



# STRUCTURAL BRAIN IMAGING IN INFANT MACAQUES EXPOSED TO ZIKA VIRUS PRENATALLY

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## BACKGROUND

- Prenatal Zika virus (ZIKV) exposure negatively impacts brain development
- Childhood developmental deficits
  - Early intervention is crucial
  - Therapies known to maximize function

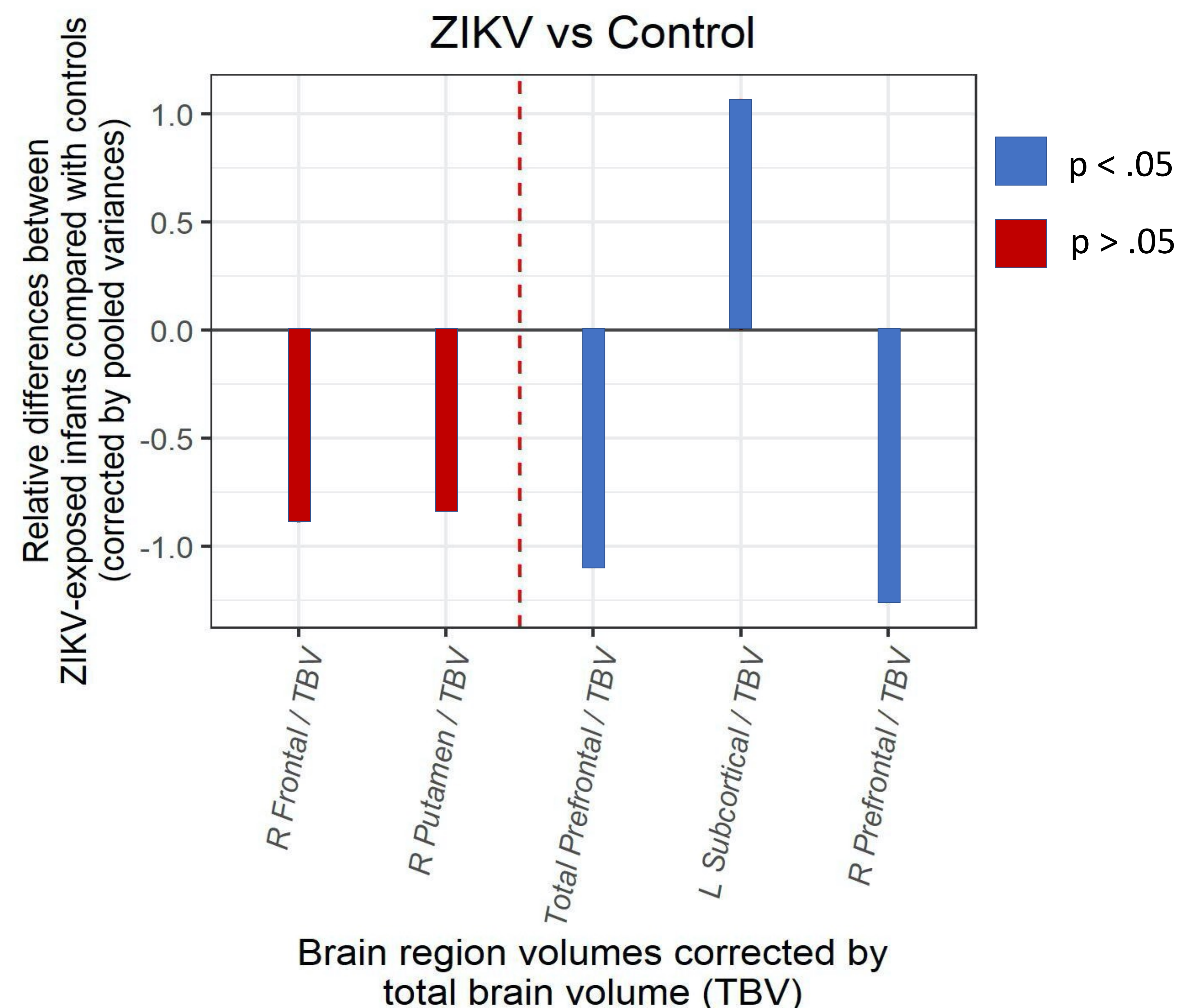
**Hypothesis:** Brain abnormalities in infancy predate developmental deficits in childhood.

## METHODS

- $n = 18$  pregnant rhesus macaques
  - 11/18 inoculated with Zika virus
  - 7/18 macaques inoculated to a saline as controls.
- Inoculation around gestational day 30 or 45
- Infants delivered via cesarean section at term.
- MRI scans completed at 3 months of age
- Volumes for 21 brain regions (left, right, total)

Significant differences were found in cortical brain structures involved in **motor function** in ZIKV exposed infants compared with control.

These differences indicate a possible early predictor for developmental deficits in infants



R frontal ( $p=0.0785$ ), R putamen ( $p=0.0740$ ), Total prefrontal ( $p=0.0305$ ), L subcortical ( $p=0.0270$ ), R prefrontal ( $p=0.0139$ )

## CONCLUSIONS

Differences in subcortical, prefrontal, frontal, and putamen volumes indicate a possible early predictor for developmental deficits (specifically motor deficits) in infants.

## ADDITIONAL KEY INFORMATION

- Developmental outcomes will be defined up to 3 years of age
  - Compared to brain region volumes
  - Structural MRI in future

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