

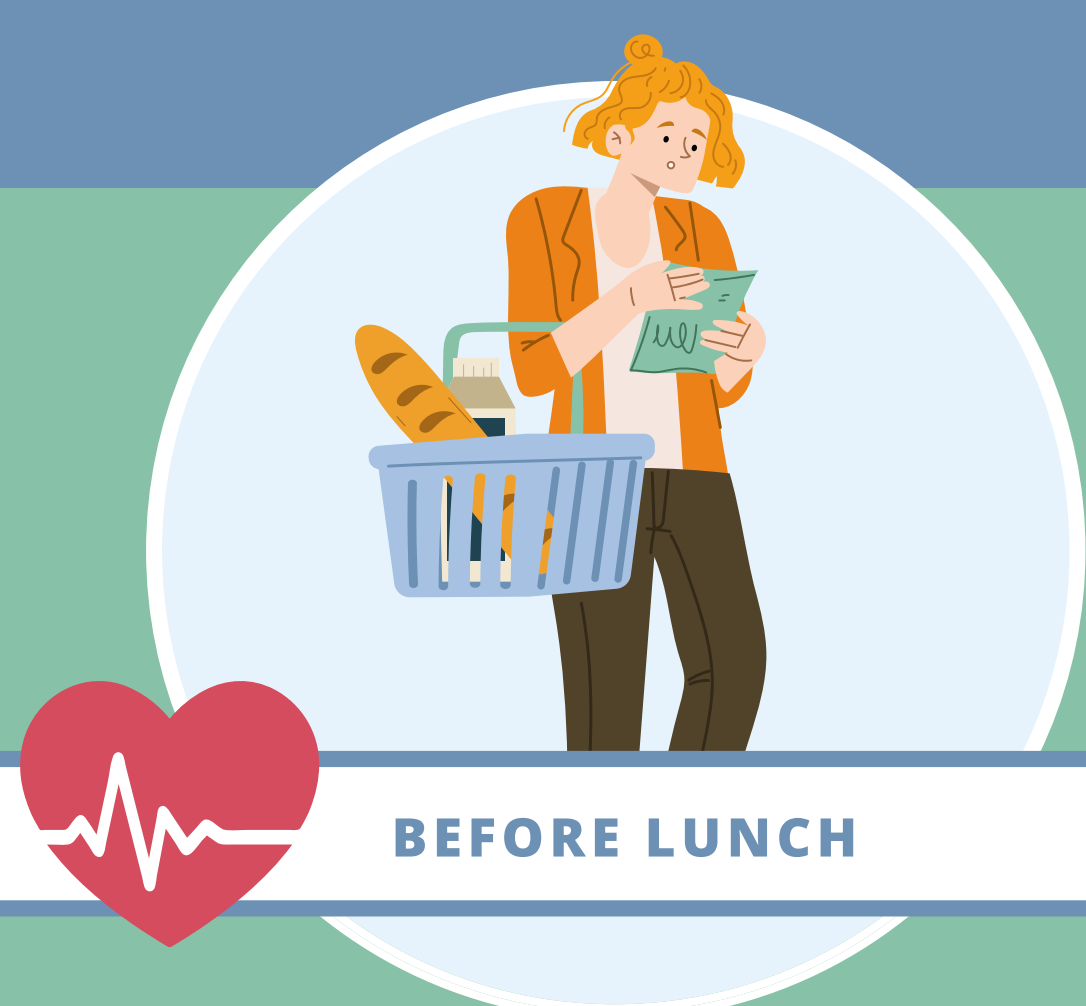
Common eating habit patterns

are associated with a high maximum occlusal force and pre-eating cardiac vagal tone

