

Ultrasound assessment of the extracranial carotid arteries in individuals with cardiovascular disease risk factors, consuming Rooibos



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Introduction

The use of *Aspalathus linearis*, most commonly known as Rooibos herbal tea, has become increasingly popular worldwide due to its potential health benefits. A previous study showed Rooibos to improve the lipid profile and redox status of adults at-risk for developing cardiovascular disease (CVD)¹. Rooibos is naturally caffeine-free and low in tannins and differs from the Ceylon teas (*Camellia sinensis*)².

Aim

To establish whether Rooibos consumption, in individuals with associated risk factors for CVD can significantly reduce extracranial carotid artery disease by comparing the ultrasound findings of the carotid Doppler studies in a pre- and post 12-week intervention of the 3 groups namely: individuals consuming fermented rooibos, or green rooibos, or a placebo.

Methods

- Ethical approval was granted by the Faculty of Health and Wellness Sciences Research Ethics Committee.
- The study followed a 12-week randomised, placebo-controlled, parallel, double-blinded, dietary intervention trial design with participants (N = 213) consuming capsules containing standardised water-soluble extracts mimicking a cup-of-rooibos tea of either green or fermented rooibos or a placebo control.
- Extracranial vascular ultrasound was performed on the participants of which 67 consumed fermented Rooibos, 76 green Rooibos and 70 the placebo capsule three times daily with meals.
- Ultrasound interrogation determined the carotid intima-media thickness (cIMT), (Figure 1), and blood flow patterns using colour and spectral Doppler analysis (Figure 2) on all participants pre- and post the 12-week intervention. Increased cIMT is a surrogate marker for early atherosclerosis and CVD risk³.

