The influence of possession on the movement and physical demands in adolescent rugby union match play

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The whole match demands of rugby union are well established, however it is unclear how these vary during specific phases of play within a match. For example, the influence of phases of play (attacking or defending) on the movement and physical demands are yet to be quantified. Therefore, the aim of this study was to investigate the influence of attacking and defensive phases of play on the movement (e.g., running) and physical (e.g., accelerometer activity) demands for forwards and backs. With institutional ethics approved, 50 male academy rugby union players (age: 17.6 ± 0.6 years; stature: 183.0 ± 6.8 cm; body mass 89.4 ± 10.9 kg) from one regional rugby union academy were tracked during match-play using microsensor technology (Optimeye S5, Catapult Innovations, Melbourne, Australia). 260 observations were collected over 2 seasons (12 matches). Differences in maximum sprint velocity (V_{max}), relative distance an§d PlayerLoad™ (PL.min^{-1}) were assessed using magnitude based inferences. The mean length of matches were 74.8 ± 3.3 min, whilst the mean amount of time the ball was in play was 27.4 ± 2.9 min. The mean amount of time spent attacking per match was lower than defending (12.7 ± 3.1 vs. 14.7 ± 2.5 min). There were a lower number of attacking phases (27 ± 9) compared to defensive phases (31 ± 10) whilst the mean phase was similar in length (26 ± 17 vs. 26 ± 18 s). The demands were *almost certainly* greater when defending compared to attacking for forwards; V_{max} (3.3 ± 1.8 vs. 4.1 ± 1.5 m.s^{-1}), relative distance (97.9 ± 53.7 vs. 121.8 ± 48.8 m.min^{-1}) and PL.min^{-1} (10.6 ± 5.3 vs. 12.7 ± 4.6 AU.min^{-1}). When defending, relative distance was *very likely* greater (101.6 ± 66.4 vs. 121.4 ± 60.9 m.min^{-1}), and V_{max} (3.7 ± 2.1 vs. 4.2 ± 1.8 m.s^{-1}) and PL.min^{-1} (10.7 ± 7.6 vs. 12.4 ± 7.4 AU.min^{-1}) were both *likely* greater compared to attacking for backs. The movement and physical demands were consistency greater when defending for both positional groups, although a smaller disparity between phases was observed for backs than forwards. This indicates backs have greater movement demands during attacking phases, which was also reflected in the higher V_{max}. The greater PL.min^{-1} for the forwards during defending suggests a greater involvement in tackles and rucks. These data provide practitioners with reference data when replicating match specific phases of play.