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## INTRODUCTION

- Epidemiological findings indicate that cardiovascular disease (CVD) remains the leading cause of death in the US and worldwide.
- Reduced vascular function/health, indexed as brachial-artery macrovascular and forearm microvascular reactivity are predictive of future cardiovascular disease (CVD) risk and related events.
- Reduced vascular function/health is multifactorial but is related to increased systemic inflammation and oxidative stress.
- Previous research has reported that diets, beverages, and/or supplements containing antioxidant and anti-inflammatory properties benefits various physiological responses including peripheral vascular function and overall cardiovascular health.
- Ketogenic diets and/or supplementation, commonly used as a strategy to lose weight and improve health, have been reported to improve mitochondria function, as well as antioxidant and inflammatory status.

## PURPOSE

This study tested the hypothesis that 14-days of Ketone supplementation, Keto5 XOGenius, would improve well-validated indices of peripheral micro and macrovascular function in otherwise young healthy adults.

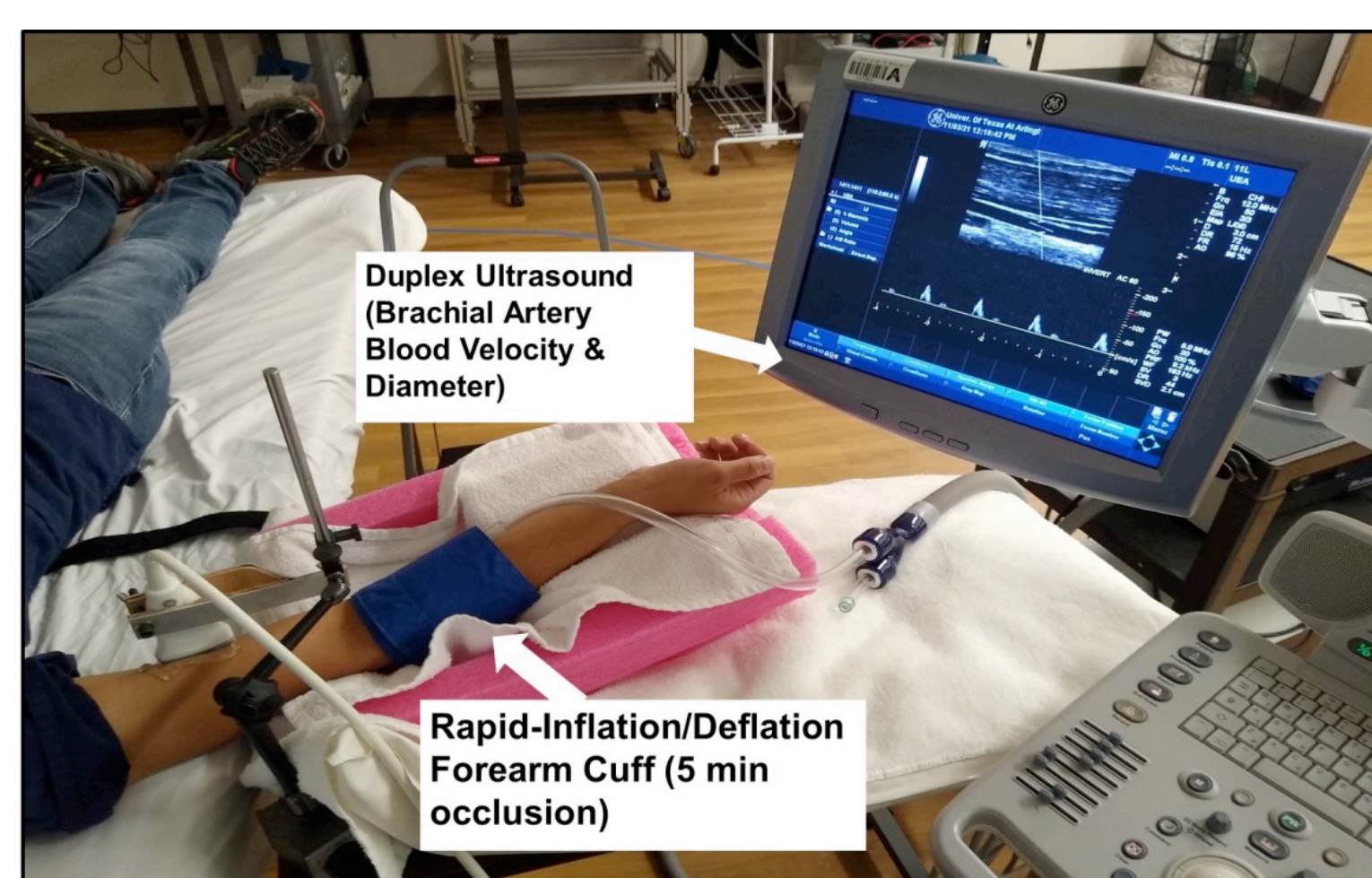
## METHODS

### Participants:

- Six young healthy adults (4 males; age: 22±4 years, BMI: 24±3 kgm<sup>-2</sup>) participated in this preliminary study.

