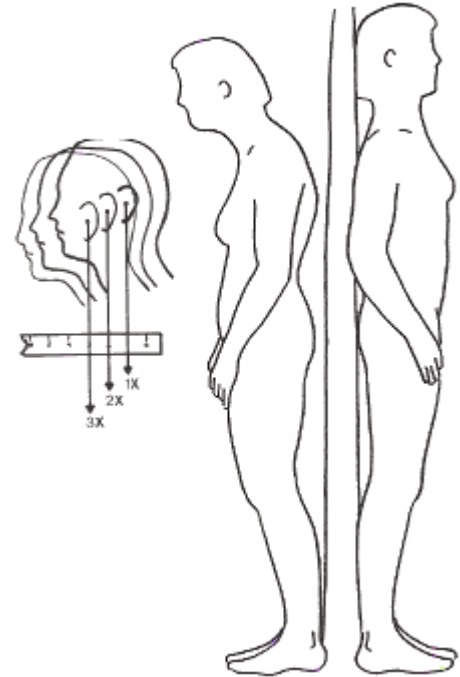


SOBC 19 General Functional Tests

Before you start:

Record the height, weight and posture of the athlete

- Record height and weight of each athlete
- Ensure athletes are standing tall during height measurement- **measure height in feet**
- Ensure athlete's shoes are off and **measure weight in lbs.**

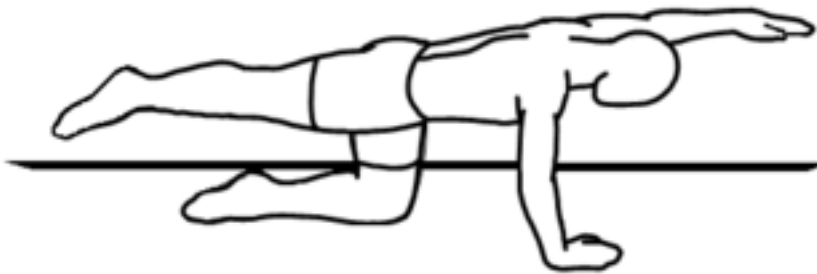


1. Four pt. opposite arm and leg raise

To practice and test back and core strength

Equipment needed

- Mat



Proper form of 4 point

- Athlete should assume a hands and knees 4 point position
- Athlete should align shoulders directly over hands and hips over knees
- Instruct athlete to lift the one hand and the opposing knee up off the ground a couple of inches
- The torso should shift somewhat but should not rotate. The elbow and knee should remain close to the side of the body and should not be pulled outwards

Tips for Coaches and Volunteers

- Tell the athletes they have a plate of spaghetti on their back.
- If you have their papers, put it on their back and tell them to not let it fall off

Form Rating Scale

1. Torso is kept parallel to the ground- does not rotate or wobble
2. Elbows and knees are maintained beside the body

Corrective Exercises

Arm Only

Assume a hands and knees position and place a dowel across the back of the pelvis/hips. Shoulders are above hands and hips are above knees. Engage the core musculature and lift the one hand a couple inches from the ground. The pelvis needs to stay level in order to balance the dowel. Slowly lift the arm up until it is parallel with the body. Slowly lower the



Figure 1

hand and resume the start position. Repeat ten times each side. Gradually increase repetitions to three sets of ten repetitions per side.

Leg Only

Assume a hands and knees position and place a dowel across the back of the pelvis/hips. Shoulders are above hands and hips are above knees. Engage the core musculature and lift one knee a couple inches from the ground. The pelvis needs to stay level in order to balance the dowel. Slowly lift the leg up until it is parallel with the body. Slowly lower the leg and resume the start position. Repeat ten times each side. Gradually increase repetitions to three sets of ten repetitions.

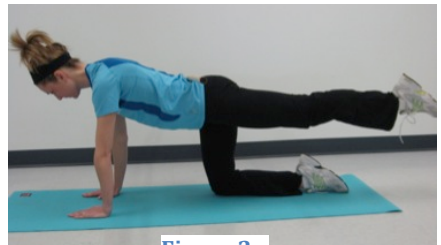
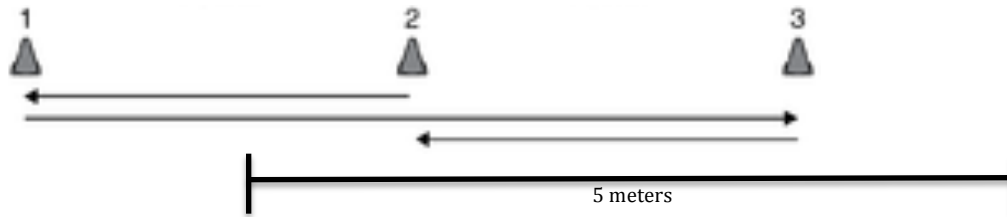


