

Pro Skills Basketball

Architech Sports and Physical Therapy



Countermovement Jump Results

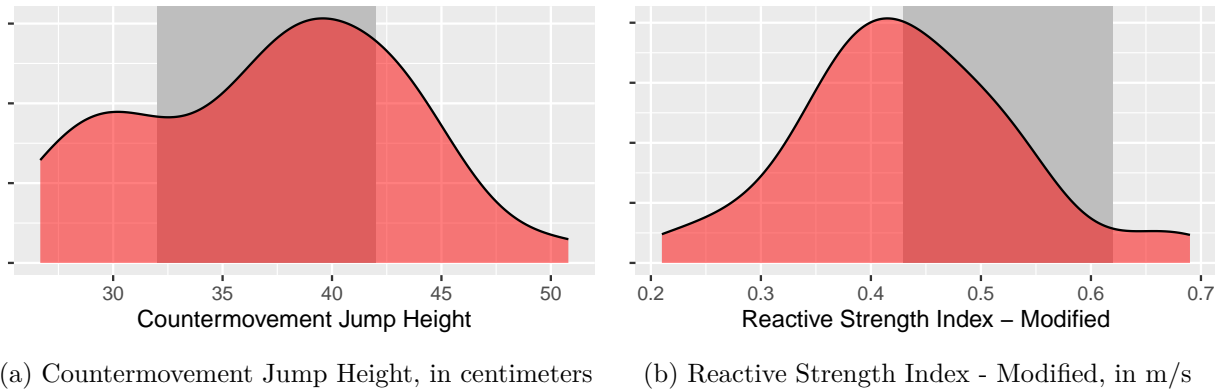


Figure 1: Distributions of CMJ results

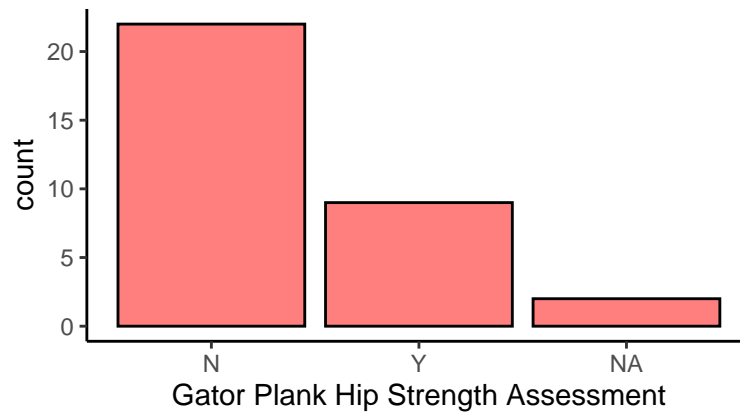
The countermovement jump is an excellent measure of lower body power and explosiveness. Through the use of the Vald ForceDecks, we are able to accurately measure the force an athlete produces over time, which leads to a precise measurement of the athlete's jump height alongside a range of other useful metrics, such as peak power, the duration of different phases of the jump, and the Reactive Strength Index - Modified (mRSI).

One of the more useful metrics gathered from the assessment, the mRSI captures a few important characteristics of the jump into one single measurement. Calculated by dividing the Jump Height by the time to takeoff, the mRSI shows how “springy” an athlete is. While two athletes may jump the same height, one might drop down and rebound very quickly, like a powerful spring, while the other takes longer to develop that force, resulting in a lower mRSI. This provides insight into both the athlete's jump strategy but also fatigue characteristics.

The above graphs show the distribution of testing scores, alongside normative data from the VALD *Normative Data Report - Basketball 2022*¹, displayed as a grey region showing the 25th to 75th percentile. Note that the normative values are gathered from collegiate athletes.

¹Normative data from: <https://hub.valdperformance.com/app/reports/dataReports>

Gator Plank



(a) Count of Athletes

Figure 2: Distribution of Gator Plank Results

The Gator Plank Hip Strength assessment is a test used to evaluate the relative hip strength of an athlete in the frontal plane. Being strong enough to support one's bodyweight in the side plank position shows healthy muscular development, which should correlate with a reduced rate of injury in athletes. If the athlete was marked as "Yes," then they were able to successfully perform the assessment.