### Measurements and Instrumentation:

- All measures were assessed at baseline and after 14-days of increased Ketone supplementation.
- Post-occlusive brachial artery flow-mediated dilation (FMD; macrovascular function) and forearm reactive hyperemia (indexed as peak blood velocity; microvascular function) were assessed in the supine position (Fig 1).
- Ketone supplementation was accomplished by adding ~13.7g of Keto5 XOGenius powder to 16oz of water – twice daily.



### Supplement Facts

Serving Size 1 Sachet (13.7 g)  
Servings Per Container: 30

Amount Per Serving	% Daily Value
Calories 30	
Total Carbohydrate 6 g	2%*
Dietary Fiber 2 g	9%
Calcium 120 mg	9%
Magnesium 65 mg	15%
Sodium 550 mg	24%
Potassium 470 mg	10%

Proprietary Blend 12.1 g †  
Pea Starch (as Carb10), D-Beta-Hydroxybutyrate Sodium (as goBHB™), D-Beta-Hydroxybutyrate Potassium (as goBHB™), D-Beta-Hydroxybutyrate Calcium (as goBHB™), D-Beta-Hydroxybutyrate Magnesium (as goBHB™)

\* Percent Daily Values are based on a 2,000 calorie diet.  
† Daily value not established.

OTHER INGREDIENTS: CITRIC ACID, SILICON DIOXIDE, NATURAL FLAVOR, SUCRALOSE

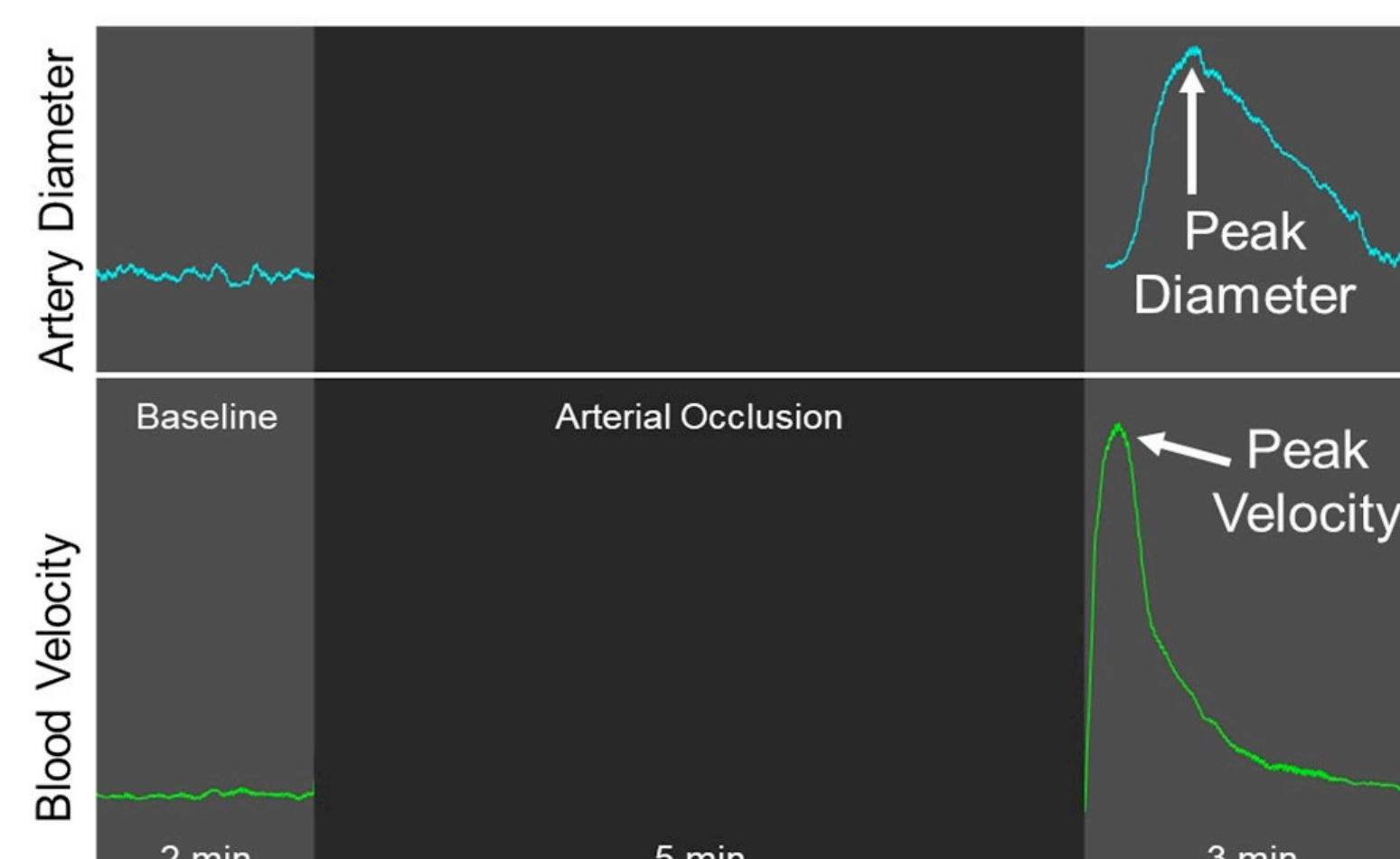


Figure 1. Experimental setup (top Left) and representative tracings (bottom left) for peripheral vascular function testing. Keto5 XOGenius Product information (top right)

## RESULTS

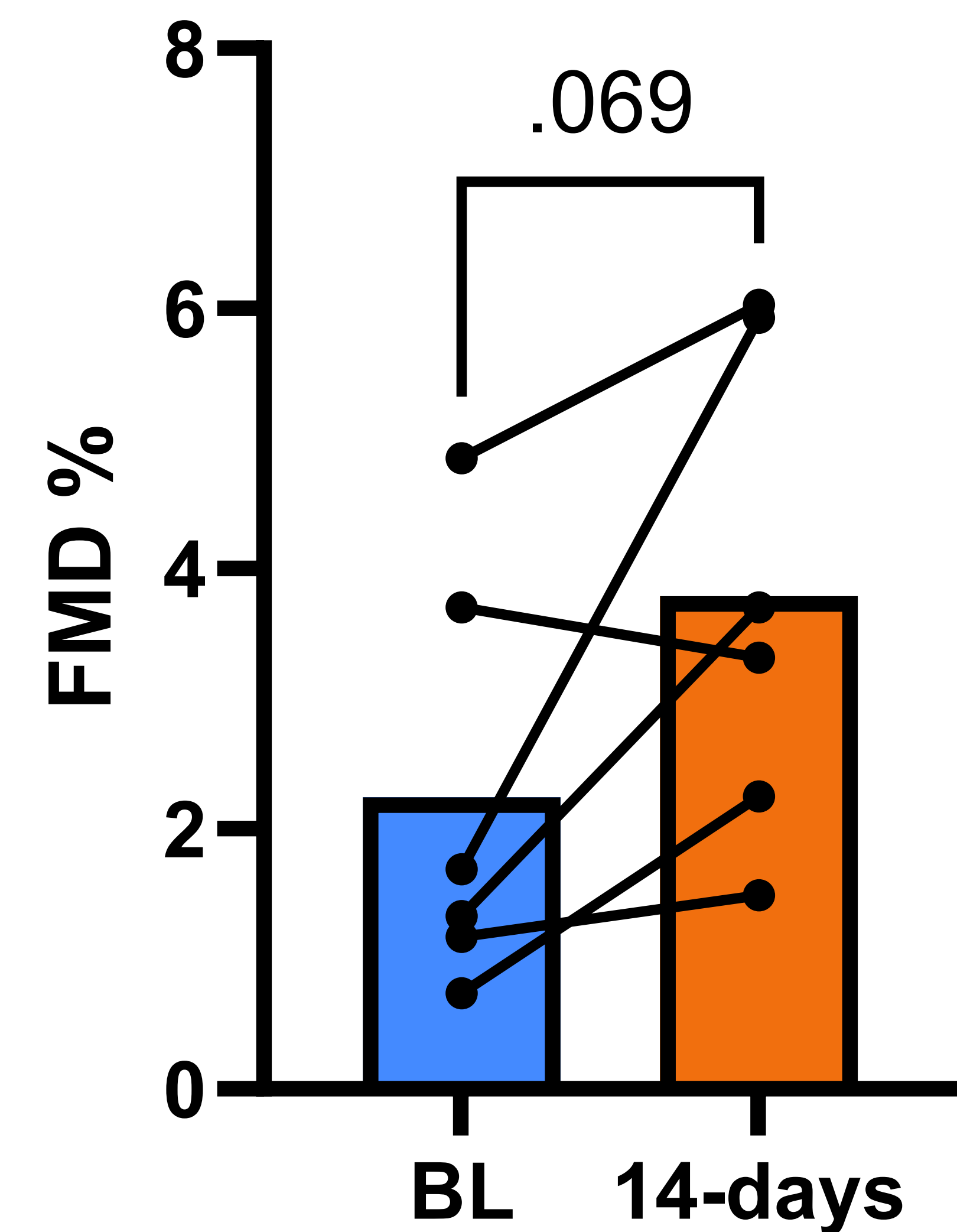


Figure 2. Brachial Artery Flow-Mediated Dilation (index of macrovascular function) Following 14-days of Keto5 XOGenius Supplementation.

