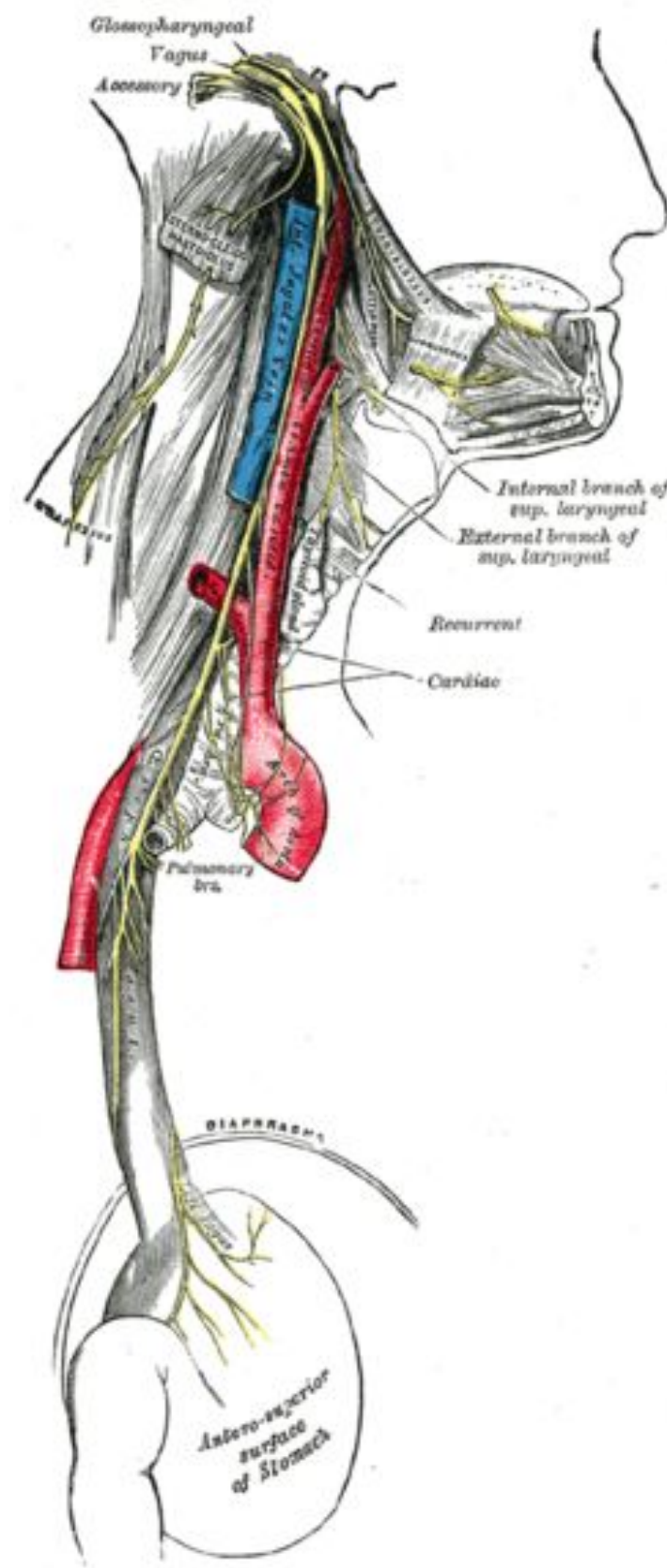


I. INTRODUCTION & SUMMARY

Figure 1: Depiction of Vagus Nerve



- **Vagus nerve** is known to control body functions involuntarily.
- **Heart rate variability:** occurs when resting or exercising
- **Respiratory sinus arrhythmia:** when at rest vagus nerve is constricted.
- Higher heart rate and more stress = *less variability*

