

# MOVEMENT SCREENING



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# ASSESSING MOVEMENT



Assessing movement during a warm-up is one of the best ways to gather information about an individual's movement capabilities and specific areas such as balance and coordination.

During the first session with a client, I will usually start with a warm-up that allows me to see how they walk and run, squat, lunge, and perform basic exercises like a push-up. From there, the first gym-based session will involve a variant of a squat, single-leg, hinge, push, and pull exercise. Not only does this give me a lot of information in the first session, but it also limits DOMS and acts as a great intro to the gym. However, if someone needs a lot more work on the basics, a whole session might be dedicated to mastering squat and hinge mechanics.

Besides gathering information dynamically as we go, we can create movement assessments/screens, taking the individual through several assessments and grading them on their performance.

## **Movement assessments are often assessed on a 1-3 scale:**

- **1** – Unable to attain the correct positioning/movement.
- **2** – Inconsistent positioning/movement.
- **3** – Maintains good positioning/movement throughout.





# ATHLETIC ABILITY ASSESSMENT (AAA)



A study was carried out by Ian McKeown and published in the International Journal of Sports Physical Therapy. The study demonstrated the application of the Athletic Ability Assessment or AAA.

The AAA is an excellent example of a movement screen and only requires body weight or equipment usually accessible in gym environments. However, you could choose a selection of the below exercises.

## Assessments: 9 Total

- **Prone Hold on Hands:** (High front plank) – 2 minutes.
- **Lateral Hold on Hands:** (High side plank) – 2 minutes – on each side.
- **Overhead Squat:** 10kg Olympic barbell x 5 reps.
- **Single-Leg Squat Off Box:** x 5 reps – on each side.
- **Walking Lunge:** 20kg Olympic barbell x 10 reps.
- **Single-Leg Forward Hop:** x 3 reps – on each side.
- **Lateral Bound:** x 3 reps – on each side
- **Push-Up:** Minimum of 20 reps for males / 12 reps for females.
- **Chin-Up:** Minimum of 10 reps for males / 4 reps for females.

Each exercise has 3 assessment points: Each exercise's maximum points are 9 (9 exercises = total of 81).

Note: A "Chin-Up" refers to palms facing the individual, while a "Pull-Up" refers to palms facing away from the individual – even top athletes may find chin-ups extremely hard, especially if they have a heavier bodyweight.



# SCORING THE AAA: PART 1

Exercise	Assessment Points	3	2	1
<b>Prone Hold</b>	Upper Back / Shoulder Position	Scapula depression and retraction constant for 2 mins.	Inconsistent positioning.	Unable to attain correct position.
	Hip Position	Neutral hip positioning.	Inconsistent hip positioning.	Unable to attain the correct position.
	Time	>2 Minutes	1-2 Minutes	<1 Minute
<b>Lateral Hold</b>	Upper Back / Shoulder Position	Scapula depression and retraction constant for 2 mins.	Inconsistent positioning.	Unable to attain correct position.
	Mid-Line Alignment	No rotation or lateral flexion of trunk or hips for 2 mins.	Inconsistent positioning.	Unable to attain correct position.
	Time	>2 Minutes	1-2 Minutes	<1 Minute
<b>Overhead Squat</b>	Hands / Barbell Overhead	Maintains bar overhead with appropriate shoulder/thoracic extension and trunk angle with no rotation	Inconsistent alignment / form.	Excessive trunk inclination throughout.
	Hip / Knee / Ankle Alignment	Perfect alignment and control of hips, knees and ankles.	Inconsistent form.	Unable to attain correct position.
	Depth	Hips below knees (below parallel) maintaining a neutral spine	Depth below parallel for some but not all reps.	Unable to achieve required depth for any reps.



# SCORING THE AAA: PART 2

Exercise	Assessment Points	3	2	1
<b>Single Leg Squat Off Box</b>	Trunk Angle	Maintains perfect trunk posture throughout.	Inconsistent forward lean and lumbopelvic positioning.	Excessive and uncontrolled positioning.
	Hip / Knee / Ankle Alignment	Perfect form.	Inconsistent form.	Poor form throughout.
	Depth	Hip below knee while maintaining neutral spine.	Depth below parallel for some but not all reps.	Unable to achieve required depth for any reps.
<b>Walking Lunge</b>	Knee / Ankle Alignment	Perfect alignment / form.	Inconsistent alignment / form.	Poor alignment / form throughout.
	Hip Control	Perfect alignment / form.	Inconsistent alignment / form.	Poor alignment / form throughout.
	Trunk Control	Perfect form, without excessive forward lean and no lateral flexion.	Inconsistent alignment / form.	Poor alignment / form throughout.
<b>Single Leg Forward Hop</b>	Hip / Knee / Ankle Alignment	Perfect alignment / form.	Inconsistent alignment / form.	Poor alignment / form throughout.
	Balance / Control	Sticks the landing with perfect balance and control.	Sticks the landing but is unbalanced – adjustments made.	No balance / control upon landing.
	Power Position Upon Landing	Lands in optimal single leg power position.	Inability to consistently land in optimal power position.	Unable to land in optimal power position.