Figure 2

2. Agility Test

To test agility

Equipment: A flat, non-slip floor, tape measurer, stop watch, three cones



- The two end cones are set 5 meters apart on a straight line. The third cone is placed in the middle (2.5 meters from either end).
- The athlete starts at the middle cone.
- The tester gives the signal to start and points in a specific direction, right or left.
- The athlete runs and touches the first cone (either right or left), returns past the middle cone (start) to the far cone and touches that one and then returns to the middle (start) cone, touching that one- this is done as fast as possible as a sprint.
- The tester starts the stopwatch on giving the 'Go' command and stops the watch when the athlete touches the middle cone at the end.
- The point of the test is to see how fast the athlete can react to the directional instruction and to see how agile they are while moving pylon to pylon.
- The better of two tries are recorded for scoring.

NOTE:

- Make sure to encourage the athlete to move as fast as possible.
- If necessary, run with them for encouragement.
- Ensure that they are touching each time they are at a pylon.

Corrective Exercises and Normative Data

To improve agility, you have to do agility drills. There are many ladder and hurdle drills that you can do to improve your agility. Talk to your Club Fit Coach to learn more about these drills.

Normative Data: 5-10-5 Agility Test (seconds)

Rating	Males	Females
Excellent	> 4.5	> 4.7
Good	4.8	5.0
Average	5.2	5.4
Below Average	< 5.5	< 5.9

Data from 440 Performances

3. Ball toss

To test strength and power

Equipment: two medicine balls, measuring tape.

Test

- Allow athletes to warm up arms, arm circles, arm swings
- Explain test to athletes and demonstrate
- Athletes start holding onto medicine ball with both hands, heels on the start line
- Athletes can start with knees and elbows bent
- Throw the ball away from the direction that they are facing
- Measure the point that the ball lands in metres
- Allow athlete two chances



Note

- Encourage athletes to throw ball behind them as far as possible
- Encourage athletes to breath during throwing
- You can help count athletes down before throw

Corrective Exercises and Normative Data

If you would like to improve your ball toss, you will have to strengthen your posterior chain. This is the chain of muscles along the backside of the body. One of the most important exercises is the deadlift. Talk to your Club Fit Coach about learning body weight deadlifts and the one leg deadlift. These exercises are important for strengthening your glute and hamstring muscles and should not be felt in your lower back. It is very important to learn proper technique when doing these exercises so as not to hurt yourself.

Normative Data for Ball Toss Test (m)

Rating	Males	Females
Excellent	> 13.3	> 9.9
Good	10.7-13.3	8.1-9.9
Average	8.2-10.7	6.1-8.1
Needs Improvement	< 8.2	< 6.1

Data from Medicine and Science in Sports and Exercise

4. Broad jump, 3 Broad jumps

To test leg strength and endurance

Equipment needed

- Measuring tape

Proper form of Broad jump

- Allow athletes both a demonstration and practice round
- Have athletes stand at the end of the measuring tape
- Ask them to perform their biggest single jump forward
- Athletes must land on two feet
- Ensure they are swinging their arms, bending their legs and reaching as far as possible
- Measure and record the distance they jump
- If they step backwards, measure from that point
 - Measure from the back of their heel – the point closest to the start mark



Proper form of Three Broad Jumps

- Allow athletes a practice round
- Have athletes stand at end of tape
- Have athletes perform three 2-footed jumps forward with no pause between jumps
- Ensure they are landing on both feet for every jump
- Measure the final distance of the three jumps
- Measure from the back of their heel, the point closest to the start mark

Corrective Exercises and Normative Data

To improve at the broad jump tests, you should do a combination of strength training and plyometric training for your lower body to increase the explosive power in your lower body. Exercises such as squats, lunges, deadlifts, box jumps and resistance hurdle jumps are great to improve distance of an athlete's jump. Talk with your Club Fit Coach to learn more about these exercises.

Normative Data for Broad Jump Test (meters)

Rating	Males	Females
Excellent	> 2.50	> 2.00
Very Good	2.41-2.50	1.91-2.00
Above Average	2.31-2.40	1.81-1.90

Average	2.21-2.30	1.71-1.80
Below Average	2.11-2.20	1.61-1.70
Poor	1.91-2.10	1.41-1.60
Very Poor	< 1.91	< 1.41

5. Sit and Reach Test

To test hamstring and trunk flexibility

Equipment: Yardstick and tape



Preparation:

Place the yardstick on the floor with the zero mark closest to you. Tape the yardstick in place at the 38cm mark.

