



RESEARCH TO
PRACTICE 2018

27-29 MARCH 2018
BRISBANE, QUEENSLAND

CAN WE ENHANCE METABOLIC ADAPTATIONS TO EXERCISE WITH NUTRITIONAL BIOACTIVE INGREDIENTS?

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Endurance exercise, when performed regularly as part of a training program, leads to increases in whole-body and skeletal muscle-specific oxidative capacity. The increase in mitochondrial biogenesis (increased volume and functional capacity) is fundamentally important as it leads to greater rates of oxidative phosphorylation and an improved capacity to utilize fatty acids during sub-maximal exercise. Given the importance of mitochondrial biogenesis for skeletal muscle performance, considerable attention has been given to understanding the molecular cues stimulated by endurance exercise that culminate in this adaptive response. In turn, this research has led to the identification of pharmaceutical compounds and small nutritional bioactive ingredients that appear able to amplify exercise-responsive signaling pathways in skeletal muscle. In this session, I will explore these purported exercise mimetics and bioactive ingredients in the context of mitochondrial biogenesis in skeletal muscle. Examining proposed modes of action and evidence of application in skeletal muscle *in vivo*, I will discuss the feasibility of such approaches to alter metabolic flexibility in humans.

Abstract number: 030
Session: Flexing Your Metabolic Muscle: Exercise Prescription for Metabolic Flexibility
Date: Wednesday, 28 March 2018
Time: 3:30pm – 5:00pm
Co-Presenters: Dr Jonathan Little; Prof David Bishop; Dr Andy Philp
Panel Practitioner: Mr Daniel Ryan
Session Chairperson: Prof Martin Gibala