

**SSP**

**TESTING PROTOCOL**

**Updated: Oct 2023**

**TID**

**National Youth Sports Institute**

Contents

[40m Straight Line Sprint 4](#_Toc153354235)

[505 Agility 5](#_Toc153354236)

[Standing & Sitting Height 6](#_Toc153354239)

[Arm Span 7](#_Toc153354240)

[Vertical Jump 8](#_Toc153354241)

[Handgrip 9](#_Toc153354242)

[Medicine Ball Throw 10](#_Toc153354243)

[Alternate Hand Wall Toss 11](#_Toc153354244)

[Lower Quarter Y Balance 12](#_Toc153354245)

[Balance Beams 13](#_Toc153354246)

[Moving Sideways 14](#_Toc153354247)

[Jumping Sideways 15](#_Toc153354248)

# 40m Straight Line Sprint

|  |  |  |
| --- | --- | --- |
| **Objectives**:   * To measure the ability to sprint at maximal speed and also allow assessments of acceleration and speed over short distances. | **Equipment:**  -Electronic light gates with PDA -Tape measure -Marking tape -2 Marker cones | **Other requirements:**  1 x Test assistant |
| **Diagrammatic representation:**    10m  0 – 40m | | |
| **Protocol:**   * Light gates to be placed at the 0, 5, 10, 20 and 40 metre mark * Participant is to get ready at start line 40 cm before the 0 metre mark * Participant starts from a stationary standing position, with one foot in front of the other. The front foot must be behind the starting line * This position should be held for 2 sec prior to starting, and no rocking movements are allowed * Participant is instructed to sprint as fast as possible; ensuring that they don’t decelerate until they have passed the cones set 4m after the final gate * Participants will complete 1 practice trial (60% effort) followed by 2 actual trials * Allow 2 min active recovery or rest between sprint trials   **Note:**   * If participants starts the sprint with a rocking movement, the trial is deemed invalid | | |
| **Introduction & Demonstration:**   1. Introduction & purpose: **“This is the 40m sprint station and it will test your running speed”** 2. Tester points to demonstration by assistant: **“Watch him/her do it.”** 3. Tester reads instructions below | | |
| **Instructions to participants:**   1. **“Stand behind the line.”** 2. **“Do not rock your body.”** 3. **“Once ready, run as fast as you can until you pass the cones.”** | | |

# 505 Agility

|  |  |  |
| --- | --- | --- |
| **Objectives**:   * To measure the ability to sprint at maximal speed and also allow assessments of acceleration and speed over short distances. | **Equipment:**  -Electronic light gates with PDA -Tape measure -Marking tape -2 Marker cones | **Other requirements:**  1 x Test assistant |
| **Diagrammatic representation:** | | |
| **Protocol:**   * Markers are set up 10m and 15m from a starting line marked on the ground. Light gates will be set up at the 10m mark. * Participant runs from start line towards the 15m marker (run-in distance to build up speed), **turns on the 15m marker line** and runs back towards the starting line, passing through the 10m mark. * The time is recorded from when the athletes first runs through the 10m mark, and stopped when they return through this mark (that is, the time taken to cover the 5m up and back distance - 10m total) * Participant should be encouraged to not overstep the turn line by too much, as this will increase their time. * Participants will complete 1 practice trial followed by 2 actual trials   **Note:**   * If the participant turns before the turn line, the trial is deemed invalid | | |
| Introduction & Demonstration:  * 1. Introduction & purpose**: “This is the 505 agility station and it will test your speed and quickness in making a 180 degree turn.”**  1. Tester points to demonstration by assistant: **“Watch him/her do it.”** | | |
| Instructions to participants:  1. **“Stand behind the line”** 2. **“Wait till I say Go.”** (Tester to ensure light gate system is ready at this point) 3. **“Once ready, run towards the ‘turn’ line quickly.”** 4. **“Use your foot to turn on the line and run back towards the ‘start’ line quickly.”** 5. **“Your foot must touch or cross the line to be counted.”** | | |

