



LEVELLING THE PLAYING FIELD

RESEARCH PROJECT

An evidence-based approach to mismatches in junior rugby union

FITNESS TESTING PROTOCOLS

Research Partners:



Rugby Fitness Testing Protocols

Order of Testing:

Testing can be completed in any order, with the exception of the ENDURANCE Test (1200m) which HAS TO BE completed at the end of the session.

Clothing:

Participants are encouraged to wear minimal clothing (t-shirt, shorts, rugby boots/runners) at the time of testing. For anthropometric testing, boots and socks need to be removed.

Standardised Warm-Up:

All participants should complete a standardised warm up to prepare them for the movements and activity they are about to complete.

If participants have not completed their usual warm up with their club/team, please see recommended warm up on the next page that can be used. This has been adapted from the Rugby AU 'Prepare to Play; Prepare to Perform' program / NSW Waratahs 'Preparation to Perform' program.

STANDARDISED WARM-UP

DRILL NAME		EXERCISE DESCRIPTION		SETS/REPS	COACHING CUES
RUNNING (5MINS)					
RUNNING	1	RUNNING STRAIGHT	<p>Run straight ahead to last cone Stay tall and drive arms</p> <p>Repeat for reps and jog back to start.</p>	30m Out 30m Back	
	4	RUNNING LATERAL SHUFFLE	<p>Jog to first cone, Base position, feet square, mid foot focus Pushing off BIG toe shuffle across to cone Bounce off the line and return back to start (facing same way)</p> <p>Proceed to each cone and repeat</p>	1 Rep (6 cones)	<p>BASE POSITION PUSH OFF BIG TOE STRONG TRUNK</p>
	6	RUNNING ACCEL DECEL	<p>Run quickly to the second cone then run backwards to the first cone keeps hips and knees slightly bent.</p> <p>Repeat, running two cones forward one cone backwards.</p>	1 Rep (6 cones)	<p>WEIGHT OVER MIDDLE FOOT SIT BACK AS YOU DECELERATE Do not let knees buckle in wards</p>
PLYOMETRICS - BALANCE (5MINS)					
STANDING	12	SINGLE - LEG STANCE HOLD THE BALL	<p>Stand on 1 leg (chest over knee, knee over toe) Hold the ball in front of you with both hands, Raised leg should be positioned behind the supporting leg.</p> <p>Hold your balance and bodyweight over the ball of foot for 30sec on each leg x 2 sets</p>	2 x 30sec el	<p>BEND THROUGH HIPS & KNEE WEIGHT OVER BALL OF FOOT CHEST OVER KNEE, KNEE OVER TOE Do not let knee buckle inwards</p>

	13	SQUATS WITH TOE RAISE	<p>Stand with feet hip width apart, arm straight out in front</p> <p>Sit back (as though sitting down) bending hips/knees & ankles to 90 degrees</p> <p>Lean upper body forwards</p> <p>Then stand back up straightening hips/knee/ankles, stand on toes to finish</p> <p>Repeat 10 x</p>	1 X 10	<p>HINGE THROUGH HIP/KNEE/ANKLE</p> <p>EXTEND THROUGH HIP/KNEE/ANKLE</p> <p>FINISH ON TOES</p> <p>KEEP BACK STRAIGHT</p>
	14	JUMPING VERTICAL JUMPS	<p>Start in base position (hips back, chest over knee, knee over toes, brace core)</p> <p>Jump from base position and extend through hips/knee/ankles</p> <p>Land in base position and hold for 1 sec</p>	1 X 7	<p>HINGE THROUGH HIP/KNEE/ANKLE</p> <p>PAUSE IN BASE POSITION</p> <p>JUMP AS HIGH AS POSSIBLE</p> <p>CUSION LAND ON BALLS OF FOOT</p>
RUNNING (2MINS)					
RUNNING	15	RUNNING LOW BOUNDING	<p>Take a few warm up steps</p> <p>Take 8-10 low bounding steps, lift knee and drive opposite arm</p> <p>Jog the rest of the way</p> <p>Jog back to start and repeat x 2</p>	2 Reps	<p>KEEP BODY STRAIGHT</p> <p>LAND ON BALL OF LEAD FOOT</p> <p>REACT & SPRING OFF GROUND</p> <p>ARM DRIVE</p>
	16	RUNNING PLANT & CUT	<p>Jog 4-6 steps</p> <p>Plant on right leg, cut and change direction to the left and accelerate again</p> <p>sprint 5-7 steps (80/90%) before you plant on left leg and accelerate to right</p> <p>Repeat untill you reach the other side of the field, jog back.</p> <p>Repeat x 2</p>	2 Reps	<p>HIPS, KNEE, FEET ALLIGNED</p> <p>CUT ON BALL OF LEAD FOOT</p> <p>Do not let knee buckle inwards</p>

