

## SASKATCHEWAN HEAT OFF-ICE PERFORMANCE TESTING PROTOCOLS

### **20M Beep Test**

The 20m Beep Test is a non-invasive, indirect maximal multistage test of aerobic fitness. Aerobic fitness is measured from the maximum rate that oxygen can be extracted from the atmosphere and transported to and used by the body's tissues (VO<sub>2</sub>max). It is expressed in ml/kg/min. The shuttle running course consists of running back and forth in a gymnasium or on a running track, on a 20m course. The running speed is controlled by audio signals that allow the speed to be increased over time. At every sound signal, participants must reach the 20m line, pivot, and get to the other line by the next audio signal. The test is terminated when a subject fails to reach within 1m of the end line two times consecutively. Scores are a product of the level and the number of successful shuttles completed for that level.

For ringette, it is very important to have an adequate level of aerobic fitness to build a platform in which explosive power; muscular strength and anaerobic power can be maximized. Generally speaking, athletes with high aerobic capacities have the ability to sustain high intense exercise and recover from repeated bouts of high intense exercise. This reflects an ability to recover and play at a higher intensity during back to back bouts, halves, games, and seasons. Also, athletes with adequate levels of aerobic fitness generally recover faster from sicknesses, from periods of travel, and sleep better.

### **20M Sprint**

This test is for linear acceleration and speed and will provide information regarding how fast an athlete can accelerate from a stationary position, and their maximum speed at a 20m distance.

Athlete will start from a staggered stance and sprint as fast as possible through the cones placed at 20m. Times will be recorded at the cones marking the 20m distance. Each athlete will get two attempts.

### **Broad Jump**

The athlete will begin by standing behind a line marked on the ground with feet roughly shoulder width apart. A two-foot take off and landing is used, with swinging of the arms and bending of the knees to provide forward drive. The athlete attempts to jump as far as possible, landing on both feet without falling backwards. Three attempts are allowed with the greatest jump distance recorded. The athlete must "stick" the landing. If the hands must be placed on the floor to stabilize, the jump WILL NOT be recorded but will count towards your three attempts. If the feet upon landing are staggered the measurement is taken from the back of the back heel. Distance is recorded to the nearest cm.

### **Triple Broad**

For the triple broad jump, the athlete will perform three consecutive broad jumps for two attempts. This test provides information about an athlete's ability to transfer energy in a continuous manner. The test is not performed by completing three maximal jumps one after the other, but rather a sub-maximal jump for the first two jumps and a maximal jump for the final jump of the triple. This will allow the athlete to carry forward momentum and achieve a greater overall total distance of the entire three jumps. Total distance covered by the three jumps is recorded to the nearest cm.

## Musculoskeletal Strength & Endurance Tests

- Chin Up

Athlete begins from a dead hang position (elbows fully extended) with hands shoulder width apart in a supinated grip (palms towards face). Athlete will then pull body up to bar until chin passes the level of the bar before returning down to dead hang position. Legs may not be swung to create additional momentum. Repetitions will be counted as chin crosses the level of the bar. If chin does not cross the bar or dead hang position is not achieved before pull back up towards the bar, the repetition will not count. Athlete may continue their attempt until they have reached exhaustion or until there are two repetitions in a row that do not count. Maximum number of repetitions will be recorded.

- Push Up

Athlete begins by lying face down on the ground with legs together, hands pointed forward at the level of arm-pits just to the side of the body. Push up by fully extending arms, while maintaining a straight back. Use the toes as a pivot point. The upper body must be kept in a straight line, returning to the starting position with the chin to the ground. Stomach and thighs do not touch the ground. Athlete performs as many reps as possible until exhaustion. If an athlete does not reach full extension of elbows or chin does not touch the ground, the repetition will not count but athlete can continue. If there are two repetitions in a row that do not count, the athlete's attempt of the test will be terminated. Repetitions are counted as athlete reaches the top of the motion (elbows fully extended). Athlete must continue to produce repetitions at a continuous pace and may not stop to rest between repetitions. Maximum number of repetitions recorded is 40.

- Full Sit Up

Athlete begins by laying on back with knees bent to roughly 90 degrees, feet about shoulder width apart, hands cupping ears. Do not hold feet or have them secured. Athlete begins sit up and with each rep must touch both elbows to both bent knees, and return shoulder blades back down to the ground to finish the repetition. Maximum number of repetitions will be counted, to a maximum of 100 sit ups.

- Front Plank

Athlete begins in the prone position, face down on the ground with elbows directly under the shoulders. Feet are set with a narrow base but not touching. The athlete elevates the pelvis and abdomen from the ground so that only the forearms and toes are in contact with the ground. The athlete must maintain the shoulders, hips, and ankles in a straight line and stable position. The athlete must hold the position until they reach exhaustion to a maximum of three minutes. If lower back begins to arch, the athlete will be informed that their test is terminated. Test will be recorded to the nearest second.