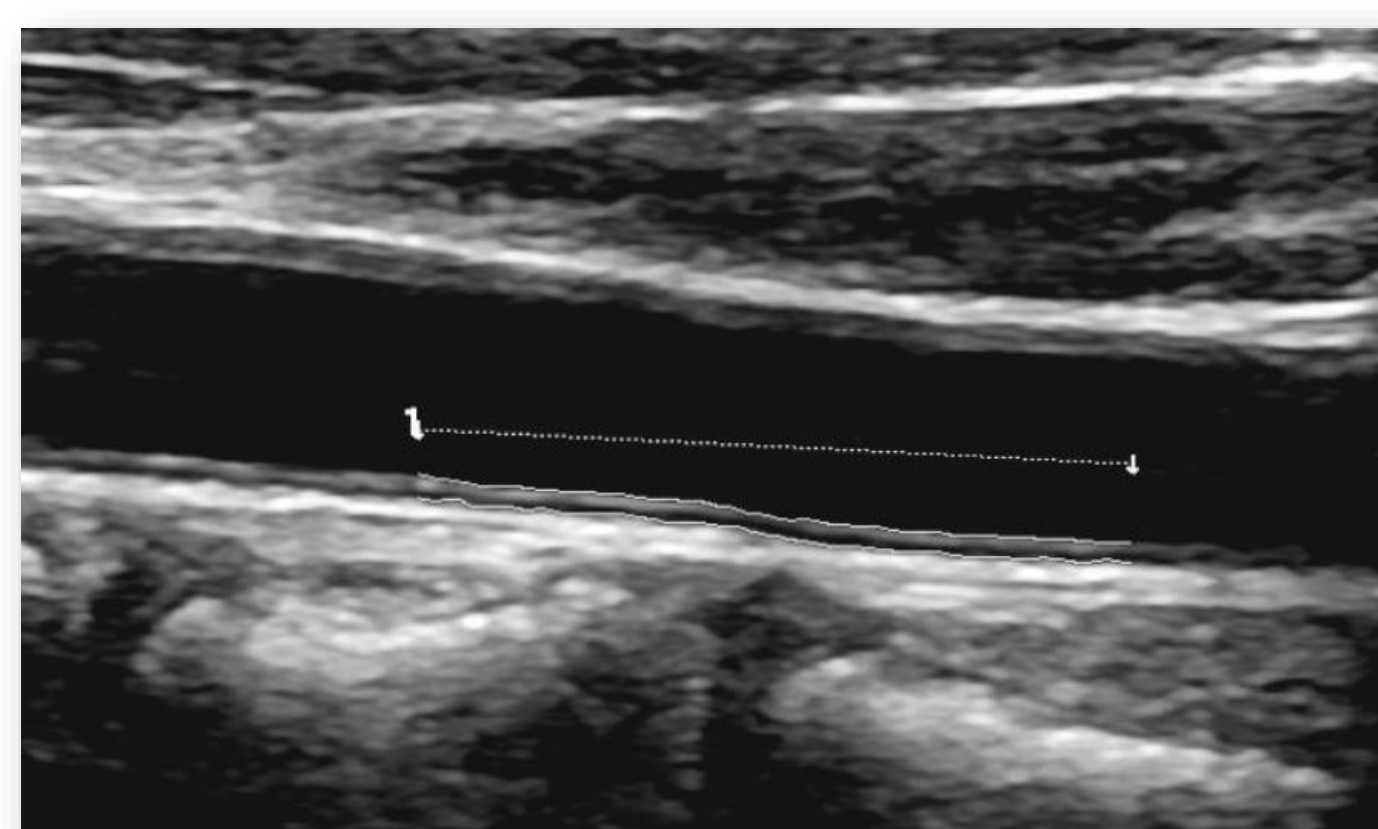


Figure 1. Grey-scale image of the CCA IMT measurement.

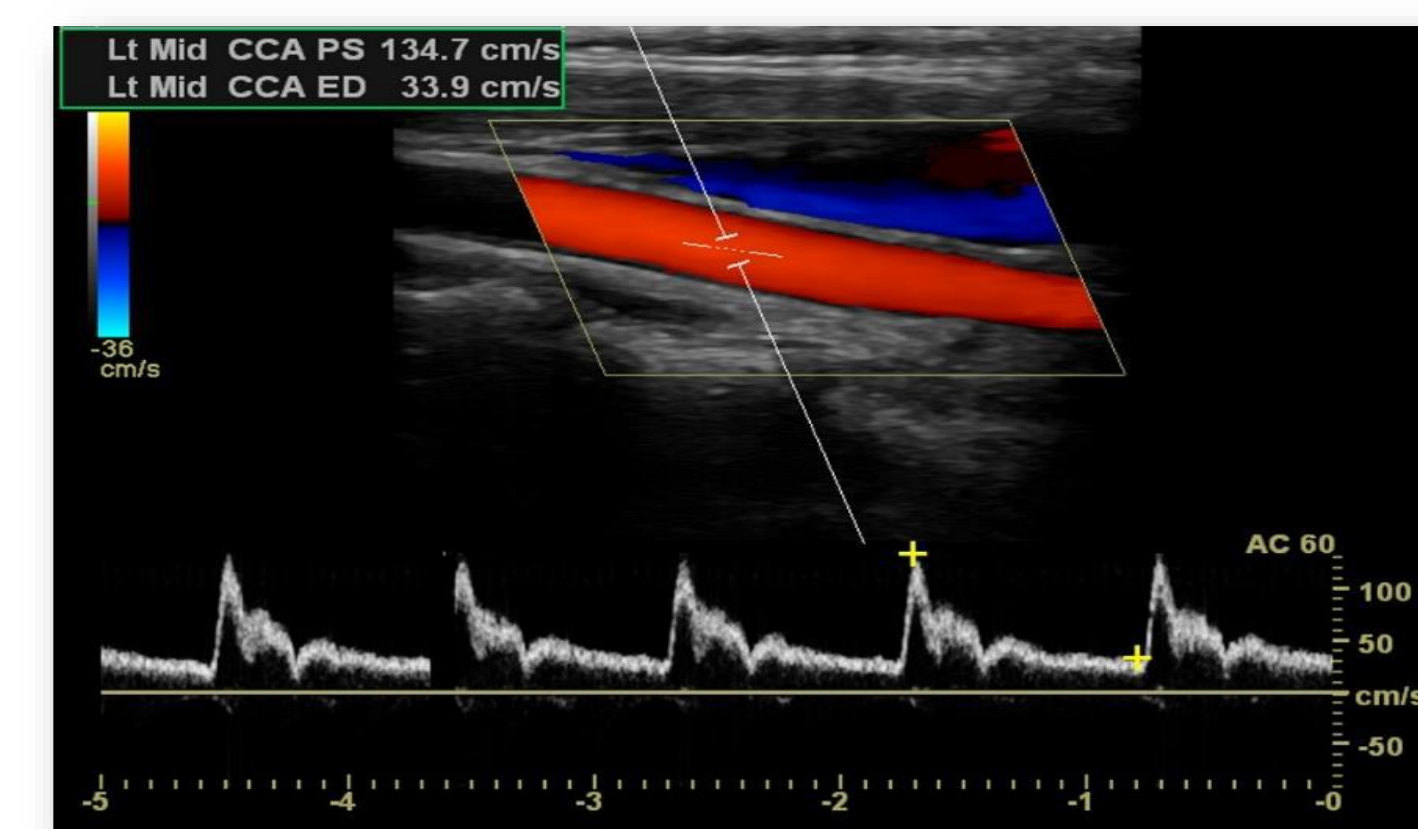


Figure 2. Colour and spectral Doppler analysis of the left CCA.