ANTHROPOMETRIC TESTING

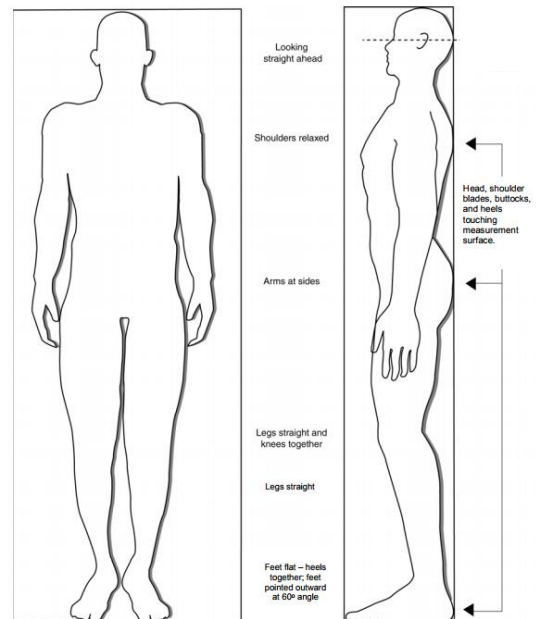
For all anthropometric testing, participants need to be advised to REMOVE their SHOES + SOCKS, as well as any excessive clothing

STANDING Stature

Equipment:
Stadiometer

Protocol:

- **Players must REMOVE SHOES + SOCKS; bare feet only**
- The player is asked to stand with his back facing the stadiometer, with feet together and heels firmly on the ground (standing in anatomical position)
- The player's head, shoulder blades, buttocks, and heels should be making contact with the stadiometer
- Instruct the player to look forward, have their arms by their side, and feet flat on the ground
- Record the measure at this point, with the measure taken from the top of the head (apply minimal force on hair)



SITTING Stature

Stretch stature method – sitting height is the maximum distance from the head piece to the base of the sitting surface

Equipment:

Stadiometer, measuring box/level platform
(do not forget to measure the height of the flat-based seat)

Protocol:

- Player is asked to sit on the level platform/chair with hands resting on his thighs
- The back, shoulder blades and head should be touching against the stadiometer
- Instruct the player to look forward and have their shoulders relaxed
- Record the measure at this point, with the measure taken from the top of the head (apply minimal force on hair)
- Make sure that the player doesn't push upwards with their legs (feet flat on the ground)

Data Collection: STANDING + SITTING Stature

- Each player will have *two trials* – with stature measured to the nearest 0.1 cm
- If the results from the two trial differ by more than 0.4 cm, then repeat measurements for a *third trial*

¹Marfell-Jones, M. J., Stewart, A. D., & De Ridder, J. H. (2012). *International standards for anthropometric assessment*.

²Ross WD, Marfell-Jones MJ. Kinanthropometry. In MacDougall JD, Wenger HA, Green HJ, eds. *Physiological Testing of the High-Performance Athlete*, pp 223-308. Champaign, Illinois: Human Kinetics Books, 1991.

Body Mass

Equipment:

Body mass scales

Protocol:

- **Players must REMOVE SHOES + SOCKS; bare feet only**
- The player is asked to stand on the centre of the scales without support, with weight evenly distributed on both feet and head looking forward
- Ensure instructing the player that if he does not want to know his weight, not look down until he steps off the scales

Data Collection:

- Each player will have *two trials* – with stature measured to the nearest 0.1 kg
- If the results from the two trial differ by more than 0.4 kg, then repeat measurements for a *third trial*

SPEED

40 m Sprint Test

Equipment:

Tape measure, cones (×4), stopwatch

Pre-test: ensure participants are thoroughly warmed-up prior to performing this test

Protocol:

- Measure and place the cones, starting with 2 cones at 0m, and two cones at 40 m
- Set up a final cones two meters past the final cone, used as a target to run to before slowing down (so that they run 40 m at top speed without slowing down prior to the last cone)

