

Cutting Edge

by Dr. Brian S. Seaman, DC, FRCCSS(C), FICC

Preparing the pros for action

For most North Americans, the idea of exercising leads to fitness, which in turn has the benefit of reducing or maintaining a healthy weight, increasing your overall health and well-being, and providing an opportunity to better enjoy recreational activities with your friends and family. For competitive or elite athletes, the demands they place on their bodies are much higher.

In years past, professional hockey players would play a lot of golf over the summer months, and go to their training camps to "play into shape." However modern-day athletes no longer view the training camps as an opportunity to get into shape, but rather the key as to whether they will make the team or be cut. Nowadays, professional and elite athletes continue to train throughout the off-season, as the athletic world has become very highly competitive.



Andy O'Brien



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Over the years, fitness and conditioning for elite and professional athletes have become more specialized and very functional from a sports-specific perspective.

Typically, athletes now work with a team of professionals, which not only includes a sports chiropractor and other health-care professionals, but also training staff who are very

specialized in developing an appropriate training program. Andy O'Brien is one such individual who has developed a very practical protocol with the focus on functional conditioning in professional sports, especially the National Hockey League (NHL) players.

The Lateral Cable Lunge exercise

Andy O'Brien – One Coach's Corner

Today's NHL hockey players face a variety of challenges in preparing and maintaining their bodies. On the ice, players need to be fast, powerful, agile, and have great endurance from a variety of energy systems. Developing these qualities, and maintaining them over a gruelling schedule, requires a multifaceted, holistic approach to training.

Surprisingly, the biggest challenge in achieving all of this might be overcoming the effects of regular movements associated with the game. Skating requires players to produce forces horizontally through their lower body while maintaining acute hip angles.

When handling the puck, players hold their spines in a laterally flexed and rotated position. Finally, shooting requires players to create rotational forces in one direction for thousands of repetitions each week, with very few in the opposite direction. Not exactly a series of movements the human body was designed for!

The end result is a player who has a variety of muscle imbalances and unnatural motor patterns. Eventually, their athleticism becomes limited, and they end up with decreased performance and chronic injuries. That, in a nutshell, sums up the modern-day professional hockey player.

When a player comes off the ice to train, it is almost certain they will be moving inefficiently. The body will twist and pull itself into compensatory positions to avoid using weak muscles, over-rely on strong ones, and accommodate limitations in range of motion. The more dynamic the movement, the more compensation will occur, and the more dangerous it becomes for the player.

Restoring stability and movement efficiency is absolutely critical before taking on any substantial training load off-ice. If not, the player's condition will become exacerbated. Their strong muscles will become stronger, and their weaker ones weaker, worsening the imbalances. Their motor patterns will become reinforced, and instead of inching closer to their performance goals, they will be moving further away.

Since so much emphasis is placed on a player's ability to achieve the appropriate muscle activation, lumbo-pelvic stability, and tri-planar mechanical action within their movements, the "how to do" is almost more important than the "what to do." That being said, once an athlete has restored optimal neuro-muscular and biomechanical function, they must progress into sport-specific exercises that will enhance their abilities on the ice.

Lateral Cable Lunge

This exercise features resisted horizontal movement that combines hip abduction and external thigh rotation with extension of the

Instructions:

If moving right to left, begin in a wide athletic stance with body weight on the right leg, flexed slightly at the hip, hugging a Swiss ball with a

contralateral shoulder. The activation of the contralateral upper quadrant serves as a counterbalancing force which stabilizes the trunk and pelvis.

Instructions:

If moving left to right, begin in a lunge position with body weight on the left side. The right leg is crossed underneath the left. The right hand holds a cable with horizontal resistance from the opposite direction of your eventual movement. Push directly lateral and extend with the left leg while the right leg strides laterally in the opposite direction. Simultaneously, the arm pulls the cable laterally and slightly upwards, keeping the hand close to the body through the movement.

Swiss Ball Cable Rotation

This exercise features strict rotation of the trunk combined with horizontal force production from the lower body. The movement simulates transference of power from the lower body into a rotational movement such as in shooting.

