Keto diets and performance of elite endurance sport – the science of the practice

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More than a decade after we launched the most recent series of studies on low carbohydrate high fat (LCHF) diets and sports performance, we have had the chance to debate their relevance to the high performance endurance athletes with a key proponent, Professor Tim Noakes. This session summarises our key points: 1) that sports performance is explained by a complex interaction of factors, and 2) rather than claim a single truth to a superior dietary approach, sports scientists should identify nuances and context within the characteristics of the athlete and the event to determine the most suitable nutrition approach(es). A sports-centric summary of the current literature on ketogenic diets and endurance sports performance is now available, providing a dashboard to highlight the nuances of each study rather than the traditional meta-analytical approach which deliberately eradicates such important detail. Each study is examined for context (scenarios in which there are likely to be true differences between the ketogenic low carbohydrate high fat (LCHF) and high carbohydrate availability (HCHO) approaches), but also caveats (issues with the study design that raise questions about interpretations). Although we consider this to be a starting point for gaining a more nuanced picture of the performance effects of LCHF diets in their various versions, we note that (1) we are scratching the surface of the permutations of athlete, event and LCHF strategy; (2) that greater transparency around individual data and experiences is needed to identify true responsiveness vs non-responder status and (3) while noting the lack of investigations of true ultra-endurance events in which moderate-intensity workloads and/or difficulty in supplying sufficient exogenous CHO to supply muscle and central nervous system substrate needs creates a different opportunity, the *current* literature does not support the proposal that LCHF strategies are beneficial for the performance in competitive endurance athletes. Furthermore, scenarios in which there might be equivalency to strategies that focus on high endogenous or exogenous CHO availability are matched by others in which there is detriment to performance.

Burke LM, Whitfield J. Ketogenic Diets Are Not Beneficial for Athletic Performance. *Medicine and science in sports and exercise*. *Med Sci Sports Exerc;* 2024;56(4):756-759. doi:10.1249/MSS.0000000000003344

Burke LM, Whitfield J. Ketogenic Diets Are Not Beneficial for Athletic Performance: Response to Noakes. *Med Sci Sports Exerc* 2024;56(4):763-765. doi:10.1249/MSS.0000000000003346