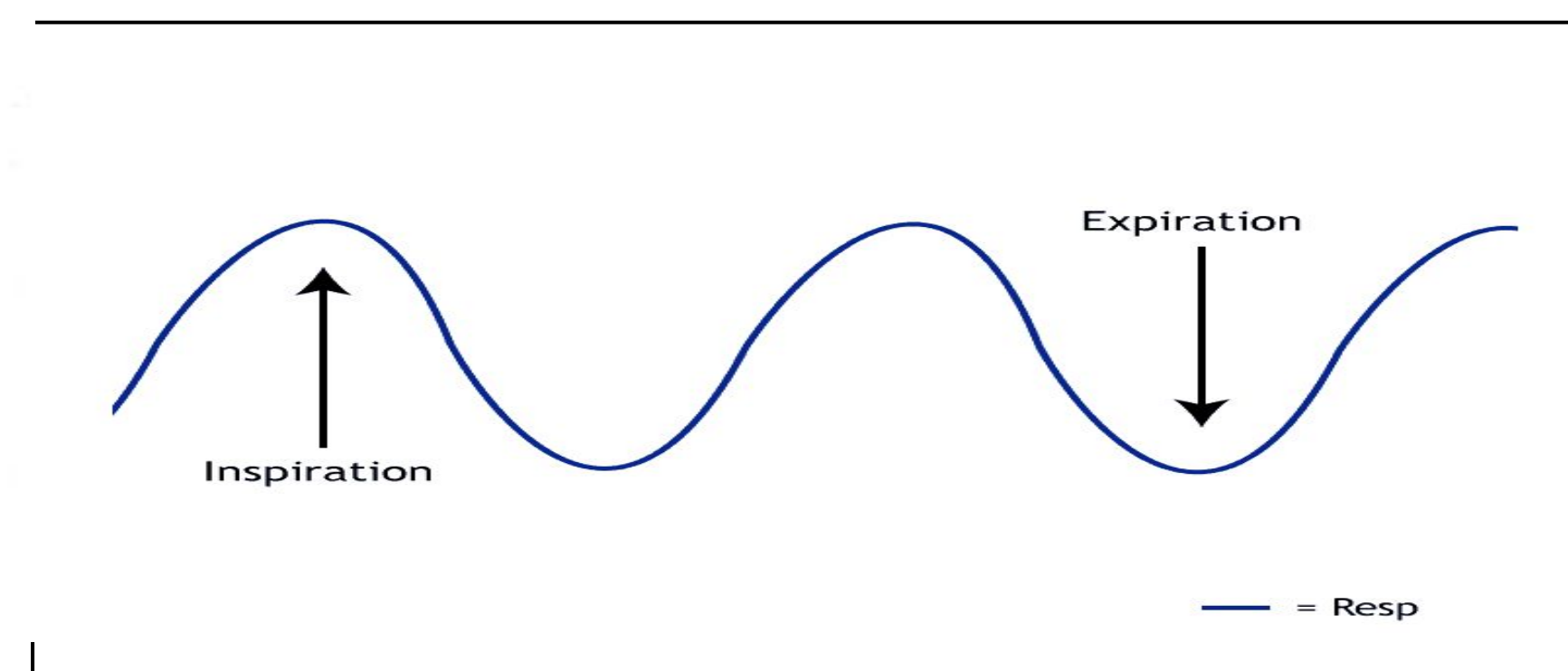


Figure 2: This figure shows the correlation between inspiration and expiration, which is key to interpreting respiratory sinus arrhythmia. This is key to also addressing heart rate variability.

- In this research women over the ages of 35 and up (with oldest of 50 years old) are being studied through a manual data analysis utilizing Google Excel Sheets.
- **Thesis:** How low heart rate variability can be correlated with different stressors in women ages 35-50.

