

# midFEMA Manuscript

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**Abstract**—The midFEMA research project is aimed at identifying and analyzing neurodevelopmental biomarkers for severe behavioral and emotional problems in youth. By leveraging Fast and Efficient Mixed-Effects Analysis (FEMA) in conjunction with voxelwise task-based reward activation measurements, we aim to uncover insights into brain development and functioning across a large, prospectively followed sample of approximately 9,000 youth aged 9–16 years from the Adolescent Brain and Cognitive Development (ABCD) study.

**Index terms**—Longitudinal, fMRI, DBD, FEMA, MID

## I. INTRODUCTION

Introduce the research topic, state the research problem, and outline the study’s objectives. Provide background information to set the context. This is an exmaple in-text citation [1]

### A. Background

*Provide a brief review of the pertinent literature, highlighting the gaps your study aims to fill.*

### B. Objectives

*State the specific research questions or hypotheses your study addresses.*

## II. METHODS

Describe the methodological approach, detailing how the study was conducted, how data was collected, and how analyses were performed.

### A. Participants

*Describe the demographic characteristics of the study participants, including how they were selected, recruited, and any inclusion or exclusion criteria.*

### B. Measures

*List the instruments or tools used to collect data, describing each measure’s purpose and any relevant psychometric properties.*

### C. Analytic Plan

*Detail the statistical tests or models employed to analyze the data, including any software used.*

## III. RESULTS

Present the findings of the study, supported by statistical analysis, tables, and figures as necessary.

### A. [Subsection Title]

*Present specific findings related to a particular aspect of the study, supported by data.*

### B. [Subsection Title]

*Discuss another set of findings, providing details on the analysis and interpretation.*

## IV. DISCUSSION

Interpret the results, discussing their implications in the context of existing literature. Address the study’s limitations and suggest directions for future research.

### A. Interpretation of Findings

*Discuss how your findings contribute to the existing body of knowledge and their practical implications.*

### B. Limitations

*Acknowledge any limitations of your study and their potential impact on the findings.*

### C. Future Directions

*Suggest areas for future research that could build on your findings or address limitations.*

## V. CONCLUSION

Summarize the main findings and their implications. Conclude with a statement that reflects the significance of the study and its contributions to the field.

## VI. ACKNOWLEDGMENTS

*Acknowledge anyone who contributed to the research but does not meet authorship criteria, along with any funding sources.*

## VII. REFERENCES

*List all sources cited in your manuscript, formatted according to your discipline's preferred citation style.*

## VIII. APPENDICES

*Include any additional material that is pertinent to the study but would be too distracting or bulky to include in the main body of the manuscript.*

## BIBLIOGRAPHY

- [1] R. Astley and L. Morris, "At-scale impact of the Net Wok: A culinarily holistic investigation of distributed dumplings", *Armenian Journal of Proceedings*, vol. 61, pp. 192–219, 2020.