



BRITISHROWING

Performance Talent Profiling, Benchmarking and tracking: Testing Protocols

May 2020 update

TEAMWORK | OPEN TO ALL | COMMITMENT



Contents

May 2019 update	0
1. Introduction	3
2. Uploading data.	3
3. Tests to be performed	5
3.1 Performance.....	5
3.1.1 2km and 5km performance tests	5
3.2 Anthropometry	5
3.3 Endurance Capacity.....	5
3.3.1 30 Minute Ergo (Rate 20)	5
3.4 Power Capacity	5
3.4.1 250m Performance Test.....	6
3.4.2 7 Power Stroke Assessment.....	6
3.5 Strength Capacity.....	6
3.5.1 Press Up Max.....	6
3.5.2 Supine Pull Max	8
3.6 Body Conditioning.....	9
3.6.1 Core Activation assessment	9
3.7 Movement Patterns.....	11
3.7.1 Squat Assessment	11
3.7.2 Hip Hinge Assessment.....	12
3.8 Flexibility	13
3.8.1 Catch Position Test.....	13
3.8.2 Thomas Test	14
4. Notes / Results:.....	17



Figure 1. The attributes and tests that are included in the England Talent Pathway athlete profile.

Performance	<ul style="list-style-type: none">• 2km Ergo at Free Rate*• 5km Ergo at Free Rate
Anthropometry	<ul style="list-style-type: none">• Height, weight and arm span*
Endurance Capacity	<ul style="list-style-type: none">• 30 minute ergo (Rate 20)*
Power Capacity	<ul style="list-style-type: none">• 250m Ergo at Free Rate*• 7 Power Stroke Assessment
Strength Capacity	<ul style="list-style-type: none">• Press up Max• Supine Pull Max
Body Conditioning	<ul style="list-style-type: none">• Core Activation assessment
Movement Patterns	<ul style="list-style-type: none">• Squat assessment• Hip Hinge Assessment
Flexibility	<ul style="list-style-type: none">• Catch Position test• Thomas Test

**Required results*



1. Introduction

The information provided in this booklet will enable you to perform the tests required to complete a rower profile. The tests outline should be used to show your development and what areas you should be worked on to improve your rowing ability.

To ensure that a rower profile contains accurate reflections of a rower's development, it is important that the data collected is of a good quality. Following the procedures provided in this booklet will ensure the collection of good quality data, however, the quality can be compromised if the rowers do not follow the instructions below:

- **Rowers cannot be tested in a fatigued state.** It is recommended that rowers do not undertake any moderate - strenuous exercise 24 hours prior to the testing. This includes activities like heavy lifting through such activities as DIY and gardening, as well as exercises performed in the gym.
- **Two hours (approx.) before testing,** the rower should have a light meal (e.g. cereal, toast or sandwiches) and at least a litre of water. If several tests are taking place throughout a day, the rower should ensure they bring some lunch/snacks and plenty of water with them, so they are sufficiently fuelled and hydrated to perform maximally in each test.
- **The rower should refrain from alcohol 24 hours before** a testing day. With regards to the aerobic step test, they should also refrain from consuming caffeinated drinks (tea, coffee, cola) 3 hours before a test.

2. Uploading data.

A link to upload your data will be sent prior to the dates shown below. Please contact James Andrews (james.andrews@britishrowing.org) if you have not received this or if you have any questions. Data should be uploaded 3 times a year at the following times for each specific period.

- September 1st – 15th - Baseline Scores
- December 15th – 31st for the September - December period.
- April 1st – 15th for the January - March period.
- July 10th - 20th for the April - July period.

For performance, endurance and power tests you should upload your PB from that period. All other tests should be done as close to the upload period as possible, preferably within two weeks. You may also wish to perform these in September to assess your starting point.

If you or your coach would like to discuss your technical ability, we would also ask that a video clip of you rowing, sculling or both is uploaded for assessment by your contact coach. This video should include clear footage of you rowing/sculling from the side, front and rear and should be



roughly 3 minutes long. For any tests that require a pass/fail result you may also wish to share video footage with your contact coach and discuss steps you can make to improve.