III. RESULTS

Figure 3A: Correlation graph between Z stress and Age

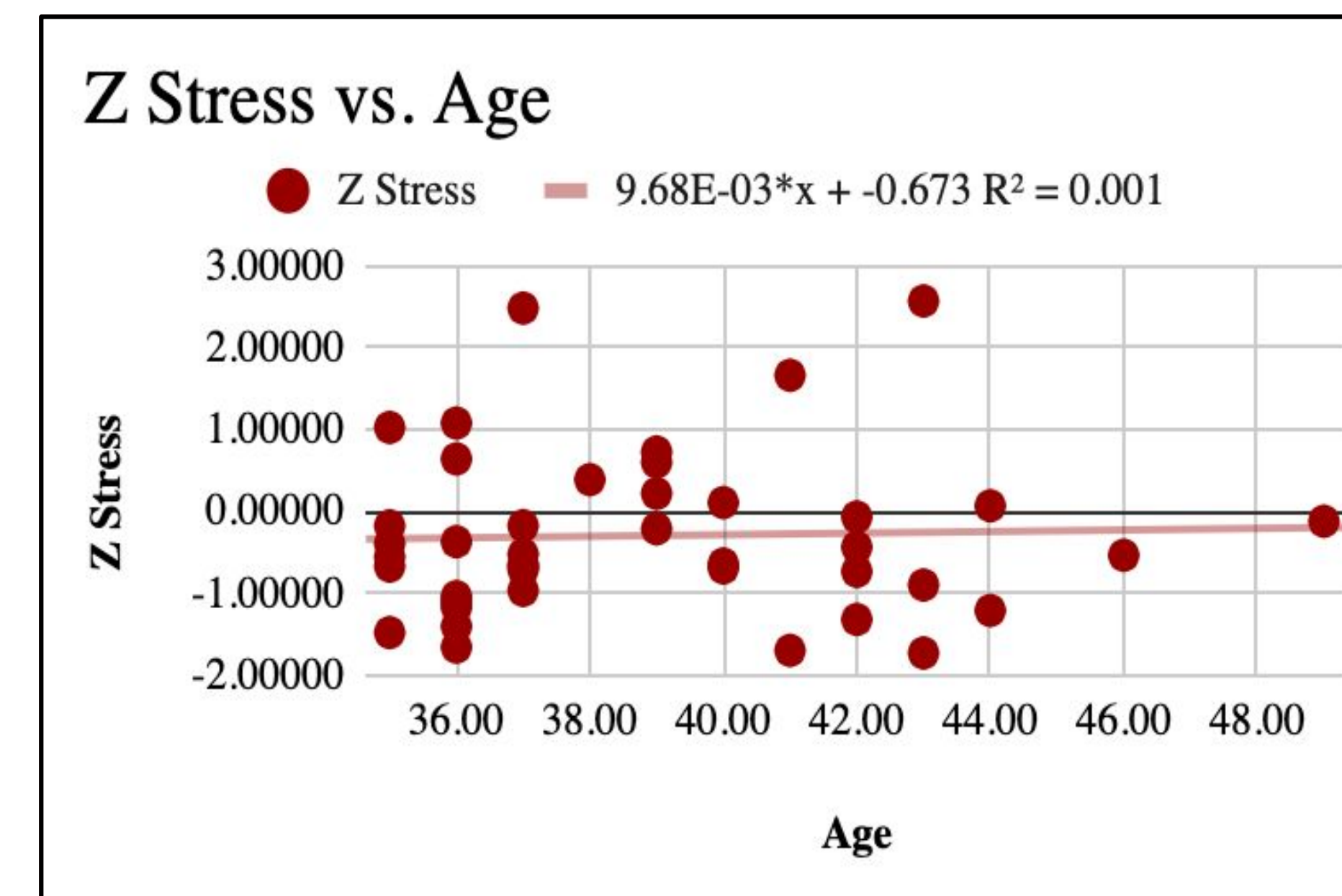