- Warm up properly. Warm-up activities include fast walking, jogging in place, or cycling on a stationary bicycle. Adding extra arm movements to these activities, like pumping your arms, will warm up your upper body.
- Sit on the floor with the yardstick between your legs, your feet 25-30cm apart, and your heels even with the tape at the 38cm mark
- Place one hand over the other. The tips of your two middle fingers should be on top of one another.
- Slowly stretch forward without bouncing or jerking and slide your fingertips along the yardstick as far as possible. The greater your reach, the higher your score will be.
- Do the test three times and record the highest number in cm
- If the athlete is unable to reach the yardstick, write an X for the measurement

Corrective Exercises and Normative Data

Normative Data: Male Sit and Reach Test (centimeters)

Age	18-25	26-35	36-45	46-55	56-65	65+
Excellent	> 51	> 51	> 48	> 48	> 43	> 43
Good	47-51	47-51	43-48	40-48	36-43	33-43
Above average	43-47	40-47	38-43	36-40	30-36	28-33
Average	38-43	36-40	33-38	30-36	25-30	23-28
Below average	33-38	30-36	28-33	25-30	20-25	20-23
Poor	25-33	25-30	23-28	18-25	13-20	13-20
Very Poor	< 25	< 25	< 23	< 18	< 13	< 13

Data from YMCA of the USA

Normative Data: Female Sit and Reach Test (centimeters)

Age	18-25	26-35	36-45	46-55	56-65	65+
Excellent	> 61	> 64	> 56	> 53	> 51	> 51
Good	53-61	51-64	48-56	46-53	46-51	46-51
Above Average	51-53	48-51	43-48	43-46	41-46	41-46
Average	46-51	46-48	41-43	38-43	38-41	36-41
Below average	43-46	41-46	36-41	36-38	33-38	30-36
Poor	36-43	36-41	28-36	28-36	25-33	23-30
Very Poor	< 36	< 36	< 28	< 28	< 25	< 23

Data from YMCA of the USA



Hamstring Stretch- Keep your leg that is on the chair straight but do not lock the joint. Make sure to keep your back straight and do not round your back forward. You should feel the stretch down the back of the leg that is on the chair. You should feel the stretch in your hamstring, which runs from your knee to your hip. Hold stretch for 30-60 seconds on each leg.

Hamstring Stretch- Keep your legs straight but do not lock the knee joints. Put a towel around your feet and pull your body down to your legs. Make sure to keep your back straight while you do this. You should feel a stretch in the back of your legs from your hips to the back of your knees.



Groin and



Hamstring

Stretch- Spread your feet out as wide as you can, keeping your toes pointing forwards. Lean forward and put your hands against a wall, keeping your core strong and your back straight. Slowly work your way down the wall until you feel a gentle stretch in your hamstring and groin. Hold this stretch for 30-60 seconds.

6. Posture test

- Get athlete to sit straight against wall
- Record athletes head position (is it neutral or forward)
- Record athletes shoulder position (is it forward or neutral)
- Record athletes low back position (is it neutral, forward or flattened)

Note:

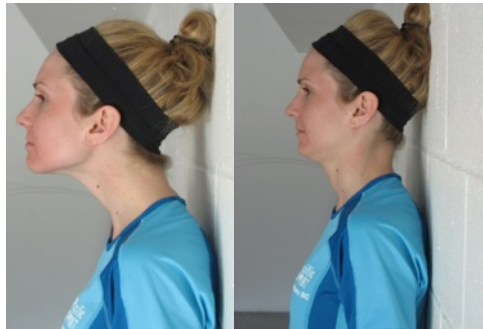
- Ensure “extra” clothes i.e. Jackets and shoes are off when weighing
- Ensure hats and shoes are off when measuring height

Corrective Exercises

Head Forward Correction

Chin retractions

While the athlete is positioned against the wall, pull head back and press against the wall keeping the chin level. The chin should slide back similar to a drawer and should not drop or lift. Hold five to ten seconds. Repeat ten times.



Shoulders Forward Correction

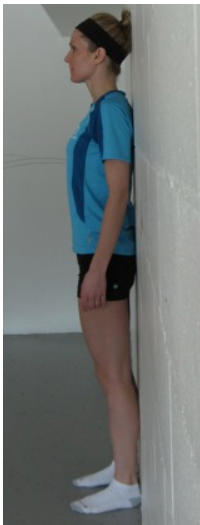
If shoulders are rounded and forward:

Scapular retraction and depression



While athlete is positioned against wall as outlined above pull shoulder blades down the back and squeeze them together. Focus on trying to flatten the back of the shoulder blades against the wall and avoid

arching the back or pulling the head away from wall. Hold five to ten seconds. Repeat ten times.



Wall Drill

This exercise can be performed to help practice proper standing posture. Stand with head, shoulders, back and heels against a wall. Heels should be shoulder width apart. Ensure the knees are not locked. Draw in the lower abdominals, decreasing the arch in your low back. Slowly exhale and pull the rib cage flat, shoulders back, to try and flatten any space between middle back and wall. Hold five to ten seconds. Repeat ten times.

