

The Effects of a Probiotic Protocol on Salivary Biomarkers, Heart Rate Variability, and Daily Wellness Scores in Elite Australian Athletes - Results of a Double-Blind Randomised Controlled Trial

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Objective: To evaluate the effects of a probiotic protocol formulation on the salivary biomarkers sIgA, cortisol, alpha-amylase and psychometric measurements in elite athletes.

Methods: A double-blind randomised controlled trial was conducted over 17 weeks. Elite male Australian Rugby Union athletes were randomly assigned to receive either a probiotic (n=11) or a placebo (n=10) supplement. The probiotic Ultrabiotic 60™ or placebo was taken with food twice daily for 13 weeks and SB Floractiv™ 250mg twice daily during athletes international travel period (9 weeks). The main outcome measured included salivary alpha-amylase, cortisol, testosterone and secretory immunoglobulin A (sIgA), heart rate variability (HRV) and daily wellness scores including sleep quality, motivation and muscle soreness.

Results: There were no significant differences between the groups at baseline: age $p=0.77$, and weight ($p=0.96$). Multiple linear regression analysis identified alpha amylase and LF/HF ratio (HRV) were both independent predictors of general muscle pain and together account for 15.31% of the variance in general muscle pain in the placebo group ($p < 0.0001$). Sleep quality and motivation were both independent predictors of reduced muscle pain and together account for 40.43% of the variance in general muscle pain ($p < 0.0001$). HRV and alpha-amylase were weakly associated with general muscle pain in the probiotic group.

Conclusion: The probiotic protocol trialed in this study resulted in a positive effect on sleep quality and motivation scores that is associated with a reduction in perceived muscle pain. Further research is required to evaluate this association.

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Biography:

Dr. Joanna Harnett holds a PhD in nutritional pharmacology and a bachelor and master degree in health science. She currently holds a fulltime teaching and research position within the Faculty of Pharmacy at The University of Sydney Australia. Her PhD (2013) explored the association between the intestinal microbiota and coeliac disease and included a randomized controlled trial evaluating the effects of a probiotic formulation on the composition of the faecal microbiota and symptom scores. Her current research activities include collaborating with Associate Professors Kate Pumpa (Sports Dietician) and Andrew McKune (Exercise Physiologist) exploring the role of probiotics in elite athletes.