Figure 3B: Correlation graph between Heart Rate Variability and Z stress

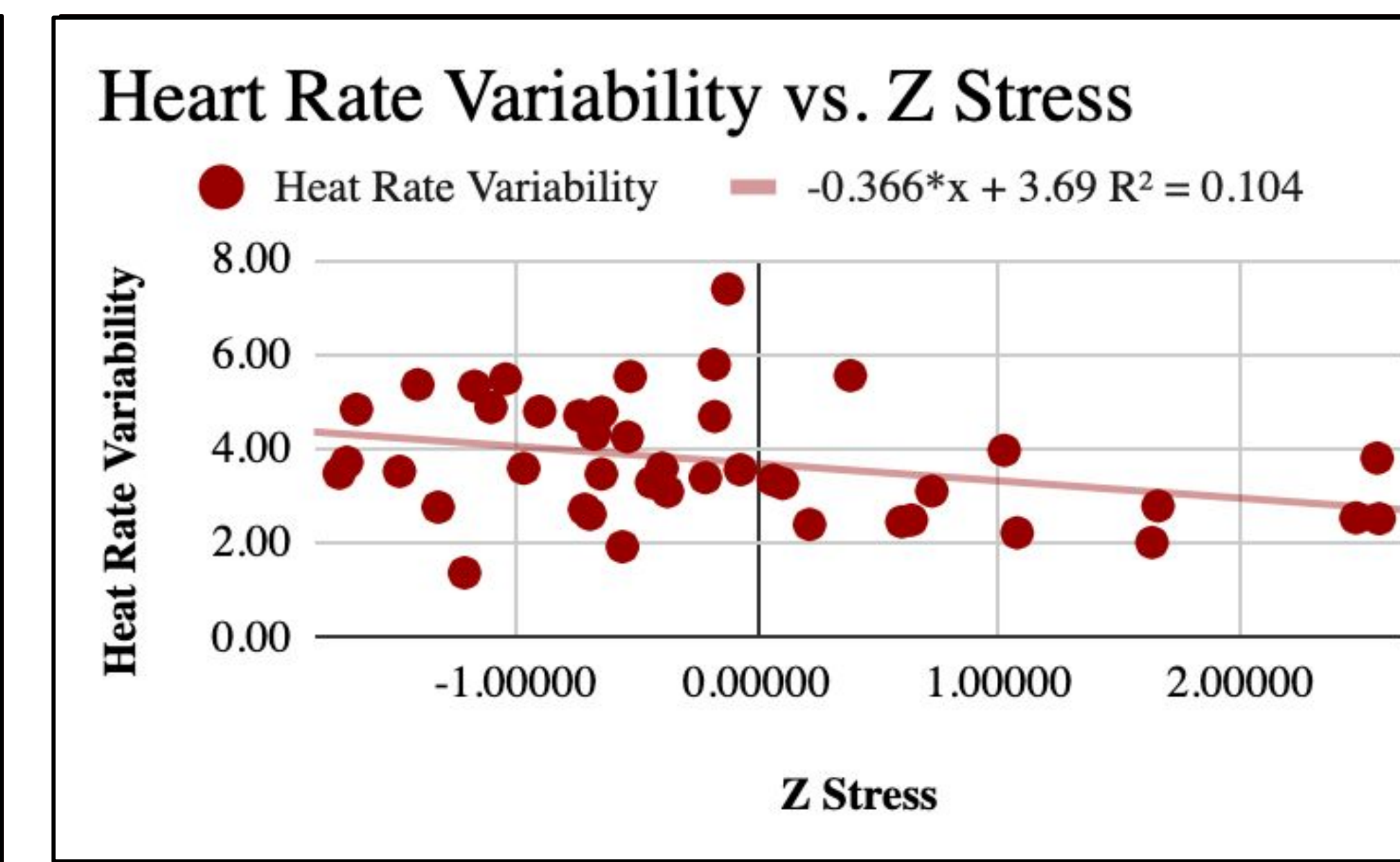
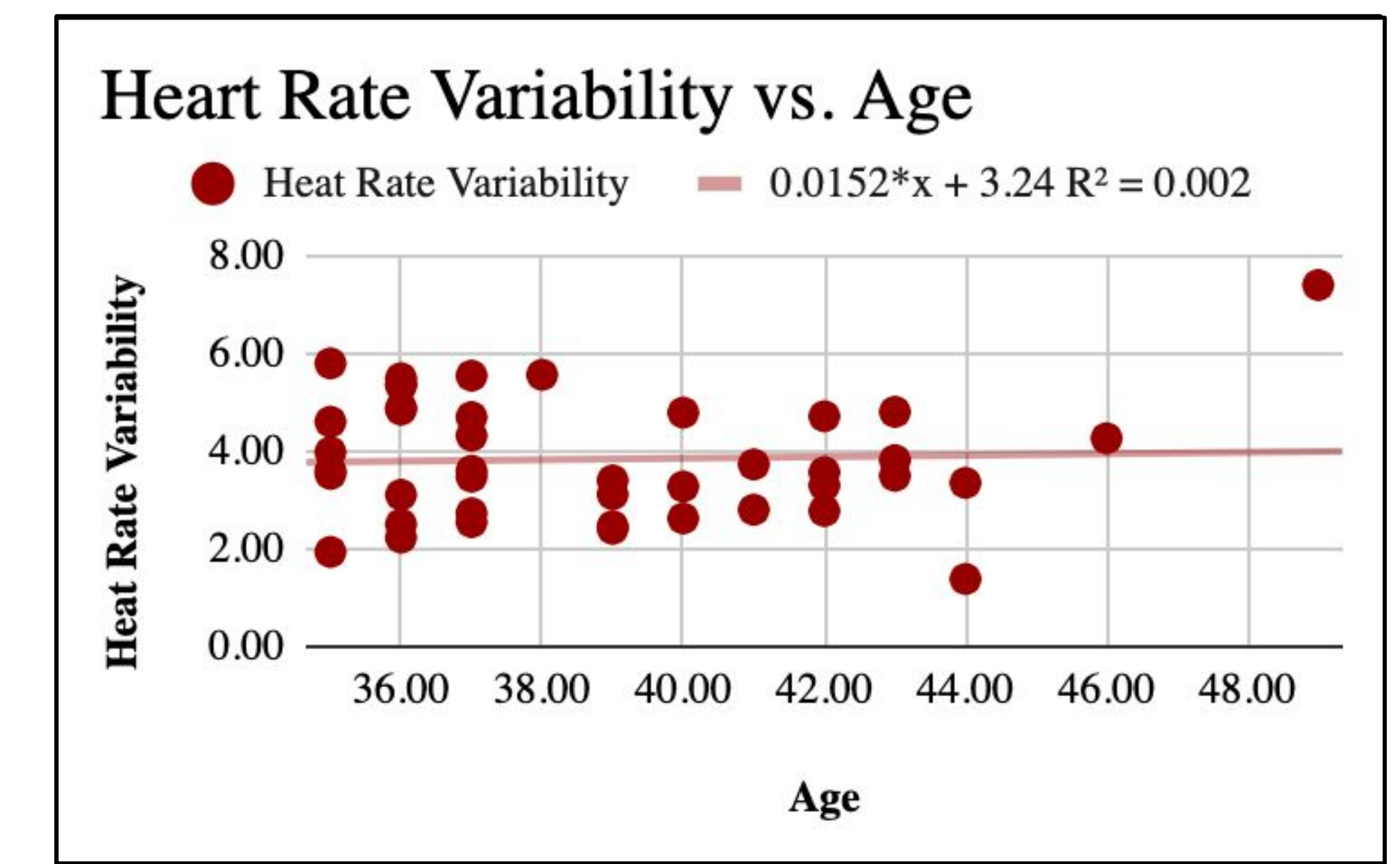


