

Running demands in New Zealand club, semi-professional and professional rugby union competitions

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Abstract:

Game demands of professional rugby players are well documented, however, there is minimal research on the running demands in amateur and semi-professional competitions. To the authors knowledge, no research has compared the running demands in club, national (division 1 (NPC) and division 2 (Heartland)) or international provincial (Super rugby) competitions. Information on the running demands of each competition would enable trainers to develop training programs specific to player's needs and assist in the transition of players between competitions. Players from a team in each competition level wore a 10 Hz GPS unit during all games in a rugby season. Total distance (m), running distance (≥ 7 km.h⁻¹(m)) and high intensity running (≥ 16 km.h⁻¹(m)) were recorded. The research was approved by an Institutional Ethics Board and the NZ Rugby Union. Lower competition (club and division 2) players covered greater distances (150m to 400m) per game than higher level players. As in total distance, division 2 players ran (≥ 7 km.h⁻¹) more in games (120m) compared to higher level players. However, club players typically covered less running distance than higher level players (3102m vs 3237 to 3319m, $p=0.10$ to 0.00). In contrast, Super rugby players typically ran greater distances (962m) at higher speeds (≥ 16 km.h⁻¹) per game. This information could assist in the development of competition-specific training programs, and the monitoring of training loads during a season and when a player returns from an injury. Further analysis will investigate running demands of rugby positions in each competition to enable the development of position-specific-training programs.

Bios:

Peter Olsen ([id 0000-0001-7815-215X](#)) (peter.Olsen@ara.ac.nz) is a Principal Lecturer and Programme Leader for the Bachelor of Applied Science in Sport, Nutrition, and Health Promotion. He has a passion for teaching and sport science, especially in areas such as critical thinking and research. His recent research has focused on equity in sport and exercise settings.

Mike Hamlin's ([id 0000-0001-7941-8554](#)) research specialises in the effects of exercise on human physiology and he is a world expert on altitude/hypoxic training. His research is theoretical (regarding the physiological mechanisms behind exercise training adaptation) as well as practical (how does altitude training effect a rugby player's sprinting and game performance?).

Richard Deuchrass has been an Athletic Performance Manager at Lincoln University for more than 17-years. He has a passion for strength and conditioning and has held many positions in this area and trained athletes and teams that have competed at the National and International level.

Shaun Owen has a PhD in sport performance and has worked with elite sports teams from New Zealand, Japan, South Africa and the United States.

James Jowsey is a Manager at Ara and also a coach. He is passionate about Leadership and Coaching, and thinking outside of the square to help teams and individuals achieve their goals. He is a World Ruby Accredited Coach Educator and has had many coaching roles with club and representative teams.

Matt Liley is a sport science graduate who participated in the research as part of his final year of study at Ara Institute of Canterbury.

Keywords:

GPS, rugby, specificity