

18+ Fitness Testing Protocols

Note: The 18+ fitness testing protocol reflects the requirements of the Curling Canada High Performance Program overseen by Kyle Turcotte.

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 |
|---------|-------|--------|
| Minimum | 120lb | 70lb |

3. Power: 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.

| | Male | Female |
|-----------|---------|---------|
| Poor | < 40cm | < 30cm |
| Average | 55-60cm | 45-50cm |
| Excellent | > 70cm | > 60cm |

4. Lower Body Strength: 1RM Back Squat

Rationale: Important for sweeping and throwing abilities.

Protocol:

- Ensure the athlete is familiar with back squat.
- Depth should be hips parallel to knees at the bottom position with no posterior pelvic shift. If an athlete is unable to attain this depth then make a note of depth attained.
- Ensure safety bars and collars are used
- Appropriately warm up athletes, and have athletes complete a 1 rep max test of 1-5 repetition depending on the athletes comfort. 1 rep max will be estimated based on maximum repetitions achieved at the maximum weight.
- Ensure adequate rest between attempts

| Back Squat Standards (as per Curling Canada) | Male | Female |
|----------------------------------------------|-----------|-----------|
| Minimum | 1.5 x BW | 1 x BW |
| Better | 1.75 x BW | 1.25 x BW |
| Best | 2 x BW | 1.5 x BW |

5. Upper Body Strength: 1RM Bench Press

Rationale: Important component of sweeping.

Protocol: Have athletes find a comfortable grip width. If unfamiliar with bench press, have them grip slightly wider than shoulder width so hands stay over the elbows. Feet should remain on the ground, buttocks, head and shoulders in contact with the bench at all times. Have the athlete lower until the bar touches the chest. The concentric phase should include a full range of motion at the elbow. Record the maximum successful weight (kg).

| Bench Press Standards (as per Curling Canada) | Male | Female |
|-----------------------------------------------|-----------|----------|
| Minimum | 1 x BW | .6 x BW |
| Better | 1.25 x BW | .75 x BW |
| Best | 1.5 x BW | 1 x BW |

6. Upper Body Stamina

A: Push-up Test

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 | <20 | <15 |
| Average | 40 | 35 |
| Excellent | >60 | >50 |

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 |
|-----------|-------|--------|
| Poor | <10 | <3 |
| Average | 10-19 | 3-9 |
| Excellent | >20 | >15 |

7. Core Strength: 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.

8. 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) Incremental Treadmill Test: Initial workload is 5.8 mph, 0% grade for 3 min followed by 2% increase every 2 min maintaining constant speed (speed that's comfortable for the athlete). Test is terminated when the athlete

cannot complete a full stage. - Record time to fatigue, incline achieved, and chosen pace.

- b) Beep Test - record highest level achieved
- c) 2k Row Test - record time to completion
- d) 5k Bike Erg Test (not a Curling Canada option) - record time to completion
- e) Cooper Test (not a Curling Canada option) - record distance completed in 12 minutes