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Exercise, antioxidant intervention and free radical metabolism in diabetes

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It is well known that hyperglycaemia is associated with an enhanced production of free radicals and reactive oxygen species (ROS), and a significant increase in such oxidants can trigger several pathological events that are linked to the development of macro- and microvascular disease. Although exercise has many beneficial metabolic effects, such as an increased translocation of GLUT proteins to aid glucose transport into cells, there is clear evidence to suggest that patients with diabetes have a more pronounced free radical production following exercise, and the consequence of this, is further damage to important macromolecules such as DNA, lipids and proteins. Although antioxidants are known to inhibit oxidative cell damage, there is current debate regarding the beneficial effects of chronic antioxidant supplementation *per se*. In fact, while antioxidant supplementation was once advised for the control of diabetes, it is now postulated that antioxidant therapy may interfere with cell signaling processes. This talk will (a) examine the current knowledge base with regards exercise-induced oxidative stress in diabetes, and (2) address the important question of whether it is beneficial or counterproductive to supplement with antioxidants in diabetes.

Biography

Gareth Davison is currently Professor of Exercise Biochemistry and Physiology within the Sport and Exercise Sciences Research Institute at the University of Ulster. He graduated from the University of Ulster with a BA (Hons) in 1996 and an MSc in 1997. He was awarded his PhD in Biochemistry and Physiology in 2002 and is a fellow of the American College of Sports Medicine. Professor Davison has published extensively within the area of Exercise Biochemistry.

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