7. Hip flexor test

To test flexibility in the hip and hamstring

Equipment needed

- Measuring tape, mat



Proper form of Hip flexor test

- Athlete should pull one knee against the chest and maintain the low back in flat position
- Athletes other leg remains straight and flat on the ground
- If the lower leg is **not** flat on the ground measure the distance from the floor to the back of the knee **in centimetres**
- Repeat on the other side
- Leg that is pulled up is the leg that you are scoring i.e. right knee up is right side

Form Rating Scale

1. Bottom leg is flat on the mat
2. Knee is fully against the chest
3. Bottom foot is not rotated outward

Corrective Exercises

Glute Stretch- Keep your back flat against the ground and slowly push your left knee away from you until you feel a stretch. To feel a deeper stretch you can move closer to the wall. Hold stretch for 30-60 seconds on each leg.



Crossover Hip Stretch- Start laying flat on the ground. Raise your right leg up off the ground towards you, bending it in a 90 ° angle. Use your left hand to gently pull your right leg over to the left of your body, feeling the stretch through your right hip and glute muscle. Keep your right shoulder on the ground and

only go through a range of motion that is comfortable, you do not need to bring your right knee to the ground. Hold this stretch for 30-60 seconds and then repeat with the left leg.

8. Hurdle Step

For stability, balance and flexibility of the pelvis, knees and ankles

Equipment needed: dowel, tape, doorway or two solid objects

Proper Form of Hurdle step

- Instruct the athlete to stand in a doorway and place a length of masking tape across the width of the doorway
- **Masking Tape is placed at the height of the bump on the upper aspect of their shin**
 - The masking tape will have to be moved for every athlete
- Place the dowel across the shoulders and hold in each hand (any substitute dowel can be used i.e.) floor hockey stick
- Athlete stands with feet positioned together side by side and toes directly behind the strip of tape
- Athlete lifts one foot and steps up and over the tape. The heel of the foot is placed on the floor briefly and then lifted back up to starting position.



Note: The foot should only lightly touch the floor and the weight should not be transferred forward onto the foot to gain balance or use as a take off

Hurdle step form rating scale

1. Minimal movement of the torso and balance is maintained
2. Foot does not touch the tape
3. Dowel does not touch the doorway
4. Knee, hip and ankle remain aligned and no spinal movement is observed (i.e. side flexing or hiking the hip upward)

Corrective Exercises

One Leg Step Up

Start with your right leg up on a bench or chair and your left leg on the ground. Keep your core strong



and push through your right foot that is on the bench to bring yourself up onto the bench. Lower your left foot backs to the ground slowly, and controlled, using your right glute and hamstring muscles. Repeat for ten repetitions or until fatigued on one side, and then perform the same number of reps on the opposite leg. Once you are able to do 20 repetitions per side you can talk to your Club Fit coach about adding weights in your hands to make the exercise more challenging.

Box Squats

Place a box, chair, or bench behind you. Slowly descend into a squatting position, pushing your hips back and sitting on the object, and then push through your legs to rise again. Heels remain flat and feet point forward. Knees should remain behind feet and aligned over the feet. Core should be engaged, and glutes activated as your chest stays facing forward.



If you are unable to maintain knee and foot alignment, you feel pain in your knees, or you feel most of the work being done by your quad muscles, work on the Glute Bridge Exercise and the Lower Body Flexibility Exercises. If you feel back pain, stop the exercise and work on Core Strengthening Exercises.

Perform repetitions until fatigue. Gradually increase repetitions until completing 3 sets of 15 repetitions with proper form. Once this is attained, start practicing squatting without a box. Ask your Club Fit coach how to squat with weight if this becomes too easy.

9. Lunge

To test leg strength, balance, and functional movement ability

Equipment: Orange Dot

Proper form of a lunge (split squat)

- Athlete should stand with feet shoulder width apart
- He/she should take a large step forward with one foot
- Athlete should slowly descend dropping the back knee straight down towards the ground



- The front knee should bend to approximately 90 degrees and should NOT travel forwards
- The trunk should maintain in an upright position with no forward lean
- The head and chest should remain upright
- Travel back to starting position and repeat- switch legs
- In a regular lunge-back knee does not touch ground, **for the purpose of this test, instruct athlete to touch the orange dot on the ground with their back knee**

Form Rating Scale

- 1) Minimal movement of the torso and balance is maintained
- 2) Feet do not move and remain pointing straight ahead
- 3) The back knee touches the ground

Corrective Exercises

One Leg Step Up (same as above)

Start with your right leg up on a bench or chair and your left leg on the ground. Keep your core strong and push through your right foot that is on the bench to bring yourself up onto the bench. Lower your left foot back to the ground slowly, and controlled, using your right glute and hamstring muscles. Repeat for ten repetitions or until fatigued on one side, and then perform the same number of reps on the opposite leg. Once you are able to do 20 repetitions per side you can talk to your Club Fit coach about adding weights in your hands to make the exercise more challenging.



