ADAPT

PERFORMANCE & REHAB DEPARTMENT

PHYSICAL PROFILE REPORT

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11th October 2023

KEY DEVELOPMENT AREAS

1. Enhance maximal of force production (strength)
2. Increase ability to use stretch shortening cycle
3. Improve eccentric hamstring strength & symmetry
4. Improve adduction / abductor strength
5. Increase symmetry of right shoulder

STAGE ONE GOALS

1. Implement early stage plyometrics
2. Add shoulder ER in 90 degree position
3. Add isometric hamstring exercises
4. Add unilateral adductor exercises, isometric

STAGE TWO GOALS

1. Progress to higher velocity plyometrics
2. Add in shoulder strength exercises in dangerous positions
3. Aim for 90% BM for Hamstring strength
4. Add range to abductor/adductor ExRx

PERFORMANCE OUTCOMES

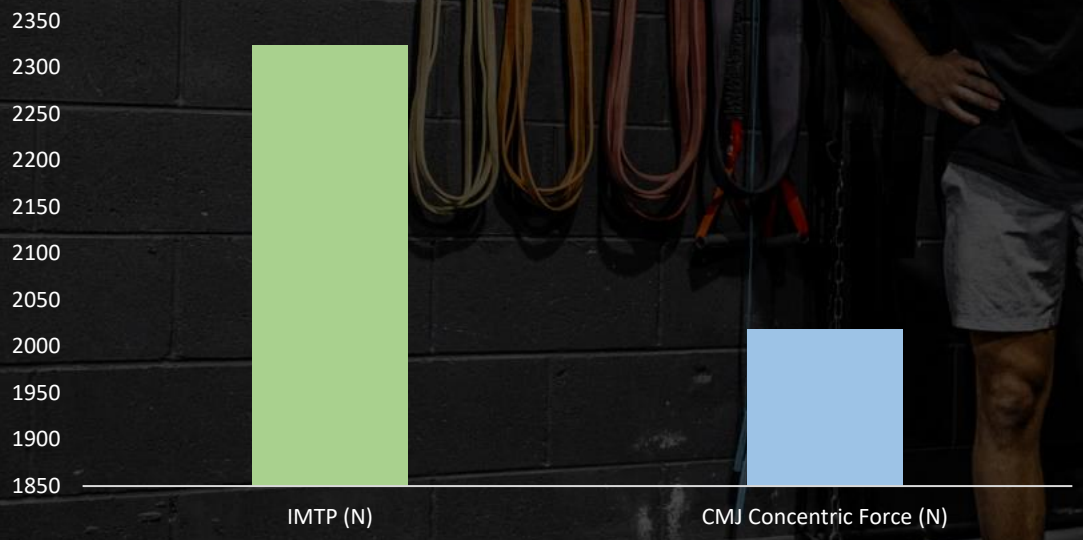
1. Improve resilience – Reduced risk of knee / shoulder injuries
2. Improved symmetry – Increase force output and performance
3. Improved Eccentric hamstring strength – to withstand higher running loads and speeds
4. Improve adductor strength to reduce future injury risk

FORCE APPLICATION

ISOMETRIC MID THIGH PULL (IMTP)

def. Testing the max strength of an athlete in conjunction with how well they use this strength in a powerful movement.