# Standing & Sitting Height

|  |  |  |  |
| --- | --- | --- | --- |
| **Objectives:**   * To measure leg-length for the LQYB Test. * To determine maturation status | | **Equipment:**  -Height scale /Stadiometer  -Measuring tape  - Set square - Bench  - Laser leveler  - Clip boards | **Other requirements:**  1 x Test assistant |
| **Diagrammatic representation:**     1. (B) | | | |
| **Standing Height Protocol (Refer to A):**   * Participant **stands upright** and **barefoot** with **feet and legs** **together against the wall** * Participant is instructed to **look straight ahead** (ensure that the **head** is **not tilted backwards**) and stands as upright as possible * The participant is to **take a deep breath just before the measurement is done**. Instruct the participant to breathe normally after measurement is done * The feet of the participant should not leave the floor. * If using stadiometer, lower the platform until it makes firm contact with the top of the head. If using a tape measure, place the set square against the wall with the base on top of the head ensuring the set square is level by using the spirit level as an indicator * The height of the vertex is recorded to the nearest 0.1cm | **Sitting Height Protocol (Refer to B):**   * Participant sits on bench with knees forward and hands resting on thighs which are parallel to the floor. * The **buttocks and shoulders rest** lightly **against** the stadiometer/**tape** which is positioned vertically in the midline behind the participant. * Participant is instructed to **look straight ahead** (ensure the **head** is **not tilted backwards**), sit as upright as possible * The participant to take a deep breath just before measurement is done. Instruct the participant to breathe normally after measurement is done. * If using stadiometer, lower the platform until it makes firm contact with the top of the head. If using a tape measure, place the set square against the wall with the base on top of the head ensuring the set square is level by using the spirit level as an indicator * The height of the vertex is recorded to the nearest 0.1cm. | | |
| **Instructions to participants (standing):**   1. **“Remove shoes.”** 2. **“Stand upright.”** 3. **“Feet together, with heels touching the wall.”** 4. **“Look straight ahead.”** 5. **“On the count of 3, take a deep breath”** | **Instructions to participants (sitting):**   1. **“Back flat against the wall.”** 2. **“Sit up right.”** 3. **“Hands rest on your thighs.”** 4. **“Look straight ahead.”** 5. **“On the count of 3, take a deep breath”** | | |

# Arm Span

|  |  |  |
| --- | --- | --- |
| **Objectives**:   * To measure the distance between fingertips when the arms are outstretched. | **Equipment:**  -Measuring tape  - Wall | **Other requirements:**  1 x Test assistant |
| **Diagrammatic representation:** | | |
| **Protocol:**   * Set up the tape measure from the corner of a wall * Athlete to **stand facing away from the wall**, with **back and buttocks against the wall**. * Athlete to **stretch out their arms horizontally**, measuring from **one fingertip to the other**. | | |
| **Instructions to participants:**   1. **“Stand with your feet together, facing away from the wall.”** 2. **“Stretch out your arms horizontally as wide as you can.”** | | |

# Vertical Jump

|  |  |  |  |
| --- | --- | --- | --- |
| **Objectives:**   * To measure the explosive power of the leg extensor muscles. | | **Equipment:**  -Vertical Jump equipment (e.g. Vertec)  -Long ruler/ Straight stick | **Other requirements:**  1 x Test assistant |
| Diagrammatic representation:    **(A) (B)** | | | |
| **Standing Reach Height Protocol**  **(Refer to A):**  To obtain standing reach height:   * Participant starts by standing tall, toes in-line with the pole * Keeping both feet together and flat on the ground, participant reaches upward with their dominant hand as high as possible, fully elevating the shoulder to touch the highest vane possible * This is recorded as the standing reach height in cm | **Vertical Jump Protocol**  **(Refer to B):**  Vertical jump   * Participant jumps vertically as high as possible to displace the vanes, using both arms and legs to assist in projecting their body upwards * The takeoff must be from both feet with no preliminary steps or shuffling; however, feet can be comfortably apart * The difference between the jump height and the standing reach height is calculated to give the vertical jump result in cm. | | |
| **Note:**   * Recording sheet records 2 actual trial scores * Vertical jump does not have to be from the same position as standing reach height, as long as participant is comfortable * Participants will complete 1 practice trial followed by 2 actual trials | | | |
| **Instructions to participants:**   1. **“Stand with toes in-line with the pole, feet together and flat on the ground.”** 2. **“With your writing hand, reach as high as you can.”** 3. **“You must be stationary and jump with both feet.”** 4. **“When you’re ready, stand slightly away from the pole, feet comfortably apart, jump and reach as high as you can.”** | | | |

