**AFL SCREENING TEST INSTRUCTIONS**

**EQUIPMENT**

30cm steel ruler

rigid tape

stopwatch (phone)

metronome (phone)

sphygmomanometer or dynamometer

1 goniometer

long measuring tape

Box

plinth

**THE MUSCULOSKELETAL TESTS**

**Knee to wall**

Tape the steel ruler on floor, perpendicular to a wall. Ask the player to place their big toe and heel on the steel ruler and lunge forward so that their knee touches the wall without the heel leaving the ground. If the heel lifts, ask the player to move their foot forward and re-do the test. Measure the distance (cm) from big toe to wall. Ensure this is the limit of the ankle range. Also make sure the pelvis has not rotated during the test.

**Single leg stance**

Ask the player to stand on one leg with their arms crossed over their chest and with eyes closed. Time for 30 seconds. Count the number of touches to the floor the player makes with the free leg during the 30 seconds. Players are not to shuffle or move their standing foot. It they do, re-start the test. They are allowed one “practice” test if they shuffle their standing foot, or move their trunk excessively. Give feedback, then re-start the test.

**Single leg squat**

Ask the player to stand on one leg with their arms crossed over their chest. Ask the player to slowly squat as low as possible without lifting the heel. Repeat 5 times. Look for hip and knee alignment and ankle strategy. Grade the quality of squat as poor, average or good.

**Single leg calf raise**

With bare feet, ask the player to perform a single leg calf raise through full range of motion. Continue this movement at a rate of 60bpm until the player is unable to move through full range of motion. Record the number of calf raises performed.

**Squeeze Test 1 (bent knees)**

With the player supine, ask them to bend one knee, bringing the heel level with the opposite knee and leave the foot there, then bend the other knee and place that foot at the same level as the first foot. Use a dynamometer or fold the pressure cuff of the sphygmomanometer in thirds and pre-inflate to 10mmHg. Place it between the knees, inline with the shaft of the femur. Ask the player to slowly squeeze the dynamometer/pressure cuff as hard as they can and hold for 5 seconds. Record the maximum pressure. Ask and record whether there was any pain on a scale from 1 to 10. You may also record the location of the pain.

**Squeeze Test 2 (straight knees)**

Begin the test with the player supine and legs straight (hips and knees at 0 degrees). Use a dynamometer or fold the pressure cuff of the sphygmomanometer in thirds and pre-inflate to 10mmHg. Place it vertically between the knees. Ask the player to slowly squeeze the pressure cuff as hard as they can and hold for 5 seconds. Record the maximum pressure. Ask and record if there was any pain on a scale from 1 to 10. You may also record the location of the pain.

**Supine passive hip internal rotation at 90deg**

With the player in supine, passively take their leg to 90deg hip flexion. Internally rotate the leg passively and visually estimate the range of internal rotation into the following categories <20deg, 20-45deg or >45deg. (A goniometer may also be used to measure this range.)

**Hip quadrant / hip impingement test**

With the player in supine, take the leg into full hip flexion, passively internally rotate and adduct the thigh with moderate over-pressure. Record whether the player reports pain in the hip or not.

**Supine active hip internal rotation**

Place the player supine, hip in a neutral position and lower leg over the edge of the plinth. Ask the player to rotate their foot out as far as possible. Record the angle of the lower leg with the goniometer along the line of the tibial shaft. Ensure the pelvis stays level throughout the testing.

**Supine active hip external rotation**

Place the player supine, hip in a neutral position and lower leg over the edge of the plinth. Have the opposite leg abducted out of the way. Ask the player to rotate their foot in as far as possible. Record the angle of the lower leg with the goniometer along the line of the tibial shaft. Ensure the pelvis stays level throughout the testing.

**Modified Thomas test for 1) hip flexor**

Have the player supine in the Thomas test position, with gluteal fold of the testing leg at the edge of the plinth. Ask the player to pull the opposite leg to their chest. Allow the test leg to hang passively over the edge of the plinth and record whether the line of the femur is above horizontal, horizontal or below horizontal.

**Modified Thomas test for 2) quadriceps length**

Have the player supine in the Thomas test position, with gluteal fold of the testing leg at the edge of the plinth. Ask the player to pull the opposite leg to their chest. Allow the test leg to hang passively over the edge of the plinth and record the flexion angle at the knee with a goniometer.

**Elevated single leg bridge**

Have the player lying supine on the floor with one heel on a box or plinth at 60cm high. The knee of the test leg is slightly bent at 20deg and opposite leg is bent to 90deg hip and knee flexion with their arms crossed over chest. Ask the player to elevate the hips as high as possible and the assessor places a hand at this height. The player repeats this action as many times as possible, and touches the assessors hand each time. The first time the player fails to touch the assessor’s hand, a warning is given, the second time the test is stopped and the number of repetitions recorded. The player may also stop the test due to fatigue or hamstring discomfort.

