



## 2015 All Star Program Fitness Conditioning Screening

### **RMF All Star Athlete Testing Mission Statement:**

To provide a fitness assessment and readiness for sport test and training program, appropriate for the top recognized athletes in the Rocky Mountain Freestyle Division, with the purpose of supporting the athlete's development of strength, power, endurance, agility, and flexibility and recovery in order to maximize their performance and create the Nation's top, most well-prepared Freestyle athletes.

The program mission also includes coordination with the athlete's coaches for training suggestions to promote training continuity and continued progression toward the athlete's goals.

### **Test date:**

To be determined in August/early September 2015. We recommend future seasons to provide testing in late spring or early summer.

### **2015 Test Location:**

Vail, Colorado (date to be confirmed with Vail Ski Club Training Center for 2015)

### **Testing to be performed:**

Athletes will be lead in dynamic warm-up including but not limited to quadriceps, gluteus, hamstrings, Achilles, core- 15 min.

### **Testing begins:**

Rotation stations for testing to include:

- Strength: broad jump and Single leg triple-hop-stick R and L
- Power: vertical jump on force plate
- Anaerobic power/capacity; Wingate cycle test, Box jump
- Flexibility and balance: hamstrings, Thomas test, Achilles (ankle Dorsiflexion) Y-Balance test or BESS
- Neuromuscular control: (video taped: squat, Single leg cross-over Drop test and tuck jump movement assessment,
- Core strength and Stability: Plank hold with extremity movement, Lunge
- Aerobic conditioning: either Shuttle (beep) test or 1.5 mile run depending upon facility

**Vertical jump test-** Lower extremity Power. This test has been shown to improve with squat training and leg press training and has been shown in other sports to be an indicator of speed and strength. We have the equipment for this simple test. This is a safe alternative for squat and leg press activities which not all of the athletes have been training and may be difficult to test on a one time basis. These activities (squat and leg press) would be great for homework training to improve the athletes strength after instruction on performance but for testing day the vertical jump test may work best for us.

**Triple hop test for Distance-** both single leg and double leg (AKA 3- broad jump listed on USSA testing under power but does not require fancy force plate equipment or programs ) for testing Power and dynamic balance. Symmetry in performance L to R would indicate lower risk for knee injury.

**Wingate for anaerobic conditioning X 3 (or just 1x if we are doing the running)** with 10 min. rest interval to determine recovery (simulating a ski competition with multiple runs with only chairlift ride recovery)- This test is only slightly more difficult to do in the field since it requires a special apparatus but would be superior to other tests such as the shuttle run. Cycling is a superior choice of activity over running due to the reduced strain on the knees for both training purposes and testing. This may be redundant information but I feel one test at least may be an interesting collection of data for looking at predictable performance.

**Box jump -speed/agility-** a timed event of lateral jumps to a box for 30 second interval to simulate a ski run. This test can indicate speed, agility, balance and core strength.

**Tuck jump testing-** 10 consecutive tuck jumps video taped for accuracy in grading. This can be done on an iPad and sent to the athlete for educational purposes. It evaluates Neuromuscular control for core stability and knee health and is considered predictive for risk of injury to the knees.

**Drop cross over jump-** test movement quality and strength of single limb, both R and L.

**Y-Balance testing- dynamic balance and lower extremity symmetry.** This test is standing on one foot while reaching out as far as possible with the free foot in all three directions of a "Y" if you were standing at the intersection point. Again this test would identify dynamic balance and symmetry in lower extremity function.

**Plank position and Quadruped (hands and knees)** with static hold and extremity motion to establish core stability and strength. This test is easy to administer and grade and evaluates the ability to stabilize the core while moving the extremities. Difficulty with this test could indicate higher risk for any injury due to the poor control of the core.

**Flexibility of hamstrings, Thomas test** (hip flexor, quadriceps and ITband flexibility) and ankle Dorsiflexion (achilles and calf flexibility)

**Lunge and bodyweight squat** for movement analysis.

We do not see any realistic reason or validity to eliminate the athletes based on score received on these tests. There truly is no data stating what scores result in the top performing athletes, but rather can indicate red flags for risk for injury or just areas that would most likely benefit the athlete if they were improved. We do not have much time for them to make progress since this testing is occurring so late so we would suggest that we do it as soon as possible and in the future, plan it much earlier in the preseason.

We will also request that athletes have IMPACT test within past year (every 2 years)-most of them have done this through their individual teams

We may also consider Body Composition testing for research data purposes.

Testing day will end with summary of movement education, training education for safe lifting techniques and movement awareness.

Within 2 weeks, athletes and coaches will receive testing results and training program suggestions which will be updated monthly, until November 15 start of ski season. Testing scores will not eliminate athletes but will provide training opportunities to strengthen the weak areas of concern for peak performance in the coming season.

Athletes should expect to spend 4-6 hours on test day at the facility and bring their own water and snacks/lunch.

**Sources:**

*Thank you to the USSA COE for their assistance in helping us develop this testing which is consisted with Fitness Conditioning Training being offered at COE.*