FMS Overhead Squat

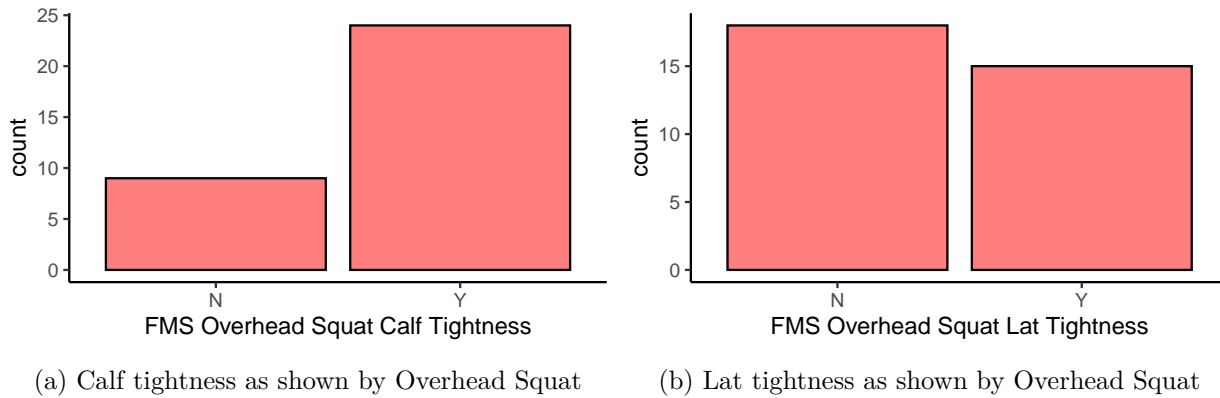


Figure 3: Count of Athletes by FMS Squat Results

The Functional Movement Screen™ is a battery of several assessments that look to determine the quality of an athlete's movement patterns. While performing the entire FMS™ screen gives a more comprehensive look into an athlete's movement, the overhead squat, as a single assessment, provides a holistic look into the entire body as an entire system working together. The squat looks at an athlete's ability to reach good depth while maintaining a relatively upright posture, shoulder flexion in keeping the bar overhead, and weight balanced both between the left and right feet and over the middle of the foot. This allows the practitioner to assess the athlete's movement capabilities across the whole body at once. During this assessment, we looked at whether tightness in the calves and/or lats were the limiting factor. A 'Yes' indicates tightness in that particular area.

Counts of Athletes

	Total	Pain	Hip	Tightness			Assymetries		
				Quad	Lat	Calf	Ecc.	Con.	Landing
Pain History									
Pain	14	100.0	57.1	57.1	35.7	71.4	35.7	28.6	50.0
No Pain	19	0.0	73.7	47.4	52.6	73.7	36.8	21.1	73.7
Hip Weakness									
Weakness	22	36.4	100.0	54.5	50.0	81.8	45.5	27.3	68.2
No Weakness	9	66.7	0.0	55.6	33.3	44.4	11.1	11.1	55.6
Quad Tightness									
Tightness	17	47.1	70.6	100.0	35.3	58.8	35.3	17.6	76.5
No Tightness	14	42.9	71.4	0.0	57.1	85.7	35.7	28.6	50.0
Lat Tightness									
Tightness1	15	33.3	73.3	40.0	100.0	93.3	46.7	20.0	73.3
No Tightness1	18	50.0	61.1	61.1	0.0	55.6	27.8	27.8	55.6
Calf Tightness									
Tightness2	24	41.7	75.0	41.7	58.3	100.0	45.8	33.3	62.5
No Tightness2	9	44.4	44.4	77.8	11.1	0.0	11.1	0.0	66.7
Ecc. Assym.									
High Assym	12	41.7	83.3	50.0	58.3	91.7	100.0	33.3	83.3
Low Assym	21	42.9	57.1	52.4	38.1	61.9	0.0	19.0	52.4
Con. Assym.									
High Assym1	8	50.0	75.0	37.5	37.5	100.0	50.0	100.0	75.0
Low Assym1	25	40.0	64.0	56.0	48.0	64.0	32.0	0.0	60.0
Landing Assym.									
High Assym2	21	33.3	71.4	61.9	52.4	71.4	47.6	28.6	100.0
Low Assym2	12	58.3	58.3	33.3	33.3	75.0	16.7	16.7	0.0

Table 1: Athletes with Calf Tightness

Raw Data

Athlete	CMJ	mRSI	Hip Weakness	Calf	Lat	Quad Tightness	Pain History
Addison	27.94	0.36	NA	Y	Y	NA	N
Tyree-Rodriguez							
Braven Kincaid	28.96	0.42	N	Y	Y	N	Y
Bryson Demby	28.96	0.26	Y	Y	Y	N	Y
Canyon Hall	41.40	0.55	Y	N	N	Y	Y
Carrington Harris	38.35	0.48	Y	Y	Y	N	N
Connor Walker	39.12	0.53	N	Y	Y	N	Y
Cooper Dillon	30.23	0.37	N	Y	Y	Y	N
Dmitriy Ivanov	34.04	0.42	N	Y	N	Y	Y
Ethan Warren	38.10	0.45	N	N	Y	Y	N
Evan Jones	44.20	0.46	N	Y	Y	Y	N
Grant Warren	37.59	0.44	NA	Y	N	NA	N
Henry Garrison	45.72	0.51	Y	Y	N	N	Y
Ian Ramirez	33.78	0.40	N	Y	Y	N	N
Isaiah Smith III	26.92	0.21	N	Y	N	Y	N
Jacob Pietrafesa	50.80	0.69	N	Y	N	N	N
Jacob Warren	43.69	0.50	Y	N	N	Y	Y
Jaxson Martin	26.67	0.44	N	Y	Y	Y	N
Jayden McCrea	43.43	0.65	N	Y	N	N	N
Jermiah Boswell	42.93	0.56	N	Y	Y	N	Y
Jimmy Neubauer	38.61	0.45	N	Y	N	Y	N
Jovon Nasir Berry	40.89	0.37	N	Y	N	N	Y
KaiRee McCain	31.24	0.31	N	Y	Y	N	N
Ko Ide	38.10	0.41	N	N	N	Y	N
Latterio Robinson	29.97	0.48	N	Y	Y	Y	N
Logan Massenberg	38.10	0.40	N	Y	N	Y	Y
Maxim Stassenko	42.42	0.30	N	N	N	Y	Y
Maxwell Ober	36.58	0.37	N	Y	Y	N	N
Nikhil Nanduri	34.80	0.42	Y	N	N	Y	N
Nolan Keady	30.99	0.37	N	Y	N	Y	Y
Reid Stanley	42.67	0.53	Y	Y	Y	Y	Y
Saul Lieberman	42.42	0.50	Y	N	N	Y	Y
Tommy Claire	37.59	0.35	Y	N	N	N	N
Trevor James	39.62	0.38	N	N	N	N	N

Table 2: Raw data from testing.