

## U18 Protocol

### 1. **Body Composition:**

- Height (cm)
- Weight (kg)

### 2. **Grip Strength Test:**

Rationale: Grip strength is directly correlated to shoulder strength, and it is often a limiting factor in training. In curling, grip strength is crucial to support one's body weight on the broom.

Protocol: Adjust the grip dynamometer to the comfort of the athlete. Starting with the athlete's dominant hand, grip the dynamometer with as much force as possible for a maximum of 10s. Repeat the test with the non-dominant hand. Allow athletes to perform 3 attempts on each hand. Record the highest value as their score.

	Male	Female
Poor	< 40kg	< 20kg
Average	50kg	30kg
Excellent	> 65kg	> 40kg

### 3. **Power Test: Standing Vertical Jump**

Rationale: A measure of explosive power, which is important in both sweeping and throwing efforts. Power is a combination of force and speed, we will measure both components through the testing.

Protocol: Athlete stands next to wall and will arm closest to the wall and feet flat on the ground, mark/record the highest standing reach height. The athlete then vertically leaps as high as possible using both arms and legs to assist with upward projection. Attempt to touch the wall at the highest point of the jump. The difference in distance between the standing reach height and jump height is recorded. Athletes are allowed 3 attempts, recording the greatest score (make note of this).

	Male	Female
Poor	<30cm	<25cm
Average	45cm	40cm
Excellent	>65cm	>55cm

### 4. **Lower Body Strength: Single Leg Squat Test**

Rationale: Important to support proper technique, generate power, and prevent injury with the delivery.

Protocol: On one leg, squat down to depth (top of the thigh is parallel with the ground), return to full extension of hip and knee to complete each repetition. Supporting knee should point in the same direction as the foot throughout movement. Hip knee and big toe in alignment. Speed of movement is controlled speed. Non-working leg should be positioned in front of the body on descent (option to hold foot with hand). Failure is considered if speed of movement can't be controlled, if full range is not achieved, if balance can't be maintained, if knee buckles inward, if ankle stability can't be maintained. Rest 1 minute between legs. Option to use a box/bench to control depth.

	Male & Female	Male & Female
Poor	< 10	< 10
Average	15-20	15-20
Excellent	> 25	> 25

## 5. Upper Body Strength

Rationale: Important for efficient sweeping.

**A:** Push-ups

Protocol: Assume a plank position so that only the hands and toes are in contact with the ground, with hands directly under the shoulders, feet hip width apart, and hips are aligned with shoulders. Place a 2 inch mat under the chest. Lower the body until the chest contacts the mat. Without deviating from posture, fully extend the elbows to complete the repetition. Complete as many repetitions as possible without deviating from the posture for 2 consecutive repetitions, until failure, or volitional fatigue.

	Male	Female
Poor	< 15	< 10
Average	20-40	15-25
Excellent	> 50	> 30

**B:** Pull-up Test

Protocol: Have athletes start in full extension of elbows, without the use of a swing, pull the body up until the chin passes the height of the bar. Complete as many repetitions as possible until the athlete is unable to meet the required height.

	Male	Female
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Poor	< 8	< 2
Average	9-14	3-9
Excellent	> 15	> 10

**6. Core Strength/Stability: Plank**

Rationale: Important to maintain efficient delivery and sweeping postures.

Protocol: Assume an elbow plank position, with elbows under the shoulders, forearms parallel to each other, feet hip width apart, and hips in line with shoulders. Record maximum time without deviating from posture to a maximum of 2 minutes.

**7. Aerobic Capacity**

Rationale: Important for sustaining effort throughout a game and competition, as well as recovery between aerobic efforts while sweeping and throwing.

Protocol: Complete 1 of the following options to determine an estimated VO2max. (Note complete the same option with subsequent testing).

- a. Beep Test (record highest level completed)
- b. Cooper Test (record distance completed in 12 minutes)
- c. 2k Row Test (record time to completion)
- d. 5k Bike Erg Test (record time to completion)