**MHFAKE (Maximal hip flexion and knee extension)**

Have the player lying supine on the floor or plinth. The athlete hugs one thigh to chest and performs active knee extension, without moving their thigh away from their chest, until reaching maximal tolerable stretch or the onset of pain/discomfort. Range of motion (i.e. knee extension angle) is measured by hand held goniometer.

**Hamstring outer range eccentric strength**

The athlete is lying supine with ASIS/pelvis and the contralateral leg fixated. The clinician passively flexes the player’s leg to 90deg knee flexion, holding the dynamometer or folded sphygmomanometer (folded in thirds and pre-inflated to 10mmHg) under the athlete’s heel. The athlete performs 3 isometric knee flexions for 3 seconds. (Maximal effort – hard as possible). The clinician applies an eccentric brake test in an upward direction. Record the best of three tests.

Sit and Reach Test

Tests Lx and Hamstring ROM. Long sit on floor with feet flat against box. Reach for toes. Reaching the toes is equivalent to 0cm. A measure in cm beyond the toes is positive and toward the knees is negative.

|  |  |  |
| --- | --- | --- |
| **Normative data:** | **Males** | **Females** |
| **Excellent** | +6cm or more | +11cm or more |
| **Good** | 0 to +5cm | 0 to +10cm |
| **Average** | 0 to -8cm | 0 to -7cm |
| **Below average** | -9cm or more | -8cm or more |

**Single leg triple hop test**

Jump as far forward as possible on a single leg three consecutive times, without losing balance and landing firmly. The distance is measured from the start line to the heel of the landing leg. Recored the best of 3 attempts. The goal is to have a less than 10% difference between the injured and uninjured limb.

**Single leg cross over hop test**

Jump as far as possible on a single leg three consecutive times, without losing balance and landing firmly. Between each hop, the athlete has to jump across a midline (zig zag over outstretched measuring tape), hence including side-to-side movement in this test. The distance is measured from the start line to the heel of the landing leg. The goal is to have a less than 10% difference between the injured and uninjured limb.

**The T-Test**

A useful agility test for the assessment of multidirectional movement (forward, lateral, and backward.

Equipment: A marked hard, flat surface that offers good traction, measuring tape, four cones, stopwatch.

Pre-test procedure: Set up the cones as depicted in the figure below.

Diagram

Description automatically generated

* After explaining the purpose of the T-test, describe and demonstrate the proper route and technique. Allow the client to warm up and perform a few practice trials before administering the test.
* The goal of the test is to complete the course as quickly as possible.
* The client must keep his or her body facing forward at all times and must physically touch each cone with the correct hand. The client shuffles through the course and cannot allow the feet to crossover at any time. Proper technique must be followed or the test run will not count.

**Test protocol and administration:**

* The client starts at cone A. On the trainer’s command, the client sprints to cone B and touches the base of the cone with the right hand.
* He or she then side shuffles left to cone C and touches the base of the cone with the left hand.
* He or she then side shuffles right to cone D and touches the base of the cone with the right hand.
* He or she then side shuffles back to cone B and touches the base with the right hand before running backward to the start (cone A).
* Stop the stopwatch as the client passes cone A.
* The T-test is performed three times with a few minutes of recovery between each test.
* Record the fastest time on a testing form.

Note: The test can be run in either or both directions.

Use the table below to rank the client’s performance.

**T-Test performance norms**

|  |  |  |
| --- | --- | --- |
| **Ranking** | **Males (seconds)** | **Females (seconds)** |
| Excellent | <9.5 | <10.5 |
| Good | 9.51-10.50 | 10.51-11.50 |
| Average | 10.51-11.50 | 11.51-12.50 |
| Poor | >11.50 | >12.50 |

Data from: Hoffman, J. (2006). Norms for Fitness, Performance, and Health. Champaign, Ill.: Human Kinetics.

**20m Beep test**

A multi-stage fitness test in which you must do 20 metre shuttle runs in time with the pre-recorded bleeps until the bleeps get too quick. It is a maximal test. Record the highest level that was successfully completed.

**AFL Screening Questionnaire**

**Players name: DOB: Assessor Name: Date:**

**Family history of ACL injury:**

Has anyone in your family injured their ACL or had an ACL reconstruction?

YES / NO

Details:

**Operative history:**

Have you had any operations for injuries related to football?

What was the injury?

What was the surgery?

When did you have the surgery?

**Footedness:**

Do you prefer to kick with your right or left leg?

