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Human Kinetics
EDITORIAL

Extreme Positions in Sport Science and the Importance of Context: It Depends?

We seem to live in an age where adopting extreme positions is becoming the norm. In our field of sport science there are numerous debates about the best way to prepare athletes for competition, with areas such as training physiology and nutrition fiercely debated. Nowhere is this more evident than on social media, where individuals are quick to espouse the latest training fad or idea and seemingly adopt a rigid and fixed position on an issue. What is interesting about many of these debates is the lack of consideration of context. While there is little doubt that it is extremely difficult to place things in the proper context in 140 characters on Twitter, it never ceases to amaze me how blanket statements can be made regarding athlete training and performance. While debate and discussion are important in our field, I am not sure social-media platforms are the best way to achieve this. In my experience there is nothing that will move individuals away from these extreme positions, including scientific evidence. Despite this, conducting applied-research studies with athletes that address important questions regarding sport performance is a proven way to advance knowledge. However, we need to be careful not to cherry-pick individual studies to support our own positions and biases. Just as we should not rely on a single study to make a case for a particular approach, a body of evidence needs to be built up over time.

Debates about areas such as periodization (eg, is block periodization superior to other models, or should we periodize at all?), resistance-training volume (eg, single vs multiple sets for increasing strength and hypertrophy?), resistance-training load (eg, high vs low loads for increasing strength and hypertrophy?), recovery (eg, which strategies are best and when should they be used?), or exercise selection (eg, are weight-lifting exercises superior to other exercises for increasing speed?) are often interesting questions, but how useful are they? I often wonder why anyone would suggest a one-size-fits-all model for many of these questions, particularly when applied to the preparation of athletes. There is such great diversity across sports that surely it is important to consider the context of the individual athlete and environment when making decisions. Ultimately it would seem that it really depends on a range of different factors such as the sport, level of athlete, training history, and so on. If we take the example of resistance training, there is now little doubt that this is beneficial for most athletes.[1] Even endurance sports, where some coaches have traditionally been reluctant to incorporate resistance training, have more widely recognized the value of this mode of training.[2,3] How resistance training should be used most effectively to improve the performance of athletes and reduce risk of injury is often less clear. This is where applied-research studies can play an important role and help to build an evidence base to guide best practice.

As people working in elite-sport environments know, the concept of real versus ideal is the ultimate dictator of whether a particular training strategy can be effectively implemented. The increased focus on athlete monitoring and the use of technology have also resulted in many debates on the value of these approaches. This is another example that can lead to people taking extreme positions where they will advocate for the value of coach intuition or the art of coaching versus a scientific approach. Undoubtedly both aspects are important and need to be integrated into a sports-performance program, so why do we feel the need to use a one-or-the-other approach? Practitioners and scientists do need to be mindful about not implementing monitoring systems that do not inform decision making and result in collecting information for the sake of it. Conversely, simply relying on subjective measures and intuition has limitations. It is obviously critical to not overly rely on technology. However, these methods can be extremely beneficial to practitioners. Velocity-based training approaches in resistance training are an example where technology now allows practitioners to collect important data on athlete performance. Profiling the force–velocity aspects of athletes can also provide rich insights for individualizing training.[4] The next challenge is to have more published evidence of how this training and performance data can be used to optimize training adaptations and ultimately improve athletes' performance.

This increased attention to athlete monitoring and technology has also led to debates on the role and importance of coaches/practitioners versus scientists. What has been heartening to observe in the last several years is the breaking down of these barriers and the willingness of many universities to embrace more applied research. At the same time, sports have continued to invest heavily in sport science. As with anything, many of these problems and differences can be overcome by people having conversations rather than communicating solely through blogs and social media. Scientists and practitioners should continue to work together to conduct studies that address questions that have practical application for enhancing sport performance and reducing risk of injury in athletes. While it is important that we do continue to debate these issues, it is critical that we consider the context of the particular questions when it comes to sport science and how they directly relate to enhancing performance. As always, the answer to most of these questions will remain "It depends."

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