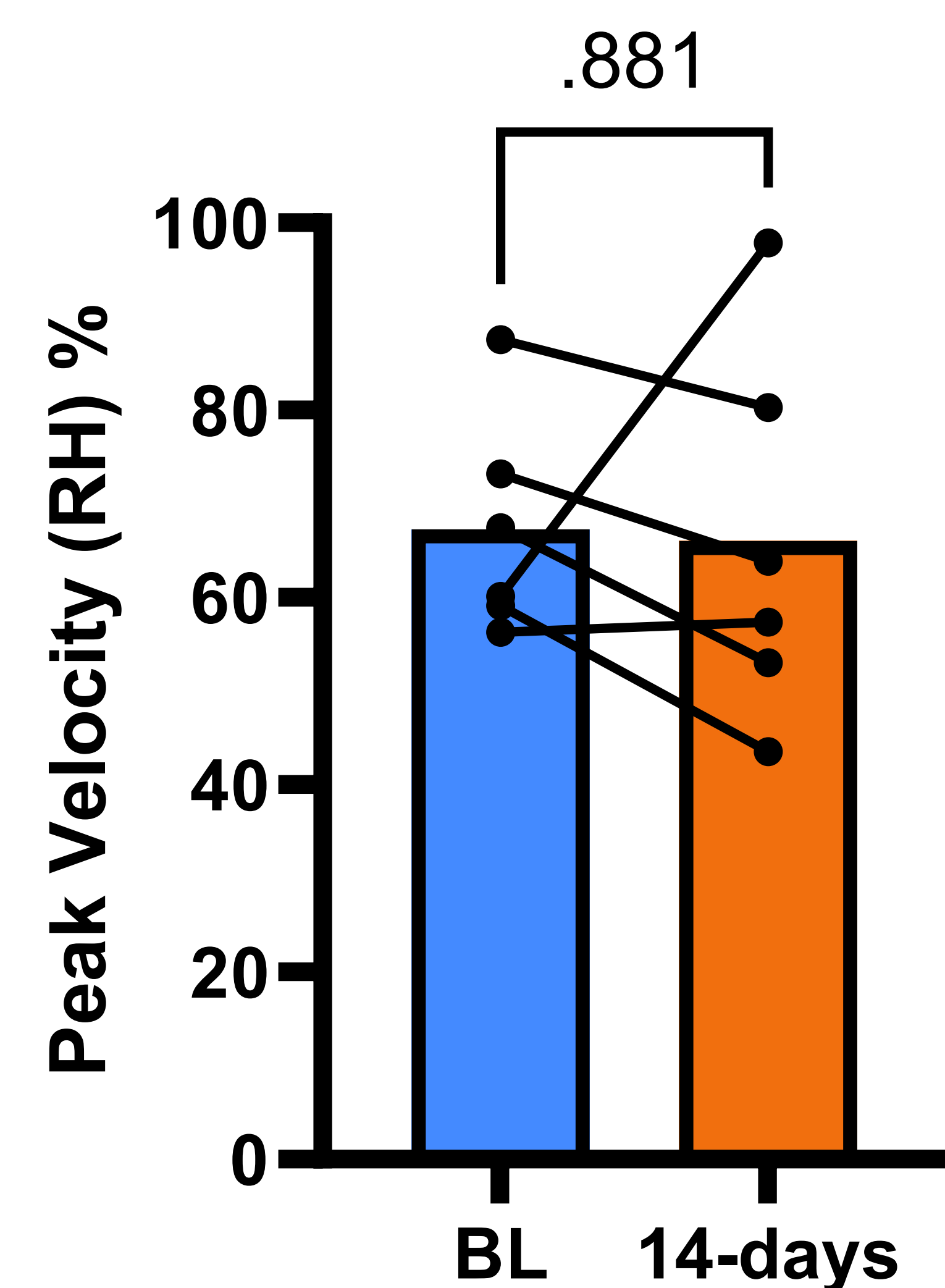


Figure 3. Brachial Artery Peak Velocity (index for microvascular function) Following 14-days of Keto5 XOGenius Supplementation.

## CONCLUSIONS

- These preliminary data indicate a positive effect of Keto5 XOGenius supplementation on peripheral macrovascular function/health.
- Future Studies will continue to expand upon these findings in a larger cohort of individuals.

## LIMITED BIBLIOGRAPHY

- Kumar, S. (2017). Cardiovascular Disease and Its Determinant: Public Health Issue. *Journal of Clinical Medicine and Therapeutics*.
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- Pinto, A., ... & Businaro R. (2018). Anti-Oxidant and Anti-Inflammatory Activity of Ketogenic Diet: New Perspectives for Neuroprotection in Alzheimer's Disease