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Pre-Season Conditioning: Hockey Specific Movement Analysis and Needs Assessment

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For many Canadians, the days following the Civic long weekend mean 1 thing, and 1 thing only, the start of hockey season. For others, the hockey season never ended, rather, they were training in the off-season. Regardless of your training schedule, as a hockey player your season; training camp, or regular weekly pick-up game, is starting. With that, the smart and pro-active coach, parent or athlete, should focus on their, or their players physical preparation.

Hockey, like any sport, requires specific and focused training to provide optimal results and better performance. When developing a program for the competitive athlete, less focus should be placed on skill development, with an increased focus on injury prevention. A good place to start is to look at common hockey injuries.

The 3 main concerns related to common injuries on a specific hockey team are if the injuries are 1) contact or non-contact, 2) common to the athletes in the program, and 3) related to a common factor such as a previous training program. A movement analysis of hockey and of hockey players is important to determine how body positions and functional requirements impact the kinetic chain. Recognizing dysfunction is highly dependant on perspective. Hockey players often have abnormal gait patterns that are compounded by restricted thoracic spine rotation, hip tightness, and a natural tendency to externally rotate their feet.

The likely cause of altered gait is from constant skating, mechanical compensations and restrictions that permit synergistic dominance, and turning off motor units (MU) within muscles that should operate as primary contributors to on-ice skills. By leaving these MU dormant, the athlete may still be successful, but will be limited and at an increased risk of injury. The combination of altered gait patterns, the movement analysis, and injury research provides the starting point of the needs assessment. What follows is a brief overview of 3 specific needs that comprise the most essential requirements. If addressed with proper training and progression, attention to these areas should reduce the # of non-contact injuries, and enhance performance.

Specific Need #1: Thoracic spine rotation in spinal flexion

Adequate thoracic spine mobility may help alleviate lower back problems. If the thoracic spine is "locked up", the body will compensate through the lumbar spine. The lumbar region needs stability, which can be enhanced by maximizing range of motion (ROM). Currently it is popular to train thoracic movement through a variety of twists, lifts, chops and core rotational exercises. However it is important to ensure that the hockey player can rotate within spinal flexion.



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Specific Need #2: Hip internal and external rotation in hip flexion

Quickness and reaction in many sports depend partly on ankle inversion and eversion. In hockey however, ankle movement is limited by the rigidity of the skate boot. Setting the blade on the ice, is therefore a function of hip rotation. Athletes could “muscle” through this restriction, but not efficiently and not without placing a high degree of torque on the knee. The hockey stance is in a position of hip flexion. A flexed hip changes the mobility and flexibility requirements of the hip joint and surrounding musculature when compared to upright standing. Further, the hip must be trained to accept internal and external rotation under tension.

Specific Need #3: Dynamic Scapular stability for shoulder mobility

The shoulder is a joint unlike any other. It is basically a ball (head of the humerus) being held against a plate (scapula) by a web of muscles tendons and ligaments. You cannot look at shoulder ROM without looking at scapula mobility. The scapula should elevate, depress, protract, retract, wing, tip, and rotate up or downward. When training the shoulder it must be approached by targeting scapulo-thoracic movements in a kinetic chain. That is using varies vectored resistance with scapula movements to train the scapula to move with the humerus.

If you would like assistance in developing exercises or a training program for your hockey team, please contact us through our web page at www.performancetrainingsystems.net

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