Results

- Significant differences ($p = 0.027$; $p = 0.040$ respectively) were demonstrated in the right cIMT of the group consuming green Rooibos (decrease of 0.06046 mm) and the fermented Rooibos (decrease of 0.05907 mm) when compared to the placebo (Figure 3).
- A univariate analyses of variance including age categories demonstrated significant differences in the right cIMT ($p = 0.008$) and left cIMT ($p < 0.009$) between individuals younger than 35 and 35 – 65 years of age within the fermented Rooibos group.

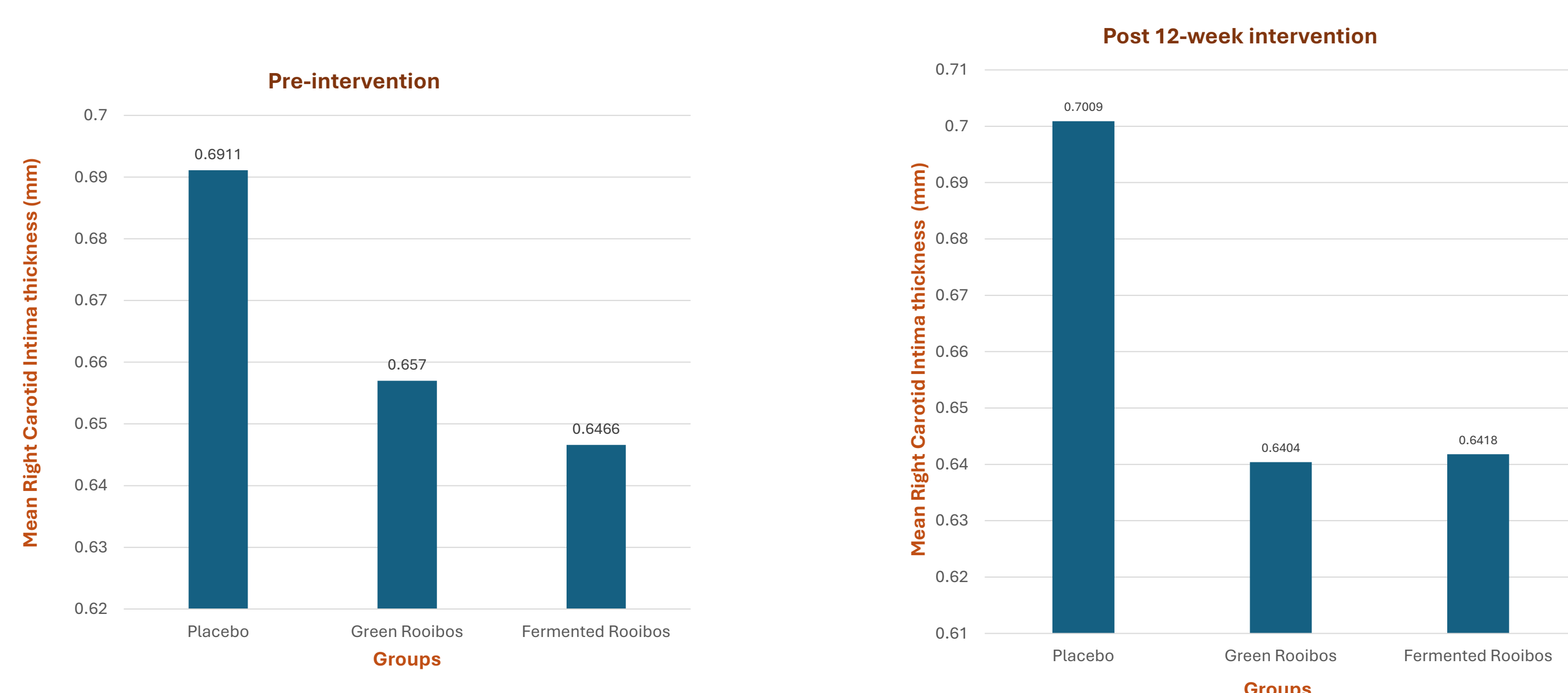


Figure 3. Differences in cIMT.

Conclusion

- The outcomes from this study are promising and supports current evidence of the cardioprotective effects of Rooibos.
- This study highlights that the 12-week consumption of green and fermented Rooibos could reduced the cIMT, which contributes to a reduced risk of CVD. These findings may support the development of dietary interventions that help prevent or delay CVD, thereby reducing associated morbidity and mortality.

Acknowledgements

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