

The forgotten role of the liver in exercise metabolism: insights from ^{13}C magnetic resonance spectroscopy

Glycogen stores in muscle and liver play a crucial role in sustaining performance during prolonged moderate- to high-intensity exercise. Whilst significant advancements have been made in understanding muscle glycogen use during exercise and its (re)synthesis during subsequent recovery, the dynamics of liver glycogen metabolism in response to exercise and recovery are poorly understood, mainly due to previous methodological challenges in the measurement of liver glycogen. However, developments in ^{13}C magnetic resonance spectroscopy and its application to exercise metabolism research now allows for the non-invasive direct assessment of liver glycogen content and its dynamic changes in response to exercise and nutrition. This talk will present new developments and research insights into the role of liver glycogen in modulating metabolism during exercise and provide practical fuelling and recovery strategies to promote liver glycogen storage for the athlete.