# SCORING THE AAA: PART 3

Exercise	Assessment Points	3	2	1
<b>Lateral Bound</b>	Hip / Knee / Ankle Alignment	Perfect alignment / form.	Inconsistent alignment / form.	Poor alignment / form throughout.
	Balance / Control	Sticks the landing with perfect balance and control.	Sticks the landing but is unbalanced – adjustments made.	No balance / control upon landing.
	Power Position Upon Landing	Lands in optimal single leg power position.	Inability to consistently land in optimal power position.	Unable to land in optimal power position.
<b>Push Up</b>	Scapulohumeral Rhythm	Scapula depression and retraction constant throughout. No excessive elbow flare.	Inconsistent alignment / form.	Poor alignment / form throughout.
	Body Control	Perfect body control throughout.	Inconsistent body control.	Poor body control throughout.
	Complete Repetitions	M >20 F >12		M <20 F <6
<b>Chin Up</b>	Scapulohumeral Rhythm	Scapula depressed and retracted throughout hang. Symmetry of scapulohumeral rhythm throughout pull and lowering phase.	Inconsistent alignment / form.	Poor alignment / form throughout.
	Body Control	No swinging, perfect body control throughout.	Inconsistent body control.	Poor body control throughout.
	Complete Repetitions	M >10 F >4		M <10 F <4



# FUNCTIONAL MOVEMENT SCREEN

The functional movement screen (FMS) is one of the most commonly used tools to assess movement. However, it requires an FMS kit.

The FMS consists of 7 movement patterns, scored from 0-3 to create a total of 0-21 points: 0 is given if the individual has pain during any part of the movement.

- **Deep Squat:** Overhead squat with a dowel (included in the kit).
- **Hurdle Step:** With the dowel held across the individual's shoulders, the individual steps over a low hurdle and places their heel down before returning the foot to the starting position (the hurdle is created with the kit and set at the height of the individual's tibial tuberosity – top of the shin, below the kneecap).
- **In-line Lunge:** Performed on the kit with a dowel held behind the individual's back with one arm behind the head and one arm behind the lower back, placing the dowel in-line with the spine.
- **Shoulder Mobility:** Back scratch test (one arm behind your lower back and reaching up, and the other arm over your shoulder and reaching down) measured with the dowel – the dowel has measurements on it.
- **Active Straight Leg Raise:** Lying on their back, the individual raises one leg while keeping both legs straight – the dowel is used to assess the leg position.
- **Trunk Stability Push-Up:** A push-up that is performed with the arms laid flat and the thumbs in line with the top of the forehead. This position results in the elbows being bent at 90 degrees.
- **Rotary Stability:** Bird Dog.

A score of <14 is used as the cut-off score. Individuals who score less than 14 points are thought to be at a greater risk of injury. However, the accuracy and applicableness to specific sports and population groups are debated.



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# SCC MOVEMENT SCREEN

Ultimately, you can add any movement that you believe to be applicable to a movement screening. However, just like any fitness test, we should ensure it provides us with useful data.

Here's an example of a standard movement screening used with clients and athletes at the SCC Academy:

- **Bodyweight Squat:** x 10 reps – movement basics and familiarity.
- **Overhead Squat:** x 3 reps with dowel (barbell can be used).
- **Bodyweight Walking Lunge:** x 10 reps – movement basics and familiarity.
- **Overhead Walking Lunge:** x 6 reps with dowel (barbell can be used).
- **Bodyweight Hip Hinge:** x 10 reps – movement basics and familiarity.
- **Dumbbell / Kettlebell Deadlift:** x 6 reps – 20kg for males / 16kg for females.
- **Vertical Countermovement Jump:** x 1 and x 3 (the x 3 are performed in quick succession).
- **Lateral Bounds:** x 4 reps with 1-second pause upon landing.
- **Slow Tempo Push-Ups:** x 6 reps for males / x 3 reps for females – tempo: 3131.
- **Barbell Overhead Press:** x 4 reps – 20kg for males / 10-15kg for females.

Scoring can be done using the 1-3 or 0-3 methods. However, we use a notes section for each, where technique faults, limitations, and compensations are recorded.





# OVERHEAD SQUAT ASSESSMENT



Movement screens often involve several exercises performed one after the other. However, the overhead squat assessment (OHSA) is one of the quickest ways to gain an overall impression of an individual's functional status.

Note: Movement limitations and compensations should NOT be seen as a sure sign of injury risk, but as indicators to where improvements in overall performance can be made – making a more robust athlete!

The overhead squat assessment can be performed with or without a dowel:

- To perform the OHSA without a dowel, the individual adopts their squatting stance and raises their arms overhead while keeping their arms in-line with (covering) their ears.
- To perform the OHSA with a dowel, the individual adopts their squatting stance and holds the dowel in each hand at a width that when they place the dowel on the top of their head, their elbows are bent at 90 degrees. They then straighten their arms, keeping their arms in-line with (covering) their ears.