# Handgrip

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To assess general upper body strength | **Equipment:**  -Handgrip dynamometer | **Other requirements:**  1 x Test assistant |
|  | | |
| **Protocol:**   * The athlete using their **dominant hand**, with the arm at right angles and the elbow by the side of the body * The athlete applies as much grip pressure as possible on the dynamometer * Record the maximum reading (kg) * Athletes does two attempts with sufficient rest in between | | |
| **Instructions to participants:**   1. “Hold the hand dynamometer with your dominant hand.” 2. “Adjust the handle of the dynamometer if required, the base should rest on the heel of palm, while the handle should rest on middle of the four fingers.” 3. “Place your arm at a right angle and the elbow by the side of your body.” 4. “When you are ready, squeeze as hard as you can for 3 seconds.” 5. “Let’s repeat this one more time.” | | |

# Medicine Ball Throw

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To assess general upper body strength | **Equipment:**  - Medicine Ball (1Kg for girls, 2Kg for boys  - Gym bench  - Measuring tape | **Other requirements:**  1 x Test assistant |
|  | | |
| **Protocol:**   * The athlete’s back is always in contact with the bench. Feet are on the ground without holding any object. * The athlete throws the medicine ball in both hands as far as possible. * The distance is measured from subject's shoulders. * Athletes does one practice trials, followed by two attempts with sufficient rest in between. | | |
| **Instructions to participants:**   1. “Lie on the bench with the shoulders placed on the line, and feet on the ground.” 2. “Hold the medicine ball with both hands and throw it as far as possible, with your shoulders and body maintaining contact with the bench.” | | |

# Alternate Hand Wall Toss

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To measure hand-eye coordination. | **Equipment:**  -Wall (Flat) -Tape measure -Marking tape -Tennis balls x 3  -Container (to hold tennis balls) | **Other requirements:**  1 x Test assistant |
| Diagrammatic representation:  A person standing in front of a wall  Description automatically generated | | |
| **Protocol:**   * Participant stands facing the wall behind the line marked 1.5m from the wall on the ground * Participant is instructed to throw the ball against the wall and on the rebound, catch the ball with the other hand * Participant continues to throw the ball with the hand that caught the ball * Participant to continue this order for as many times as possible * If participant drops the ball, continue from the hand which attempted to catch the ball * Record the total number of successful catches in 30 seconds * A catch is completed when the ball is thrown underarm and caught with no bounce on the floor * A catch is completed if the ball is caught cleanly by hand and not trapped by body * Participant is not allowed to step over the line to catch the ball * The catch is only successful if the ball hits the wall and participant catches the ball before the bounce * 1 point is scored for each successful catch * A 30 second practice trial will be conducted before 2 actual trials   **Note:**   * If participant steps over the line, that catch will be deemed invalid * Participants can take a ball from the container placed on the edge of the 1.5m line if the ball rolls away | | |
| Instructions to participants:   1. **“Stand behind the line.”** 2. **“When I say ‘Go’, throw the ball against the wall with your right hand and catch it with your left, then throw it with your left and catch with your right. Repeat till I say Stop.”** 3. **“You must do an underarm throw and must catch the ball before it hits the floor.”** 4. **“A catch is only counted if caught with your hands and not trapped with your body.”** | | |