10. Plank test

To test core strength

Equipment needed

- Stop watch
- Mat

Instructions

- **Use a stop watch to time how long the athlete can assume the proper position**
- **Stop time when athlete stops or when form is improper**



- Athlete should be up on their wrists and toes (as seen in picture)
- Athlete buttocks should not dip or raise but should be completely level
- Back and legs must be straight at all times
- If athlete has no trouble maintaining, provide an adaptation by asking athlete to lift one arm, one leg or both during the test
- If athlete has **significant** trouble, they may modify the plank by coming down to their knees- always encourage these athletes to transition into not using knees.

Note that the test was modified and what the modification was

Tips:

- Tell the athletes to imagine a plate of spaghetti or a bowl of water on their back and they need to keep their back flat so that it doesn't fall over

Modifications



Corrective Exercises and Normative Data

Normative Data for Plank Test

Rating	Time
Excellent	> 6 minutes
Very Good	4-6 minutes
Above Average	2-4 minutes
Average	1-2 minutes
Below Average	30-60 seconds
Poor	15-30 seconds
Very Poor	< 15 seconds

Data from Top End Sports

Glute Bridge

Start on your back with your heels close to your glutes, shoulder width apart, and keep your core active. Press through your feet, with most of the pressure into your heels, and squeeze your glute (butt) muscles to extend your hips into the air. Hold for a second and then slowly lower your hips back to the ground. Repeat this exercise for 10-12 repetitions, or until the glute muscles are fatigued. Once you can perform this exercise easily for 20 repetitions, you can try doing this exercise one leg at a time for a challenge.

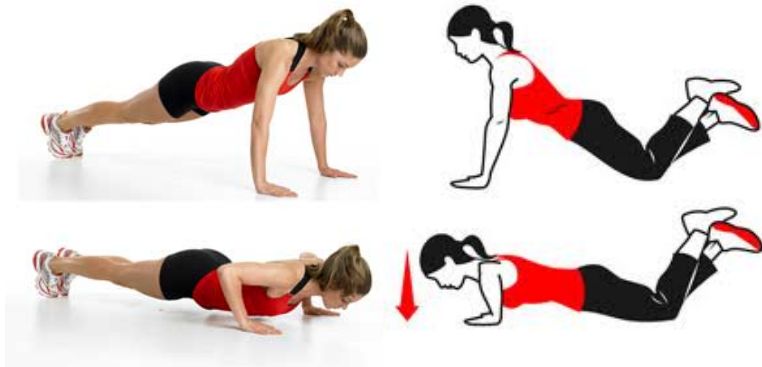


11. Push- Up

To test the stability of the trunk and upper body strength

Equipment needed: mat

Proper Form of a Push-Up



- Athlete should start lying flat on the ground-or on knees if modified
- He/she should place hands palm down on the ground slightly wider than shoulder width apart and thumbs at approximately shoulder height
- Athlete curls toes upward (towards head) so the balls of the feet touch the ground
- He/she pushes down into the ground and slowly straightens elbows until they are only slightly bent (not locked)
- Straight line should fall along the ankle, knees, spine, shoulders and head
- Please note if modified push up is used

Form Rating Scale

5. Ankles, knees, hips, spine, shoulders and head remain aligned
6. No spinal movement is observed (i.e. sagging)
7. Shoulder blades remain flush against the rib cage throughout the execution of one repetition

12. Push- up Test

- Record the number of push ups completed without a large pause- must be proper form
- Stop the test when athletes are unable to maintain appropriate technique for two consecutive push-ups.

Please note if modification is used

Corrective Exercises and Normative Data

Normative Data: Male Push up Test (reps)

<u>Age</u>	<u>17-19</u>	<u>20-29</u>	<u>30-39</u>	<u>40-49</u>	<u>50-59</u>	<u>60-65</u>
<u>Excellent</u>	<u>> 56</u>	<u>> 47</u>	<u>> 41</u>	<u>> 34</u>	<u>> 31</u>	<u>> 30</u>
<u>Good</u>	<u>47-56</u>	<u>39-47</u>	<u>34-41</u>	<u>28-34</u>	<u>25-31</u>	<u>24-30</u>
<u>Above average</u>	<u>35-46</u>	<u>30-39</u>	<u>25-33</u>	<u>21-28</u>	<u>18-24</u>	<u>17-23</u>
<u>Average</u>	<u>19-34</u>	<u>17-29</u>	<u>13-24</u>	<u>11-20</u>	<u>9-17</u>	<u>6-16</u>
<u>Below average</u>	<u>11-18</u>	<u>10-16</u>	<u>8-12</u>	<u>6-10</u>	<u>5-8</u>	<u>3-5</u>
<u>Poor</u>	<u>4-10</u>	<u>4-9</u>	<u>2-7</u>	<u>1-5</u>	<u>1-4</u>	<u>1-2</u>
<u>Very Poor</u>	<u>< 4</u>	<u>< 4</u>	<u>< 2</u>	<u>0</u>	<u>0</u>	<u>0</u>

