

## Challenges in Developing Evidence-Based Practice in High-Performance Sport

An important goal for most athlete-centered research is for it to be translated into practice, where it is used to inform the development of improved athlete preparation and/or performances. The result of this process is commonly termed evidence-based (or even evidence-informed) practice. In this editorial, we discuss approaches to developing evidence-based practice in sport and identify the role that *IJSP* has in fostering these practices.

During the last decade, the concept of evidence-based practice in high-performance sport has gained great interest among sporting practitioners, researchers, and sporting organizations. Indeed, many leading global sporting organizations have developed research partnerships and innovation hubs with the intentions of further developing evidence-based practices specific to their sport.<sup>1</sup> While there is no widely adopted definition of evidence-based practice in sport science, we can adopt accepted definitions for evidence-based medicine into a sporting context. Evidence-based practice in medicine has been described as the integration of clinical expertise, patient values, and best available evidence in the process of decision making related to patients' health care.<sup>2</sup> Modifying this definition and replacing the terms *clinician* and *patient* with *coach* and *athlete*, we can develop a working definition for evidence-based practice in sport. Accordingly, evidence-based practice in sport can be described as the integration of coaching expertise, athlete values, and the best relevant research evidence into the decision-making process for day-to-day service delivery to athletes.

The use of evidence-based practice in high-performance sport may improve training and performance, reduce training errors (eg, injuries or inappropriate training), help balance known benefits and risks in decision making, challenge belief-based views with evidence, and integrate athlete and coach preferences into decision making around approaches to training and performance. Developing evidence-based practice involves many key stakeholders and often follows an iterative process that includes

- Identifying relevant research questions
- Searching and critically evaluating the evidence for its validity, impact, and applicability
- Developing strategies to implement the best available evidence into contemporary practice
- Assessing the effectiveness of the new practice in athletes
- Continuing to reevaluate the evidence and assess current practices.

Experience shows that this approach works most effectively when key stakeholders in sport, including coaches and support staff, athletes, and researchers, work together through this process. Indeed, this is often best achieved when researchers embed themselves into sporting organizations and work directly with these stakeholders under the typical pressures and constraints of high-performance sport. Once suitably embedded in high-performance sport, research-

ers are able to see “problems” as they appear, and they are also able to observe the environmental constraints that may limit the application or translation of findings or methods from traditional research studies.<sup>3</sup> This approach not only aids the development of more efficacious advice for developing evidence-based practice but also provides invaluable insights for designing ecologically valid research studies.

Evidence-based practice is essential in sport science, just as it is in other areas of medicine and the health professions. However, it is also important to acknowledge that while applied or translational research has a strong impact on professional practice, basic or laboratory studies conducted away from the field also have an important role to play in developing evidence-based practice. A common obstacle for researchers working in high-performance sport is the difficulty of conducting high-quality randomized clinical trials in true high-performance athletes.<sup>4</sup> Unfortunately, the randomized control trial, which is a foundation of evidence-based practice, is uniquely difficult to perform in athletic populations. Indeed, there are few incentives for high-performance athletes or organizations to participate in such studies, as the experimental-control requirements are likely to interfere with typical preparations, and the need for true randomization (ie, where the athlete has equal chances of receiving or not receiving the experimental treatment) is not conducive to the high-performance mind set common in these athletes. These issues likely explain why there are relatively few randomized control studies with true high-performance athletes.

The intent of this editorial is not to detract from the important role that basic research has in the development of the foundations of evidence-based approaches but, rather, to highlight the benefits of ecologically valid, applied research studies that are conducted with high-performance athletes. In fact, *IJSP* welcomes and encourages the submission of high-quality applied research studies that investigate relevant issues encountered by high-performance athletes in training and competition. The results from these studies are of particular relevance as they are often easily translated to influence professional practice, ultimately resulting in improved athlete management and performance. Additional aims of *IJSP* are to ensure that submissions receive high-quality reviews and that manuscripts provide practical messages. Indeed, an important function of *IJSP* is to provide these important messages to practitioners who seek to continually improve their practice by improving its evidence base. Finally, it is hoped that the journal also promotes evidence-based practice by publishing educational commentaries that combine the best available knowledge, research methodologies, and practitioner expertise.<sup>5,6</sup>

Ultimately, if our research can be used to positively affect the preparation and performance of athletes, then *IJSP* has met its mission. Indeed, there is no better example of the impact of the work of the journal than when it is directly applied to professional practice.

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## References

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