



THE RELATIONSHIP BETWEEN RUNNING VERTICAL JUMP PERFORMANCE, TRADITIONAL VERTICAL JUMPS, AND DEADLIFT BAR VELOCITY METRICS

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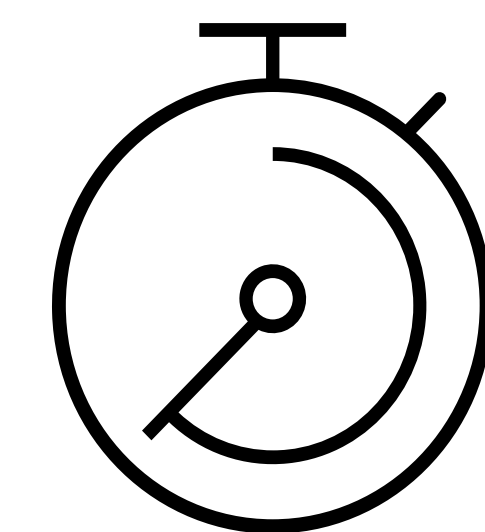
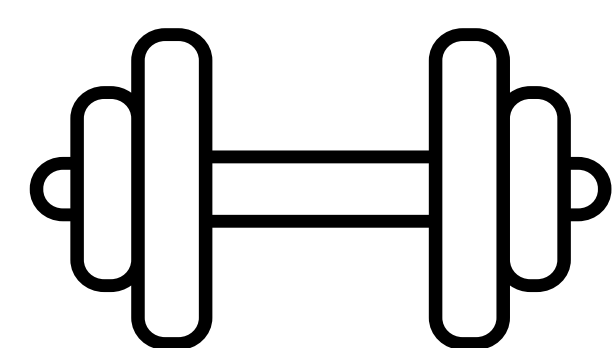
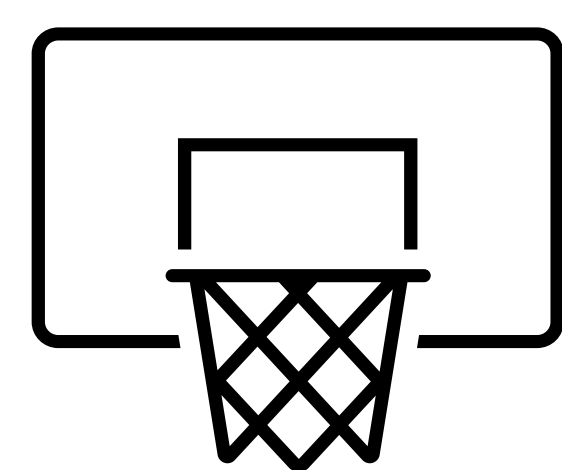
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Introduction

- Ecological validity of many standard performance assessments and training movements is lacking in team sports
- In basketball, players often run, or are in a whole-body movement pattern prior to jumping
- Running vertical jump may provide the most ecological valid version of the vertical jump in basketball
- The purpose of this study was to investigate the correlation between deadlift bar velocity metrics, running start vertical jumps, and traditional fixed-foot, countermovement jump reach verticals in Division II, NCAA male basketball athletes

Methods

- Male collegiate basketball athletes (n = 14; aged = 21 ± 2 y; ht. = 186.1 ± 10.4 cm; wt. = 85.1 ± 13.3 kg; BIA BF% = 11.3 ± 4.0 %)
- Two, fixed-feet, countermovement jump reach verticals (VJ)
- Two running start vertical jumps (rVJ)
- Force & Velocity data from multiple-repetition hex-bar deadlift max
- Pearson correlations were run to investigate the relationships between vertical jump performances and bar velocity metrics



Results

	rVJ	VJ	Peak Force	Peak Velocity	Mean Velocity	Peak Power	Mean Power	Relative PF	Fat-free PF	Relative PP	Fat-free PP	Relative MP	Fat-free MP
rVJ	-	-	-	-	-	-	-	-	-	-	-	-	-
VJ	0.947	-	-	-	-	-	-	-	-	-	-	-	-
Peak Force	0.442	0.312	-	-	-	-	-	-	-	-	-	-	-
Peak Velocity	0.233	0.288	0.459	-	-	-	-	-	-	-	-	-	-
Mean Velocity	0.223	0.227	0.460	0.886	-	-	-	-	-	-	-	-	-
Peak Power	0.241	0.308	0.549	0.962	0.804	-	-	-	-	-	-	-	-
Mean Power	0.195	0.245	0.614	0.585	0.572	0.693	-	-	-	-	-	-	-
Relative PF	0.764	0.588	0.707	0.167	0.296	0.166	0.330	-	-	-	-	-	-
Fat-free PF	0.715	0.539	0.743	0.150	0.304	0.141	0.309	0.983	-	-	-	-	-
Relative PP	0.547	0.561	0.559	0.867	0.795	0.868	0.679	0.529	0.466	-	-	-	-
Fat-free PP	0.485	0.512	0.569	0.919	0.852	0.910	0.680	0.470	0.428	0.989	-	-	-
Relative MP	0.412	0.422	0.581	0.485	0.542	0.547	0.905	0.602	0.558	0.743	0.708	-	-
Fat-free MP	0.357	0.379	0.584	0.483	0.555	0.542	0.925	0.560	0.535	0.705	0.684	0.993	-

Conclusions

- rVJ and VJ are strongly correlated
- Bar velocity & absolute power & force were moderate-to-weakly correlated
- Relative power & force (per body mass or per fat-free mass) were moderate-to-weakly correlated

Practical Applications

- Running vertical jump could be utilized as an ecologically valid performance metric in DII, male basketball players
- Running vertical jump has a stronger correlation with lower-body force and power production than the traditional, fixed-foot, countermovement jump reach