IMTP (N)	IMTP (N) per KG of Body Mass	CMJ Concentric Force (N)
2323	27.59	2019



STRENGTH : POWER RATIO

0.87

POWER DOMINANT

PERFORMANCE TARGETS

RELATIVE IMTP

45N/KG AND ABOVE

Athlete can generate a large amount of force. Train more power

40 - 44.9N/KG

Average force output. Needs analysis required. Look at S:P ratio

39.9 N/KG AND BELOW

Below average force output. Train more strength suitable to training age

FORCE APPLICATION

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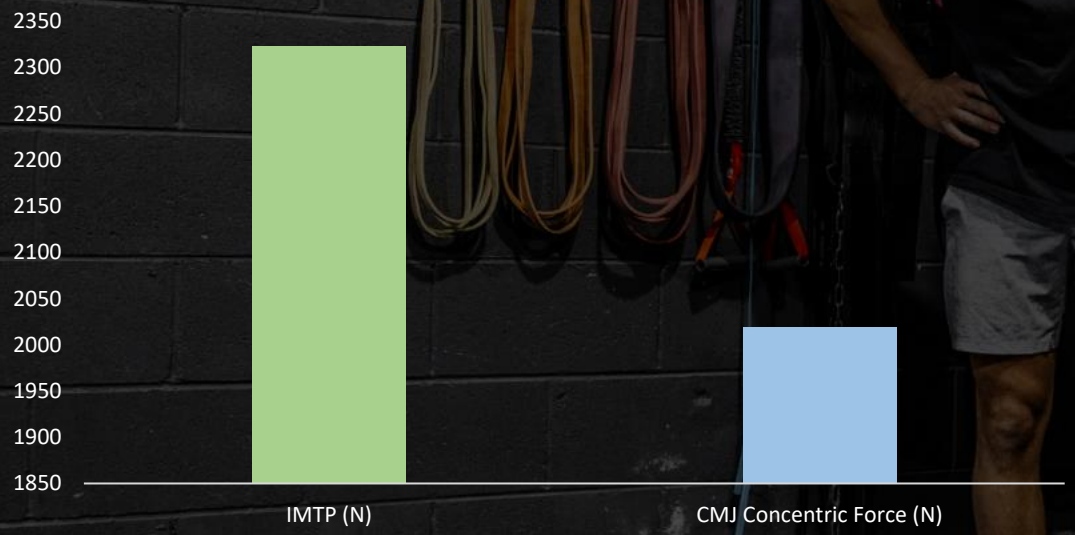


STRENGTH : POWER RATIO
0.87
POWER DOMINANT

PERFORMANCE TARGETS

STRENGTH:POWER RATIO

0.80 AND ABOVE

Athlete is power dominant. Target strength training to increase ability to produce force and increase potential

0.60 - 0.79

Concurrent athlete. Refer to detailed needs analysis to asses relative force output or capacity

0.60 AND BELOW

Training should focus on rate of force development and being more powerful and moving with intent

VELOCITY APPLICATION

VERTICAL PROJECTION

def. Comparing an athletes ability to jump using elastic energy from tendons (stretch shorterning cycle), without using the stretch shoterning cycle (SSC)

SQUAT JUMP (cm)	CMJ FLIGHT (cm)
29.9	33.7

ECCENTRIC UTILISATION RATIO
1.13
BALANCED ATHLETE

PERFORMANCE TARGETS

ECCENTRIC UTILISATION RATIO (EUR)

1.15 AND ABOVE
Good use of stretch shortening cycle and tendon capacity

1.05 - 1.15
Average EUR. Improve athletes ability to use their SSC

1.05 AND BELOW
Low EUR. Major focus of program should be using SSC

VELOCITY APPLICATION

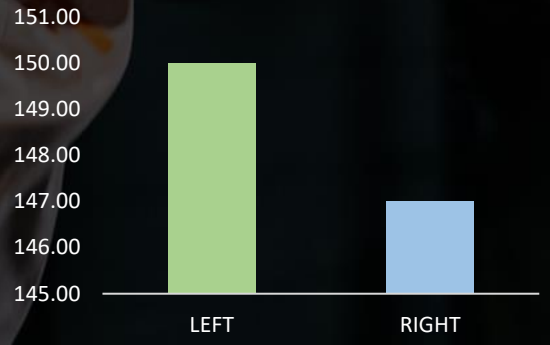
HORIZONTAL PROJECTION

def. Comparing an elastic jump with a jump in a squat position to create a jump height profile

HOP & STICK

LEFT	RIGHT
145.00	145.00
LIMB SYMMETRY	
0.00%	BALANCED

LATERAL BOUND



LEFT	RIGHT
150.00	147.00
LIMB SYMMETRY	
2.02%	LEFT

TRIPLE HOP

LEFT	RIGHT
412.00	423.00
LIMB SYMMETRY	
2.63%	RIGHT

Hop & Stick: How far the athlete can project forward, this also tests deceleration as the athlete must stabilise themselves to hold landing position

