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THE LOW CARB HIGH FAT DIET FOR ELITE ENDURANCE ATHLETES: LESSONS IN SCIENCE VERSUS SCIENCINESS

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In past times, when researchers measured the impact of their work via the quality and quantity of their publications in the peer-reviewed literature, the rules of engagement were transparent, and the main challenge was doing battle with Reviewer No 3. Contemporary sports scientists are faced with a far more complicated and noisy environment in which they must make themselves heard. In the Twittersphere, celebrities are the new science experts while some scientists have become celebrities. Many academic institutions now recognise or expect scientific outputs to include social media coverage and prestigious journals now tweet, post or blog their latest papers. What are the benefits and disadvantages of new forms of scientific communication? Can 140 characters or a little white man do justice to the complexity of most scientific investigations? The current promotion of the Low Carb High Fat (LCHF) diet for the High Performance endurance athlete presents an interesting opportunity to examine contemporary challenges in sports science. There have been three distinct cycles of interest in the concept of altering dietary intake to further enhance the capacity for fat oxidation in endurance/ultra-endurance sport. The first iteration (1980s) involved chronic adaptation to a ketogenic LCHF diet to replace the reliance on muscle carbohydrate as an exercise substrate with greater use of the relatively unlimited body fat stores (1980s). Meanwhile, the revival in the 1990s focused on a periodised model where short term adaptation to a non-ketogenic LCHF diet retooled the muscle for greater fat oxidation before restoring carbohydrate availability to promote “the best of both worlds” in terms of muscle fuel options. Each cycle seemed to end when initial interest was not sustained by evidence of advantages to the performance of high performance sport. The most recent incarnation in the form of chronic keto-adaptation has been largely supported by social media and testimonials, with fierce support from its proponents being pitted against a continued lack of research support for its claim of universal benefits for sports performance. The story of this dietary philosophy demonstrates the contemporary challenge of “scienciness” vs science, and the problems that arise when complex scenarios are oversimplified or become personalised crusades. This presentation provides an overview of the LCHF and elite endurance sport, showcasing both the current state of scientific evidence to support its use by high performance athletes as well as its role as a cautionary tale of the “highs” and “lows” of engagement with modern communication tools. .

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