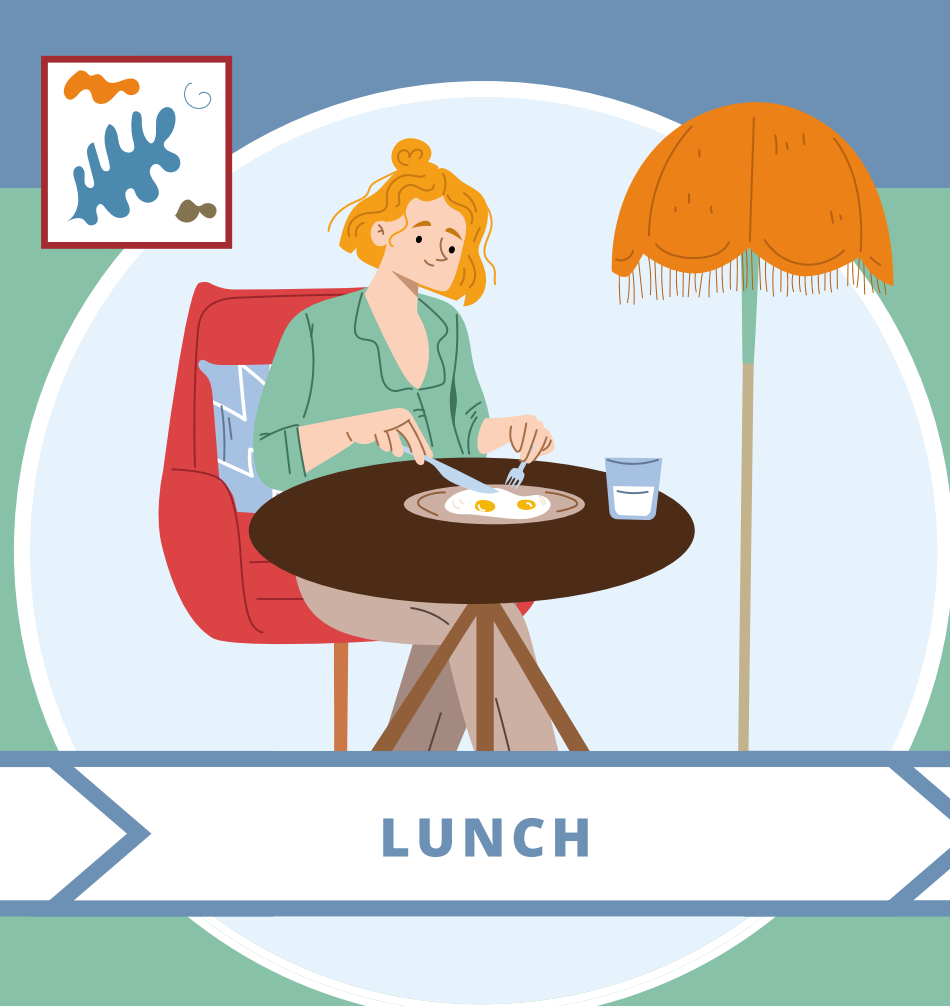


BACKGROUND

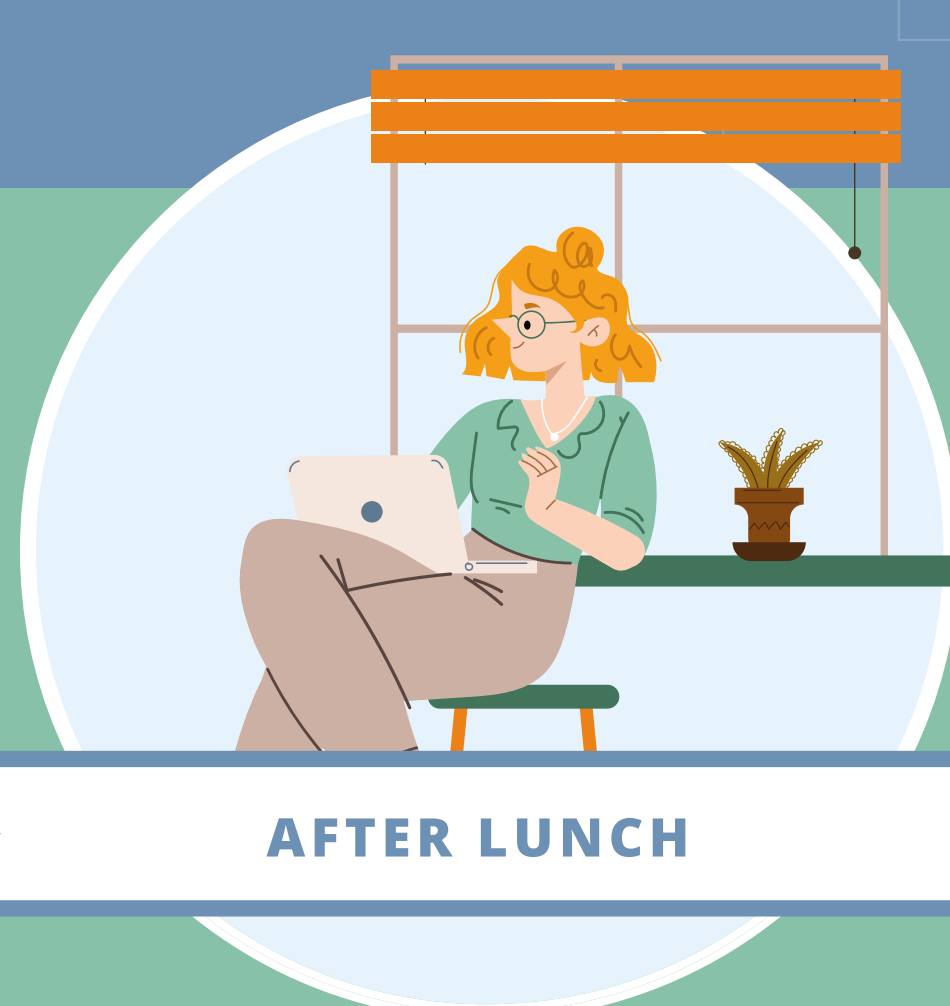
Masticatory function is associated with nervous function, including autonomic nervous function, and both functions are influenced by human habits. In a previous preliminary study of 53 young women, we found that eating habits were associated with occlusal force as an indicator of masticatory function. Therefore, we hypothesized that relationships exist between occlusal force, the autonomic nervous system, and eating habit patterns.



