Can Test Familiarity Improve Performance on the National Hockey League Combine? A Case Study Analysis.

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ABSTRACT

Test performance in athletes can be impacted by familiarity with test procedure, the environment in which testing is taking place, and perceived competency for achieving the desired outcome. However, there is a dearth of research on these factors in elite athletes. **PURPOSE:** The purpose of this study was to familiarize an elite-level ice hockey player with the protocols required in the National Hockey League Combine (NHL-C) and compare these tests results to his performance on the NHL-C. **METHODS:** An 18-year old ice-hockey player (who was invited to the NHL-C in 2023) volunteered to complete a battery of fitness testing eight days before the first day of the NHL-C using standardized NHL-C procedures. Testing included height, weight, wingspan, and body composition (BC) measures, the pro-agility test (P-A), hand-grip strength (HGS), a bench press (BP) for power, horizontal jump (HJ), vertical jump, squat jump, no-arm jump, a Wingate bike test for peak power (PP), average power (AV), and a fatigue index score (FI), pull-ups to fatigue (PU), a maximal effort bike test for aerobic fitness (AF), and a Y-Balance test (YBT). Testing was administered by a certified exercise physiologist using the same equipment and procedures used for the NHL-C. Prior to testing the subject provided informed consent and physician clearance. Test performance was compared to scores obtained on the NHL-C. **RESULTS:** Compared to baseline testing, increases in NHL-C scores were observed for right and left HGS (21.0% and 7.9%, respectively), BP (6.0%), PU (10.0%), YBT (4.2%), absolute and relative AF (6.0% and 7.0%, respectively), and PP (14.8%), along with improvements (decreases) in P-A times (2.2%). No changes were observed for BC, AV, and HJ, and a slight decrease was seen for FI and the three jump tests. **CONCLUSIONS:** Familiarity with the protocols, coupled with feedback on strategies to improve scores may have helped the subject with their NHL-C performance as there was likely insufficient time between the testing sessions for physiological adaptations to have explained improvements. Given the impact NHL-C performance may have on draft potential even small improvements may be beneficial. This supports the need for future research on the effect of test familiarity with small samples when the population they reflect is challenging to study as a large cohort.