Figure 3C: Correlation graph between Heart Rate Variability and Age



All graphs contain R^2 value to indicate correlation

- Initial hypothesis was that a negative correlation would be observed in figure 3A and a predicted positive correlation would be found in figure 3C.
- High variability may show optimal results, however, preliminary results are still in the works.
- Three correlation graphs made and other graphs utilizing other data sets are a potential result.

II. MATERIALS & METHODS

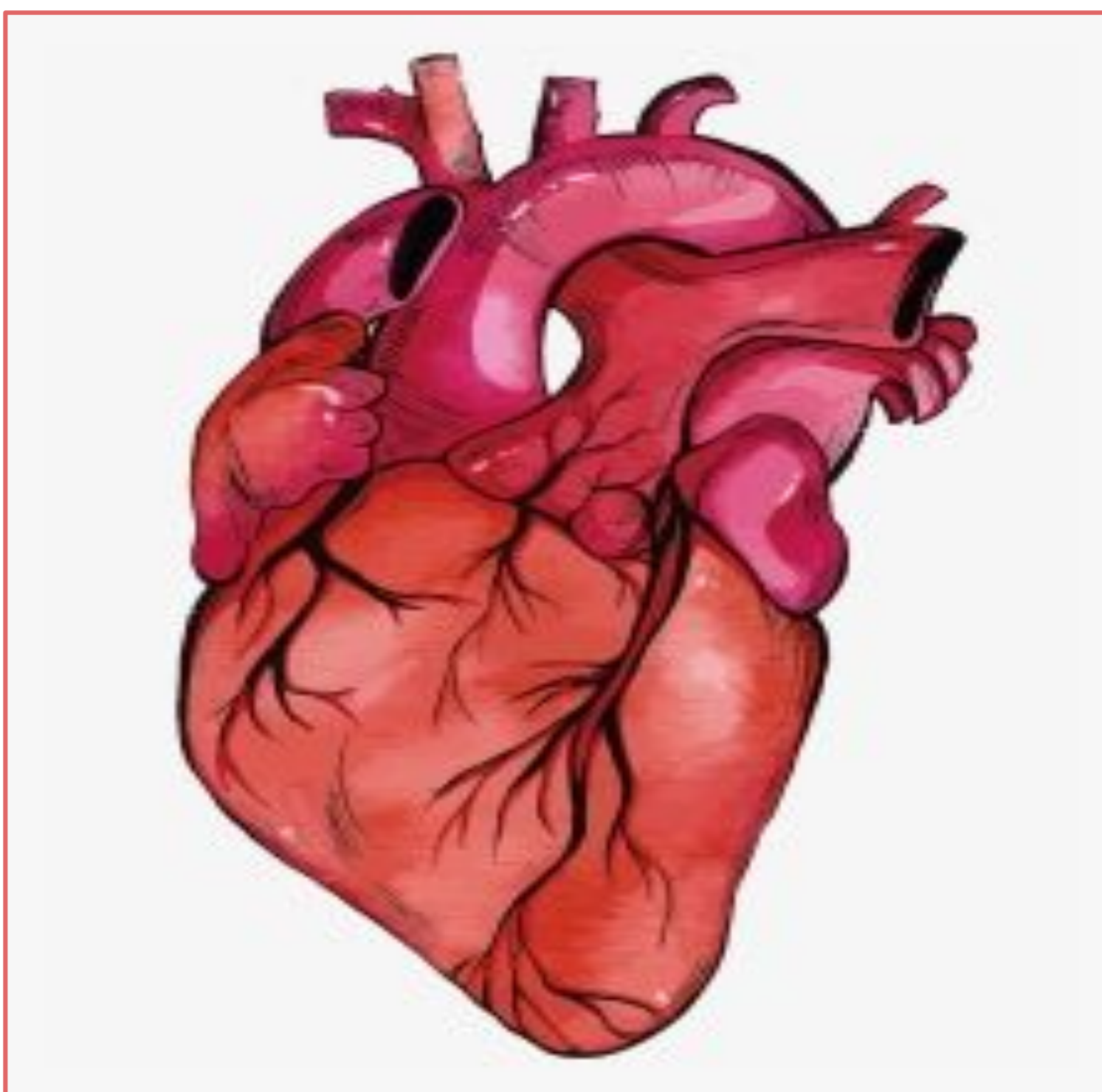


Figure 4: Cardiac Diagram

- Data set of women ages 35 and up with measurements of stressor index, age, and heart rate variability collected through Mom study.
- Data set provided by Professor Kirby Deater-Deckard and Jennifer Christensen.
- ECG data is crucial to observe any possible correlation between these 3 variables.

Vigorous research done regarding cardiac data. Also, resting state to the cognitive stressor state was studied where immense variation was observed, which was all crucial to test hypothesis. Age group was selected for where corresponding graphs were made in relation to 3 specific variables related to stressors.

V. CONCLUSIONS

Further **conclusions** are in **progress**, however, current conclusions that can be made include:

- No concrete correlation between Heart Rate Variability and Stressor Index (**Figure 3B for reference**).
- *Main preliminary results:* Observing a larger age range may bring more variety to graphs and correlations found.

Expected vs Actual Results:

- Graph 1: Expected was a negative correlation and positive correlation was observed.
- Graph 1,3: Expected was a positive correlation and a positive correlation was seen

IV. FUTURE DIRECTIONS

- Possible **correlations** between **demographics** and Mom study data file to observe if environment/race/ethnicity have any association or cause any **adverse effects**.
- Interpretation of viable positive or negative correlations between variables including **stressor index, age, or heart rate variability**.
- Explore **health equity** solutions for that cause these adverse effects in women in.