

High-Speed Running Density in Collegiate Women's Soccer

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ABSTRACT

High-speed running density (HSRd) is a relatively new concept developed to discern between HSR volume and intensity. HSRd is the ratio of high-speed efforts to distance covered. **PURPOSE:** This study aimed to assess the differences in HSRd between training and games, and among positions in collegiate women's soccer. A second aim was to correlate HSRd with other training metrics. **METHODS:** Data was collected during the in-season through global positioning units (GPS) worn by athletes ($n = 20$) for 42 training sessions and 15 games. A speed of $5 \text{ m}\cdot\text{s}^{-1}$ was used as the threshold for defining HSR. **RESULTS:** HSRd did not differ between training sessions and games ($H(1) = 0.875, p = .349$) or by position during training sessions ($H(3) = 7.503, p = .057$). However, HSRd differed by position during games ($H(3) = 116.560, p < .001, d = .165\text{-}484$). Midfielders had higher HSRd than goalies and defenders. HSRd had low correlations ($p < .001$) with HSR efforts ($r = .128$), top speed ($r = .061$), and HSRd intensity ($r = .043, p = .003$). A low inverse correlation ($p < .001$) was found between HSRd and sprint distance ($r = -.135$). **CONCLUSION:** There is a difference in HSRd between positions during games, but not training sessions. Midfielders had higher HSRd than goalies and defenders during games. The increase in HSRd for midfielders may be a result of games being less predictable than training sessions, or the expectations of competitive play. The coaching staff and athletes may have tendencies which force midfielders to display higher HSRd during games. Observing HSRd over the course of multiple seasons with various teams, coaching staffs, and athletes will increase the reliability of the data produced. This information would help coaching staffs plan load management strategies for their athletes, potentially decreasing risk of injury.