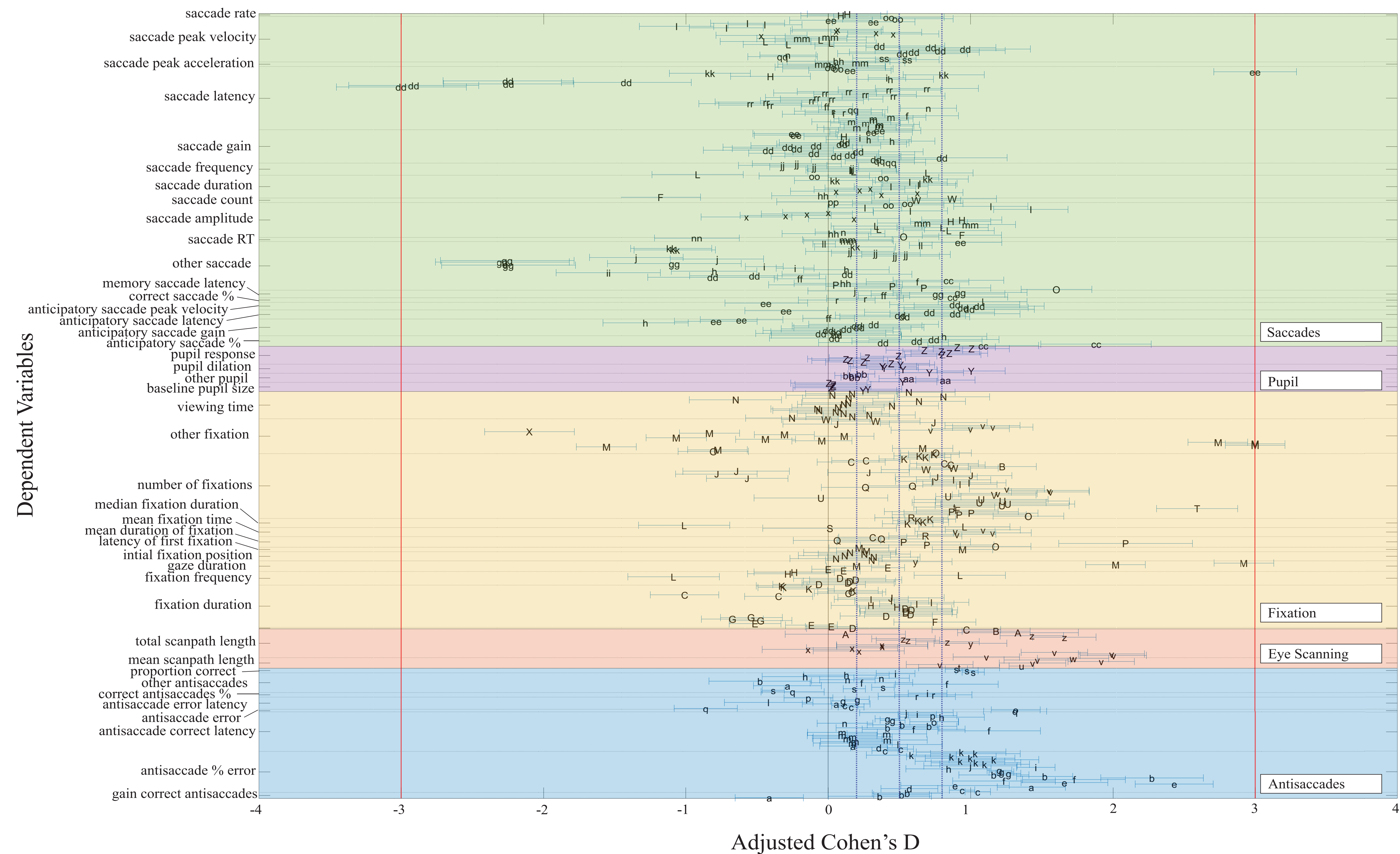


Figure 2 (left). This figure shows a violin plot of the distribution of dependent variables with the adjusted Cohen's D on the y-axis and the subcategories of eye movements on the x-axis.

Figure 1 (left). This figure shows a scatter plot with dependent variables plotted on the y-axis and the adjusted Cohen's D on the x-axis. The solid red x-lines denote the maximum caps placed. The dotted blue x-lines denotes the clinical significance range (small => 0.2, moderate => 0.5, large => 0.8). The data points represent the references. Scan QR code below to view the legend of references.



## SUMMARY

- Saccades and Fixation have been extensively researched, but their effect sizes are widely distributed.
- Eye Scanning has not been researched as much as Saccades and Fixation, however, this category has the largest average effect size.

## REFERENCES

1. Diefendorf AR, Dodge R. An experimental study of the ocular reactions of the insane from photographic records. *Brain*. 1908;31:451-489.
2. Morita, K., Miura, K., Kasai, K., & Hashimoto, R. (2020). Eye movement characteristics in schizophrenia: A recent update with clinical implications. *Neuropsychopharmacology reports*, 40(1), 2-9. <https://doi.org/10.1002/npr2.12087>