

TESTING FOR ICE HOCKEY

From Brian Sipotz and Darryl Nelson, operators of Advantage Strength in Ann Arbor and HockeyStrengthAndConditioning.com, as adopted from former collegiate, NHL, MLB, Olympic strength and conditioning coach Mike Boyle.

On- and off-ice testing are great ways to measure your player's training habits and work ethic in the off season. For that reason, we conduct several tests at the beginning and end of each season to test different aspects of the players' physical attributes.

ON-ICE TESTING

Goal line to Blue Line Sprint - Think of this as the "Hockey 40". In fact it is a 60-foot or 20-yard test that can be used to measure speed. In a more complicated explanation, we are actually measuring acceleration vs speed. Ice hockey is a game of repeated acceleration so this test is extremely predictive. Collegiate males (Boston University sampling) will be below 3.0 seconds on average with top times in the 2.7 range. For world-class females (U.S. Women's National Team) fast is considered to be sub-3.0 with the fastest players in the high 2.7-2.8 range.

On-Ice Lateral Movement - Our Women's National Team coaches asked us to develop an on-ice agility/lateral movement test that again could be valid and reliable. Kevin Neeld (U.S. Women's National Team Assistant Strength Coach) developed a hockey-specific, on-ice version, of the popular 5-10-5 or pro agility test used at the NFL Combine. The test begins on the faceoff dot and is done right-left-right across the circle.

Blue-Line-to-Goal-Line Shuttle - The Blue-Line-to-Goal-Line Shuttle Test was developed to test on-ice conditioning in a simple, easy-to-administer manner. The offensive zone is again used as the distance is consistent. As hockey shifts tend to be less than a minute, seven repetitions were selected - seven reps results in scores in the 53-58 second range for collegiate males and 55-60 seconds for world-class females. Two trials are done five minutes apart with the score being the average of the two. The differential is also calculated. Differentials greater than four seconds indicate a conditioning issue even if the average score is acceptable. Collegiate males tend to average 54-57 seconds; world-class females will average under 60 seconds.

OFF-ICE TESTING

If we are going to perform off-ice testing, we particularly urge caution in double-leg tests like the front/back squat. The injury risk may outweigh the benefit, so we have used one-leg testing.

Vertical Jump — This is the standard standing two-foot jump. Coaches can use a Vertec or the new jump pads such as the Just Jump. It is important to accurately measure reach on the Vertec and to monitor technique on the Just Jump. The Just Jump measures time in the air and converts time to distance.

10-Yard Dash — I strongly prefer electronic timers for 10-yard-dash timing, since an electronic timer eliminates the margin of error. Electronic timers yield slower times, but the times are far more reliable. Off-ice speed has been shown in numerous studies to correlate to on-ice speed. Hockey speed expert Jack Blatherwick has been preaching this since the early '80s. We do not use electronic timers on ice as they're not as readily available and wires are easily cut. The 10-yard-dash is used as research has shown a higher increase in muscle strains at distances over 10 yards. Again, we are actually looking at acceleration vs. speed.

300-Yard Shuttle Run - Conditioning testing should be interval in nature and should test performance. To perform the 300-yard shuttle test, athletes run 12x25 yards, rest five minutes and repeat—the score is the average of the two times. We also make note of the differential between the first and second time. This is important, as a fast athlete may be able to obtain a passing score, but have a large differential between the two times. My guideline is to consider differentials greater than five seconds a failed test.

Upper-Body Pushing — In the past we have used a one-rep max and I would still favor this with collegiate males. With most other athletes, we will use a repetition-max test. My current choice is to ask the athlete to select a load perceived to be a five-rep max and go to failure. Maximums can easily be estimated from this data. The weight must be raised/lowered under control. No bouncing of the bar is allowed, and the hips must stay in contact with the bench.

Pullup - For upper-body pulling, a pullup or chinup test is simple to administer. I have recently begun to favor chin-ups as they are more "shoulder-friendly". It is critical that the test is strictly administered and that no cheating is allowed. To avoid endurance testing we have put a simple system in place: once an athlete can do 10 chinups, they are required to test with a 25-lb plate on a dip belt. Once they are capable of 25 lbs. for 10, they move to 35 and eventually 45. Team USA members and 2015 and 2016 Patty Kazmier Award winners Alex Carpenter and Kendall Coyne have both done at least 45 pounds five times.

Rear-Foot-Elevated Split Squats - This is the base

lower-body-strength test we currently use for our players. The rear-foot-elevated split squat develops the unilateral strength so necessary in skating, while also allowing the use of heavy loads. The ideal way to load is with dumbbells and kettlebells at the sides. Recently, as loads have increased, we have moved to the one-leg squat test below.

One-Leg Squats- Like the rear-foot-elevated split squat, a true one-leg squat is also a key exercise we use to develop lower-body strength. The one-leg squat is a more advanced exercise and develops the strength of the hips in three planes. Our strongest athletes will routinely use over 225 pounds in a rear-foot-elevated split, but will rarely use over a hundred pounds in a one-leg squat.