Normative Data: Female Push up Test (reps)

<u>Age</u>	<u>17-19</u>	<u>20-29</u>	<u>30-39</u>	<u>40-49</u>	<u>50-59</u>	<u>60-65</u>
<u>Excellent</u>	<u>> 35</u>	<u>> 36</u>	<u>> 37</u>	<u>> 31</u>	<u>> 25</u>	<u>> 23</u>
<u>Good</u>	<u>27-35</u>	<u>30-36</u>	<u>30-37</u>	<u>25-31</u>	<u>21-25</u>	<u>19-23</u>
<u>Above Average</u>	<u>21-27</u>	<u>23-29</u>	<u>22-30</u>	<u>18-24</u>	<u>15-20</u>	<u>13-18</u>
<u>Average</u>	<u>11-20</u>	<u>12-22</u>	<u>10-21</u>	<u>8-17</u>	<u>7-14</u>	<u>5-12</u>
<u>Below average</u>	<u>6-10</u>	<u>7-11</u>	<u>5-9</u>	<u>4-7</u>	<u>3-6</u>	<u>2-4</u>
<u>Poor</u>	<u>2-5</u>	<u>2-6</u>	<u>1-4</u>	<u>1-3</u>	<u>1-2</u>	<u>1</u>
<u>Very Poor</u>	<u>0-1</u>	<u>0-1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Data from Top End Sports

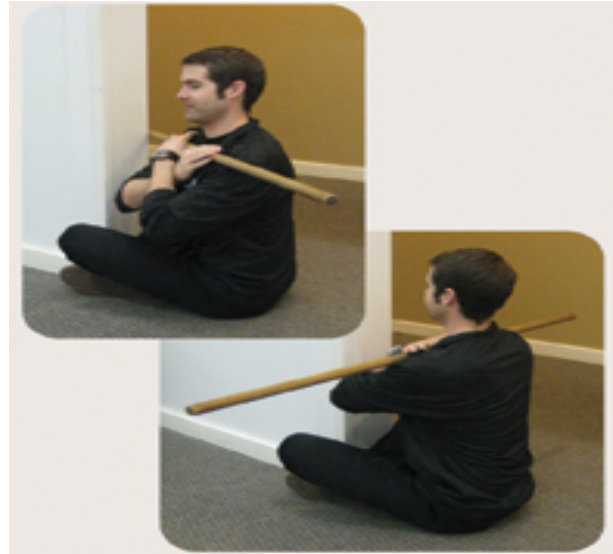
Perform pushups on your knees to start. Once you are able to do three sets of 15 repetitions, you can start doing pushups on your toes. Try to do pushups on your toes for 3 sets of max repetitions, two to three times per week.

13. Seated Rotation

To test upper torso mobility and hip mobility

Equipment: Dowel, doorway or two solid objects

- Athlete should sit cross-legged facing one side of the doorway. Lower legs should be in contact with the door jam and feet should be on either side
- Athlete should sit with trunk in an upright posture and dowel placed across chest in contact with collar bones
- Arms are crossed over chest and hands hold the dowel in place
- With back straight, athlete should rotate to each side, attempting to touch the dowel to the doorframe
- **Limit forward/back leaning or side bending**



Seated rotation form: rating scale

1. Dowel touches wall
2. Dowel remains level and in contact with chest
3. Spine remains straight and upright

Tips

- Tell athletes that they are a shish-kabob so they can't bend their bodies

Corrective Exercises

Lying Rotation

Lay face up on the ground. Bend the knees and place feet flat. Keeping knees together slowly drop the knees to one side on the body. Slowly lift knees back up to center, and repeat



on the other side. If it is uncomfortable to lower your knees all the way to the ground. Work within your range of motion, and slowly decrease the distance to the ground each week. Complete 10-20 times each side.



Crossover Hip Stretch- Start laying flat on the ground. Raise your right leg up off the ground towards you, bending it in a 90-degree angle. Use your left hand to gently pull your right leg over to the left of your body, feeling the stretch through your right hip and glute muscle. Keep your right shoulder on the ground and only go through a range of motion that is comfortable, you do not need to bring your right knee to the ground. Hold this stretch for 30-60 seconds and then repeat with the left leg.