# OVERHEAD SQUAT ASSESSMENT

Once the individual reaches full depth, we look from a front and side view - the individual can reset between the front and side assessment to ensure they are not fatiguing at the bottom.

## From the front view, we look at:

- **Their feet** – do their arches collapse, causing them to pronate/do their heels or toes raise (side view can be used)?
- **Their knees** – do they valgus?
- **Their hips** – is there a hip shift?
- **Their shoulders** – is one shoulder higher than the other?

Note: the hip area is often referred to as the lumbo-pelvic hip complex (LPHC), relating to the area around the hips, pelvis, and lower back.

## From the side view, we look at:

- **The LPHC** – is there a prominent butt wink?
- **The torso angle** – is there excessive forward lean?
- **The arm position** – do the arms come forward of the ears?
- **The head position** – are they able to keep their head up?

From this assessment, we score the individual from 1-3 and make clear notes on areas for improvement.



# CORRECTIVE EXERCISE

This content was taken from our Corrective Exercise Course.

Corrective exercise is a specialism where an in-depth knowledge of anatomy and biomechanics is used to prescribe specific exercises to fix movement limitations and compensations.

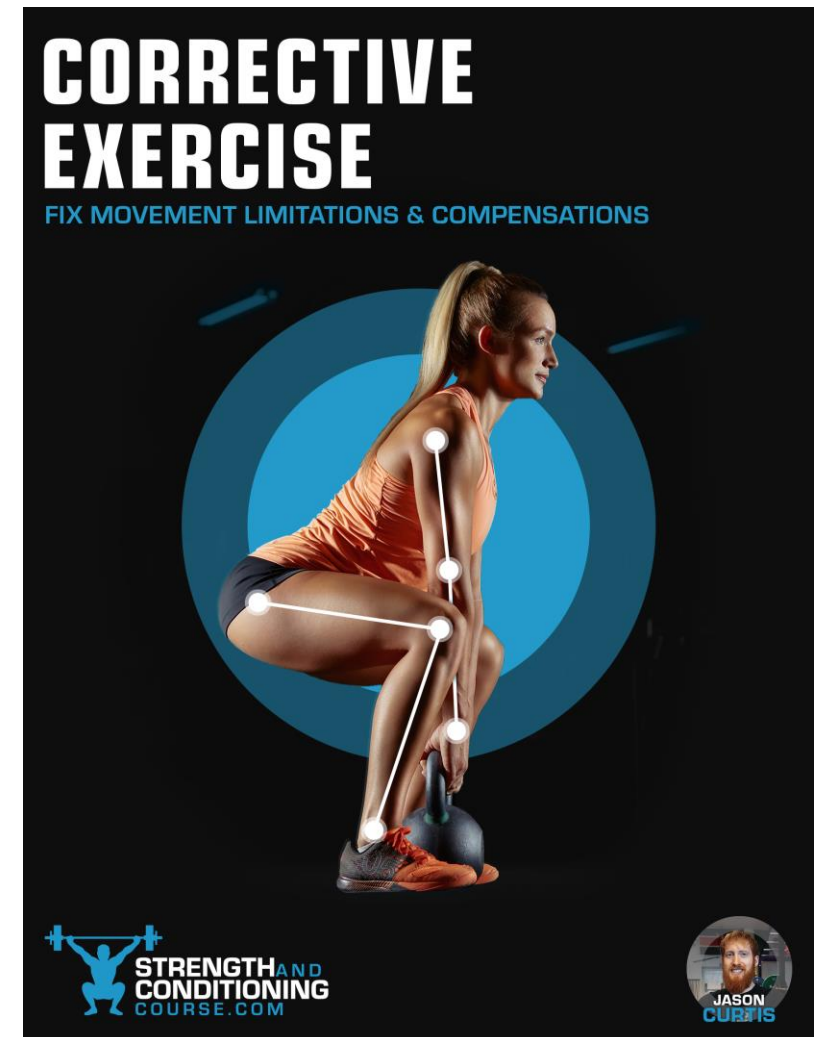
The course is designed to show you how to teach fundamental movement patterns, correct faulty movement and improve musculoskeletal health and performance.

It is normal for there to be muscle imbalances and asymmetries (differences in strength and size between muscles groups and sides of the body), and we should be very careful when it comes to labelling someone's movement as "dysfunctional" – some of the best athletes in the world have prominent imbalances and you don't want someone to leave a session feeling self conscious and demotivated.

However, muscle imbalances, weaknesses and mobility restrictions can result in compensation patterns, a higher risk of injury and a reduction in performance – it is amazing how a slight change in positioning can greatly improve performance.

Here's the link to the full course:

<https://strength-and-conditioning-course.teachable.com/p/corrective-exercise-movement-mastery>



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