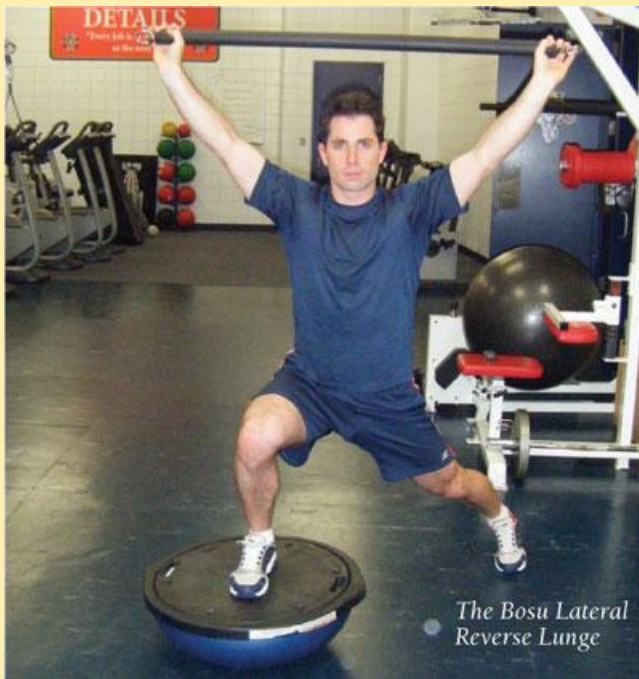
cable held in the left hand and wrapped around the ball. Transfer the weight from the right leg to the left, staying low as you move laterally. Rotate the trunk as the weight transfers from leg to leg.

Bosu Lateral Reverse Lunge

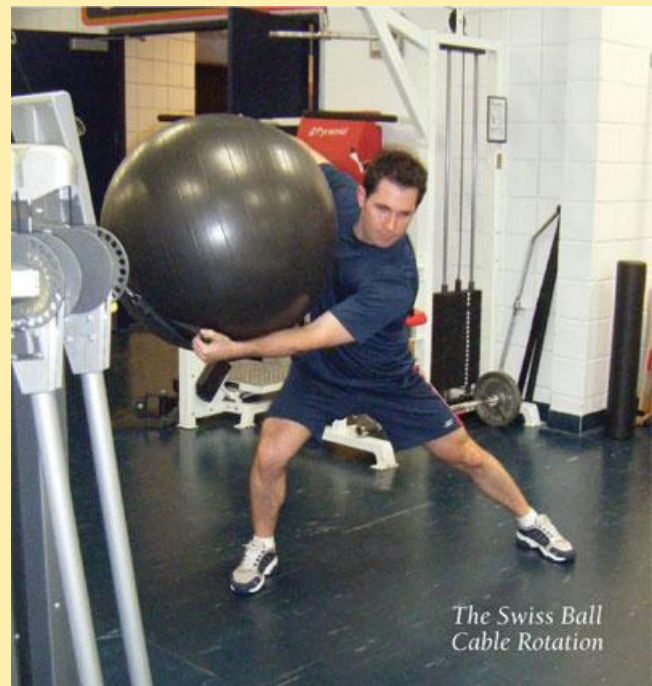
This exercise creates a balanced extension of the hip, knee, and ankle while also adducting the hip and producing vertical force through a single leg. This is counterbalanced with flexion of the hip, knee and ankle on the opposite side while adducting the hip. This counter movement is performed on the flat side of a Bosu while holding a light bar overhead to avoid compensation through the spine.

Instructions:

Begin in a lunge position, with bodyweight on the front leg centered on the Bosu, and the back leg extended behind at 45 degrees. Holding a light bar extended overhead through the exercise, extend the front leg bringing the back leg up into a knee drive position, maximizing the simultaneous extension of one side with the flexion of the other.



The Bosu Lateral Reverse Lunge



The Swiss Ball Cable Rotation

The Chiropractic Perspective

From a chiropractic perspective, it is important for the practitioner to know the sport, to be familiar with the typical injuries and conditions associated with that activity, and to talk to the athletes about the physical demands that are placed on their bodies.

When examining athletes, it is important to assess the various factors such as posture – especially related to the sport – ranges of movement, joint function, muscle balance – including strength and flexibility – and other factors related specifically to that sport.

As an example, there is a strong tendency with hockey players, for the hipflexor to be tighter on the stick side of forwards and defencemen. This can create an asymmetrical strain on the lumbo-sacral spine, and a tendency towards extension of the lumbar spine, which, in turn, places an additional stress on the lumbar facets. This, of course, can contribute to mechanical type lower back pain – i.e., facet mediated pain

When dealing with athletes, it is important to review their history and be aware of any past or current injuries, to determine an appropriate course of treatment and also communicate when appropriate – and with proper authorization – to the other members of the health-care and fitness team. This will help ensure that athletes are being afforded the best possible treatment and care, thereby allowing them to excel at their sport.

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