

The Challenges of Modern Rugby Conditioning

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The game of Rugby Union has in the recent years evolved into a new era and a new dimension for players and teams alike. The multiple aspects of conditioning came in the forefront of the training processes with the growing importance of field-polyvalence in the game. The increase of the actual ball in play time at higher speed both at professional and amateur levels have made the development of players' bio-motor abilities a paramount element for a total rugby game enhancement. In this article, we shall review what are the general and specific abilities players must develop and maintain to reach high performance? What would be the best way to develop these abilities? How will this affect the training? And finally why is it important for trainers and conditioning coaches to understand the training challenges ahead in order to optimize their potential interaction with rugby players in training?

Deutsch, Kearney and Rehrer (2006) among others classified rugby as an intermittent high-intensity exercise through a game time-motion analysis of professional Super 12 players in New Zealand. Their and other studies have shown that the Actual Ball in Play Time (ABPT) in a professional rugby game is in the range of 42% and more of the total playing time (IRB, RWC 2003 statistics). The ABPT is on the rise at amateur level too, elite rugby pulling the development upwards through a role model effect. Considering this, we can confidently say that the bio-motor abilities inherent to rugby are a limiting factor of the game.

Rugby is primarily a collective combat power game where players must repetitively display a high level of speed, agility and endurance combined with technical and tactical astuteness.

Figure 1 shows a resume of the physiological factors involved in rugby and some training objectives to develop them optimally:

Ergogenesis	Limiting Factors	Average work/rest	Training Objectives
<ul style="list-style-type: none"> • 60% Aerobic • 30% Anaerobic Lactic • 10% Anaerobic Alactic <p>(position specificity applies)</p>	<ul style="list-style-type: none"> • Acceleration • Deceleration • Change of Direction • Aerobic/lactic Endurance • Power/Power Endurance 	<ul style="list-style-type: none"> • Forwards: 1:7 • Backs: 1:21 • Note: Forwards involved in more high intensity work, whereas backs reach peak velocity more often 	<ul style="list-style-type: none"> • 3 energy pathways development with emphasis on aerobic endurance • Develop starting power and power endurance • Develop agility with

			quick footwork <ul style="list-style-type: none"> • Develop acceleration and deceleration with quick changes of direction
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Figure 1. Adapted from Bompa and Deutsch et al., 2006

The development of these abilities is best done through the methodology of a periodized training system. I refer here to a complete and systematic multilateral sport development prior any specialization. It is well established now (Bompa, 2000) that high performance in sports is more likely to occur if the player periodically and systematically developed all abilities during pre-puberty and puberty, to specialize in the chosen sport and position during the post puberty developmental phase. Hence, we can confidently say that the training periodization of rugby players (and other athletes) in adulthood should only be the continuity of a thorough plan implemented as early as in the individuals' pre-puberty phase.

Over a period of 10 to 12 years from pre-puberty to high performance, training periodization should develop speed (maximum speed and speed endurance), coordination, power (and all related issues such as strength and maximum strength at later stages), endurance (aerobic and anaerobic), and agility (improved through strength and power development). The implementation would occur through general training and then more specifically in relation with to the technical and tactical approach of the game. Moreover, the plan will also provide for position specific development.

An optimally designed plan will not only develop powerful and skilled players, but as it also provides comprehensive recovery strategies, it will also produce mostly injury free players and bring the game safer practice and play time. Coaches and trainers should keep in mind that the body adapts and get stronger through the recovery time allowed to super-compensate from the stress phases of training, not during the training per se. Training is only a stress gradually induced to force the body to adapt to heavier workloads hence maximizing performances. It is through adequate recovery that this adaptation occurs. Managing training volume and intensities is one good thing...Managing recovery time ultimately becomes the key to success! It is seemingly the most overlooked factor in training programs nowadays. When we as coaches and trainers think "overload and specificity", we also must think "recovery" as a paramount condition for successful development. The periodization of the sport's motor-abilities and the yearly plan becomes then the only efficient way to go.

Because training is of a complex nature, our duty as coaches and trainers to the athletes/players we train extends to how well we understand the whole training process, and how we relentlessly question ourselves upon our knowledge. In today's sport development challenges, sharpness comes from better education and information usage. It

is our duty to keep developing our knowledge to avoid the staleness we wish our athletes to avoid. Continuing education provides us with all the knowledge and tools necessary to thrive and get better ourselves. If we progress as coaches, only then our athletes/players will too. I believe a coach or a trainer is only as good as his/her commitment to self improvement and introspection.

Stay sharp and train smart! I wish you all safe and enjoyable training.

References:

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