

TESTING STRENGTH & POWER

REFERENCE VALUES FOR ELITE BASKETBALL PLAYERS



LAUREUS
PERFORMANCE

COACH TO COACH
EDUCATIONAL COURSES

Table 3.3 / Optimal levels of strength endurance and maximal strength (1RM) relative to the body weight

TRAP BAR DEADLIFT	BENCH PRESS	PULL-UPS	SINGLE LEG SQUAT
1.7 - 2.0	1.1 - 1.3	> 12	> 15 (< 15% difference)

Some coaches and players prefer submaximal 2-5 RM tests, due to practical or safety reasons. In this case, 1RM can be predicted using the Brzycki formula⁹:

$$1RM = \text{Weight} \div (1.0278 - (0.0278 \times \text{Number of repetitions}))$$



Table 3.4 / Optimal height/length (cm) for SJ, CMJ, 1SJ and LB tests considering playing position

	SJ	CMJ	1SJ	LB
GUARDS	> 48	> 53	> 56	> 235
FORWARDS	> 45	> 50	> 53	> 235
CENTERS	> 42	> 46	> 48	> 235

For all coaches who do not have force platforms or similar testing equipment, research confirmed that different smartphone/tablet applications are both valid and reliable for testing jump performance^{37,39,40}.



Table 3.5 / Optimal height (cm) and ground contact time (ms) in drop jumps considering playing position

	30cm / GCT	45cm / GCT	60cm / GCT	75cm / GCT
GUARDS	> 50 / < 180	50 / < 180	> 45 / < 190	> 45 / < 190
FORWARDS	> 45 / < 180	45 / < 180	> 40 / < 190	> 40 / < 200
CENTERS	> 40 / < 190	40 / < 210	> 35 / < 230	> 30 / < 250

Table 3.6 / Optimal results for 5 and 10 meters accelerations considering playing position

	5m ACC	10m ACC
GUARDS	< 0.9 s	< 1.65 s
FORWARDS	< 0.95 s	< 1.75 s
CENTERS	< 1.05 s	< 1.85 s

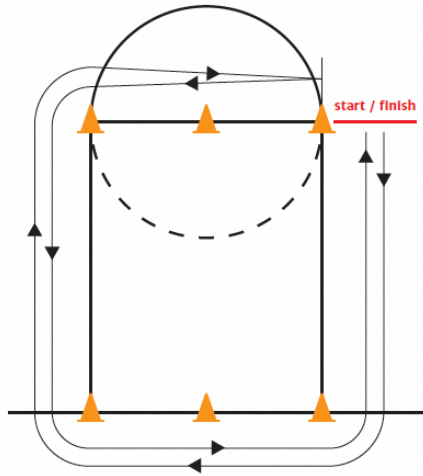
Table 6.7 / Training emphasis according to DSI⁸³

SCORE	DSI SCORE	TRAINING EMPHASIS
Low	<0.6	Ballistic training
Moderate	0.6 – 0.8	Concurrent training
High	>0.8	MAX strength training

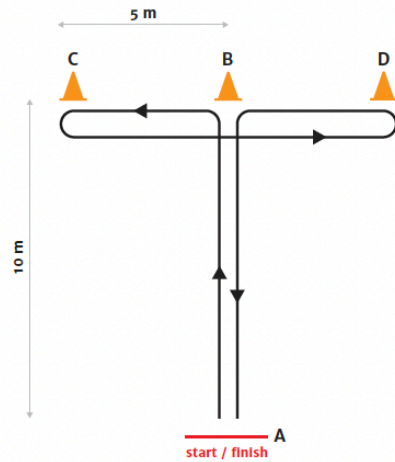
As the isometric mid-thigh pull movement is highly correlated with peak force production and RFD, it can be used as a simple test to screen the player's power performance and to monitor individual development⁴¹.



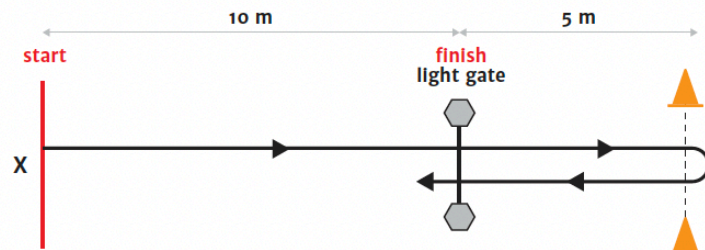
LANE AGILITY



T-TEST



505 COD



Agility can be considered a specific, on-court COD which demands additional qualities, such as anticipation and reaction to sudden changes or stimuli. Recent development in sport technologies, especially in the testing-related equipment with acoustic and visual signalization, has made headway towards the integration of some of the aforementioned qualities into standard COD testing.

Table 3.7 / Optimal results in COD tests considering playing position

	LANE AGILITY	T-TEST	505 COD
GUARDS	< 10.5 s	< 8.5 s	< 2.10 s
FORWARDS	< 11 s	< 8.75 s	< 2.20 s
CENTERS	< 11.5 s	< 9 s	< 2.30 s

CAL DIETZ

ACCELERATION SPLIT TIMES CALCULATOR:

<https://performancemadesimple.com>

LOADING PARAMETERS AND GUIDELINES FOR 13 TRAINING ZONES:

<https://www.xlathlete.com/blog/triphasic-training-13-training-zones-loading-parameters-and-guidelines/>