RIGHT LEFT NO PREFERRED

**Groin pain:**

Do you suffer from groin pain during or after activity?

YES / No

Details:

**Injury/Illness:**

Have you had any injuries/illnesses that have interfered with your sporting career?

Yes / No

Details:

**Current injuries/symptoms:**

Do you have any current injuries or symptoms?

Yes / No

Details:

Investigations:

**Training schedule:**

How many training hours/sessions/games do you participate in per week?

| Test | Description | Rating |
| --- | --- | --- |
| Knee to wall | Standing lunge. Measure from toe to wall (cms). | Right:  Left:  Comment: |
| Single leg stance | 30 seconds eyes closed. Hands across chest. Instruction: stay upright, do not move foot, or put other foot down. | No. of touches/hops:  Left:  Right:  Comment: |
| Single leg squat | Arms crossed over chest. Squat as low as possible without lifting heel. 5 times, slowly. | R: Poor Average Good  Comment:  L: Poor Average Good  Comment: |
| Single leg calf raise | Number to loss of full ROM at a rate of 60bpm. | Right:  Left:  Comment: |
| Squeeze tests | 1) Supine, hips at 60deg flexion. Sphygmomanometer (10mmHg) or dynamometer between knees.  2) Supine, hips at 0deg flexion. Sphygmomanometer (10mmHg) or dynamometer between knees. | Pain: /10  Pressure: mmHg/Kgs  Comment/location of pain:  Pain: /10  Pressure: mmHg/Kgs  Comment/location of pain: |
| Supine passive hip internal rotation at 90deg | Supine, passive at 90deg hip flexion. Visually estimate or use a goniometer. | Right:  <20deg 20-45deg >45deg  Left:  <20deg 20-45deg >45deg |
| Hip quadrant/impingement test | Supine position, passive full hip flexion, adduction and internal rotation | Pain Right: Yes No /10  Pain Left: Yes No /10 |
| Supine active hip internal rotation and external rotation | Supine, hip neutral, leg over edge of plinth. Stable pelvis. Active movement. Measure with goniometer. | Right:IR ER Total  Comment:  Left:IR ER Total  Comment: |
| Thomas test | Modified Thomas Test position for:  1) Hip flexor length  2) Quads length | Hip flexor (psoas) length- passive hang:  Above horizontal R L  Horizontal R L  Below horizontal R L  Quads length- passive hang (goniometer):  Right:  Left: |
| Elevated single leg bridge | Foot on 60cm stand/plinth. Hands across chest, test leg slightly bent (20deg). Lift hips to full extension. Repeated to fatigue/loss of form. | Right:  Comment:  Left:  Comment: |
| MHFAKE (Maximal hip flexion and knee extension) | The athlete hugs thigh to chest and performs active knee extension until  reaching maximal tolerable stretch or the onset of pain/  discomfort.  Range of motion (i.e. knee extension angle) is measured  by hand held goniometer. | L Deg  R Deg |
| Hamstring outer range eccentric strength | The athlete is lying supine with ASIS/pelvis and the  contralateral leg fixated.  The player’s hip and knee is flexed to 90° while the clinician holds the dynamometer or folded sphygmomanometer (pre-inflated to 10mmHg) under the athlete’s heel.  The clinician applies an upward eccentric brake force against the athletes isometric knee flexion. Maximal effort. Record the best of three tests. | L Kgs/mmHg  R Kgs/mmHg |
| Sit and reach | Tests Lx and Hamstring ROM. Long sit on floor with feet flat against box. Reach for toes. Reaching the toes is equivalent to 0cm. A measure in cm beyond the toes is positive and toward the knees is negative. | Score: cm  Normative Data:   |  | | --- | | **Males** | | Excellent: +6cm or more | | Good: 0 to +5cm | | Average: 0 to -8cm | | Poor: -9cm or more |  |  | | --- | | **Females** | | Excellent: +11cm or more | | Good: 0 to +10cm | | Average: 0 to -7cm | | Poor: -8cm or more | |
| Single leg triple hop test (straight line) | The distance is measured from the start line to the heel of the landing leg. The goal is to have a less than 10% difference between the injured and uninjured limb. | L m  R m |
| Single leg cross over hop test (zig-zag) | The distance is measured from the start line to the heel of the landing leg. The goal is to have a less than 10% difference between the injured and uninjured limb. | L m  R m |
| T-test for agility | Time starts from when the subject leaves cone 1 (start) and finishes when the subject passes cone 1. See above for test set up. | Time: sec |
| 20m Beep test | A multi-stage fitness test in which you must do 20 metre shuttle runs in time with the bleeps. Record the highest level that was successfully completed. | Level: |