Lateral Bound: Displays athletes ability to change direction laterally from leg to leg

Triple Hop: Three consecutive hops on the same limb with little ground contact time, this tests the athletes stretch shortening cycle. Showing how quick a muscle can lengthen and shorten

NORDBORD

ECCENTRIC HAMSTRING STRENGTH

def. The nordbord tests eccentric hamstring strength. This is vital for handling high-speed running with imbalances and deficiencies in strength increase injury risk

NORDIC FALL TEST

Performing a Nordic Fall on the Nordbord tells us two key results that are essential for eccentric hamstring strength. Symmetry between limbs and total force produced. For Athletes, we should be aiming for 100% body mass of force produced and 5% asymmetry

SIDE	LEFT HAMSTRING	RIGHT HAMSTRING
FORCE (N)	251	274
FORCE (KG)	26	28
SYMMETRY %		8.76%
% BODY MASS		64%

PERFORMANCE TARGETS

NORDBORD - NORDIC FALL TEST

GREAT ECCENTRIC STRENGTH
100% BM and above
5% Asymmetry and below

AVERAGE ECCENTRIC STRENGTH
90 - 99.9% BM and above
5 - 10% Asymmetry

POOR ECCENTRIC STRENGTH
90% BM and below
10% Asymmetry and above

DYNAMO

HIP ABDUCTION / ADDUCTION STRENGTH

def. The dynamo allows us to test a wide range of joint/muscle strength as well as imbalances between glute and groin strength. Low percentage of body mass and high asymmetries present and increased risk of injury.

ABDUCTION

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	163	176
FORCE (KG)	17	18

SYMMETRY %	8%
% BODY MASS	41%

ADDUCTION

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	234	241
FORCE (KG)	24	25

SYMMETRY %	3%
% BODY MASS	58%

PERFORMANCE TARGETS

DYNAMO - HIP ABDUCTION / ADDUCTION

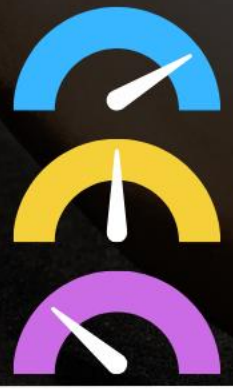
GREAT STRENGTH
100% BM and above
5% Asymmetry and below

AVERAGE STRENGTH
90 - 99.9% BM and above
5 - 10% Asymmetry

POOR STRENGTH
90% BM and below
10% Asymmetry and above

ABDUCTION : ADDUCTION RATIO

LEFT LIMB	1.44
RIGHT LIMB	1.37



ABDUCTOR DOMINANT
1.01 AND ABOVE

BALANCED
EQUAL TO 1.00

ADDUCTOR DOMINANT
.99 AND BELOW

DYNAMO + FORCE DECKS

ADDITIONAL MUSCLE TESTS

def. The dynamo and force decks allow us to test a wide range of joint/muscle strength as well as imbalances between right and left limb. A low percentage of body mass and high asymmetries present and increased risk of injury.

KNEE EXTENSION

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	373	356
FORCE (KG)	38	36
SYMMETRY%		4.66%
% BODY MASS		88%

EXTERNAL ROTATION

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	120	168
FORCE (KG)	12	17
SYMMETRY%		33.33%
DOMINANT SIDE		Right

ISO Y

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	106	148
FORCE (KG)	11	15
SYMMETRY%		33.07%
DOMINANT SIDE		Right

CALF RAISE

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	850	820
FORCE (KG)	87	84
SYMMETRY%		3.59%
% BODY MASS		202.24%

INTERNAL ROTATION

SIDE	LEFT LIMB	RIGHT LIMB
FORCE (N)	145	132
FORCE (KG)	15	13
SYMMETRY%		9.39%
DOMINANT SIDE		Left

EXTERNAL : INTERNAL ROTATION RATIO

SIDE	RATIO
RIGHT LIMB	0.83
LEFT LIMB	1.27

EX ROT. DOM
1.01 AND ABOVE

BALANCED
EQUAL TO 1.00

INT ROT. DOM
.99 AND BELOW