Results to be reported are as below where “Current” is intended to be as close to the upload periods as is suitable for your programme:

Test	September (Baseline)	December	April	July
2km	Best score from Previous Season	Best score from Sept – Dec	Best score from Jan – Apr	Best score from Apr – July
5km	Best score from Previous Season	Best score from Sept – Dec	Best score from Jan – Apr	N/A
Anthro	Current	Current	Current	Current
30 Minute	Current	Best score from Sept – Dec	Best score from Jan – Apr	N/A
250m	Current	Current	Current	Current
7 Stroke	Current	Current	Current	Current
Press Up	Current	Current	Current	Current
Supine Pull	Current	Current	Current	Current
Core	Current	Current	Current	Current
Squat	Current	Current	Current	Current
Hip Hinge	Current	Current	Current	Current
Catch Test	Current	Current	Current	Current
Thomas Test	Current	Current	Current	Current



3. Tests to be performed

3.1 Performance

3.1.1 2km and 5km performance tests

- Testing procedures:
 - Using a Concept 2 rowing machine.
 - From a standing start complete 2 or 5km in the fastest time possible.
 - Record time taken. (MM:SS.00)

3.2 Anthropometry

- Height
 - Recorded in CM
 - Wearing no shoes on a flat surfaced measured to the top of your head.
- Weight
 - Recorded in KG
 - Wearing an all-in-one and no shoes.
- Arm span
 - Recorded in CM
 - Measured from fingertip to fingertip along your back. Keep your back/arms as flat as possible preferably along a wall.

3.3 Endurance Capacity

3.3.1 30 Minute Ergo (Rate 20)

- Testing Procedure
 - Using a Concept 2 rowing machine.
 - In the single time workout menu set:
 - Time to 30 minutes
 - Split length set to 30s
 - Row for 30 minutes at the lowest split possible. The split should be a split that the rower can hold for the whole 30 minutes.
 - Record distance, 500m split, watts and average stroke rate.
 - The final average rate must be rate 20.

3.4 Power Capacity



3.4.1 250m Performance Test

- Testing procedures:
 - Using a Concept 2 rowing machine.
 - From a standing start complete 250m in the fastest time possible.
 - Record time taken. (MM:SS.00)
 - All strokes must be full length.

3.4.2 7 Power Stroke Assessment

- Testing Procedure
 - Using a Concept 2 rowing machine.
 - Before starting the test, the rower is requested to ensure that their technique is as close as possible to what they would do on the water.
 - If you have the facility, filming the test will help the coach and athlete decide if their on-water technique is maintained throughout the test.
 - The rower then rows two build up strokes followed by five consecutive strokes at maximal effort. The rower must maintain a consistent SR of 34 (± 1).
 - For the last 5 strokes, record the following measurements 'live' for each stroke: Stroke Power (Watts) (or 500m split if you can't change the units to power), SR and distance if you can. The largest power achieved at R34 (± 1) is recorded as their best performance.
 - To ensure that the rower is able to produce a power capped at a SR of 34 this test is conducted twice.

