



BACKGROUND

- External Load monitoring is important in sports science
- Proprietary load algorithms to summarize inputs and provide the end user with a single summary number
- However, the weight given to each on-field performance metric contributing to the overall cumulative score is often unknown

PURPOSE

Investigate the relationships between the GPS derived 2D and 3D summary load metric with on-field metrics related to speed and distance during NCAA Division II women’s lacrosse practice and games.

METHODS

- 15 observations (10 practices, 5 games)
- 15 athletes were provided GPS trackers (10Hz GPS with accelerometer)
- Speed & distance variables were correlated with 2D load & 3D load via Pearson’s correlations

RESULTS

	Load 3D	Load 2D	Top Speed (ft/s)	Work Rate (yd/min)	Hard Running (yd)	Sprint Distance (yd)	Run Distance (yd)	Jog Distance (yd)	Walk Distance (yd)	Total Distance (yd)
Load 2D	0.998	-	-	-	-	-	-	-	-	-
Top Speed (ft/s)	0.57	0.57	-	-	-	-	-	-	-	-
Work Rate (yd/min)	0.13	0.12	0.46	-	-	-	-	-	-	-
Hard Running (yd)	0.58	0.59	0.42	0.18	-	-	-	-	-	-
Sprint Distance (yd)	0.23	0.24	0.21	0.09	0.86	-	-	-	-	-
Run Distance (yd)	0.81	0.82	0.51	0.25	0.74	0.32	-	-	-	-
Jog Distance (yd)	0.97	0.97	0.56	0.21	0.54	0.22	0.77	-	-	-
Walk Distance (yd)	0.91	0.91	0.53	-0.07	0.48	0.18	0.67	0.87	-	-
Total Distance (yd)	0.98	0.98	0.58	0.12	0.62	0.30	0.81	0.98	0.94	-
Performance Duration (min)	0.91	0.91	0.51	-0.09	0.50	0.20	0.68	0.88	0.98	0.94

CONCLUSIONS

- Total distance, Practice Duration, & Non-high-speed running were highly correlated with 2D & 3D load metrics
- This relationship was stronger than the relationships with Sprinting or Hard-Running

PRACTICAL APPLICATIONS

- Athlete load monitoring is a multifaceted process.
- Coaching staffs with limited budgets can consider cheaper alternatives to measure total distance and practice time for player monitoring