BEFORE LUNCH



LUNCH



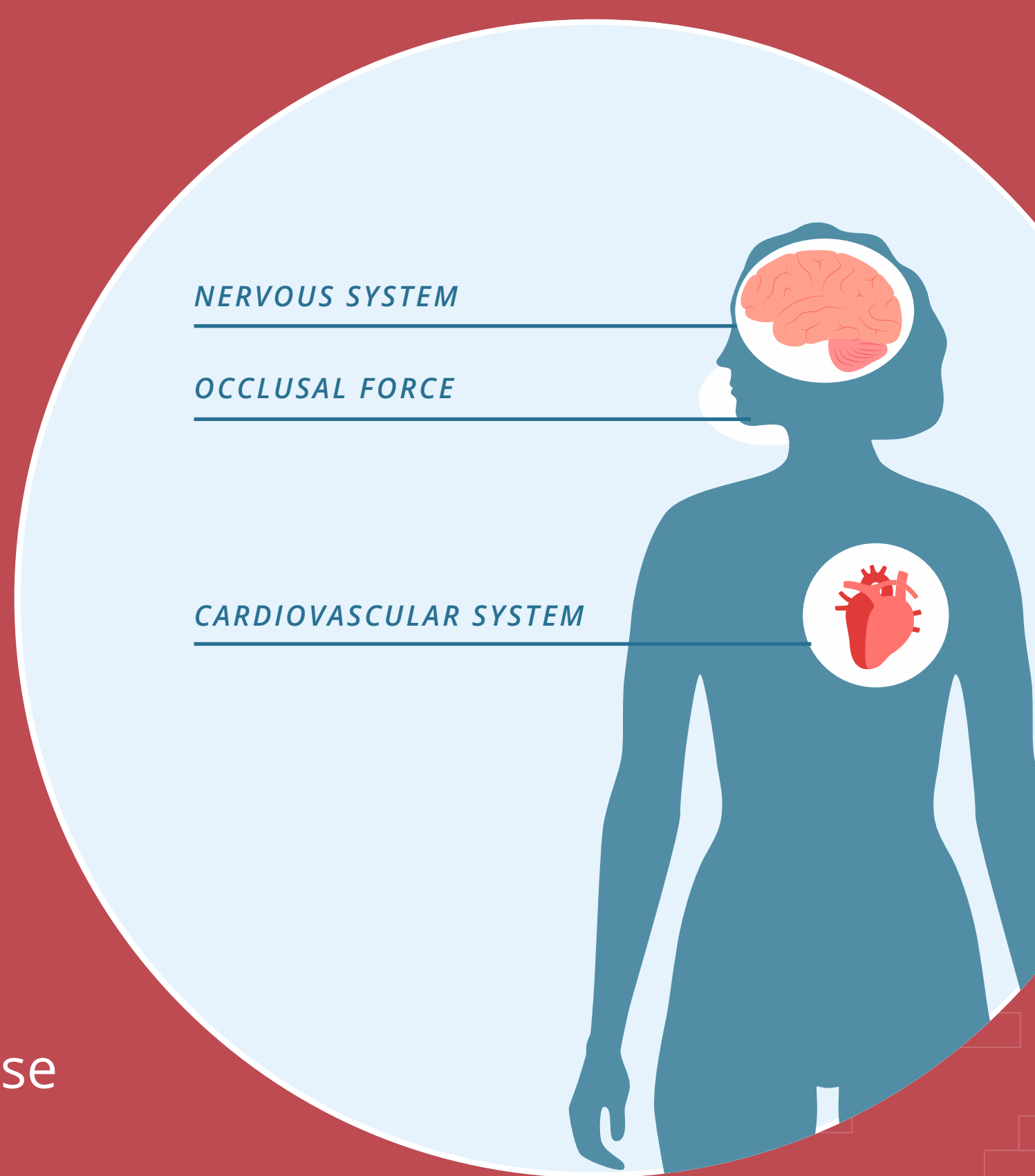
AFTER LUNCH

METHODS

To test our hypothesis, we measured 53 young women's heart rate before and after lunch and their maximum occlusal force, surveyed their eating habits, and analyzed the relationship between these factors.

RESULTS

High occlusal force was associated with an increased high-frequency (HF) component (vagal tone index) of the heart rate variability index immediately before lunch. Each of the eating habit items surveyed in a questionnaire showed a similar tendency for the HF component immediately before lunch and maximum occlusal force; in particular, "Habit of eating breakfast" and "Number of meals per day" were significantly associated with both variables. Additionally, total eating habit scores related to higher maximum occlusal force were associated with an increase in the HF component before lunch.



CONCLUSION

Occlusal force and the pre-eating cardiac vagal response of individuals were characterized by their common eating habit patterns, indicating that eating habits may be simultaneously associated with the development of masticatory function, nervous system development, and cardiovascular rhythm. Although further research is needed to investigate these relationships in detail, our findings provide insights that will inform the study of physical functions, neurodevelopment, habitual behaviors, and health in humans.