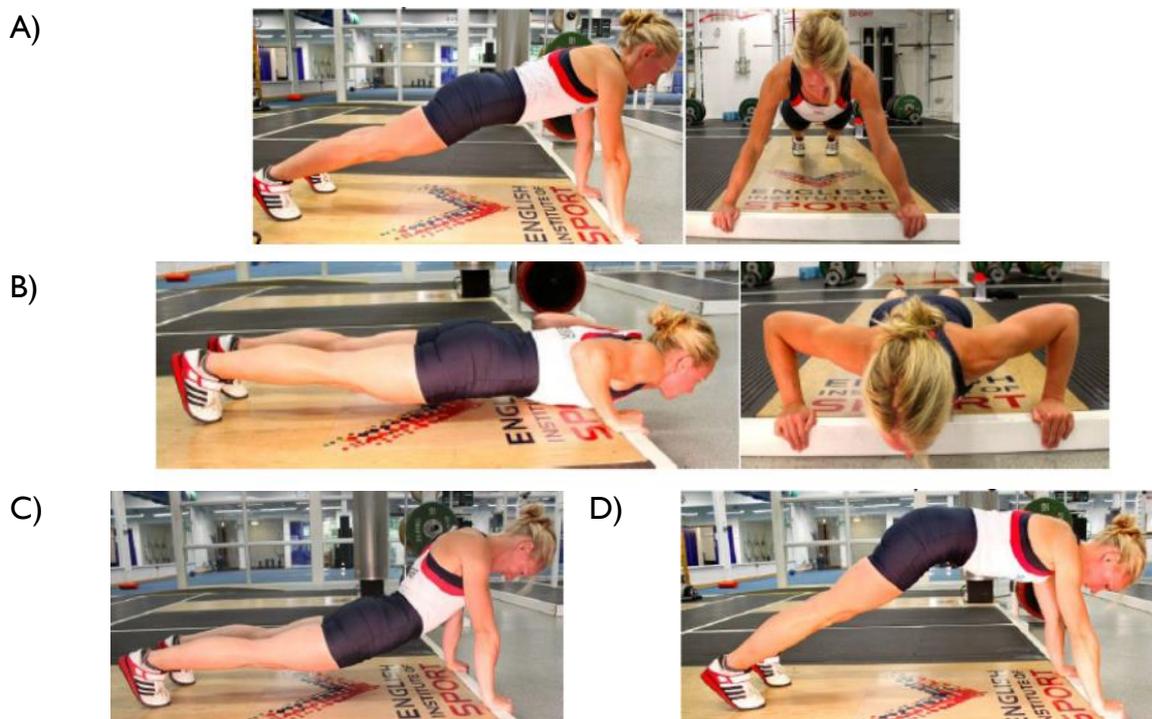
3.5 Strength Capacity

3.5.1 Press Up Max

- Aim
 - To test the loading capacity of the anterior shoulder girdle.
- Equipment
 - The following equipment is required for the Press Up Max testing:
 - Flat surface.
 - X 15kg weight plates (or use weight platform with edge to place hands on).
- Testing procedure
 - Adopt a lying prone position with feet hip width apart and ankles dorsi-flexed.
 - Place hands on ledge shoulder width apart or very slightly wider than shoulder width.

- With fingers placed over the ledge and the thumbs lining the top of the edge, point elbows up towards the ceiling.
 - The rower braces the shoulders, hip and trunk whilst simultaneously lifting the knees from the floor so that the legs are fully extended.
 - Press up to start position maintaining alignment with the head in the neutral position.
 - Lower the body under control until the chest touches the ground
 - Press back to the start position fully extending the elbows.
- Test rules
 - Ankles, knees, shoulders, and hips should remain inline throughout the movement. Head must remain in neutral position.
 - The chest must touch the floor and elbows return to full extension.
 - No resting at the top or bottom position.
 - Rower must adopt a rhythmical and controlled movement throughout the whole test.
 - Coach the rower into the correct position for the first 1-3 reps.
 - Warnings are given if the rower deviates from correct position. If not corrected the test is terminated.
 - The test is also terminated if two gross movements occur that deviate from the correct position. Gross movements include: Hips sagging, hips piking, back arching, elbows not fully extended, and no chest touch.
 - Count the number of reps completed by the rower which comply with the correct position.

Figure 2. Press up max set up, procedure (A & B) and common faults (C & D)





3.5.2 Supine Pull Max

- Aim
 - To test the loading capacity of the posterior shoulder girdle.
- Equipment
 - The following equipment is required for the Supine Pull Max testing:
 - Flat surface
 - TRX or similar suspension system with handles. If not, available use Olympic bar placed at a height where rower can adopt a similar position as shown in figure A (i.e. bar placed at waist height, so knees are bent and feet flat securely on the floor).
- Testing Procedures
 - Adopt a lying supine position underneath the suspension system which is vertical and in line with the shoulders.
 - Arms are positioned in a vertical position, so the fingers can touch the back of the handles. Palms of the hands are pronated, and the shoulders protracted (shoulders are lifted from the floor with the upper back still in contact).
 - Heels should be brought tight into the hips.
 - The athlete grips the handles with a pronated (overhand) grip
 - Retract the scapula to lift shoulders from the ground and simultaneously brace and lift the hips.
 - Raise the body under control bringing the handles tight into their side, hands in line with lower chest.
 - Hands must be in a hammer grip position with palms facing each other at all times.
 - The athlete extends the elbows back to the start position whilst maintaining body alignment.
- Test rules
 - Maintain body alignment with head held in neutral position throughout
 - A rep will only count if full range of movement is executed (i.e. full extension of the elbow to hands in line with lower chest and return to full extension). See figure 9 A.
 - Rower must adopt a rhythmical and controlled movement throughout the whole test.
 - Coach the rower into the correct position for the first 1-3 reps.
 - Warnings are given if the rower deviates from correct position if not corrected the test is terminated.
 - The test is also terminated if two gross movements occur that deviate from the correct position. Gross movements include: Hips sagging, throwing hips into the movement, elbows not fully extending and hands in final position.

