

Conference Abstract

# Developing Training Intelligence in Interdisciplinary Performance Teams: Perspectives from Elite Track Cycling

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## Abstract

**Introduction:** The effectiveness of sport scientists and performance staff in elite cycling often depends on their ability to complement the wider performance team – consisting of the cyclists, coaches, and other interdisciplinary practitioners – to support athlete development. A practitioner's impact on athlete development and performance may be moderated by their ability to implement their knowledge and expertise, which itself can be constrained by several factors within the high performance sport environment. The aim of this study was to qualitatively examine elite track cycling coaches' perspectives of how practitioners can best support cyclists and their coaches through the implementation of sport science and research in practice to optimise training and performance.

**Materials and Methods:** Elite track cycling coaches (n = 8) who had been working at Olympic or UCI World Championships competition level participated in one-off semi-structured interviews. During the ~1-hour long interviews included several questions related to their engagement with sport science, practitioners' effectiveness in contributing to track cyclist development, and how sport science and research can impact training and performance. The interview guide is presented in Table 1. Reflexive thematic analysis was conducted to identify common themes in the coaches' perspectives.

**Results:** Coaches' experiences of engaging with sport science to support practice were generally positive, and several important factors were identified that may enhance the effectiveness of practitioners within interdisciplinary performance teams to develop collective training intelligence. Three principal themes were identified from the data: 'conversation & the information dynamic', highlights the value of information and feedback within the performance team to influence decision making; 'integrating performance components for the individual', details the importance of individualised and integrated approaches to address athlete needs; and, 'science to complement the vision', examines the limitations of research and data in practice.



**Table 1.** The interview guide used with track cycling coaches to examine their perspectives on the impact of sport science and research to optimise training and performance

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1. Tell me about yourself and your journey as a track cycling coach

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  2. What is your approach to coaching and developing athletes' performance?

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  3. How do you know if you are prescribing the best training?

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  4. What factors are most important for a track cyclist to progress from good to great and have sustained success?

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  5. What comes to mind when I say 'optimising performance' for [Mental / Physical / Tactical / Technical] components of performance?

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  6. What is the role of sport science and research in track cycling?

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  7. Has sport science/research influenced your coaching and the way you prepare your athletes for performance?  
How [do you typically engage with it]?

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  8. What do you think sport science/research does well for track cycling?

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  9. Thinking ahead to upcoming Olympic cycles, what do you and your athletes need to maximise performance?

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**Conclusions:** The development of collective training intelligence within the performance team may increase the ability to develop a more holistic understanding of athletes' performance needs, and plan and prescribe training to more effectively address them. Within these findings, two key contributors were identified by elite track cycling coaches as central to this process: athletes deeply invested in, and actively contributing to, the development process; and, performance staff identifying and filtering research and data to impact decision making and athlete development. These findings allowed for the development of a model outlining the potential contexts and mechanisms that contribute to training and performance outcomes that, through their interaction, contribute to the development of training intelligence within interdisciplinary performance teams.

**Keywords:** Coaching, Athlete-Centred, High Performance, Leadership, Holistic.

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