# Lower Quarter Y Balance

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To measure the dynamic balance in single leg stance. | **Equipment:**  -Y Balance Test Kit | **Other requirements:**  1 x Test assistant |
| **Diagrammatic representation:**  starting position y-balance-ay-balance-by-balance-c  Start Position Anterior Posteromedial Posterolateral | | |
| **Protocol:**   * Participant starts by standing on the right foot at the centre foot plate behind the line (Start Position). * Participant reaches out in 1 of the 3 directions with the free leg and then return to the starting position. * Complete each direction with both legs before moving on to the next direction. * Directions are as follows (refer to picture):  1. Anterior (front), 2. Posteromedial (back and away from midline of the body) and 3. Posterolateral (back and across midline of the body).  * Participant pushes the indicator block as far as possible with their toes in one motion. * Participant recovers to Start Position without touching the floor. * Participant performs the whole procedure a total of 3 times: 1 practice and 2 trials.     **Note:**   * Toes of the reach foot must be kept on the red indicator at all times. * The reach foot must not rest on the indicator block, touch the floor, kick the block or push the block in jerky movements. * The balancing foot must remain behind the line and within the boundary of the foot plate. If any of these errors are committed, the result will be invalid (mark ‘X’ on result sheet). | | |
| **Instructions to participants:**   1. “Place your RIGHT foot on the plate with toes behind the line.” 2. “Touch the red line with your LEFT toe and give one push as far as you can and return to this starting position.” 3. “Reach foot must not rest on the block, kick the block, push the block in jerky movements or touch the floor.” 4. “Change leg.” 5. “Now, let’s do the direction with the left foot going AWAY from the body.” 6. “Change leg.” 7. “Finally the last direction, with the left foot going across the body.” 8. “Change leg.” 9. “Let’s repeat this sequence 1 more time” | | |

# Balance Beams

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To measure balance | **Equipment:**  -3 sets of Balance Beams | **Other requirements:**  1 x Test assistant |
| A person running on a track  Description automatically generated with medium confidence | | |
| **Protocol:**   * Athlete stands barefoot on the widest balance beam with one foot after another * The athlete tries to make 8 steps backward * Each time the floor is touched a new attempt starts * After three attempts on the 6cm beam, repeat three times on the 4.5cm and on the 3cm beam * Record number of steps the athletes does backwards without losing balance. 8 is the maximal mark per attempt. If the athlete crosses the end of the beam in 7 steps, he is granted 8 points. Sum of the three attempted scores are noted. | | |
| **Instructions to participants:**   1. On the 6cm beam: “Walk forward to the end of the beam.” 2. “Once you reach the end of the beam, start walking backwards slowly on the beam without falling off.” 3. “Walk to the end of the beam and walk backwards 2 more times.” 4. “Repeat this sequence on the narrower (4.5cm) beam.” 5. “Now, repeat it one last time on the narrowest (3cm) beam.” | | |

# Moving Sideways

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To assess the gross motor coordination of the athlete | **Equipment:**  - Boards | **Other requirements:**  1 x Test assistant |
| A picture containing person, person, outdoor, sport  Description automatically generated | | |
| **Protocol:**   * Athlete stands barefoot on a board and holds the other board in both hands at pelvic height * When the tester gives the starting signal, athlete places the board next to the board which he stands on and steps on the board * The board that is now free is taken with both hands and placed next to him again * Athlete moves as fast as possible in a straight line for 20 seconds. * Athletes does 3 transfers to the right and 3 transfers to the left * Athlete performs two attempts with sufficient rest in between * Each point the athlete stands on the other board, 2 points are granted (1 point for grabbing the board, 1 point for when the athlete stands on it) * Both attempts are noted | | |
| **Instructions to participants:**   1. “Stand with both feet on one board, and both hands holding the other board.” 2. “Place the board next to the board you are standing on (either to your right or left).” 3. “Move both feet across to the newly placed board and pick up the board with both hands.” 4. “Repeat this 2 times, and change direction.” 5. “Choose your preferred direction.” 6. “Now, repeat the entire sequence as many times as possible within 20secs.” 7. “Let’s repeat this one more time.” | | |

# Jumping Sideways

|  |  |  |
| --- | --- | --- |
| **Objectives:**   * To assess the gross motor coordination and speed of the lower limbs | **Equipment:**  - Jump Mat | **Other requirements:**  1 x Test assistant |
| A couple of men on a track  Description automatically generated with low confidence | | |
| **Protocol:**   * Athlete stands barefoot on the mat, feet parallel with the beam * Athlete jumps as fast as possible sideways over the beam for 15 seconds * Both feet must touch the floor when landing * Athletes does two attempts with sufficient rest in between * Record the number of times the athlete jumps over the beam | | |
| **Instructions to participants:**   1. “Stand on either side of beam.” 2. “When I say ‘start’ jump as quickly as you can across the beam, with both feet at the same time for 15 sec.” 3. “Both feet have to touch the floor when jumping across the beam.” 4. “Let’s repeat this one more time.” | | |