- Count the number of reps completed by the rower which comply with the correct position.

Figure 3. Supine Pull max set up procedure (A & B) and common faults (C & D)

A)



B)



C)



D)



3.6 Body Conditioning

3.6.1 Core Activation assessment

- Aim
 - This exercise is designed to assess a rower's ability to maintain a posture associated with the trunk, pelvis and lumbar spine, by activating and/or engaging their core/trunk.
 - The procedure requires the rower to use their abdominal wall/trunk to control the position of their spine and pelvis whilst at the same time maintaining a normal breathing pattern. This is further testing by lowering one leg then the other and ultimately both legs.



- Equipment
 - Flat surface, exercise mat if required.
- Testing procedures
 - Rower lies on their back with hips bent to approx. 45° and knees flexed to approx. 90°.
 - The lumbar spine should be neutral (i.e. not arched or forced into the floor).
 - The tester will need to be at the side of the rower at the level of their hips to be able to detect any changes in breathing or pelvic posture. Look closely at the pelvis, especially as the rower starts each movement. A hand (belonging to the rower or the tester) under the lumbar spine helps to check arching.
 - The following movements should be done slowly for the best effect and easiest assessment.
- Movement 1
 - The rower is asked to engage their lower abdominals. To help them do this advise them to draw pelvic floor in and up as if stopping the flow of urine/lift testicles.
 - To pass this test the rower must be able to engage their lower abdominals whilst continuing to breathe. Also, there should not be any compensatory movements around the shoulders/head/arms.
 - To check if the rower has engaged their lower abdominals, with the rower's permission, place your hands on the lower abdominals.
- Movement 2a
 - The rower lifts the left foot of the ground whilst the knees are still at approximately at 90° and the hip moves to 90°, then lowers the left foot again.
 - To pass this test the rower must be able to engage their lower abdominals whilst continuing to breathe. The rowers pelvis must stay still.
 - To check if the rowers has engaged their lower abdominals, with the rower's permission, place your hands on the lower abdominals.
- Movement 2b
 - The rower repeats Movement 2a but with the right leg.
- Movement 3
 - The rower repeats Movement 2a, but with both legs. Once one hip has been lifted and at 90°, the other hip can be lifted to 90°.
 - The criteria of passing this test is similar to movements 2a and b.
- Rating movements
 - Each movement is rated **red** (fail: requires referral), **amber** (requires input), or **green** (pass). To rate each movement the following needs to be recorded.



- Movement 1

Does the rower engage their lower abdominals?

Yes/No

Does the rower continue breathing?

Yes/No

Are there any compensatory movements around the shoulders/head/arms?

Yes/No

- If the answer is no to all questions the rower is rated **red**
- If the answer is no to one of the questions the rower is rated **amber**
- If the answer is yes all questions the rower is rated **green**

- Movements 2 and 3.

Pelvis shift sideways or rotates?

Stable/Shifts

Is the back stable?

Stable/Arches/Pushed into floor

Does the rower continue breathing?

Yes/No

Are there any compensatory movements around the shoulders/head/arms?

Yes/No

- If the answer is negative to all questions the rower is rated **red**
- If the answer is negative to one of the questions the rower is rated **amber**
- If the answer is positive to all questions the rower is rated **green**

3.7 Movement Patterns

3.7.1 Squat Assessment

- Aim
 - This is a test to assess the ability of a rower to achieve the positions required to row powerfully and safely on an ergo or in a boat.
- Equipment
 - The following equipment is required for the squat assessment.
 - Flat surface



- Testing Procedures
 - Start by standing with your feet shoulder width apart with toes pointed slightly outwards.
 - Hands linked together behind the head (prisoner squat position).
 - Your body should be upright with the shoulder blades retracted and the chest open.
 - Pushing the hips backwards, descend by flexing the hips and knees.
 - Maintain a natural curvature of the spine and open chest at all times.
 - Keep the heels on the floor with the knees aligned over the feet.
 - Continue to flex the knees and hips until the thighs are parallel to the floor.
- Test rules
 - Head and shoulders must remain in place.
 - The lumbar spine should maintain normal curvature of the spine.
 - The pelvis and the lumbar spine should remain aligned.
 - Your thigh must reach a parallel position with the floor.
 - Record pass or fail.

