SE&NZ

SPORT & EXERCISE SCIENCE

NEW ZEALAND

SE⊘NZ

SPORT & EXERCISE SCIENCE

— NEW ZEALAND —

SESinNZ: reconnecting Academics and Practitioners

Sport and Exercise Science New Zealand
Annual Conference, 13-14 October 2017
Avantidrome, Cambridge

Proudly in association with ICPAFR (International Council for Physical Activity and Fitness Research

Using Global Positioning System Analysis to Quantify the Movement Characteristics of Sub Elite Rugby Union Players in Training and Match Performance

[1]Pieters, T, [1]Haggie, M; [2]Onishi, T.

[1]Waikato Institute of Technology, [2]Teikyo University of Sport Science and Medicine

Rugby Union(RU) involves various movement patterns(MP) which include walking, jogging and sprinting. Substantial physiological differences exist between backs and forwards. The diversity of physiological requirements of each positional group results in a range of physiological stress experienced by players. Game demands and training loads need to be quantified to maximise the physiological benefits of training and improve performance. Therefore, the aim of the present study was to incorporate GPS player tracking in sub-elite(SE) RU games and training sessions to evaluate the MP. 31 SE RU players participated in the study. Players were categorised as tight or loose forwards, scrumhalves, inside or outside backs. MP was evaluated over four weeks of training and games with 23 portable GPS player tracking devices. MP was categorized as walking, jogging, cruising, striding, high-intensity and sprinting. Total distance (m), total duration (min), relative distance (m/min), and distance (m) and duration (min) covered in each speed zone were compared between training and games. Results indicated that SE RU players are not trained sufficiently. Training loads fail to meet game demands, especially in high-intensity and sprint zones, which increase injury risks. Conditioning programmes should be adjusted so that training loads equal game demands.

References

Cahill, N., Lamb, K., Worsfold, P., Headey, R., & Murray, S. (2013). The movement characteristics of English Premiership rugby union players. Journal of Sports Sciences, 31(3), 229–237. https://doi.org/10.1080/02640414.2012.727456

Coughlan, G. F., Green, B. S., Pook, P. T., Toolan, E., & O'Connor, S. P. (2011). Physical game demands in elite rugby union: a global positioning system analysis and possible implications for rehabilitation. The Journal of Orthopaedic and Sports Physical Therapy, 41(8), 600–605. https://doi.org/10.2519/jospt.2011.3508

Cunniffe, B., Proctor, W., Baker, J. S., & Davies, B. (2009). An evaluation of the physiological demands of elite rugby union using global positioning system tracking software. Journal of Strength and Conditioning Research / National Strength & Conditioning Association, 23(4), 1195–1203. https://doi.org/10.1056/NEJM200004203421607

Cunningham, D., Shearer, D. A., Drawer, S., Eager, R., Taylor, N., Cook, C., & Kilduff, L. P. (2016). Movement demands of elite U20 international rugby union players. PLOS ONE, 11(4), e0153275. https://doi.org/10.1371/journal.pone.0153275

Tee, J. C., Lambert, M. I., & Coopoo, Y. (2016). GPS comparison of training activities and game demands of professional rugby union. International Journal or Sports Science and Coaching, 11(2), 200–211. https://doi.org/10.13140/RG.2.1.3223.0881