14. Shoulder Mobility test

To test shoulder flexibility/mobility

Materials: measuring tape



- Measure athlete's hand in inches from the tip of their middle finger to the bottom of their palm, note this distance
- Instruct athlete to reach overhead and toward their back with the left hand and underhand behind back with their right hand. Both hands are placed

on the back- he/she should be stretching as far as possible without straining

- Measure the distance between two closed fists- middle knuckle to middle knuckle
- If the distance is greater than the size of palm, a score of zero is given
- If the distance is the same or less than the size of the palm, 1/1 is given
- Switch hands and perform the test again

Form Rating Scale

1. Fists are one hand width apart or less


Corrective Exercises and Normative Data

Shoulder Mobility

Assume the test position as above. Hold a strap between each hand and alternate between gently pulling the top hand downward and the bottom hand upward while holding the strap. Gentle tension should be felt and NOT pain. If pain is felt try moving the hands further apart along the length of the strap. This should be a gentle stretch.



Normative Data for Shoulder Mobility Test

Rating	Description
	Good Fingers are touching
Fair	Fingertips are not touching but are less than 5cm apart



Poor Fingertips are greater than 5cm apart

Data and images from Top End Sports

15. Sprint test

To test acceleration

Equipment needed

- Pylons or cones for start and finish
- Stop watch
- Measuring tape

Sprint Test

- Measure out 30 metres, making sure there is room for athlete to run out
- Mark start and finish line with cones
- Make sure athletes are warm or run athletes through a warm-up
- Explain test to athletes
- Ensure his/her foot is behind the line and give him/her a countdown
- Allow athlete two tries (if time), take the best score and record
- Use two volunteers, one at start one at finish to increase accuracy



Tips:

- Use creative ways to get athletes to run their hardest
 - i.e. get coach to run alongside to encourage athlete
 - i.e. get everyone to cheer each other on

Corrective Exercises and Normative Data

Strength, plyometric, and technique training are all important to improving sprinting. If you are a sprinting athlete, work with your coach to improve on your technique working on one improvement in technique per session. Talk to your Club Fit Coach to learn more about strength and plyometric training for your lower body to improve sprinting.

Normative Data for 30m Sprint Test (seconds)

Rating	Males	Females
Excellent	< 4.0	< 4.5
Above Average	4.0 - 4.2	4.5 – 4.6
Average	4.3 – 4.4	4.7 – 4.8
Below Average	4.5 – 4.6	4.9 - 5.0
Poor	> 4.6	> 5.0

Data from Physical Education and the Study of Sport

16. Squat test

To test for functional movement ability

Proper form of Squat

- Athlete should stand with shoulder width apart and raise straight arms in front of body to shoulder level
- Feet may slightly point out with knees aligned over feet
- Athlete should descend into a squatting position by bending the hips and knees and lowering the trunk (sitting back into a chair)
- Knees stay behind toes and are aligned over the second toe of each foot
- Body weight is shifted back on heels



Tips:

- Tell the athletes to imagine sitting in a chair
- If an athlete fails, try to coach them and allow them to try again

Form Rating Scale

1. Thighs are parallel to ground when athlete is in a fully descended position (i.e. at the bottom of the squat)
2. Angle of torso is parallel with lower leg
3. Heels remain on the ground
4. Knees are aligned over feet and behind toes

Corrective Exercises and Normative Data

Box Squats

Place a box, chair, or bench behind you. Slowly descend into a squatting position, pushing your hips back and sitting on the object, and then push through your legs to rise again. Heels remain flat and feet point forward. Knees should remain behind feet and aligned over the feet. Core should be engaged, and glutes activated as your chest stays facing forward.



If you are unable to maintain knee and foot alignment, you feel pain in your knees, or you feel most of the work being done by your quad muscles, work on the Glute Bridge Exercise and the Lower Body Flexibility Exercises. If you feel back pain, stop the exercise and work on Core Strengthening Exercises.

Perform repetitions until fatigued. Gradually increase repetitions until completing three sets of 15 repetitions with proper form. Once this is attained, start practicing squatting without a box. Ask your Club Fit coach how to squat with weight if this becomes too easy.

Glute Bridge

Start on your back with your heels close to your glutes, shoulder width apart, and keep your core active. Press through your feet, with most of the pressure into your heels, and squeeze your glute (butt) muscles to extend your hips into the air. Hold for a second and then slowly lower your hips back to the ground. Repeat this exercise for 10-12 repetitions, or until the glute muscles are fatigued. Once you can perform this exercise easily for 20 repetitions, you can try doing this exercise one leg at a time for a challenge.