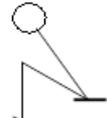
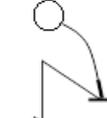
3.7.2 Hip Hinge Assessment

- Aim
 - To test the movement of the rock over can be achieved effectively.
- Equipment
 - The following equipment is required for the hip hinge assessment.
 - Flat surface
- Testing Procedures
 - Start by standing with your feet – shoulder width apart with toes pointed slightly outwards.
 - Your body should remain straight with a neutral spine the shoulder blades retracted and the chest open.
 - Your knees may be slightly bent to start the exercise.
 - Start by rocking over from the hips until you reach 90 degrees or until your upper body is parallel with the floor.
 - Your hips should move backwards while maintaining the same angle at the knees.
- Test rules
 - Head and shoulders must remain in place.
 - The lumbar spine should remain straight.
 - The pelvis and the lumbar spine should remain aligned.
 - You must reach 90 degrees or until your upper body is parallel with the floor.
 - Record pass or fail.

3.8 Flexibility

3.8.1 Catch Position Test

- Aim
 - To provide an easy field test that can reliably monitor rowing specific hip flexion mobility.
- Equipment
 - The following equipment is required for the catch position test.
 - Concept 2 Ergometer
 - Seat pad (if normally used)
- Testing Procedures
 - Set heel height at the rower's normal position.
 - If a seat pad is normally used while using an ergo, the same seat pad should be used for this test.
 - Ask the rower to move to the catch position or fully forward and hold with no assistance.
- Recording
 - A guide to hip or pelvic rotation in the rowing movement can be observed at the catch position on a scale of 1 to 5 (see below). This is a rough guide to flexibility and core strength on the rowing position and should not necessarily be used as a selection tool but as a development guide to prevent injury from training in poor positions.
 - A photograph taken at this position could be valuable for later analysis by trained medical and physiotherapy staff.

Score	1	2	3	4	5
Rotation of Pelvis	Significant anterior tilt of pelvis	Some anterior tilt of pelvis	Pelvis vertical	Some posterior tilt of pelvis	Significant posterior tilt of pelvis
Lumbar spine/core strength:	Excellent lumbar/core strength position	Slight curve of lumbar spine	Some curve of lumbar spine	Obvious curve of lumbar spine	Pronounced curve of lumbar spine
					

Note: Set heel height at the rower's normal position.



3.8.2 Thomas Test

- Aim
 - To test the flexibility of the iliopsoas, rectus femoris and ileo tibial band to assess hip flexor flexibility.
- Equipment
 - The following equipment is required for the hamstring testing.
 - Table (strong enough to take body weight)
- Testing Procedures
 - Lie (supine) on a table/plinth/bar/etc. Bottom just perched on the end. (Easiest to start with both legs bent up against the chest.)
 - Hold one leg against the chest (with both hands) but keep the lower back in neutral, i.e. don't roll up the pelvis.
 - Relax the other leg and let it down, without changing the lower back posture.
 - Be aware of neural tension, i.e. tingles, numbness or pins and needles, and DO NOT force into this tension.

- Ideal Position

Figure 5. The thigh remains in line with the body whilst the knee bends to 90 degrees.