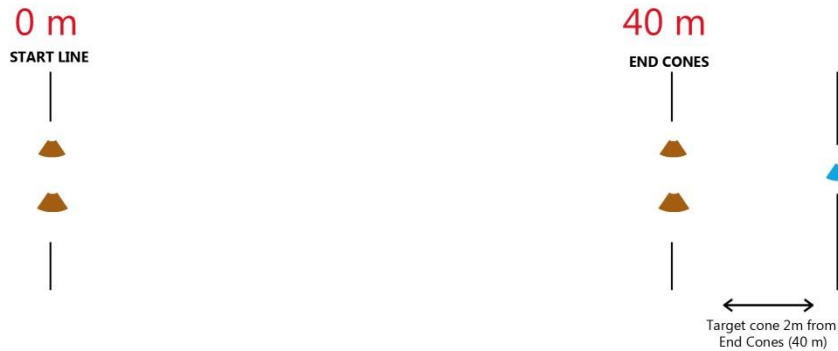
RUNNING THE TEST:

- The player stands at the starting line with their non-dominant foot in front)
- Instruct the player to begin running 'as fast as he can' i.e. 'max effort'
- Instruct the player to run **all the way thru to the end set of cones** (e.g. the blue cone)

Data Collection:

- Run the stopwatch from the moment of take-off to the moment the participant passes the cones set at the 40 m mark
- Each participant will have 2 *trials*
- Record data after EACH trial

40 meter Sprint



POWER

Upper Body Power (Overhead Medicine-ball Throw)

Equipment:

2 kg deadball/medicine ball, tape measure, cones (×10)

Protocol:

- Using a sideline as the 0 m point, set out a measuring tape and cones (marking 1 meter intervals)
- Participant stands behind the sideline with feet side-to-side and slightly apart
- Using a 2 kg medicine ball, the ball is lifted behind the head, and thrown as far as possible without the participant crossing the line (standing in the same position)
- Record distance throw to the nearest 5 cm (have someone recording and another person the side of the measuring tape)
- Approximately 15 secs between throws

Data Collection:

- Participants perform 2 familiarisation throws prior to data collection
- Each participant will have 2 *trials*
- Record data after EACH trial!!

¹Ulbricht, Fernandez-Fernandez, & Ferrauti. (2013). Conception for Fitness Testing and individualized training programs in the German Tennis Federation. *Sport-Orthopädie - Sport-Traumatologie*, 29(3), 180-192.

Lower Body Power (Standing Broad Jump)

Equipment:

Tape measure

Protocol:

- The player stands with both feet parallel with each other, and toes behind the starting line
- When ready, the player swings his arms backwards, crouches and then swings his arms forwards and they jump as far forward as possible
- The assessor measures the distance from the back of the foot to the starting line
- *Familiarisation: perform 1 practice jumps with at least 60 secs before the first measured attempt*

Data Collection:

- Each participant will have 2 *trials* with at least 30 sec between jumps

ENDURANCE

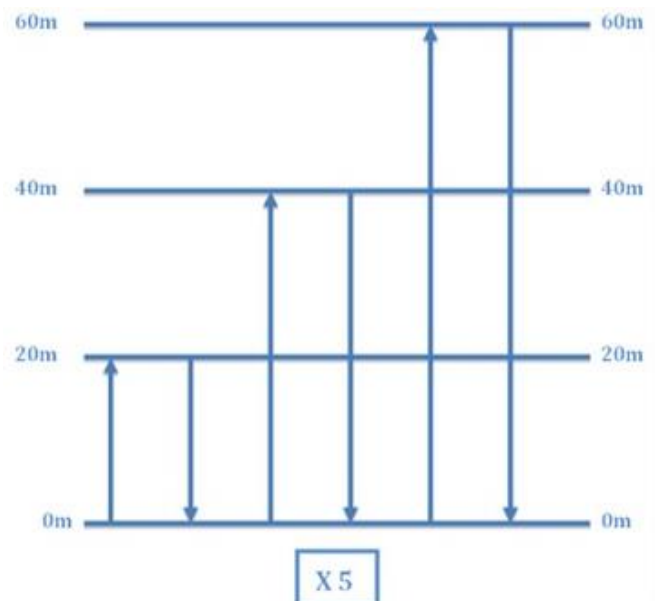
1200 meter Shuttle Run

Equipment:

Trundle wheel, cones/masking tape, stopwatch

Protocol:

- Set cones at the 0 m, 20 m, 40 m and 60 m marks (spread out across the length of the tryline as a large group of participant will be performing the test at the same time))
- Participants begin at the start line (0m) then:
 - run to the 20 m point and then run back to the startline
 - run to the 40 m point and then run back to the startline
 - run to the 60 m point and then run back to the startline
 - This equals 1 cycle – participants are required to perform 5 CYCLES (1200 m)



Data Collection:

- Record total time (1200 m) – ask players to put their hand up on the final 60 m so you know when to look at the stopwatch to record times