17. Stork Stand test

To test balance

Equipment needed: Stopwatch



- Athlete should lift one foot and place the sole against the inside of the supporting leg, just below or at the knee (stork)
- Arms may be in front of body, at hips or at sides or overhead (more difficult)
- Athletes should focus on a spot on the wall
- When athletes are ready, start timing- stop timing when form is improper in any way i.e.) hopping, large sway or wobble, other foot touching ground, using support
- Record time, switch legs
- Record the time even if it's a second

Corrective Exercises and Normative Data

Single Leg Balance- As seen above under **Hurdle Step Test**

Normative Data for Stork Balance Test (seconds)

Rating	Males	Females
Excellent	> 50	> 27
Above Average	37-50	23-27

Average	15-36	8-22
Below Average	5-14	3-7
Poor	< 5	< 3

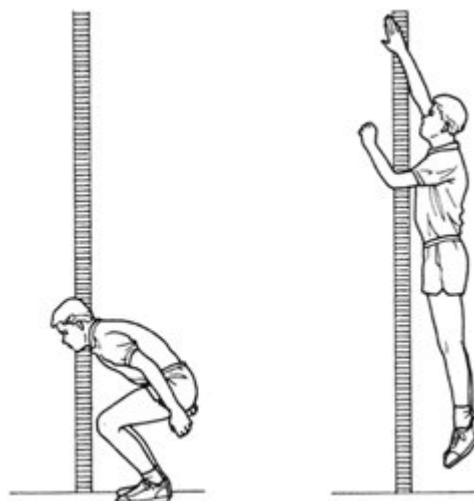
Data from Brian Mac Sports Coach

18. Vertical Jump

To test leg power

Proper form

- Instruct athlete to stand next to a wall with his/her dominant side facing the wall.
- If athlete is right handed, right shoulder should be next to the wall, and vice versa.
- Athlete should extend arm and reach up as high as possible, marking the highest spot he/she can touch.
- This is the **standing reach**.
- You can apply ink or chalk on your fingertips to mark the spot or put some tape on the wall marking off the highest point
- Without taking any steps, athlete should jump up, reach as high up the wall as they can, and mark off the second spot.
- Mark this second spot with ink, chalk or tape like before.
- Athlete can repeat the jump until he/she feels they have touched the highest point on the wall.
- Subtract your standing reach from the height of the highest point touched on the wall
- This number will be the **vertical jump**.
- For example, if standing reach is 20 inches and the highest point reached on the wall is 30 inches, vertical jump is 10 inches



If the testing site has a jump mat:

- Turn the jump mat on
- Hit the red button when it says one jump
- Instruct the athlete to step on
- Jump
- Record reading for black box

Corrective Exercises and Normative Data

To improve at the vertical jump test, you should do a combination of strength training and plyometric training for your lower body to increase the explosive power in your lower body. Exercises such as squats, lunges, deadlifts, and box jumps are great to improve power. Talk with your Club Fit Coach to learn more about these exercises.

Normative Data for Vertical Jump Test (inches)

Rating	Males	Females
Excellent	> 28	> 24
Very Good	24-28	20-24
Above Average	20-24	16-20
Average	16-20	12-16
Below Average	12-16	8-12
Poor	8-12	4-8
Very Poor	< 8	< 4

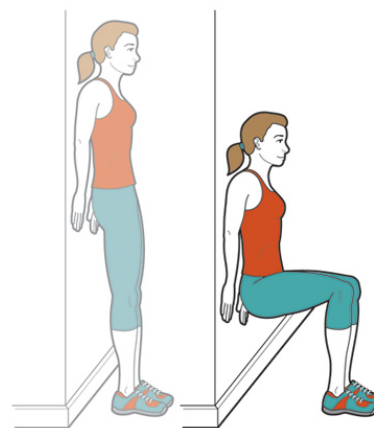
Data from Top End Sports

19. Wall sit test

To test leg endurance

Equipment: Stopwatch, flat wall, tape

- Athlete stands approximately 25cm from wall, feet shoulder width apart-this will vary depending on height of athlete
- Athlete leans back against the wall and slides down until knees are **90 degrees**, ensure that athletes are not standing too high or sliding lower than 90 degrees
- You can mark 90 degrees for the athlete with tape on the ground
- Hands should be folded across chest or resting on thigh
- When athlete is in position, start timing
- Stop timing when athlete changes position significantly-knees must remain in 90 degrees



Tips for Volunteers and Coaches:

- Stand beside the athlete to make sure that they are at 90 degrees
- Correct the athlete as soon as their form changes

Corrective Exercises and Normative Data

See [Box Squat Exercise](#)

Normative Data- Wall Sit Test (seconds)

Rating	Males	Females
Excellent	> 100	> 60
Good	75 - 100	45 - 60
Average	50 - 75	35 - 45
Below Average	25 - 50	20 - 35
Poor	< 25	< 20

Data from Top End Sports