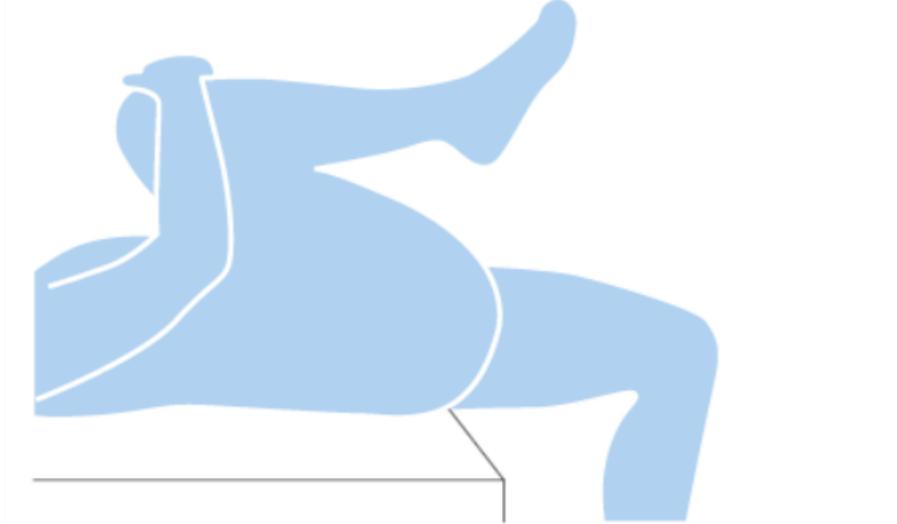
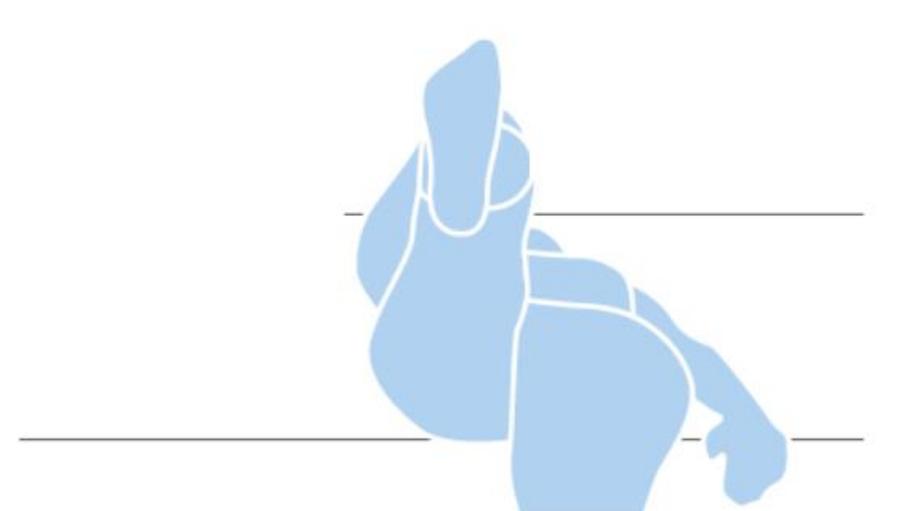


Figure 6. Check the angle of the thigh to body. It should be in line.



- Test Results
 - Use the chart below and record your observation.

Observation	Looks Like	Means	Action
Observe from the side			
Thigh remains in line with the body and knee bends to 90 degrees.		Iliopsoas & Rectus femoris length - Good	Continue with the current regime – it's obviously working.
Thigh remains in line with body, but lower leg is at an oblique angle.		Iliopsoas length – Good Rectus femoris length - Shortened	Stretch rectus femoris.
Thigh is raised higher than the line of the body, and knee is bent to 90 degrees.		Iliopsoas length – Shortened Rectus femoris length - Good	Stretch iliopsoas.
Thigh is raised high than the line of the body and lower leg makes an oblique angle to the thigh.		Iliopsoas & Rectus femoris length shortened	Stretch both iliopsoas & rectus femoris.
Observe from above			
The knee deviates outwards from the line of the body.		Ileo Tibial band (ITB) - Tight	Use foam roller over the IT bands



4. Notes / Results:

Please use this page to record any notes or results.



Performant Talent - Record Sheet

First Name		Surname	
Gender	Male / Female	Date of Birth	
Rower ID Number (The last 7 digits of your British Rowing membership number)			
Rowing Club (3 letter club code)			
Disciplines	Strokeside / Bowside / Sculling		
Project	Women's Training Days / DiSE / J16 Camp / BUCS Camp / England Team – HIR / Other		

4

2km Free Rate (MM:SS.00)			
5km Free Rate (MM:SS.00)			
Height (CM)			
Arm Span (CM)			
Body Mass (Weight) (KG)			
30 Minute at Rate 20 (Distance in M)			
7 Power Stroke Assessment at Rate 34 (Watts)			
250m Free Rate (MM:SS.00)			
Press Ups Max (Completed number of Reps)			
Supine Pull Max (Completed number of Reps)			
Core Activation Assessment	Movement 1	Green / Amber / Red	
	Movement 2a	Green / Amber / Red	
	Movement 2b	Green / Amber / Red	
	Movement 3	Green / Amber / Red	
Squat Assessment		Pass / Fail	
Hip Hinge Assessment		Pass / Fail	
Catch Position Test		1 / 2 / 3 / 4 / 5	
Thomas Test		Left Leg	Right Leg
	(Iliopsoas Length)	Good / Tight	Good / Tight
	(Rectus Remoris Length)	Good / Tight	Good / Tight
	(Ileo Tibial Band)	Good / Tight	Good / Tight

This sheet is for personal use only to help record information from the Performance Talent testing protocols document. If you have any questions, please contact James Andrews (james.andrews@britishrowing.org) or your contact coach.